
Spoofax API

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4.10	org.metaborg.spoofox.meta.core.pluto.build.main	464
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The API documentation contains all classes in MetaBorg Core, Spoofax Core, and their meta counterparts. This documentation is generated from the source code at the [Spoofax GitHub repository](#).

org.metaborg.core

AggregateMetaborgException

public class **AggregateMetaborgException** extends *MetaborgException*

Constructors

AggregateMetaborgException

public **AggregateMetaborgException** (*Iterable*<*MetaborgException*> causes)

Methods

getCauses

public *Iterable*<*MetaborgException*> **getCauses** ()

getMessage

public *String* **getMessage** ()

throwIfAny

public static void **throwIfAny** (*Iterable*<*MetaborgException*> exceptions)

MetaBorg

public class **MetaBorg** implements *AutoCloseable*

Facade for instantiating and accessing the MetaBorg API. Call the public methods to perform common operations, or use the public final fields to access services directly. All services and operations available in this facade are implemented when using the default *MetaborgModule*.

Fields

autoCloseables

public final *Set<AutoCloseable>* **autoCloseables**

contextService

public final *IContextService* **contextService**

dependencyService

public final *IDependencyService* **dependencyService**

dialectProcessor

public final *IDialectProcessor* **dialectProcessor**

editorRegistry

public final *IEditorRegistry* **editorRegistry**

injector

public final *Injector* **injector**

languageComponentFactory

public final *ILanguageComponentFactory* **languageComponentFactory**

languageDiscoveryService

public final *ILanguageDiscoveryService* **languageDiscoveryService**

languageIdentifierService

public final *ILanguageIdentifierService* **languageIdentifierService**

languagePathService

public final *ILanguagePathService* **languagePathService**

languageService

public final *ILanguageService* **languageService**

projectService

public final *IProjectService* **projectService**

resourceService

public final *IResourceService* **resourceService**

sourceTextService

public final *ISourceTextService* **sourceTextService**

Constructors

MetaBorg

public **MetaBorg** (*IModulePluginLoader* loader, *MetaborgModule* module, *Module...* additionalModules)
 Instantiate the MetaBorg API.

Parameters

- **loader** – Module plugin loader to use.
- **module** – MetaBorg module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaBorg

public **MetaBorg** (*MetaborgModule* module, *Module...* additionalModules)
 Instantiate the MetaBorg API.

Parameters

- **module** – MetaBorg module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaBorg

public **MetaBorg** (*IModulePluginLoader* loader, *Module...* additionalModules)

Instantiate the MetaBorg API.

Parameters

- **loader** – Module plugin loader to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaBorg

public **MetaBorg** (*Module...* additionalModules)

Instantiate the MetaBorg API.

Parameters

- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

Methods

close

public void **close** ()

Closes the MetaBorg API, closing any resources and services created by the API.

defaultModule

protected static *MetaborgModule* **defaultModule** ()

defaultPluginLoader

protected static *IModulePluginLoader* **defaultPluginLoader** ()

discoverLanguages

public *Iterable<ILanguageComponent>* **discoverLanguages** (*FileObject* location)

See **also:** *ILanguageDiscoveryService.request (FileObject),*
ILanguageDiscoveryService.discover (ILanguageDiscoveryRequest)

identifyResource

public boolean **identifyResource** (FileObject resource, ILanguageImpl language)
See also: *ILanguageIdentifierService.identify(FileObject, ILanguageImpl)*

identifyResource

public ILanguageImpl **identifyResource** (FileObject resource)
See also: *ILanguageIdentifierService.identify(FileObject)*

resolve

public FileObject **resolve** (String uri)
See also: *IResourceService.resolve(String)*

resolve

public FileObject **resolve** (File file)
See also: *IResourceService.resolve(File)*

resolve

public FileObject **resolve** (URI uri)
See also: *IResourceService.resolve(URI)*

scanLanguagesInDirectory

public Set<ILanguageImpl> **scanLanguagesInDirectory** (FileObject directory)
See also: *ILanguageDiscoveryService.scanLanguagesInDirectory(FileObject)*

MetaBorgGeneric

public class **MetaBorgGeneric**<I extends IInputUnit, P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate>
 Generic version of the *MetaBorg* facade. Call the public methods to perform common operations, or use the public final fields to access services directly. This facade should only be used with a module that implements these services, like the Spoofox module, or through a subclassed facade like to the Spoofox facade. Using this facade with the *MetaborgModule* will cause an exception on construction.

Parameters

- <I> – Type of input units.
- <P> – Type of parse units.
- <A> – Type of analyze units.
- <AU> – Type of analyze unit updates.
- <T> – Type of transform units with any input.
- <TP> – Type of transform units with parse units as input.

- **<TA>** – Type of transform units with analyze units as input.
- **<F>** – Type of fragments.

Fields

actionService

public final *IActionService* **actionService**

analysisResultProcessor

public final *IAnalysisResultProcessor*<I, P, A> **analysisResultProcessor**

analysisService

public final *IAnalysisService*<P, A, AU> **analysisService**

builder

public final *IBuilder*<P, A, AU, T> **builder**

categorizerService

public final *ICategorizerService*<P, A, F> **categorizerService**

completionService

public final *ICompletionService*<P> **completionService**

dialectIdentifier

public final *IDialectIdentifier* **dialectIdentifier**

dialectService

public final *IDialectService* **dialectService**

hoverService

public final *IHoverService*<P, A> **hoverService**

menuService

public final *IMenuService* **menuService**

outlineService

public final *IOutlineService*<P, A> **outlineService**

parseResultProcessor

public final *IParseResultProcessor*<I, P> **parseResultProcessor**

processorRunner

public final *IProcessorRunner*<P, A, AU, T> **processorRunner**

resolverService

public final *IResolverService*<P, A> **resolverService**

stylerService

public final *IStylerService*<F> **stylerService**

syntaxService

public final *ISyntaxService*<I, P> **syntaxService**

tracingService

public final *ITracingService*<P, A, T, F> **tracingService**

transformService

public final *ITransformService*<P, A, TP, TA> **transformService**

unitService

public final *IUnitService*<I, P, A, AU, TP, TA> **unitService**

Constructors

MetaBorgGeneric

public **MetaBorgGeneric** (*Class*<I> *iClass*, *Class*<P> *pClass*, *Class*<A> *aClass*, *Class*<AU> *auClass*, *Type* *iClass*, *Type* *tpClass*, *Type* *taClass*, *Class*<F> *fClass*, *IModulePluginLoader* *loader*, *MetaborgModule* *module*, *Module*... *additionalModules*)

Instantiate the generic MetaBorg API.

Parameters

- **loader** – Module plugin loader to use.
- **module** – MetaBorg module to use, which should implement all services in this facade. Do not use *MetaborgModule*.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaBorgGeneric

```
public MetaBorgGeneric (Class<I> iClass, Class<P> pClass, Class<A> aClass, Class<AU> auClass,
                        Class<T> tClass, Class<TP> tpClass, Class<TA> taClass, Class<F> fClass,
                        MetaborgModule module, Module... additionalModules)
```

Instantiate the generic MetaBorg API.

Parameters

- **module** – MetaBorg module to use, which should implement all services in this facade. Do not use *MetaborgModule*.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaborgConstants

```
public class MetaborgConstants
```

Fields

FILE_COMPONENT_CONFIG

```
public static final String FILE_COMPONENT_CONFIG
```

FILE_CONFIG

```
public static final String FILE_CONFIG
```

LOC_COMPONENT_CONFIG

```
public static final String LOC_COMPONENT_CONFIG
```

METABORG_GROUP_ID

```
public static final String METABORG_GROUP_ID
```

METABORG_VERSION

public static final [String](#) **METABORG_VERSION**

MetaborgException

public class **MetaborgException** extends [Exception](#)

Constructors

MetaborgException

public **MetaborgException** ()

MetaborgException

public **MetaborgException** ([String](#) *message*)

MetaborgException

public **MetaborgException** ([String](#) *message*, [Throwable](#) *cause*)

MetaborgException

public **MetaborgException** ([Throwable](#) *cause*)

MetaborgModule

public class **MetaborgModule** extends [AbstractModule](#)

Guice module that specifies which implementations to use for services and factories.

Fields

autoClosableBinder

protected [Multibinder](#)<[AutoCloseable](#)> **autoClosableBinder**

contextFactoryBinder

protected [MapBinder](#)<[String](#), [IContextFactory](#)> **contextFactoryBinder**

contextStrategyBinder

protected [MapBinder](#)<[String](#), [IContextStrategy](#)> **contextStrategyBinder**

languageCacheBinder

protected [Multibinder](#)<[ILanguageCache](#)> **languageCacheBinder**

languagePathProviderBinder

protected [Multibinder](#)<[ILanguagePathProvider](#)> **languagePathProviderBinder**

Constructors

MetaborgModule

public **MetaborgModule** ()

MetaborgModule

public **MetaborgModule** ([ClassLoader](#) *resourceClassLoader*)

Methods

bindAnalysis

protected void **bindAnalysis** ()

bindBuilder

protected void **bindBuilder** ()

bindConfigMisc

protected void **bindConfigMisc** ()

bindContext

protected void **bindContext** ()

bindContextFactories

protected void **bindContextFactories** ([MapBinder](#)<[String](#), [IContextFactory](#)> *binder*)

bindContextStrategies

protected void **bindContextStrategies** ([MapBinder](#)<[String](#), [IContextStrategy](#)> *binder*)

bindDependency

protected void **bindDependency** ()

bindEditor

protected void **bindEditor** ()

bindLanguage

protected void **bindLanguage** ()

bindLanguageChangeProcessing

protected void **bindLanguageChangeProcessing** ()

bindLanguageComponentConfig

protected void **bindLanguageComponentConfig** ()

bindLanguagePath

protected void **bindLanguagePath** ()

bindLanguagePathProviders

protected void **bindLanguagePathProviders** (*Multibinder<ILanguagePathProvider> binder*)

bindProcessor

protected void **bindProcessor** ()

bindProcessorRunner

protected void **bindProcessorRunner** ()

bindProject

protected void **bindProject** ()

bindProjectConfig

protected void **bindProjectConfig** ()

bindResource

protected void **bindResource** ()

bindSourceText

protected void **bindSourceText** ()

configure

protected void **configure** ()

MetaborgRuntimeException

public class **MetaborgRuntimeException** extends *RuntimeException*

Constructors

MetaborgRuntimeException

public **MetaborgRuntimeException** ()

MetaborgRuntimeException

public **MetaborgRuntimeException** (*String message*)

MetaborgRuntimeException

public **MetaborgRuntimeException** (*String message*, *Throwable cause*)

MetaborgRuntimeException

public **MetaborgRuntimeException** (*Throwable cause*)

org.metaborg.core.action

CompileGoal

public class **CompileGoal** implements *ITransformGoal*

Methods

equals

public boolean **equals** (*Object obj*)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

EndNamedGoal

public class **EndNamedGoal** implements *ITransformGoal*

Named transform goal that points to a builder in a menu, without qualified menu names.

Fields

name

public final *String* **name**

Constructors

EndNamedGoal

public **EndNamedGoal** (*String name*)

Methods

equals

public boolean **equals** (*Object obj*)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

IAction

public interface **IAction**

Methods

name

String **name** ()

IActionService

public interface **IActionService**

Methods

actionContributions

Iterable<*TransformActionContrib*> **actionContributions** (*ILanguageImpl* language, *ITransformGoal* goal)

Gets transform action contributions for given transform goal.

Parameters

- **language** – Language implementation to get transform actions from.
- **goal** – Goal to get transform actions for.

Returns Transform action contributions.

actions

Iterable<*ITransformAction*> **actions** (*ILanguageImpl* language, *ITransformGoal* goal)

Gets transform actions for given goal.

Parameters

- **language** – Language implementation to get transform actions from.
- **goal** – Goal to get transform actions for.

Returns Transform actions.

available

boolean **available** (*ILanguageImpl* language, *ITransformGoal* goal)

Checks if transform actions are available for given transform goal.

Parameters

- **language** – Language implementation to check transform actions from.
- **goal** – Goal to check transform actions for.

Returns True if transform actions are available, false if not.

requiresAnalysis

boolean **requiresAnalysis** (*ILanguageImpl* language, *ITransformGoal* goal)

Checks if analysis is required for given transform goal.

Parameters

- **language** – Language implementation to check from.
- **goal** – Goal to check for.

Returns True if analysis is required, false if not.

ITransformAction

public interface **ITransformAction** extends *Action*

Methods

flags

TransformActionFlags **flags** ()

goal

ITransformGoal **goal** ()

ITransformGoal

public interface **ITransformGoal** extends *Serializable*

Tag interface for transformation goals.

NamedGoal

public class **NamedGoal** implements *ITransformGoal*

Named transform goal that points to a builder in a menu via a list of menu names and builder name.

Fields

names

public final *List*<*String*> **names**

Constructors

NamedGoal

public **NamedGoal** (*List*<*String*> names)

Methods

equals

public boolean **equals** (*Object obj*)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

TransformActionContrib

public class **TransformActionContrib**

Fields

action

public final *ITransformAction* **action**

contributor

public final *ILanguageComponent* **contributor**

Constructors

TransformActionContrib

public **TransformActionContrib** (*ITransformAction action*, *ILanguageComponent contributor*)

Methods

toString

public *String* **toString** ()

TransformActionFlags

public class **TransformActionFlags**

Fields

openEditor

public boolean **openEditor**

Flag indicating if the result of this action should be shown in a new editor.

parsed

public boolean **parsed**

Flag indicating if the strategy should be invoked on the parsed AST instead of the analyzed AST.

realtime

public boolean **realtime**

Flag indicating if this action should be updated in real time whenever the input changes.

Constructors

TransformActionFlags

public **TransformActionFlags** ()

TransformActionFlags

public **TransformActionFlags** (boolean *parsed*, boolean *openEditor*, boolean *realtime*)

Methods

merge

public static *TransformActionFlags* **merge** (*TransformActionFlags* x, *TransformActionFlags* y)

org.metaborg.core.analysis

AnalysisException

public class **AnalysisException** extends *MetaborgException*

Exception indicating that analysis failed unexpectedly.

Fields

context

public final *IContext* **context**

Constructors

AnalysisException

public **AnalysisException** (*IContext context*)

AnalysisException

public **AnalysisException** (*IContext context*, *String message*)

AnalysisException

public **AnalysisException** (*IContext context*, *Throwable cause*)

AnalysisException

public **AnalysisException** (*IContext context*, *String message*, *Throwable cause*)

AnalysisService

public class **AnalysisService**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate> implements *IAnalyzeService*

Methods

analyze

public *IAnalyzeResult*<A, AU> **analyze** (P input, *IContext context*, IProgress progress, ICancel cancel)

analyzeAll

public *IAnalyzeResults*<A, AU> **analyzeAll** (Iterable<P> inputs, *IContext context*, IProgress progress, ICancel cancel)

available

public boolean **available** (*ILanguageImpl langImpl*)

AnalyzeResult

public class **AnalyzeResult**<A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate> implements *IAnalyzeResult*<A, AU>

Constructors

AnalyzeResult

public **AnalyzeResult** (A *result*, Collection<AU> *updates*, IContext *context*)

AnalyzeResult

public **AnalyzeResult** (A *result*, IContext *context*)

Methods

context

public IContext **context** ()

result

public A **result** ()

updates

public Collection<AU> **updates** ()

AnalyzeResults

public class **AnalyzeResults**<A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate> implements IAnalyzeResults<A, AU>

Constructors

AnalyzeResults

public **AnalyzeResults** (Collection<A> *results*, Collection<AU> *updates*, IContext *context*)

AnalyzeResults

public **AnalyzeResults** (Collection<A> *results*, IContext *context*)

AnalyzeResults

public **AnalyzeResults** (IContext *context*)

Methods

context

public *Context* **context** ()

results

public *Collection*<*A*> **results** ()

updates

public *Collection*<*AU*> **updates** ()

AnalyzerFacet

public class **AnalyzerFacet**<*P* extends *IParseUnit*, *A* extends *IAnalyzeUnit*, *AU* extends *IAnalyzeUnitUpdate*> implements *IFacet*

Fields

analyzer

public final *IAnalyzer*<*P*, *A*, *AU*> **analyzer**

Constructors

AnalyzerFacet

public **AnalyzerFacet** (*IAnalyzer*<*P*, *A*, *AU*> *analyzer*)

IAnalysisService

public interface **IAnalysisService**<*P* extends *IParseUnit*, *A* extends *IAnalyzeUnit*, *AU* extends *IAnalyzeUnitUpdate*>
Interface for context-sensitive analysis of parse units.

Parameters

- <**P**> – Type of parse units.
- <**A**> – Type of analyze units.
- <**AU**> – Type of analyze unit updates.

Methods

analyze

IAnalyzeResult<A, AU> **analyze** (P *input*, *IContext* *context*, IProgress *progress*, ICancel *cancel*)

Analyzes given parse input, in given context, into an analysis result which contains an analyze unit and optionally updates to analyze units.

Parameters

- **input** – Parse unit to analyze.
- **context** – Context to perform analysis in.
- **progress** – Progress reporter.
- **cancel** – Cancellation token.

Throws

- *AnalysisException* – When analysis fails unexpectedly.
- *InterruptedException* – When analysis is cancelled.

Returns Analysis result which contains an analyze unit and optionally updates to analyze units.

analyze

IAnalyzeResult<A, AU> **analyze** (P *input*, *IContext* *context*)

Analyzes given parse input, in given context, into an analysis result which contains an analyze unit and optionally updates to analyze units.

Parameters

- **input** – Parse unit to analyze.
- **context** – Context to perform analysis in.

Throws

- *AnalysisException* – When analysis fails unexpectedly.

Returns Analysis result which contains an analyze unit and optionally updates to analyze units.

analyzeAll

IAnalyzeResults<A, AU> **analyzeAll** (Iterable<P> *inputs*, *IContext* *context*, IProgress *progress*, ICancel *cancel*)

Analyzes given parse input, in given context, into an analysis result which contains an analyze unit and optionally updates to analyze units.

Parameters

- **input** – Parse unit to analyze.
- **context** – Context to perform analysis in.
- **progress** – Progress reporter.
- **cancel** – Cancellation token.

Throws

- ***AnalysisException*** – When analysis fails unexpectedly.
- ***InterruptedException*** – When analysis is cancelled.

Returns Analysis result which contains an analyze unit and optionally updates to analyze units.

analyzeAll

IAnalyzeResults<A, AU> **analyzeAll** (*Iterable*<P> inputs, *IContext* context)

Analyzes given parse input, in given context, into an analysis result which contains an analyze unit and optionally updates to analyze units.

Parameters

- **input** – Parse unit to analyze.
- **context** – Context to perform analysis in.
- **progress** – Progress reporter.
- **cancel** – Cancellation token.

Throws

- ***AnalysisException*** – When analysis fails unexpectedly.

Returns Analysis result which contains an analyze unit and optionally updates to analyze units.

available

boolean **available** (*ILanguageImpl* langImpl)

Checks if analysis is available for given language implementation.

Parameters

- **langImpl** – Language implementation to check.

Returns True if analysis is a available, false if not.

IAnalyzeResult

public interface **IAnalyzeResult**<A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate>

Result of the analysis of a single parse unit.

Parameters

- **<A>** – Type of analyze units.
- **<AU>** – Type of analyze unit updates.

Methods

context

IContext **context** ()

Returns The context that was used during analysis.

result

A **result** ()

Returns Resulting analyze unit of the analysis.

updates

Collection<AU> **updates** ()

Returns Updates to existing analyze units.

IAnalyzeResults

public interface **IAnalyzeResults**<A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate>

Result of the analysis of a multiple parse units.

Parameters

- <A> – Type of analyze units.
- <AU> – Type of analyze unit updates.

Methods

context

IContext **context** ()

Returns The context that was used during analysis.

results

Collection<A> **results** ()

Returns Resulting analyze units of the analysis.

updates

Collection<AU> **updates** ()

Returns Updates to existing analyze units.

IAnalyzeUnit

public interface **IAnalyzeUnit** extends *IUnit*

Unit representing an analyzed source file. An analyze unit can be passed to the *ITransformService* to transform the parse unit into a *ITransformUnit*

Methods

context

Context **context** ()

Returns The context that was used during analysis.

duration

long **duration** ()

Returns Analysis duration in nanoseconds, or -1 if the duration is unknown.

input

ParseUnit **input** ()

Returns The parse unit this unit was made with.

messages

Iterable<*Message*> **messages** ()

Returns Messages produced by the analyzer.

success

boolean **success** ()

Returns True if analysis was successful, i.e. the analyzed produced a result and no errors were encountered. False otherwise.

valid

boolean **valid** ()

Returns True if this unit is valid, i.e. the analyzer analyzed the parse unit without exceptions. Even when the unit is valid, it may still be unsuccessful, use *success* () to check for that.

IAnalyzeUnitUpdate

public interface **IAnalyzeUnitUpdate**

An update to an analyze unit, made from analyzing a different unit.

Methods

messages

`Iterable<IMessage> messages ()`

Returns Updated messages.

source

`FileObject source ()`

Returns Source file the update is for.

IAnalyzer

public interface **IAnalyzer**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate>
Interface for a context-sensitive analyzer implementation.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.
- **<AU>** – Type of analyze unit updates.

Methods

analyze

`IAnalyzeResult<A, AU> analyze (P input, IContext context, IProgress progress, ICancel cancel)`

Analyzes given parse input, in given context, into an analysis result which contains an analyze unit and optionally updates to analyze units.

Parameters

- **input** – Parse unit to analyze.
- **context** – Context to perform analysis in.
- **progress** – Progress reporter.
- **cancel** – Cancellation token.

Throws

- **AnalysisException** – When analysis fails unexpectedly.
- **InterruptedException** – When analysis is cancelled.

Returns Analysis result which contains an analyze unit and optionally updates to analyze units.

analyzeAll

IAnalyzeResults<A, AU> **analyzeAll** (*Iterable*<P> *inputs*, *IContext* *context*, *IProgress* *progress*, *ICancel* *cancel*)

Analyzes given parse inputs, in given context, into an analysis result which contains analyze units and optionally updates to analyze units.

Parameters

- **inputs** – Parse units to analyze.
- **context** – Context to perform analysis in.
- **progress** – Progress reporter.
- **cancel** – Cancellation token.

Throws

- *AnalysisException* – When analysis fails unexpectedly.
- *InterruptedException* – When analysis is cancelled.

Returns Analysis result which contains analyze units and optionally updates to analyze units.

org.metaborg.core.build

BuildInput

public class **BuildInput**

Input for a build. Use the *BuildInputBuilder* fluent interface to create objects of this class.

See also: *BuildInputBuilder*

Fields

analyze

public final boolean **analyze**

If analysis is enabled.

analyzeSelector

public final *FileSelector* **analyzeSelector**

File selector to determine which resources should be analyzed, or null to analyze everything.

buildOrder

public final *BuildOrder* **buildOrder**

Language build order.

includePaths

public final Multimap<*ILanguageImpl*, *FileObject*> **includePaths**
 Per-language include paths;

messagePrinter

public final *IMessagePrinter* **messagePrinter**
 Message printer to use during build, or null to skip printing messages.

pardonedLanguages

public final Set<*ILanguageImpl*> **pardonedLanguages**
 Languages for which errors are pardoned; prevents throwing an exception when `throwOnErrors` is true.

project

public final *IProject* **project**
 Project to build.

selector

public final *FileSelector* **selector**
 File selector to determine which resources should be processed, or null to process everything.

sourceChanges

public final Iterable<*ResourceChange*> **sourceChanges**
 Sources that have changed.

state

public final *BuildState* **state**
 Build state with information about previous builds.

throwOnErrors

public final boolean **throwOnErrors**
 If an exception should be thrown when there are parsing, analysis, or transformation errors.

transform

public final boolean **transform**
 If transformation is enabled.

transformGoals

public final [Iterable](#)<[ITransformGoal](#)> **transformGoals**
Transformer goals to execute on analyzed or parsed results.

transformSelector

public final [FileSelector](#) **transformSelector**
File selector to determine which resources should be transformed, or null to transform everything.

Constructors

BuildInput

public **BuildInput** ([BuildState](#) state, [IProject](#) project, [Iterable](#)<[ResourceChange](#)> resourceChanges, [Multimap](#)<[ILanguageImpl](#), [FileObject](#)> includePaths, [BuildOrder](#) buildOrder, [FileSelector](#) parseSelector, boolean analyze, [FileSelector](#) analyzeSelector, boolean transform, [FileSelector](#) transformSelector, [Iterable](#)<[ITransformGoal](#)> transformGoals, [IMessagePrinter](#) messagePrinter, boolean throwOnErrors, [Set](#)<[ILanguageImpl](#)> pardonedLanguages)

BuildInputBuilder

public class **BuildInputBuilder**
Fluent interface for creating [BuildInput](#) objects.

See also: [BuildInput](#)

Constructors

BuildInputBuilder

public **BuildInputBuilder** ([IProject](#) project)

Methods

addComponent

public [BuildInputBuilder](#) **addComponent** ([ILanguageComponent](#) component)
Adds languages from given language component.

addComponents

public [BuildInputBuilder](#) **addComponents** ([Iterable](#)<? extends [ILanguageComponent](#)> components)
Adds languages from given language components.

addIdentifiedSources

public *BuildInputBuilder* **addIdentifiedSources** (*Iterable<IdentifiedResource>* sources)
 Add addition source changes from given identified sources.

addIncludePaths

public *BuildInputBuilder* **addIncludePaths** (*ILanguageImpl* language, *Iterable<FileObject>* include-
Paths)
 Add given include files for given language.

addLanguage

public *BuildInputBuilder* **addLanguage** (*ILanguageImpl* language)
 Adds a single language implementation.

addLanguages

public *BuildInputBuilder* **addLanguages** (*Iterable<? extends ILanguageImpl>* languages)
 Adds given language implementations.

addPardonedLanguage

public *BuildInputBuilder* **addPardonedLanguage** (*ILanguageImpl* pardonedLanguage)
 Adds a single pardoned language.

addPardonedLanguageString

public *BuildInputBuilder* **addPardonedLanguageString** (*String* pardonedLanguage)
 Adds a single pardoned language from given language name.

addSource

public *BuildInputBuilder* **addSource** (*IdentifiedResource* source)
 Adds a single addition source change from given identified source.

addSource

public *BuildInputBuilder* **addSource** (*FileObject* source)
 Adds a single addition source change from given source.

addSourceChanges

public *BuildInputBuilder* **addSourceChanges** (*Iterable<ResourceChange>* sourceChanges)
 Adds a source change.

addSources

public *BuildInputBuilder* **addSources** (*Iterable<FileObject>* sources)

Add addition source changes from given sources.

addSourcesFromSourceLocations

public *BuildInputBuilder* **addSourcesFromSourceLocations** (*Iterable<FileObject>* sourceLocations)

Add addition source changes from source files at given source locations.

addTransformGoal

public *BuildInputBuilder* **addTransformGoal** (*ITransformGoal* goal)

Adds a single transform goal.

build

public *BuildInput* **build** (*IDependencyService* dependencyService, *ILanguagePathService* languagePathService)

Builds a build input object from the current state.

Throws

- *MetaborgException* – When *IDependencyService.compileDeps* throws.

reset

public *BuildInputBuilder* **reset** ()

Resets the builder to its original state.

withAnalysis

public *BuildInputBuilder* **withAnalysis** (boolean analyze)

Sets if analysis should be executed. Defaults to true.

withAnalyzeSelector

public *BuildInputBuilder* **withAnalyzeSelector** (*FileSelector* analyzeSelector)

Sets the analysis file selector to given selector.

withCompileDependencyLanguages

public *BuildInputBuilder* **withCompileDependencyLanguages** (boolean addDependencyLanguages)

Sets if compile time dependencies should be added to languages when the input is built. Defaults to true.

withComponents

public *BuildInputBuilder* **withComponents** (*Iterable<ILanguageComponent>* components)
Sets the languages from given language components.

withDefaultIncludePaths

public *BuildInputBuilder* **withDefaultIncludePaths** (boolean *addDefaultIncludePaths*)
Sets if default include files should be added when the input is build. Defaults to true.

withIncludePaths

public *BuildInputBuilder* **withIncludePaths** (*Multimap<ILanguageImpl, FileObject>* includePaths)
Sets the include files to given files.

withLanguages

public *BuildInputBuilder* **withLanguages** (*Set<ILanguageImpl>* languages)
Sets the languages to given language implementations.

withLanguages

public *BuildInputBuilder* **withLanguages** (*Iterable<ILanguageImpl>* languages)
Sets the languages to given language implementations.

withMessagePrinter

public *BuildInputBuilder* **withMessagePrinter** (*IMessagePrinter* messagePrinter)
Sets the message printer to given message printer.

withPardonedLanguageStrings

public *BuildInputBuilder* **withPardonedLanguageStrings** (*Iterable<String>* pardonedLanguages)
Set the pardoned languages from given language names.

withPardonedLanguages

public *BuildInputBuilder* **withPardonedLanguages** (*Set<ILanguageImpl>* pardonedLanguages)
Set the pardoned languages from given set of pardoned languages.

withSelector

public *BuildInputBuilder* **withSelector** (*FileSelector* selector)
Sets the file selector to given selector.

withSourceChanges

public *BuildInputBuilder* **withSourceChanges** (*Collection<ResourceChange>* sourceChanges)
Sets the source changes to given resource changes.

withSourceChanges

public *BuildInputBuilder* **withSourceChanges** (*Iterable<ResourceChange>* sourceChanges)
Sets the source changes to given resource changes.

withSources

public *BuildInputBuilder* **withSources** (*Iterable<FileObject>* sources)
Set the source changes to additions from given sources.

withSourcesFromDefaultSourceLocations

public *BuildInputBuilder* **withSourcesFromDefaultSourceLocations** (boolean *addSourcesFromDefaultSourceLocations*)
Sets if addition source changes should be added from source at default source locations, when the input is built.
Defaults to false.

withState

public *BuildInputBuilder* **withState** (*BuildState* state)
Sets the build state to given build state.

withThrowOnErrors

public *BuildInputBuilder* **withThrowOnErrors** (boolean *throwOnErrors*)
Sets if a runtime exception should be thrown when errors occur. Defaults to false.

withTransformGoals

public *BuildInputBuilder* **withTransformGoals** (*Collection<ITransformGoal>* transformGoals)
Sets the transform goals to given transform goals.

withTransformSelector

public *BuildInputBuilder* **withTransformSelector** (*FileSelector* transformSelector)
Sets the transformation file selector to given selector.

withTransformation

public *BuildInputBuilder* **withTransformation** (boolean *transform*)
 Sets if transformations should be executed. Defaults to true.

BuildOrder

public class **BuildOrder**
 Language build order calculation.

Constructors

BuildOrder

public **BuildOrder** (*Iterable<ILanguageImpl>* *languages*)
 Creates a build order for given languages, using their dependencies.

Parameters

- **languages** – Languages to create a build order for.

Throws

- **MetaborgRuntimeException** – When there is a cyclic dependency between languages.

Methods

buildOrder

public *Iterable<ILanguageImpl>* **buildOrder** ()

Returns Build order.

languages

public *Iterable<ILanguageImpl>* **languages** ()

Returns Languages in this build order, in the same order that they were passed in the constructor.

BuildOutput

public class **BuildOutput**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITransformU

Fields

analysisResults

public final *Collection<A>* **analysisResults**

analysisUpdates

public final [Collection](#)<[AU](#)> **analysisUpdates**

changedResources

public final [Collection](#)<[FileObject](#)> **changedResources**

extraMessages

public final [Collection](#)<[IMessage](#)> **extraMessages**

includedResources

public final [Set](#)<[FileName](#)> **includedResources**

parseResults

public final [Collection](#)<[P](#)> **parseResults**

removedResources

public final [Set](#)<[FileName](#)> **removedResources**

state

public [BuildState](#) **state**

transformResults

public final [Collection](#)<[T](#)> **transformResults**

Methods

add

public void **add** (boolean *success*, [Iterable](#)<[FileName](#)> *removedResources*, [Iterable](#)<[FileName](#)> *includedResources*, [Iterable](#)<[FileObject](#)> *changedResources*, [Iterable](#)<[P](#)> *parseResults*, [Iterable](#)<[A](#)> *analysisResults*, [Iterable](#)<[AU](#)> *analysisUpdates*, [Iterable](#)<[T](#)> *transformResults*, [Iterable](#)<[IMessage](#)> *extraMessages*)

allMessages

public [Iterable](#)<[IMessage](#)> **allMessages** ()

analysisResults

public *Iterable*<A> **analysisResults** ()

analysisUpdates

public *Iterable*<AU> **analysisUpdates** ()

changedResources

public *Iterable*<FileObject> **changedResources** ()

extraMessages

public *Iterable*<*IMessage*> **extraMessages** ()

includedResources

public *Set*<FileName> **includedResources** ()

parseResults

public *Iterable*<P> **parseResults** ()

removedResources

public *Set*<FileName> **removedResources** ()

setState

public void **setState** (*BuildState* state)

state

public *BuildState* **state** ()

success

public boolean **success** ()

transformResults

public *Iterable*<T> **transformResults** ()

BuildState

public class **BuildState**

Methods

add

public void **add** (*ILanguageImpl* language, *LanguageBuildState* state)

get

public *LanguageBuildState* **get** (*IResourceService* resourceService, *ILanguageIdentifierService* languageIdentifierService, *ILanguageImpl* language)

Builder

public class **Builder**<I extends IInputUnit, P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITransformUnit> Builder implementation.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.
- **<AU>** – Type of analyze unit updates.
- **<T>** – Type of transform units with any input.
- **<TP>** – Type of transform units with parse units as input.
- **<TA>** – Type of transform units with analyze units as input.

Constructors

Builder

public **Builder** (*IResourceService* resourceService, *ILanguageIdentifierService* languageIdentifier, *ILanguagePathService* languagePathService, *IUnitService*<I, P, A, AU, TP, TA> unitService, *ISourceTextService* sourceTextService, *ISyntaxService*<I, P> syntaxService, *IContextService* contextService, *IAnalysisService*<P, A, AU> analysisService, *ITransformService*<P, A, TP, TA> transformService, *IParseResultUpdater*<P> parseResultUpdater, *IAnalysisResultUpdater*<P, A> analysisResultUpdater, *Provider*<*IBuildOutputInternal*<P, A, AU, T>> buildOutputProvider)

Methods

build

public *IBuildOutput*<P, A, AU, T> **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)

clean

public void **clean** (*CleanInput* input, IProgress *progress*, ICancel *cancel*)

CleanInput

public class **CleanInput**
Input for a clean build.

Fields

languages

public final *Iterable<ILanguageImpl>* **languages**
Languages to run clean operations for.

project

public final *IPProject* **project**
Project to clean.

selector

public final *FileSelector* **selector**
File selector to determine which resources are eligible for cleaning, or null to allow everything to be cleaned.

Constructors

CleanInput

public **CleanInput** (*IPProject* project, *Iterable<ILanguageImpl>* languages, *FileSelector* selector)

CleanInputBuilder

public class **CleanInputBuilder**

Constructors

CleanInputBuilder

public **CleanInputBuilder** (*IPProject* project)

Methods

addComponent

public *CleanInputBuilder* **addComponent** (*ILanguageComponent* component)
Adds languages from given language component.

addComponents

public *CleanInputBuilder* **addComponents** (*Iterable*<? extends *ILanguageComponent*> components)
Adds languages from given language components.

addLanguage

public *CleanInputBuilder* **addLanguage** (*ILanguageImpl* language)
Adds a single language implementation.

addLanguages

public *CleanInputBuilder* **addLanguages** (*Iterable*<? extends *ILanguageImpl*> languages)
Adds given language implementations.

build

public *CleanInput* **build** (*IDependencyService* dependencyService)
Builds a clean input object from the current state.

Throws

- ***MetaborgException*** – When *IDependencyService.compileDeps(IProject)* throws.

reset

public void **reset** ()

withCompileDependencyLanguages

public *CleanInputBuilder* **withCompileDependencyLanguages** (boolean *addDependencyLanguages*)
Sets if compile time dependencies should be added to languages when the input is built. Defaults to true.

withComponents

public *CleanInputBuilder* **withComponents** (*Iterable*<*ILanguageComponent*> components)
Sets the languages from given language components.

withLanguages

public *CleanInputBuilder* **withLanguages** (*Set<ILanguageImpl>* languages)
 Sets the languages to given language implementations.

withSelector

public *CleanInputBuilder* **withSelector** (*FileSelector* selector)
 Sets the file selector to given selector.

CommonPaths

public class **CommonPaths**

Fields

root

protected final *FileObject* **root**

Constructors

CommonPaths

public **CommonPaths** (*FileObject* root)

Methods

dsMainFile

public *FileObject* **dsMainFile** (*String* languageName)

Parameters

- **languageName** – Name of the language.

Returns Main DynSem file.

dsManualJavaDir

public *FileObject* **dsManualJavaDir** ()

Returns DynSem manual Java interpreter directory.

dsSrcGenJavaDir

public *FileObject* **dsSrcGenJavaDir** ()

Returns DynSem generated Java interpreter directory.

esvDir

public `FileObject` **esvDir** ()

Returns ESV directory. Contains all ESV files.

esvMainFile

public `FileObject` **esvMainFile** ()

Returns Main ESV file.

iconsDir

public `FileObject` **iconsDir** ()

Returns Icons directory.

javaSrcDirs

public `Collection<FileObject>` **javaSrcDirs** (`String languageId`)

Gets all the Java source root folders.

Parameters

- **languageId** – Identifier of the language.

Returns A list of Java source root folders.

mbComponentConfigFile

public `FileObject` **mbComponentConfigFile** ()

Returns Metaborg component configuration file.

replicateDir

public `FileObject` **replicateDir** ()

Returns Target output directory for replicated resources.

resolve

protected `FileObject` **resolve** (`FileObject dir`, `String path`)

resolve

protected `FileObject` **resolve** (`FileObject dir`, `String... paths`)

root

public `FileObject` **root** ()

Returns Root directory.

spxArchiveFile

public `FileObject` **spxArchiveFile** (`String` *languageId*)

Parameters

- **languageId** – Identifier of the language.

Returns Archived Spoofax language file.

srcGenDir

public `FileObject` **srcGenDir** ()

Returns Generated sources directory. All generated source code (Stratego, SDF, config files, etc.) go into this directory.

srcMainDir

public `FileObject` **srcMainDir** ()

Returns Java sources directory.

strCacheDir

public `FileObject` **strCacheDir** ()

Returns Stratego parse cache directory.

strJavaStratDir

public `FileObject` **strJavaStratDir** ()

Returns Stratego Java strategies directory.

strJavaStratPkg

public `String` **strJavaStratPkg** (`String` *languageId*)

Parameters

- **languageId** – Identifier of the language.

Returns Stratego Java strategies package.

strJavaStratPkgPath

public `String` **strJavaStratPkgPath** (`String` *languageId*)

Parameters

- **languageId** – Identifier of the language.

Returns Stratego Java strategies package path.

strJavaTransPkg

public `String` **strJavaTransPkg** (`String` *languageId*)

Parameters

- **languageId** – Identifier of the language.

Returns Stratego Java transformation package.

strMainFile

public `FileObject` **strMainFile** (`String` *languageName*)

Parameters

- **languageName** – Name of the language.

Returns Main Stratego file.

strMainJavaStratFile

public `FileObject` **strMainJavaStratFile** (`String` *languageId*)

Parameters

- **languageId** – Identifier of the language.

Returns Main Stratego Java strategies file.

strTypesmartExportedFile

public `FileObject` **strTypesmartExportedFile** ()

syntaxCompletionMainFile

public `FileObject` **syntaxCompletionMainFile** (`String` *languageName*)

Parameters

- **languageName** – Name of the language.

Returns Main SDF2 completion file.

syntaxCompletionMainFileNormalized

public `FileObject` **syntaxCompletionMainFileNormalized** (`String` *languageName*)

Parameters

- **languageName** – Name of the language.

Returns Main normalized aterm completion file.

syntaxCompletionSrcGenDir

public `FileObject` **syntaxCompletionSrcGenDir** ()

Returns Generated SDF2 completion syntax directory, generated from SDF3 definition.

syntaxDir

public `FileObject` **syntaxDir** ()

Returns Syntax directory. Contains the SDF2 or SDF3 definition.

syntaxMainFile

public `FileObject` **syntaxMainFile** (`String` *languageName*)

Parameters

- **languageName** – Name of the language.

Returns Main SDF2 file.

syntaxNormDir

public `FileObject` **syntaxNormDir** ()

Returns Normalized syntax directory. Contains the SDF3 normalized files.

syntaxSrcGenDir

public `FileObject` **syntaxSrcGenDir** ()

Returns Generated SDF2 syntax directory, generated from SDF3 definition.

syntaxSrcGenMainFile

public `FileObject` **syntaxSrcGenMainFile** (`String` *languageName*)

Parameters

- **languageName** – Name of the language.

Returns Main generated SDF2 file, generated from main SDF3 file.

syntaxSrcGenMainNormFile

public **FileObject** **syntaxSrcGenMainNormFile** (*String languageName*)

Parameters

- **languageName** – Name of the language.

Returns Main generated SDF2 file, generated from main SDF3 file.

syntaxSrcGenPpDir

public **FileObject** **syntaxSrcGenPpDir** ()

Returns Generated Stratego/Box pretty printer directory, generated from SDF3 definition.

syntaxSrcGenSignatureDir

public **FileObject** **syntaxSrcGenSignatureDir** ()

Returns Generated Stratego signatures directory, generated from SDF3 definition.

targetDir

public **FileObject** **targetDir** ()

Returns Target output directory. All compiled outputs go into this directory.

targetMetaborgDir

public **FileObject** **targetMetaborgDir** ()

Returns Target output directory for compiled MetaBorg artifacts (Stratego JAR, parse table, etc.). All compiled artifacts that should be included with the language go into this directory.

transDir

public **FileObject** **transDir** ()

Returns Transformations directory. Contains the Stratego definition, NaBL definition, TS definition, and DynSem definition.

FilesBuildState

class **FilesBuildState**

Fields

files

public final **Set**<*FileName*> **files**

modification

public final Object2LongMap<FileName> **modification**

Methods

add

public long **add** (FileObject *resource*)

add

public void **add** (FilesBuildState *state*)

remove

public void **remove** (FileName *name*)

IBuildOutput

public interface **IBuildOutput**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITransformUnit>
Output generated by a build.

Parameters

- <P> – Type of parse units
- <A> – Type of analyze units.
- <AU> – Type of analyze unit updates.
- <T> – Type of transform units.

Methods

allMessages

Iterable<IMessage> **allMessages** ()

Returns All messages. Includes parse, analysis, transformation, and extra messages.

analysisResults

Iterable<A> **analysisResults** ()

Returns Analysis results for changed resources. Resources that could not be parsed are not analyzed.

analysisUpdates

`Iterable<AU> analysisUpdates ()`

Returns Analysis updates for affected resources.

changedResources

`Iterable<FileObject> changedResources ()`

Returns Resources that were added or changed prior to the build.

extraMessages

`Iterable<IMessage> extraMessages ()`

Returns Extra messages generated by exceptions.

includedResources

`Set<FileName> includedResources ()`

Returns Resources that were included into the build, but not used as source files. These files were parsed and analyzed, but not transformed.

parseResults

`Iterable<P> parseResults ()`

Returns Parse results for changed resources. If parsing fails exceptionally by a *ParseException* or *IOException*, there is no parse result for that resource.

removedResources

`Set<FileName> removedResources ()`

Returns Resources that were removed prior to the build.

state

`BuildState state ()`

Returns State produced by the build.

success

`boolean success ()`

Returns If the build was successful.

transformResults

`Iterable<T> transformResults()`

Returns Transformation results for changed resources. Resources that could not be parsed or analyzed, or that do not require compilation, are not transformed.

IBuildOutputInternal

public interface **IBuildOutputInternal**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITransformUnit>

Methods

add

void **add**(boolean *success*, Iterable<FileName> *removedResources*, Iterable<FileName> *includedResources*, Iterable<FileObject> *changedResources*, Iterable<P> *parseResults*, Iterable<A> *analysisResults*, Iterable<AU> *analysisUpdates*, Iterable<T> *transformResults*, Iterable<IMessage> *extraMessages*)

setState

void **setState**(*BuildState* *state*)

IBuilder

public interface **IBuilder**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITransformUnit>
Incrementally parses, analyzes, and compiles source files.

Parameters

- <P> – Type of parse units.
- <A> – Type of analyze units.
- <AU> – Type of analyze unit updates.
- <T> – Type of transform units with any input.

Methods

build

IBuildOutput<P, A, AU, T> **build**(*BuildInput* *input*, IProgress *progress*, ICancel *cancel*)

Parses, analyses, and compiles changed resources.

Parameters

- **input** – Build input.
- **progress** – Progress reporter used for reporting build progress.
- **cancel** – Cancellation token for canceling the build.

Throws

- **InterruptedException** – When build is cancelled.
- **MetaborgRuntimeException** – When `input.throwOnErrors` is set to true and errors occur.

Returns Result of building.

build

IBuildOutput<P, A, AU, T> **build** (*BuildInput* input)

Parses, analyzes, and compiles changed resources.

Parameters

- **input** – Build input.

Throws

- **InterruptedException** – When build is cancelled.
- **MetaborgRuntimeException** – When `input.throwOnErrors` is set to true and errors occur.

Returns Result of building.

clean

void **clean** (*CleanInput* input, IProgress progress, ICancel cancellation)

Cleans derived resources and contexts from given location.

Parameters

- **input** – Clean input.
- **progress** – Progress reporter used for reporting clean progress.
- **cancellation** – Cancellation token for canceling the clean.

Throws

- **InterruptedException** – When clean is cancelled.

clean

void **clean** (*CleanInput* input)

Cleans derived resources and contexts from given location.

Parameters

- **input** – Clean input.

Throws

- **InterruptedException** – When clean is cancelled.

LanguageBuildDiff

public class **LanguageBuildDiff**

Fields

includeChanges

public final *Iterable*<*IdentifiedResourceChange*> **includeChanges**

newState

public final *LanguageBuildState* **newState**

sourceChanges

public final *Iterable*<*IdentifiedResourceChange*> **sourceChanges**

Constructors

LanguageBuildDiff

public **LanguageBuildDiff** (*LanguageBuildState* newState, *Iterable*<*IdentifiedResourceChange*> sourceFileChanges, *Iterable*<*IdentifiedResourceChange*> includeFileChanges)

LanguageBuildState

public class **LanguageBuildState**

Constructors

LanguageBuildState

public **LanguageBuildState** (*IResourceService* resourceService, *ILanguageIdentifierService* languageIdentifierService, *ILanguageImpl* language)

Methods

diff

public *LanguageBuildDiff* **diff** (*Iterable*<*IdentifiedResourceChange*> sourceFileChanges, *Iterable*<*IdentifiedResource*> newIncludeFiles)

ResourceModificationInfo

class **ResourceModificationInfo**

Fields

modificationDate

public final long **modificationDate**

resource

public final [FileObject](#) **resource**

Constructors

ResourceModificationInfo

public **ResourceModificationInfo** ([FileObject](#) *resource*)

ResourceModificationInfo

public **ResourceModificationInfo** ([FileObject](#) *resource*, long *modificationDate*)

UpdateKind

public enum **UpdateKind**

Enum Constants

Error

public static final [UpdateKind](#) **Error**

Invalidate

public static final [UpdateKind](#) **Invalidate**

Remove

public static final [UpdateKind](#) **Remove**

Update

public static final [UpdateKind](#) **Update**

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DefaultDependencyService

public final class **DefaultDependencyService** implements *IDependencyService*
 Default implementation of the *IDependencyService* interface.

Constructors

DefaultDependencyService

public **DefaultDependencyService** (*ILanguageService* languageService)

Methods

checkDependencies

public *MissingDependencies* **checkDependencies** (*IProject* project)

compileDeps

public *Collection*<*ILanguageComponent*> **compileDeps** (*IProject* project)

sourceDeps

public *Collection*<*ILanguageComponent*> **sourceDeps** (*IProject* project)

sourceDeps

public *Collection*<*ILanguageComponent*> **sourceDeps** (*ILanguageComponent* component)

IDependencyService

public interface **IDependencyService**
 Returns compile and source dependencies for a project or language component.

Methods

checkDependencies

MissingDependencies **checkDependencies** (*IProject* project)

Checks if compile and source dependencies for the given project are loaded; and returns any missing dependencies.

Parameters

- **project** – Project to check the dependencies for.

Returns Missing dependencies.

compileDeps

`Collection<ILanguageComponent> compileDeps (IProject project)`

Gets compile dependencies for the given project.

Parameters

- **project** – Project to get dependencies for.

Returns Compile dependencies.

sourceDeps

`Collection<ILanguageComponent> sourceDeps (IProject project)`

Gets source dependencies for the given project.

Parameters

- **project** – Project to get dependencies for.

Returns Source dependencies.

sourceDeps

`Collection<ILanguageComponent> sourceDeps (ILanguageComponent component)`

Gets source dependencies for the given language component.

Parameters

- **component** – Language component to get dependencies for.

Returns Source dependencies.

MissingDependencies

public class **MissingDependencies**

Fields

compile

public final `Iterable<LanguageIdentifier>` **compile**

runtime

public final `Iterable<LanguageIdentifier>` **runtime**

Constructors

MissingDependencies

public **MissingDependencies** (*Iterable<LanguageIdentifier> compile*, *Iterable<LanguageIdentifier> run-time*)

MissingDependencies

public **MissingDependencies** ()

Methods

empty

public boolean **empty** ()

toString

public *String* **toString** ()

MissingDependencyException

public class **MissingDependencyException** extends *MetaborgException*
 Thrown when a dependency is not found or not loaded.

Constructors

MissingDependencyException

public **MissingDependencyException** (*String message*, *Throwable cause*)
 Initializes a new instance of the *MissingDependencyException* class.

Parameters

- **message** – The error message; or null.
- **cause** – The exception cause; or null.

MissingDependencyException

public **MissingDependencyException** (*String message*)
 Initializes a new instance of the *MissingDependencyException* class.

Parameters

- **message** – The error message; or null.

MissingDependencyException

public **MissingDependencyException** (*Throwable cause*)

Initializes a new instance of the *MissingDependencyException* class.

Parameters

- **cause** – The exception cause; or null.

MissingDependencyException

public **MissingDependencyException** ()

Initializes a new instance of the *MissingDependencyException* class.

org.metaborg.core.build.paths

DependencyPathProvider

public class **DependencyPathProvider** implements *ILanguagePathProvider*

Constructors

DependencyPathProvider

public **DependencyPathProvider** (*IDependencyService dependencyService*)

Methods

includePaths

public *Iterable*<*FileObject*> **includePaths** (*IProject project*, *String languageName*)

sourcePaths

public *Iterable*<*FileObject*> **sourcePaths** (*IProject project*, *String languageName*)

ILanguagePathProvider

public interface **ILanguagePathProvider**

Interface for providers for source and include paths.

Methods

includePaths

Iterable<*FileObject*> **includePaths** (*IProject project*, *String languageName*)

Gets include paths in given project, for given language.

Parameters

- **project** – Project to get include paths relative to.
- **languageName** – Name of the language to get include paths for.

Throws

- *MetaborgException* – When getting include paths fails unexpectedly.

Returns Include paths.

sourcePaths

`Iterable<FileObject> sourcePaths (IProject project, String languageName)`

Gets source paths in given project, for given language.

Parameters

- **project** – Project to get source paths relative to.
- **languageName** – Name of the language to get source paths for.

Throws

- *MetaborgException* – When getting source paths fails unexpectedly.

Returns Source paths.

ILanguagePathService

public interface **ILanguagePathService**

Interface for service that returns source/include paths/files for languages.

Methods**includeFiles**

`Iterable<IdentifiedResource> includeFiles (IProject project, ILanguageImpl language)`

Gets include files in given project, for given language.

Parameters

- **project** – Project to get include files relative to.
- **language** – Language to get include files for.

Returns Identified include files.

includePaths

`Iterable<FileObject> includePaths (IProject project, String languageName)`

Gets include paths in given project, for given language.

Parameters

- **project** – Project to get include paths relative to.
- **languageName** – Name of the language to get include paths for.

Returns Include paths.

sourceAndIncludeFiles

`Iterable<IdentifiedResource> sourceAndIncludeFiles (IProject project, ILanguageImpl language)`

Gets source and include files in given project, for given language.

Parameters

- **project** – Project to get source and include files relative to.
- **language** – Language to get source and include files for.

Returns Identified source and include files.

sourceAndIncludePaths

`Iterable<FileObject> sourceAndIncludePaths (IProject project, String languageName)`

Gets source and include paths in given project, for given language.

Parameters

- **project** – Project to get source and include paths relative to.
- **languageName** – Name of the language to get source and include paths for.

Returns Source and include paths.

sourceFiles

`Iterable<IdentifiedResource> sourceFiles (IProject project, ILanguageImpl language)`

Gets source files in given project, for given language.

Parameters

- **project** – Project to get source files relative to.
- **language** – Language to get source files for.

Returns Identified source files.

sourcePaths

`Iterable<FileObject> sourcePaths (IProject project, String languageName)`

Gets source paths in given project, for given language.

Parameters

- **project** – Project to get source paths relative to.
- **languageName** – Name of the language to get source paths for.

Returns Source paths.

toFiles

`Iterable<IdentifiedResource> toFiles (Iterable<FileObject> paths, ILanguageImpl language)`

Gets source/include files given source/include paths.

Parameters

- **paths** – Source and/or include paths to get files for.
- **language** – Language to get source and include files for.

Returns Identified source and include files.

LanguagePathService

public class **LanguagePathService** implements *ILanguagePathService*

Constructors

LanguagePathService

public **LanguagePathService** (*ILanguageIdentifierService* languageIdentifierService,
Set<*ILanguagePathProvider*> providers)

Methods

includeFiles

public `Iterable<IdentifiedResource>` **includeFiles** (*IProject* project, *ILanguageImpl* language)

includePaths

public `Set<FileObject>` **includePaths** (*IProject* project, String languageName)

sourceAndIncludeFiles

public `Iterable<IdentifiedResource>` **sourceAndIncludeFiles** (*IProject* project, *ILanguageImpl* language)

sourceAndIncludePaths

public `Iterable<FileObject>` **sourceAndIncludePaths** (*IProject* project, String languageName)

sourceFiles

public `Iterable<IdentifiedResource>` **sourceFiles** (*IProject* project, *ILanguageImpl* language)

sourcePaths

```
public Set<FileObject> sourcePaths (IProject project, String languageName)
```

toFiles

```
public Collection<IdentifiedResource> toFiles (Iterable<FileObject> paths, ILanguageImpl language)
```

org.metaborg.core.completion

Completion

```
public class Completion implements ICompletion, Serializable
```

Constructors

Completion

```
public Completion (String name, String sort, String text, String additionalInfo, int startOffset, int endOffset, CompletionKind kind)
```

Completion

```
public Completion (String name, String sort, String text, String additionalInfo, int startOffset, int endOffset, CompletionKind kind, String prefix, String suffix)
```

Methods

additionalInfo

```
public String additionalInfo ()
```

endOffset

```
public int endOffset ()
```

fromOptionalPlaceholder

```
public boolean fromOptionalPlaceholder ()
```

isNested

```
public boolean isNested ()
```


items

```
public Iterable<ICompletionItem> items ()
```

kind

```
public CompletionKind kind ()
```

name

```
public String name ()
```

prefix

```
public String prefix ()
```

setItems

```
public void setItems (Iterable<ICompletionItem> items)
```

setNested

```
public void setNested (boolean nested)
```

setOptionalPlaceholder

```
public void setOptionalPlaceholder (boolean optional)
```

sort

```
public String sort ()
```

startOffset

```
public int startOffset ()
```

suffix

```
public String suffix ()
```

text

```
public String text ()
```

toString

```
public String toString ()
```

CompletionKind

```
public enum CompletionKind
```

Enum Constants

expansion

```
public static final CompletionKind expansion
```

expansionEditing

```
public static final CompletionKind expansionEditing
```

recovery

```
public static final CompletionKind recovery
```

ICompletion

```
public interface ICompletion extends Serializable
```

Methods

additionalInfo

```
String additionalInfo ()
```

endOffset

```
int endOffset ()
```

fromOptionalPlaceholder

```
boolean fromOptionalPlaceholder ()
```

isNested

```
boolean isNested ()
```

items

`Iterable<ICompletionItem> items ()`

kind

`CompletionKind kind ()`

name

`String name ()`

Serializable because it is necessary to pass an object as a String to Eclipse additional info menu

prefix

`String prefix ()`

setItems

`void setItems (Iterable<ICompletionItem> items)`

setNested

`void setNested (boolean nested)`

setOptionalPlaceholder

`void setOptionalPlaceholder (boolean optional)`

sort

`String sort ()`

startOffset

`int startOffset ()`

suffix

`String suffix ()`

text

`String text ()`

ICompletionItem

public interface **ICompletionItem** extends [Serializable](#)

ICompletionService

public interface **ICompletionService**<P extends [IParseUnit](#)>

Methods

get

[Iterable](#)<[ICompletion](#)> **get** (int *offset*, P *result*, boolean *nested*)

IPlaceholderCompletionItem

public interface **IPlaceholderCompletionItem** extends [ICompletionItem](#)

Methods

endOffset

int **endOffset** ()

name

[String](#) **name** ()

optional

boolean **optional** ()

placeholderText

[String](#) **placeholderText** ()

startOffset

int **startOffset** ()

org.metaborg.core.config

AConfigService

public abstract class **AConfigService**<TSubject, TConfig>
Stores and retrieves configurations using the `Configuration` class.

Fields

configReaderWriter

protected final *AConfigurationReaderWriter* **configReaderWriter**

Constructors

AConfigService

protected **AConfigService** (*AConfigurationReaderWriter* configReaderWriter)
Initializes a new instance of the *AConfigService* class.

Parameters

- **configReaderWriter** – The configuration reader/writer.

Methods

available

public boolean **available** (*FileObject* rootDirectory)
Checks if a configuration exists for a subject.

Parameters

- **rootDirectory** – The root directory of the subject to get the configuration for.

Returns True if a configuration exists, false otherwise.

fromConfig

protected abstract HierarchicalConfiguration<ImmutableNode> **fromConfig** (TConfig config)
Creates a new hierarchical configuration for the specified config object.

Parameters

- **config** – The config object.

Returns The configuration.

get

public *ConfigRequest*<TConfig> **get** (*FileObject* rootDirectory)

Gets the configuration for the a subject.

Parameters

- **rootDirectory** – The root directory of the subject to get the configuration for.

Returns The configuration, or `null` when no configuration could be retrieved.

getConfigFile

protected *FileObject* **getConfigFile** (TSubject subject)

Gets the configuration file for the specified subject.

Parameters

- **subject** – The subject.

Throws

- **FileSystemException** –

Returns The configuration file.

getConfigFile

protected abstract *FileObject* **getConfigFile** (*FileObject* rootFolder)

Gets the configuration file for the specified subject.

Parameters

- **rootFolder** – The root folder.

Throws

- **FileSystemException** –

Returns The configuration file.

getFromConfigFile

public *ConfigRequest*<TConfig> **getFromConfigFile** (*FileObject* configFile, *FileObject* rootFolder)

Gets the configuration from the given file.

Parameters

- **configFile** – The configuration file with the configuration.

Returns The configuration, or `null` when no configuration could be retrieved.

getRootDirectory

protected abstract *FileObject* **getRootDirectory** (TSubject subject)

Gets the configuration file for the specified subject.

Parameters

- **subject** – The subject.

Throws

- **FileSystemException** –

Returns The configuration file.

readConfig

protected HierarchicalConfiguration<ImmutableNode> **readConfig** (*FileObject configFile*, *FileObject rootDirectory*)

Reads a configuration from a file.

Parameters

- **configFile** – The configuration file to read.

Throws

- **IOException** –
- **ConfigurationException** –

Returns The read configuration, or `null` when the configuration could not be read.

toConfig

protected abstract *ConfigRequest*<TConfig> **toConfig** (HierarchicalConfiguration<ImmutableNode> *config*, *FileObject configFile*)

Creates a new instance of the config type for the specified configuration.

Parameters

- **configuration** – The configuration.

write

public void **write** (TSubject *subject*, TConfig *config*, IFileAccess *access*)

Writes the configuration for the given subject.

Parameters

- **subject** – The subject to set the configuration for.
- **config** – The configuration, or `null` to remove an existing configuration.
- **access** –

write

public void **write** (*FileObject rootDirectory*, TConfig *config*, IFileAccess *access*)

Writes the configuration for the given subject.

Parameters

- **rootDirectory** – The root directory of the subject to set the configuration for.
- **config** – The configuration, or `null` to remove an existing configuration.

- **access** –

writeConfig

protected void **writeConfig** (*FileObject configFile*, HierarchicalConfiguration<ImmutableNode> *config*,
FileObject rootDirectory)
 Writes a configuration to a file.

Parameters

- **configFile** – The configuration file to write to.
- **config** – The configuration to write, or `null` to delete the configuration file.
- **rootDirectory** – The root folder.

Throws

- **IOException** –
- **ConfigurationException** –

AConfigurationReaderWriter

public abstract class **AConfigurationReaderWriter**
 Reads, writes, and creates configurations Apache Commons HierarchicalConfiguration objects.

Methods

create

public JacksonConfiguration **create** (HierarchicalConfiguration<ImmutableNode> *source*, *FileObject root-*
Folder)
 Creates a configuration object.

Parameters

- **source** – The source configuration; or `null`.
- **rootFolder** – The root folder; or `null`.

Returns The created configuration object.

create

public JacksonConfiguration **create** ()
 Creates a configuration object.

Returns The created configuration object.

createNew

protected abstract JacksonConfiguration **createNew** (HierarchicalConfiguration<ImmutableNode> *source-*
Configuration)
 Creates a configuration object.

Parameters

- **sourceConfiguration** – The source configuration; or `null`.

Returns The created configuration object.

read

public HierarchicalConfiguration<ImmutableNode> **read** (`FileObject` *source*, `FileObject` *rootFolder*)
Reads a configuration from the specified file.

Parameters

- **source** – The source file.

Returns The read configuration.

read

public HierarchicalConfiguration<ImmutableNode> **read** (`InputStream` *input*, `FileObject` *rootFolder*)
Reads a configuration from the specified input stream.

Parameters

- **input** – The input stream.
- **rootFolder** – The root folder; or `null`.

Returns The read configuration.

read

public HierarchicalConfiguration<ImmutableNode> **read** (`Reader` *reader*, `FileObject` *rootFolder*)
Reads a configuration from the specified reader.

Parameters

- **reader** – The reader.
- **rootFolder** – The root folder; or `null`.

Returns The read configuration.

write

public void **write** (HierarchicalConfiguration<ImmutableNode> *configuration*, `FileObject` *destination*,
`FileObject` *rootFolder*)
Writes a configuration to the specified writer.

Parameters

- **configuration** – The configuration to write.
- **destination** – The destination file.
- **rootFolder** – The root folder.

write

```
public void write (HierarchicalConfiguration<ImmutableNode> configuration, OutputStream output, FileObject rootFolder)
```

Writes a configuration to the specified writer.

Parameters

- **configuration** – The configuration to write.
- **output** – The output stream.
- **rootFolder** – The root folder; or `null`.

write

```
public void write (HierarchicalConfiguration<ImmutableNode> configuration, Writer writer, FileObject rootFolder)
```

Writes a configuration to the specified writer.

Parameters

- **configuration** – The configuration to write.
- **writer** – The writer.
- **rootFolder** – The root folder; or `null`.

ConfigException

```
public class ConfigException extends MetaborgException
```

Constructors

ConfigException

```
public ConfigException ()
```

ConfigException

```
public ConfigException (String message)
```

ConfigException

```
public ConfigException (String message, Throwable cause)
```

ConfigException

```
public ConfigException (Throwable cause)
```

ConfigRequest

```
public class ConfigRequest<T>
```

Constructors

ConfigRequest

```
public ConfigRequest ()
```

ConfigRequest

```
public ConfigRequest (T config)
```

ConfigRequest

```
public ConfigRequest (Collection<IMessage> errors)
```

ConfigRequest

```
public ConfigRequest (IMessage error)
```

ConfigRequest

```
public ConfigRequest (T config, Collection<IMessage> errors)
```

Methods

config

```
public T config ()
```

Returns Configuration if it exists, null if it does not exist or is invalid. May be a partial configuration if it is invalid.

errors

```
public Iterable<IMessage> errors ()
```

Returns List of errors if the configuration is invalid, empty list otherwise.

reportErrors

```
public void reportErrors (IMessagePrinter printer)
```

Reports errors to given message printer.

Parameters

- **printer** – Message printer to print errors with.

valid

public boolean **valid** ()

Returns True if configuration is valid, false if not.

GenerateConfig

public class **GenerateConfig** implements *IGenerateConfig*

Fields

directory

public final *String* **directory**

language

public final *String* **language**

Constructors

GenerateConfig

public **GenerateConfig** (*String* *languageName*, *String* *directory*)

Methods

directory

public *String* **directory** ()

equals

public boolean **equals** (*Object obj*)

hashCode

public int **hashCode** ()

languageName

public *String* **languageName** ()

toString

public `String` **toString** ()

IConfig

public interface **IConfig**

Interface for configurations that are backed by an `ImmutableConfiguration` object.

Methods

getConfig

`HierarchicalConfiguration<ImmutableNode>` **getConfig** ()

Gets the underlying configuration.

Returns The underlying configuration.

IExportConfig

public interface **IExportConfig** extends `Serializable`

Configuration for file exports. Use the visitor pattern access implementations.

Methods

accept

void **accept** (*`IExportVisitor` visitor*)

Accepts an export visitor.

Parameters

- **visitor** – Visitor to accept.

IExportVisitor

public interface **IExportVisitor**

Visitor for *`IExportConfigs`*.

Methods

visit

void **visit** (*`LangDirExport` export*)

Visit a language-specific directory export

Parameters

- **export** – Language directory export.

visit

void **visit** (*LangFileExport* export)
Visit a language-specific single-file export.

Parameters

- **export** – Language file export.

visit

void **visit** (*ResourceExport* export)
Visit a generic resource export.

Parameters

- **export** – Generic resource export.

IGenerateConfig

public interface **IGenerateConfig**
Configuration for a language that generates source files in a directory.

Methods

directory

String **directory** ()

Returns Directory to which source files are generated, relative to a project root.

languageName

String **languageName** ()

Returns Name of the language for which source files are generated.

ILanguageComponentConfig

public interface **ILanguageComponentConfig** extends *IProjectConfig*
Configuration of a language component at runtime. To create a new instance of this interface, use an *ILanguageComponentConfigBuilder* interface.

Methods

completionsParseTable

String **completionsParseTable** ()

Gets the (relative) path to the completions parse table.

Returns path to the completions parse table.

exports

Collection<IExportConfig> **exports** ()

Gets the file exports.

Returns The file exports.

generates

Collection<IGenerateConfig> **generates** ()

Gets the languages for while files are generated.

Returns The languages for while files are generated.

identifier

LanguageIdentifier **identifier** ()

Gets the language identifier.

Returns The language identifier.

langContribs

Collection<LanguageContributionIdentifier> **langContribs** ()

Gets the language contributions.

Returns The language contributions.

name

String **name** ()

Gets the name of the language the component belongs to.

Returns Name of the language the component belongs to.

parseTable

String **parseTable** ()

Gets the (relative) path to the parse table.

Returns path to the parse table.

sdfEnabled

Boolean **sdfEnabled** ()

Gets whether the project depends on SDF or not.

Returns true if SDF is enabled and false otherwise.

ILanguageComponentConfigBuilder

public interface **ILanguageComponentConfigBuilder** extends *IProjectConfigBuilder*
 Builder for *ILanguageComponentConfig* objects.

Methods

addCompileDeps

ILanguageComponentConfigBuilder **addCompileDeps** (*Iterable<LanguageIdentifier>* deps)
 { @inheritDoc }

addExports

ILanguageComponentConfigBuilder **addExports** (*Iterable<IExportConfig>* exports)
 Adds file exports.

Parameters

- **exports** – The file exports.

Returns This builder.

addGenerates

ILanguageComponentConfigBuilder **addGenerates** (*Iterable<IGenerateConfig>* generates)
 Adds languages for while files are generated.

Parameters

- **generates** – The languages for while files are generated.

Returns This builder.

addJavaDeps

ILanguageComponentConfigBuilder **addJavaDeps** (*Iterable<LanguageIdentifier>* deps)
 { @inheritDoc }

addLangContribs

ILanguageComponentConfigBuilder **addLangContribs** (*Iterable<LanguageContributionIdentifier>* contribs)

Adds language contributions.

Parameters

- **contribs** – The language contributions.

Returns This builder.

addSourceDeps

ILanguageComponentConfigBuilder **addSourceDeps** (*Iterable<LanguageIdentifier>* deps)
{ @inheritDoc }

build

ILanguageComponentConfig **build** (*FileObject* rootFolder)
{ @inheritDoc }

copyFrom

ILanguageComponentConfigBuilder **copyFrom** (*ILanguageComponentConfig* config)
Copies the values from the specified configuration.

Parameters

- **config** – The configuration to copy values from.

reset

ILanguageComponentConfigBuilder **reset** ()
{ @inheritDoc }

withCompileDeps

ILanguageComponentConfigBuilder **withCompileDeps** (*Iterable<LanguageIdentifier>* deps)
{ @inheritDoc }

withExports

ILanguageComponentConfigBuilder **withExports** (*Iterable<IExportConfig>* exports)
Sets the file exports.

Parameters

- **exports** – The file exports.

Returns This builder.

withGenerates

ILanguageComponentConfigBuilder **withGenerates** (*Iterable<IGenerateConfig>* generates)
Sets the languages for while files are generated.

Parameters

- **generates** – The languages for while files are generated.

Returns This builder.

withIdentifier

ILanguageComponentConfigBuilder **withIdentifier** (*LanguageIdentifier identifier*)

Sets the language identifier.

Parameters

- **identifier** – The language identifier.

Returns This builder.

withIncrementalConstraintSolver

ILanguageComponentConfigBuilder **withIncrementalConstraintSolver** (boolean *incremental*)
{ @inheritDoc }

withJavaDeps

ILanguageComponentConfigBuilder **withJavaDeps** (Iterable<*LanguageIdentifier*> *deps*)
{ @inheritDoc }

withLangContribs

ILanguageComponentConfigBuilder **withLangContribs** (Iterable<*LanguageContributionIdentifier*> *contribs*)

Sets the language contributions.

Parameters

- **contribs** – The language contributions.

Returns This builder.

withMetaborgVersion

ILanguageComponentConfigBuilder **withMetaborgVersion** (*String metaborgVersion*)
{ @inheritDoc }

withName

ILanguageComponentConfigBuilder **withName** (*String name*)

Sets the language name.

Parameters

- **name** – The language name.

Returns This builder.

withSdfCompletionsTable

ILanguageComponentConfigBuilder **withSdfCompletionsTable** (*String completionsParseTable*)

Sets the completion parse table (relative) path.

Parameters

- **completionsParseTable** – The completion parse table (relative) path.

Returns This builder.

withSdfEnabled

ILanguageComponentConfigBuilder **withSdfEnabled** (*Boolean sdfEnabled*)

Sets the whether SDF is enabled in the project

Parameters

- **sdfEnabled** – If SDF is enabled or not.

Returns This builder.

withSdfTable

ILanguageComponentConfigBuilder **withSdfTable** (*String parseTable*)

Sets the parse table (relative) path.

Parameters

- **parseTable** – The parse table (relative) path.

Returns This builder.

withSourceDeps

ILanguageComponentConfigBuilder **withSourceDeps** (*Iterable<LanguageIdentifier> deps*)
{ @inheritDoc }

withTypesmart

ILanguageComponentConfigBuilder **withTypesmart** (*boolean typesmart*)
{ @inheritDoc }

ILanguageComponentConfigService

public interface **ILanguageComponentConfigService**

Stores and retrieves language component configurations.

Methods

available

boolean **available** (*FileObject rootFolder*)

Checks if a configuration exists for the language component at given location.

Parameters

- **rootFolder** – The language component root folder.

Returns True if a configuration exists, false otherwise.

get

ConfigRequest<ILanguageComponentConfig> **get** (*FileObject rootFolder*)

Gets the configuration for the language component at given location.

Parameters

- **rootFolder** – The language component root folder.

Returns Configuration request, either with a valid configuration, or a collection of error messages.

ILanguageComponentConfigWriter

public interface **ILanguageComponentConfigWriter**

Writes a configuration for the specified *ILanguageComponent*.

Methods

write

void **write** (*FileObject root*, *ILanguageComponentConfig config*, *IFileAccess access*)

Writes the specified configuration for the specified language component.

Parameters

- **root** – The language root folder.
- **config** – The configuration to write.
- **access** –

ILanguageImplConfig

public interface **ILanguageImplConfig**

Configuration of a language component at runtime. Composition of multiple *ILanguageComponentConfig* configurations.

Methods

compileDeps

`Iterable<LanguageIdentifier> compileDeps ()`

Gets the compile dependencies.

Returns The compile dependency identifiers.

exports

`Iterable<IExportConfig> exports ()`

Gets the file exports.

Returns The file exports.

generates

`Iterable<IGenerateConfig> generates ()`

Gets the languages for while files are generated.

Returns The languages for while files are generated.

javaDeps

`Iterable<LanguageIdentifier> javaDeps ()`

Gets the Java dependencies.

Returns The Java dependency identifiers.

sourceDeps

`Iterable<LanguageIdentifier> sourceDeps ()`

Gets the source dependencies.

Returns The source dependency identifiers.

IProjectConfig

public interface **IProjectConfig**

Methods

compileDeps

`Collection<LanguageIdentifier> compileDeps ()`

Returns Compile dependency identifiers.

incrementalConstraintSolver

boolean **incrementalConstraintSolver** ()

Returns Whether incrementalization is enabled for the constraint solver.

javaDeps

Collection<*LanguageIdentifier*> **javaDeps** ()

Returns Java dependency identifiers.

metaborgVersion

String **metaborgVersion** ()

Returns Version of MetaBorg tooling to use.

sourceDeps

Collection<*LanguageIdentifier*> **sourceDeps** ()

Returns Source dependency identifiers.

typesmart

boolean **typesmart** ()

Returns Whether typesmart dynamic analysis is enabled.

IProjectConfigBuilder

public interface **IProjectConfigBuilder**

Builder for *ILanguageComponentConfig* objects.

Methods

addCompileDeps

IProjectConfigBuilder **addCompileDeps** (Iterable<*LanguageIdentifier*> *deps*)

Adds compile dependencies.

Parameters

- **deps** – The compile dependency identifiers.

Returns This builder.

addJavaDeps

IProjectConfigBuilder **addJavaDeps** (*Iterable<LanguageIdentifier>* deps)

Adds java dependencies.

Parameters

- **deps** – The java dependency identifiers.

Returns This builder.

addSourceDeps

IProjectConfigBuilder **addSourceDeps** (*Iterable<LanguageIdentifier>* deps)

Adds source dependencies.

Parameters

- **deps** – The source dependency identifiers.

Returns This builder.

build

IProjectConfig **build** (*FileObject* rootFolder)

Builds the configuration.

Returns The built configuration.

copyFrom

IProjectConfigBuilder **copyFrom** (*IProjectConfig* config)

Copies the values from the specified configuration.

Parameters

- **config** – The configuration to copy values from.

reset

IProjectConfigBuilder **reset** ()

Resets the values of this builder.

Returns This builder.

withCompileDeps

IProjectConfigBuilder **withCompileDeps** (*Iterable<LanguageIdentifier>* deps)

Sets the compile-time dependencies.

Parameters

- **deps** – The compile-time dependency identifiers.

Returns This builder.

withIncrementalConstraintSolver

IProjectConfigBuilder **withIncrementalConstraintSolver** (boolean *incremental*)

Sets whether incrementalization is enabled for the constraint solver.

Parameters

- **incremental** – True to enable, false to disable.

Returns This builder.

withJavaDeps

IProjectConfigBuilder **withJavaDeps** (Iterable<*LanguageIdentifier*> *deps*)

Sets the java dependencies.

Parameters

- **deps** – The java dependency identifiers.

Returns This builder.

withMetaborgVersion

IProjectConfigBuilder **withMetaborgVersion** (String *metaborgVersion*)

Sets the MetaBorg version.

Parameters

- **metaborgVersion** – The MetaBorg version.

Returns This builder.

withSourceDeps

IProjectConfigBuilder **withSourceDeps** (Iterable<*LanguageIdentifier*> *deps*)

Sets the source dependencies.

Parameters

- **deps** – The source dependency identifiers.

Returns This builder.

withTypesmart

IProjectConfigBuilder **withTypesmart** (boolean *typesmart*)

Sets the typesmart property.

Parameters

- **typesmart** – The typesmart property.

Returns This builder.

IProjectConfigService

public interface **IProjectConfigService**

Stores and retrieves language component configurations.

Methods

available

boolean **available** (*FileObject rootFolder*)

Checks if a configuration exists for the project at the given location.

Parameters

- **rootFolder** – The project root folder.

Returns True if a configuration exists, false otherwise.

get

ConfigRequest<IProjectConfig> **get** (*FileObject rootFolder*)

Gets the configuration for the project at the given location.

Parameters

- **rootFolder** – The project root folder.

Returns Configuration request, either with a valid configuration, or a collection of error messages.

IProjectConfigWriter

public interface **IProjectConfigWriter**

Writes a configuration for an *IProject*.

Methods

write

void **write** (*IProject project*, *IProjectConfig config*, *IFileAccess access*)

Writes the specified configuration for the specified project.

Parameters

- **project** – The project.
- **config** – The configuration to write.
- **access** –

LangDirExport

public class **LangDirExport** implements *IExportConfig*

Language-specific directory export.

Fields

directory

public final [String](#) **directory**

Directory which is exported, relative to the location of the language component that exports sources.

excludes

public final [Iterable<String>](#) **excludes**

Exclude patterns, following the Ant pattern syntax.

See also: [Ant patterns](#)

includes

public final [Iterable<String>](#) **includes**

Include patterns, following the Ant pattern syntax.

See also: [Ant patterns](#)

language

public final [String](#) **language**

Name of the language for which source files are exported.

Constructors

LangDirExport

public **LangDirExport** ([String](#) languageName, [String](#) directory, [Iterable<String>](#) includes, [Iterable<String>](#) excludes)

Methods

accept

public void **accept** ([IExportVisitor](#) visitor)

toString

public [String](#) **toString** ()

LangFileExport

public class **LangFileExport** implements [IExportConfig](#)
Language-specific single-file export.

Fields

file

public final **String** **file**

File which is exported, relative to the location of the language component that exports sources.

language

public final **String** **language**

Name of the language for which source files are exported.

Constructors

LangFileExport

public **LangFileExport** (*String* *languageName*, *String* *file*)

Methods

accept

public void **accept** (*IExportVisitor* *visitor*)

toString

public **String** **toString** ()

LanguageComponentConfig

public class **LanguageComponentConfig** extends *ProjectConfig* implements *ILanguageComponentConfig*, *IConfig*

An implementation of the *ILanguageComponentConfig* interface that is backed by an *ImmutableConfiguration* object.

Constructors

LanguageComponentConfig

public **LanguageComponentConfig** (*HierarchicalConfiguration*<*ImmutableNode*> *config*)

LanguageComponentConfig

```
protected LanguageComponentConfig (HierarchicalConfiguration<ImmutableNode> config, String
    metaborgVersion, LanguageIdentifier identifier, String
    name, Collection<LanguageIdentifier> compileDeps,
    Collection<LanguageIdentifier> sourceDeps, Collection
    <LanguageIdentifier> javaDeps, Boolean sdfEnabled,
    String parseTable, String completionParseTable, Boolean
    typesmart, Boolean incrementalConstraintSolver, Collection
    <LanguageContributionIdentifier> langContribs, Collection
    <IGenerateConfig> generates, Collection<IExportConfig>
    exports)
```

Methods

completionsParseTable

```
public String completionsParseTable ()
```

exports

```
public Collection<IExportConfig> exports ()
```

generates

```
public Collection<IGenerateConfig> generates ()
```

identifier

```
public LanguageIdentifier identifier ()
```

langContribs

```
public Collection<LanguageContributionIdentifier> langContribs ()
```

name

```
public String name ()
```

parseTable

```
public String parseTable ()
```

sdfEnabled

```
public Boolean sdfEnabled ()
```

validate

public [Collection](#)<[IMessage](#)> **validate** ([MessageBuilder](#) mb)

LanguageComponentConfigBuilder

public class **LanguageComponentConfigBuilder** extends [ProjectConfigBuilder](#) implements [ILanguageComponentConfigBuilder](#)
 Configuration-based builder for [ILanguageComponentConfig](#) objects.

Fields

completionsParseTable

protected [String](#) **completionsParseTable**

exports

protected [List](#)<[IExportConfig](#)> **exports**

generates

protected [List](#)<[IGenerateConfig](#)> **generates**

identifier

protected [LanguageIdentifier](#) **identifier**

langContribs

protected [Set](#)<[LanguageContributionIdentifier](#)> **langContribs**

name

protected [String](#) **name**

parseTable

protected [String](#) **parseTable**

sdfEnabled

protected [Boolean](#) **sdfEnabled**

Constructors

LanguageComponentConfigBuilder

public **LanguageComponentConfigBuilder** (*AConfigurationReaderWriter* configReaderWriter)

Methods

addCompileDeps

public *ILanguageComponentConfigBuilder* **addCompileDeps** (*Iterable<LanguageIdentifier>* deps)

addExports

public *ILanguageComponentConfigBuilder* **addExports** (*Iterable<IExportConfig>* exports)

addGenerates

public *ILanguageComponentConfigBuilder* **addGenerates** (*Iterable<IGenerateConfig>* generates)

addJavaDeps

public *ILanguageComponentConfigBuilder* **addJavaDeps** (*Iterable<LanguageIdentifier>* deps)

addLangContribs

public *ILanguageComponentConfigBuilder* **addLangContribs** (*Iterable<LanguageContributionIdentifier>*
contribs)

addSourceDeps

public *ILanguageComponentConfigBuilder* **addSourceDeps** (*Iterable<LanguageIdentifier>* deps)

build

public *ILanguageComponentConfig* **build** (*FileObject* rootFolder)

copyFrom

public *ILanguageComponentConfigBuilder* **copyFrom** (*ILanguageComponentConfig* config)

reset

public *ILanguageComponentConfigBuilder* **reset** ()

withCompileDeps

public *ILanguageComponentConfigBuilder* **withCompileDeps** (*Iterable<LanguageIdentifier>* deps)

withExports

public *ILanguageComponentConfigBuilder* **withExports** (*Iterable<IExportConfig>* exports)

withGenerates

public *ILanguageComponentConfigBuilder* **withGenerates** (*Iterable<IGenerateConfig>* generates)

withIdentifier

public *ILanguageComponentConfigBuilder* **withIdentifier** (*LanguageIdentifier* identifier)

withIncrementalConstraintSolver

public *ILanguageComponentConfigBuilder* **withIncrementalConstraintSolver** (boolean *incremental*)

withJavaDeps

public *ILanguageComponentConfigBuilder* **withJavaDeps** (*Iterable<LanguageIdentifier>* deps)

withLangContribs

public *ILanguageComponentConfigBuilder* **withLangContribs** (*Iterable<LanguageContributionIdentifier>* contribs)

withMetaborgVersion

public *ILanguageComponentConfigBuilder* **withMetaborgVersion** (*String* metaborgVersion)

withName

public *ILanguageComponentConfigBuilder* **withName** (*String* name)

withSdfCompletionsTable

public *ILanguageComponentConfigBuilder* **withSdfCompletionsTable** (*String* completionsTable)

withSdfEnabled

public *ILanguageComponentConfigBuilder* **withSdfEnabled** (*Boolean sdfEnabled*)

withSdfTable

public *ILanguageComponentConfigBuilder* **withSdfTable** (*String table*)

withSourceDeps

public *ILanguageComponentConfigBuilder* **withSourceDeps** (*Iterable<LanguageIdentifier> deps*)

withTypesmart

public *ILanguageComponentConfigBuilder* **withTypesmart** (*boolean typesmart*)

LanguageComponentConfigService

public class **LanguageComponentConfigService** extends *AConfigService<ILanguageComponent, ILanguageComponentConfig>*

Constructors

LanguageComponentConfigService

public **LanguageComponentConfigService** (*AConfigurationReaderWriter configReaderWriter, ILanguageComponentConfigBuilder configBuilder*)

Methods

fromConfig

protected *HierarchicalConfiguration<ImmutableNode>* **fromConfig** (*ILanguageComponentConfig config*)

getConfigFile

protected *FileObject* **getConfigFile** (*FileObject rootFolder*)

getRootDirectory

protected *FileObject* **getRootDirectory** (*ILanguageComponent languageComponent*)

toConfig

protected *ConfigRequest<ILanguageComponentConfig>* **toConfig** (*HierarchicalConfiguration<ImmutableNode> config, FileObject configFile*)

LanguageIdentifierDeserializer

public class **LanguageIdentifierDeserializer** extends StdDeserializer<*LanguageIdentifier*>

Constructors

LanguageIdentifierDeserializer

public **LanguageIdentifierDeserializer** ()

Methods

deserialize

public *LanguageIdentifier* **deserialize** (JsonParser *parser*, DeserializationContext *context*)

LanguageIdentifierSerializer

public class **LanguageIdentifierSerializer** extends StdSerializer<*LanguageIdentifier*>

Constructors

LanguageIdentifierSerializer

public **LanguageIdentifierSerializer** ()

Methods

serialize

public void **serialize** (*LanguageIdentifier* *value*, JsonGenerator *generator*, SerializerProvider *provider*)

LanguageImplConfig

public class **LanguageImplConfig** implements *ILanguageImplConfig*

Constructors

LanguageImplConfig

public **LanguageImplConfig** (Iterable<*ILanguageComponentConfig*> *configs*)

Methods

compileDeps

```
public Iterable<LanguageIdentifier> compileDeps ()
```

exports

```
public Iterable<IExportConfig> exports ()
```

generates

```
public Iterable<IGenerateConfig> generates ()
```

javaDeps

```
public Iterable<LanguageIdentifier> javaDeps ()
```

sourceDeps

```
public Iterable<LanguageIdentifier> sourceDeps ()
```

MetaborgConversionHandler

```
class MetaborgConversionHandler extends DefaultConversionHandler  
    Converts Metaborg Core types to and from their Configuration representations.
```

Methods

convertValue

```
protected <T> T convertValue (Object src, Class<T> target, ConfigurationInterpolator interp)
```

PathLookup

```
public final class PathLookup implements Lookup  
    Provides path information for configurations.
```

Constructors

PathLookup

```
public PathLookup (FileObject rootFolder)
```

Methods

lookup

public **Object** **lookup** (*String s*)

ProjectConfig

public class **ProjectConfig** implements *IProjectConfig*, *IConfig*

An implementation of the *ILanguageComponentConfig* interface that is backed by an *ImmutableConfiguration* object.

Fields

config

protected final *HierarchicalConfiguration<ImmutableNode>* **config**

Constructors

ProjectConfig

public **ProjectConfig** (*HierarchicalConfiguration<ImmutableNode> config*)

ProjectConfig

protected **ProjectConfig** (*HierarchicalConfiguration<ImmutableNode> config*, *String metaborgVersion*, *Collection<LanguageIdentifier> compileDeps*, *Collection<LanguageIdentifier> sourceDeps*, *Collection<LanguageIdentifier> javaDeps*, *Boolean typesmart*, *Boolean incrementalConstraintSolver*)

Methods

compileDeps

public *Collection<LanguageIdentifier>* **compileDeps** ()

getConfig

public *HierarchicalConfiguration<ImmutableNode>* **getConfig** ()

incrementalConstraintSolver

public boolean **incrementalConstraintSolver** ()

javaDeps

public *Collection*<*LanguageIdentifier*> **javaDeps** ()

metaborgVersion

public *String* **metaborgVersion** ()

sourceDeps

public *Collection*<*LanguageIdentifier*> **sourceDeps** ()

typesmart

public boolean **typesmart** ()

validate

public *Collection*<*IMessage*> **validate** (*MessageBuilder mb*)

ProjectConfigBuilder

public class **ProjectConfigBuilder** implements *IProjectConfigBuilder*
Configuration-based builder for *ILanguageComponentConfig* objects.

Fields

compileDeps

protected *Set*<*LanguageIdentifier*> **compileDeps**

configReaderWriter

protected final *AConfigurationReaderWriter* **configReaderWriter**

configuration

protected *HierarchicalConfiguration*<*ImmutableNode*> **configuration**

incrementalConstraintSolver

protected *Boolean* **incrementalConstraintSolver**

javaDeps

protected *Set<LanguageIdentifier>* **javaDeps**

metaborgVersion

protected *String* **metaborgVersion**

sourceDeps

protected *Set<LanguageIdentifier>* **sourceDeps**

typesmart

protected *Boolean* **typesmart**

Constructors**ProjectConfigBuilder**

public **ProjectConfigBuilder** (*AConfigurationReaderWriter* configReaderWriter)

Methods**addCompileDeps**

public *IProjectConfigBuilder* **addCompileDeps** (*Iterable<LanguageIdentifier>* deps)

addJavaDeps

public *IProjectConfigBuilder* **addJavaDeps** (*Iterable<LanguageIdentifier>* deps)

addSourceDeps

public *IProjectConfigBuilder* **addSourceDeps** (*Iterable<LanguageIdentifier>* deps)

build

public *IProjectConfig* **build** (*FileObject* rootFolder)

copyFrom

public *IProjectConfigBuilder* **copyFrom** (*IProjectConfig* config)

reset

```
public IProjectConfigBuilder reset ()
```

withCompileDeps

```
public IProjectConfigBuilder withCompileDeps (Iterable<LanguageIdentifier> deps)
```

withIncrementalConstraintSolver

```
public IProjectConfigBuilder withIncrementalConstraintSolver (boolean incremental)
```

withJavaDeps

```
public IProjectConfigBuilder withJavaDeps (Iterable<LanguageIdentifier> deps)
```

withMetaborgVersion

```
public IProjectConfigBuilder withMetaborgVersion (String metaborgVersion)
```

withSourceDeps

```
public IProjectConfigBuilder withSourceDeps (Iterable<LanguageIdentifier> deps)
```

withTypesmart

```
public IProjectConfigBuilder withTypesmart (boolean typesmart)
```

ProjectConfigService

```
public class ProjectConfigService extends AConfigService<IProject, IProjectConfig> implements IProjectConfigService, IProjectConfigService
```

Constructors

ProjectConfigService

```
public ProjectConfigService (AConfigurationReaderWriter configReaderWriter, ProjectConfigBuilder configBuilder)
```

Methods

fromConfig

```
protected HierarchicalConfiguration<ImmutableNode> fromConfig (IProjectConfig config)
```

getConfigFile

protected `FileObject` **getConfigFile** (`FileObject` *rootFolder*)

getRootDirectory

protected `FileObject` **getRootDirectory** (`IProject` *project*)

toConfig

protected `ConfigRequest<IProjectConfig>` **toConfig** (`HierarchicalConfiguration<ImmutableNode>` *config*,
`FileObject` *configFile*)

ResourceExport

public class **ResourceExport** implements `IExportConfig`
Generic resource export.

Fields

directory

public final `String` **directory**
Directory which is exported, relative to the location of the language component that exports sources.

excludes

public final `Iterable<String>` **excludes**
Exclude patterns, following the Ant pattern syntax.
See also: [Ant patterns](#)

includes

public final `Iterable<String>` **includes**
Include patterns, following the Ant pattern syntax.
See also: [Ant patterns](#)

Constructors

ResourceExport

public **ResourceExport** (`String` *directory*, `Iterable<String>` *includes*, `Iterable<String>` *excludes*)

Methods

accept

public void **accept** (*IAExportVisitor* visitor)

toString

public *String* **toString** ()

YamlConfiguration

public class **YamlConfiguration** extends *JacksonConfiguration*
Configuration that uses YAML files.

Constructors

YamlConfiguration

public **YamlConfiguration** ()
Initializes a new instance of the *YamlConfiguration* class.

YamlConfiguration

public **YamlConfiguration** (*HierarchicalConfiguration*<*ImmutableNode*> config)
Initializes a new instance of the *YamlConfiguration* class.

Parameters

- **config** – The configuration whose nodes to copy.

YamlConfigurationReaderWriter

public class **YamlConfigurationReaderWriter** extends *AConfigurationReaderWriter*
Reads/writes configurations in YAML files.

Methods

createNew

protected *JacksonConfiguration* **createNew** (*HierarchicalConfiguration*<*ImmutableNode*> *sourceConfiguration*)

org.metaborg.core.context

ContextException

public class **ContextException** extends *MetaborgException*

Fields

language

public final *ILanguageImpl* **language**

resource

public final *FileObject* **resource**

Constructors

ContextException

public **ContextException** (*FileObject* resource, *ILanguageImpl* language)

ContextException

public **ContextException** (*FileObject* resource, *ILanguageImpl* language, *String* message)

ContextException

public **ContextException** (*FileObject* resource, *ILanguageImpl* language, *String* message, *Throwable* cause)

ContextException

public **ContextException** (*FileObject* resource, *ILanguageImpl* language, *Throwable* cause)

ContextFacet

public class **ContextFacet** implements *IFacet*

Fields

factory

public final *IContextFactory* **factory**

strategy

public final *ContextStrategy* **strategy**

Constructors

ContextFacet

public **ContextFacet** (*ContextFactory* factory, *ContextStrategy* strategy)

ContextIdentifier

public class **ContextIdentifier**

Fields

language

public final *LanguageImpl* **language**

location

public final *FileObject* **location**

project

public final *IProject* **project**

Constructors

ContextIdentifier

public **ContextIdentifier** (*FileObject* resource, *IProject* project, *LanguageImpl* language)

Parameters

- **resource** – The resource.
- **project** – The project to which the resource belongs.
- **language** –

Methods

equals

public boolean **equals** (*Object* obj)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

ContextService

public class **ContextService** implements *IContextService*, *IContextProcessor*

Methods

available

public boolean **available** (*ILanguageImpl* language)

get

public *IContext* **get** (*FileObject* resource, *IProject* project, *ILanguageImpl* language)

getTemporary

public *ITemporaryContext* **getTemporary** (*FileObject* resource, *IProject* project, *ILanguageImpl* language)

unload

public void **unload** (*IContext* context)

update

public void **update** (*LanguageImplChange* change)

ContextUtils

public class **ContextUtils**

Methods

getAll

public static *Set*<*IContext*> **getAll** (*Iterable*<*FileObject*> resources, *IProject* project, *ILanguageIdentifierService* languageIdentifier, *IContextService* contextService)
 Gets a set of all contexts for given resources.

Parameters

- **resources** – Resources to get contexts for.
- **project** – The project the resources belong to.
- **languageIdentifier** – Language identifier service.
- **contextService** – Context service.

Returns Set of all contexts.

IContext

public interface **IContext**

Interface for a context in which analysis or transformations occurs. Implementors must override *hashCode()* and *equals(Object)* using *location()* and *language()*, and also implement *IContextInternal*.

Methods

equals

boolean **equals** (*Object other*)

hashCode

int **hashCode** ()

injector

Injector **injector** ()

Returns Injector to retrieve implementations.

language

ILanguageImpl **language** ()

Returns Language of this context.

location

FileObject **location** ()

Returns Location of this context.

persist

void **persist** ()

Persist context data from memory to permanent storing. Acquires a read lock. Can be called while holding the write lock.

Throws

- **IOException** – When persisting fails unexpectedly.

project

IProject **project** ()

Returns The project that contains the transformed resource.

read

IClosableLock **read** ()

Request read access to this context.

Returns Closable lock which must be held during reading. Close the lock when done.

reset

void **reset** ()

Resets the state of this context. Acquires a write lock. Cannot be called while holding the read lock.

Throws

- **IOException** – When resetting fails unexpectedly

write

IClosableLock **write** ()

Request write access to this context.

Returns Closable lock which must be held during writing. Close the lock when done.

IContextFactory

public interface **IContextFactory**

Interface for creating *IContext* instances.

Methods

create

IContextInternal **create** (*ContextIdentifier* identifier)

Creates a new context from given identifier. A fast operation, expensive initialization is performed later.

Parameters

- **identifier** – Identifier to create the context with.

Returns Created context.

createTemporary

IContextInternal **createTemporary** (*ContextIdentifier* identifier)

Creates a new temporary context from given identifier. A fast operation, expensive initialization is performed in *IContextInternal.init()*.

Parameters

- **identifier** – Identifier to create the temporary context with.

Returns Created context.

IContextInternal

public interface **IContextInternal** extends *IContext*

Extension of *IContext* with methods that should not be exposed to clients.

Methods

identifier

ContextIdentifier **identifier** ()

Returns Identifier of this context.

init

void **init** ()

Initializes the context if it has not been initialized yet. Will not load anything from disk. Acquires a write lock. Cannot be called while holding the read lock.

load

void **load** ()

Initializes and loads the context if it has not been initialized or loaded yet. Acquires a write lock. Cannot be called while holding the read lock.

unload

void **unload** ()

Unloads the context, removing it from memory. Acquires a write lock. Cannot be called while holding the read lock.

IContextProcessor

public interface **IContextProcessor**

Methods

update

void **update** (*LanguageImplChange* change)
 Updates contexts using a language implementation change.

Parameters

- **change** – Language change to process.

IContextService

public interface **IContextService**
 Interface for retrieving or creating *IContext* instances.

Methods

available

boolean **available** (*ILanguageImpl* language)
 Checks if contexts are available for given language implementation.

Parameters

- **language** – Language implementation to check.

Returns True if contexts are available, false if not.

get

IContext **get** (*FileObject* resource, *IProject* project, *ILanguageImpl* language)
 Retrieves or creates a context for given resource and language.

Parameters

- **resource** – Resource to get a context for.
- **project** – The project the resource belongs to.
- **language** – Language to get a context for.

Throws

- *ContextException* – When an error occurs while retrieving or creating a context.
- *MetaborgRuntimeException* – When language has multiple *ContextFacet*.

Returns Existing or created context.

getTemporary

ITemporaryContext **getTemporary** (*FileObject* resource, *IProject* project, *ILanguageImpl* language)
 Creates a temporary context for given resource and language. Temporary contexts are not thread-safe, and must be closed after usage. Supports the try-with-resources statement for closing the temporary context.

Parameters

- **resource** – Resource to get a context for.
- **project** – The project the resource belongs to.
- **language** – Language to get a context for.

Throws

- *ContextException* – When an error occurs while retrieving or creating a context.
- *MetaborgRuntimeException* – When language has multiple *ContextFacet*.

Returns Temporary context.

unload

void **unload** (*IContext* context)

Unloads given context, persisting it to disk (if supported by the context) and removing it from memory.

Parameters

- **context** – Context to unload.

IContextStrategy

public interface **IContextStrategy**

Interface for *IContext* creation/retrieval strategies.

Methods

get

ContextIdentifier **get** (*FileObject* resource, *IProject* project, *ILanguageImpl* language)

Returns the context identifier for given resource and language.

Parameters

- **resource** – Resource to get a context identifier for.
- **project** – Project to which the resource belongs.
- **language** – Language to get a context identifier for.

Throws

- *ContextException* – When a context identifier cannot be returned.

Returns Context identifier.

ITemporaryContext

public interface **ITemporaryContext** extends *IContext*, *AutoCloseable*

IContext for temporary use. Is not thread-safe. Has to be closed after usage.

Methods

close

void **close** ()
Close the context, releasing any state.

ITemporaryContextInternal

public interface **ITemporaryContextInternal** extends *IContextInternal*, *ITemporaryContext*
Extension of *ITemporaryContext* with *IContextInternal* that should not be exposed to clients.

ProjectContextStrategy

public class **ProjectContextStrategy** implements *IContextStrategy*

Fields

name

public static final String **name**

Methods

get

public *ContextIdentifier* **get** (*FileObject* resource, *IProject* project, *ILanguageImpl* language)

ResourceContextStrategy

public class **ResourceContextStrategy** implements *IContextStrategy*

Fields

name

public static final String **name**

Methods

get

public *ContextIdentifier* **get** (*FileObject* resource, *IProject* project, *ILanguageImpl* language)

org.metaborg.core.editor

DummyEditorRegistry

public class **DummyEditorRegistry** implements *IEditorRegistry*

Dummy editor registry that gets bound by default, to display sane warnings when nothing else is bound to *IEditorRegistry*. Replace with working implementation or bind *NullEditorRegistry* to disable the warning.

Methods

open

public void **open** (*FileObject* resource, *IProject* project)

open

public void **open** (*Iterable*<*FileObject*> resources, *IProject* project)

openEditors

public *Iterable*<*IEditor*> **openEditors** ()

IEditor

public interface **IEditor**

Interface for an editor in an IDE.

Methods

disable

void **disable** ()

Disables parsing, analysis, and implementation-specific services. Does nothing if editor has not been initialized, or if it has been disposed, or if the editor is already disabled.

enable

void **enable** ()

Enables parsing, analysis, and implementation-specific services. Does nothing if editor has not been initialized, or if it has been disposed, or if the editor is already enabled.

enabled

boolean **enabled** ()

Returns If this editor is enabled.

forceUpdate

void **forceUpdate** ()

Force a parser, analysis, and implementation-specific update. Does nothing if editor has not been initialized, or if it has been disposed.

language

ILanguageImpl **language** ()

Returns Language of the current input resource. Null if the editor has not been initialized yet, if it has been disposed, or if the editor was opened before languages were loaded.

reconfigure

void **reconfigure** ()

Reconfigure the editor, updates its language and performs any implementation-specific reconfiguration. Does nothing if editor has not been initialized, or if it has been disposed.

resource

FileObject **resource** ()

Returns Current resource. Null if the editor has not been initialized yet, or if it has been disposed.

IEditorRegistry

public interface **IEditorRegistry**

Methods

open

void **open** (*FileObject* resource, *IProject* project)

Open an editor for given resource.

Parameters

- **resource** – Resource to open editor for.
- **project** – The project that contains the resource.

open

void **open** (*Iterable*<*FileObject*> resources, *IProject* project)

Open editors for the given resources.

Parameters

- **resources** – Resources to open editor for.
- **project** – The project that contains the resource.

openEditors

`Iterable<IEditor> openEditors ()`

Returns All open editors.

NullEditorRegistry

public class **NullEditorRegistry** implements *IEditorRegistry*
Editor registry that always returns an empty iterable.

Methods

open

public void **open** (*FileObject resource*, *IProject project*)

open

public void **open** (*Iterable<FileObject> resources*, *IProject project*)

openEditors

public *Iterable<IEditor>* **openEditors** ()

org.metaborg.core.language

AllLanguagesFileSelector

public class **AllLanguagesFileSelector** implements *FileSelector*

Constructors

AllLanguagesFileSelector

public **AllLanguagesFileSelector** (*ILanguageIdentifierService languageIdentifierService*)

Methods

includeFile

public boolean **includeFile** (*FileSelectInfo fileInfo*)

traverseDescendents

public boolean **traverseDescendents** (*FileSelectInfo fileInfo*)

ComponentCreationConfig

public class **ComponentCreationConfig**

Fields

config

public final *ILanguageComponentConfig* **config**

facets

protected final *Collection<IFacet>* **facets**

identifier

public final *LanguageIdentifier* **identifier**

implIds

public final *Iterable<LanguageContributionIdentifier>* **implIds**

location

public final *FileObject* **location**

Constructors

ComponentCreationConfig

public **ComponentCreationConfig** (*LanguageIdentifier identifier*, *FileObject location*, *Iterable<LanguageContributionIdentifier> implIds*, *ILanguageComponentConfig config*)

Methods

addFacet

public void **addFacet** (*IFacet facet*)

DescriptionFacet

public class **DescriptionFacet** implements *IFacet*

Represents a facet that provides basic information about a language

Fields

description

public final *String* **description**

Description of the language.

url

public final *String* **url**

Website URL of the language, or null if none.

Constructors

DescriptionFacet

public **DescriptionFacet** (*String description*, *String url*)

Creates an ‘about’ facet from a description and URL.

Parameters

- **description** – Description of the language.
- **url** – Website URL of the language, or null if none.

FacetContribution

public class **FacetContribution**<T extends IFacet>

Fields

contributor

public final *ILanguageComponent* **contributor**

facet

public final T **facet**

Constructors

FacetContribution

public **FacetContribution** (T *facet*, *ILanguageComponent contributor*)

IComponentCreationConfigRequest

public interface **IComponentCreationConfigRequest** extends *ILanguageDiscoveryRequest*
Request for creating a *ComponentCreationConfig*.

Methods

available

boolean **available**()
See also: `.valid()`

config

ILanguageComponentConfig **config**()
Returns Language component configuration; or `null` when not available.

errors

Collection<String> **errors**()
Gets the errors produced during the creation of this request. The resulting collection is empty when *valid()* is `true`.
Returns Produced error messages.

exceptions

Collection<Throwable> **exceptions**()
Gets the exceptions thrown during the creation of this request. The resulting collection is empty when *valid()* is `true`.
Returns Thrown exceptions.

location

FileObject **location**()
Returns Location of the request.

valid

boolean **valid**()
Gets whether a language component can be constructed from this request. A request is valid when all required files exist, such as the parse table and JAR files, and all configuration files are valid.
Returns `true` when a request is valid, `false` otherwise.

IFacet

public interface **IFacet**

Interface that represents a facet of a language.

IFacetContributions

public interface **IFacetContributions**

Interface representing language facet contributions. Facets are retrieved by type, multiple facets of the same type are allowed. Clients determine how multiple facets of the same type are handled.

Methods

facet

<T extends IFacet> T **facet** (Class<T> type)

Returns a facet of given type.

Parameters

- **type** – Facet type.

Throws

- *MetaborgRuntimeException* – When there are multiple facets of given type.

Returns Facet of given type, or null if there is no facet of given type.

facetContribution

<T extends IFacet> *FacetContribution*<T> **facetContribution** (Class<T> type)

Returns a facet contribution of given type.

Parameters

- **type** – Facet type.

Throws

- *MetaborgRuntimeException* – When there are multiple facets of given type.

Returns Facet contribution of given type.

facetContributions

<T extends IFacet> *Iterable*<*FacetContribution*<T>> **facetContributions** (Class<T> type)

Returns facet contributions of given type.

Parameters

- **type** – Facet type

Returns Facet contributions of given type.

facetContributions

`Iterable<FacetContribution<IFacet>> facetContributions ()`

Returns All facet contributions.

facets

`<T extends IFacet> Iterable<T> facets (Class<T> type)`

Returns facets of given type.

Parameters

- **type** – Facet type

Returns Facets of given type.

facets

`Iterable<IFacet> facets ()`

Returns All facets.

hasFacet

`boolean hasFacet (Class<? extends IFacet> type)`

Checks if there is at least one facet of given type.

Parameters

- **type** – Facet type.

Returns True if at least one facet of given type exists, false otherwise.

ILanguage

public interface **ILanguage**

Interface that represents a language. A language has multiple implementations.

Methods

activeImpl

`ILanguageImpl activeImpl ()`

Returns Active language implementation for this language. A language implementation is active when it has a higher version number than other language implementations. When there are multiple implementations with the highest version number, the one that was added last wins. Returns null when `#impls()` returns an empty iterable, which only happens if this language has been removed from the language service.

impls

`Iterable<? extends ILanguageImpl> impls ()`

Returns All language implementations that belong to this language.

name

`String name ()`

Returns Name of this language.

ILanguageCache

public interface **ILanguageCache**

Interface for services that cache language resources, to support invalidation of those caches when the language is removed or reloaded. Add Guice bindings to this interface for classes that implement it.

Methods

invalidateCache

void **invalidateCache** (*ILanguageComponent* component)

Invalidate the cache for given language component.

Parameters

- **component** – Component to invalidate the cache for.

invalidateCache

void **invalidateCache** (*ILanguageImpl* impl)

Invalidate the cache for given language implementation.

Parameters

- **impl** – Implementation to invalidate the cache for.

ILanguageComponent

public interface **ILanguageComponent** extends *IFacetContributions*

Interface that represents a language component. A language component contributes facets to language implementations. Facet operations only return facets of this component.

Methods

config

ILanguageComponentConfig **config** ()

Returns Configuration of this component.

contributesTo

`Iterable<? extends ILanguageImpl> contributesTo()`

Returns All language implementations that this component contributes to.

id

`LanguageIdentifier id()`

Returns Identifier of this component.

location

`FileObject location()`

Returns Location of this component.

sequenceId

`int sequenceId()`

Returns Sequence identifier of this component. Used to find out if a component was created after or before another component.

ILanguageComponentFactory

public interface **ILanguageComponentFactory**

Interface for creating *ComponentCreationConfigs* which are used to load language components into a *ILanguageService*.

Methods

createConfig

`ComponentCreationConfig createConfig(IComponentCreationConfigRequest request)`

Creates a language component configuration from a valid request.

Parameters

- **request** – Request to create a component configuration for.

Throws

- *MetaborgException* – When request is not valid, or when there are further configuration issues in the request.

Returns A language component configuration which is passed to *ILanguageService.add(ComponentCreationConfig)* to load the component.

createConfigs

`Collection<ComponentCreationConfig> createConfigs (Iterable<IComponentCreationConfigRequest> requests)`

Creates language component configurations from valid requests.

Parameters

- **requests** – Requests to create component configurations for.

Throws

- **MetaborgException** – When a request is not valid, or when there are further configuration issues in a request.

Returns Language component configurations which are passed to `ILanguageService.add(ComponentCreationConfig)` to load the component.

requestAllInDirectory

`Collection<IComponentCreationConfigRequest> requestAllInDirectory (FileObject directory)`

Creates component creation configuration requests by scanning given directory and all descendants for compiled language components.

Parameters

- **directory** – Directory to start scanning for compiled language components.

Throws

- **MetaborgException** – When `directory` is not a directory, does not exist; or when an unexpected I/O error occurs.

Returns Requests which can be checked for validity. Pass valid requests to `createConfig(IComponentCreationConfigRequest)` to create a language component configuration.

requestFromArchive

`IComponentCreationConfigRequest requestFromArchive (FileObject archiveFile)`

Create a component creation configuration request from a ZIP archive file that contains a compiled language component.

Parameters

- **archiveFile** – ZIP archive file that contains the compiled language component.

Throws

- **MetaborgException** – When `archiveFile` is not a file, does not exist, or does not contain a compiled language component; or when an unexpected I/O error occurs.

Returns Request which can be checked for validity. Pass valid requests to `createConfig(IComponentCreationConfigRequest)` to create a language component configuration.

requestFromDirectory

IComponentCreationConfigRequest **requestFromDirectory** (*FileObject* directory)

Create a component creation configuration request from a directory that contains a compiled language component.

Parameters

- **directory** – Directory that contains the compiled language component.

Throws

- *MetaborgException* – When *directory* is not a directory, does not exist, or does not contain a compiled language component; or when an unexpected I/O error occurs.

Returns Request which can be checked for validity. Pass valid requests to *createConfig(IComponentCreationConfigRequest)* to create a language component configuration.

ILanguageComponentInternal

public interface **ILanguageComponentInternal** extends *ILanguageComponent*

Methods

clearContributions

void **clearContributions** ()

Removes all contributing implementations from this component.

contributesToInternal

Iterable<? extends *ILanguageImplInternal*> **contributesToInternal** ()

Returns All language implementations that this component contributes to.

ILanguageDiscoveryRequest

public interface **ILanguageDiscoveryRequest**

Request for language discovery.

Methods

available

boolean **available** ()

See also: *.valid()*

config

ILanguageComponentConfig **config** ()

Gets the configuration of the language.

Returns The configuration; or `null` when not available.

errors

Collection<String> **errors** ()

Gets the errors produced during the creation of this request. The resulting collection is empty when *valid()* is `true`.

Returns The produced error messages.

exceptions

Collection<Throwable> **exceptions** ()

Gets the exceptions thrown during the creation of this request. The resulting collection is empty when *valid()* is `true`.

Returns The thrown exceptions.

location

FileObject **location** ()

Gets the location of the request.

Returns The location of the request.

valid

boolean **valid** ()

Gets whether the language component is available. A language component is available when all required files exist, such as the parse table and JAR files, and all configuration files are valid.

Returns `true` when a request is available; otherwise, `false`.

ILanguageDiscoveryService

public interface **ILanguageDiscoveryService**

Interface for a language discovery service that finds and loads language components and implementations.

Methods

componentFromArchive

ILanguageComponent **componentFromArchive** (*FileObject* archiveFile)

Load a language component from a ZIP archive file that contains a compiled language component.

Parameters

- **archiveFile** – ZIP archive file that contains the compiled language component.

Throws

- *MetaborgException* – When loading the language component fails.

Returns Loaded language component.

componentFromDirectory

ILanguageComponent **componentFromDirectory** (*FileObject* directory)

Load a language component from a directory that contains a compiled language component.

Parameters

- **directory** – Directory that contains the compiled language component.

Throws

- *MetaborgException* – When loading the language component fails.

Returns Loaded language component.

discover

ILanguageComponent **discover** (*ILanguageDiscoveryRequest* request)

Discover language component with given request.

Parameters

- **request** – Language discovery request created by *request (FileObject)*.

Throws

- *MetaborgException* – When discovery fails unexpectedly.

Returns Language components that were created.

discover

Iterable<ILanguageComponent> **discover** (*Iterable<ILanguageDiscoveryRequest>* requests)

Discover all language components with the given requests.

Parameters

- **requests** – Language discovery requests created by *request (FileObject)*.

Throws

- *MetaborgException* – When discovery fails unexpectedly.

Returns Language components that were created.

languageFromArchive

ILanguageImpl **languageFromArchive** (*FileObject* archiveFile)

Load a language implementation from a ZIP archive file that contains a compiled language component.

Parameters

- **archiveFile** – ZIP archive file that contains the compiled language component.

Throws

- *MetaborgException* – When loading the language component fails, or when more than one language implementation is loaded.

Returns Loaded language implementation.

languageFromDirectory

ILanguageImpl **languageFromDirectory** (*FileObject* directory)

Load a language implementation from a directory that contains a compiled language component.

Parameters

- **directory** – Directory that contains the compiled language component.

Throws

- *MetaborgException* – When loading the language component fails, or when more than one language implementation is loaded.

Returns Loaded language implementation.

languagesFromArchive

Set<ILanguageImpl> **languagesFromArchive** (*FileObject* archiveFile)

Load language implementations from a ZIP archive file that contains a compiled language component.

Parameters

- **archiveFile** – ZIP archive file that contains the compiled language component.

Throws

- *MetaborgException* – When loading the language component fails.

Returns Loaded language implementations.

languagesFromDirectory

Set<ILanguageImpl> **languagesFromDirectory** (*FileObject* directory)

Load language implementations from a directory that contains a compiled language component.

Parameters

- **directory** – Directory that contains the compiled language component.

Throws

- *MetaborgException* – When loading the language component fails.

Returns Loaded language implementations.

request

Iterable<ILanguageDiscoveryRequest> **request** (*FileObject location*)

Request language discovery at given location. Returns language discovery requests which can be checked for availability and errors. Pass requests to *discover (ILanguageDiscoveryRequest)* to actually load the components.

Parameters

- **location** – The directory to search in.

Throws

- *MetaborgException* – When searching for language components fails unexpectedly.

Returns Language discovery requests. Empty when no components can be discovered.

scanComponentsInDirectory

Set<ILanguageComponent> **scanComponentsInDirectory** (*FileObject directory*)

Scans given directory and all descendants for language components and loads them all.

Parameters

- **directory** – Directory to start scanning for language components.

Throws

- *MetaborgException* – When *directory* is not a directory or does not exist, when loading a language component fails, or when an unexpected I/O error occurs.

Returns Loaded language components.

scanLanguagesInDirectory

Set<ILanguageImpl> **scanLanguagesInDirectory** (*FileObject directory*)

Scans given directory and all descendants for language components and loads them all.

Parameters

- **directory** – Directory to start scanning for language components.

Throws

- *MetaborgException* – When *directory* is not a directory or does not exist, when loading a language component fails, or when an unexpected I/O error occurs.

Returns Loaded language implementations.

ILanguageIdentifierService

public interface **ILanguageIdentifierService**

Interface for identifying the language of a resource.

Methods

available

boolean **available** (*ILanguageImpl impl*)

Returns if language identification is available for given implementation.

Parameters

- **impl** – Language implementation to check.

Returns True if identification is available, false if not.

identify

boolean **identify** (*FileObject resource*, *ILanguageImpl language*)

Checks if given resource is of given language.

Parameters

- **resource** – Resource to check.
- **language** – Language to check against.

Returns True if resource is of given language, false otherwise.

identify

ILanguageImpl **identify** (*FileObject resource*)

Attempts to identify the active language of given resource.

Parameters

- **resource** – Resource to identify.

Throws

- **IllegalStateException** – When a resource can be identified to languages with different names.

Returns Identified language, or null if language could not be identified.

identify

ILanguageImpl **identify** (*FileObject resource*, *IProject project*)

Attempts to identify the active language of given resource.

Parameters

- **resource** – Resource to identify.
- **project** – The project to which the resource belongs; or null if not known.

Throws

- **IllegalStateException** – When a resource can be identified to languages with different names.

Returns Identified language, or null if language could not be identified.

identify

ILanguageImpl **identify** (*FileObject* resource, *Iterable*<? extends *ILanguageImpl*> languages)

Attempts to identify the language of given resource, among given list of languages.

Parameters

- **resource** – Resource to identify.

Throws

- **IllegalStateException** – When a resource can be identified to multiple languages.

Returns Identified language, or null if language could not be identified.

identifyToResource

IdentifiedResource **identifyToResource** (*FileObject* resource)

Attempts to identify the active language of given resource, and return an identified resource.

Parameters

- **resource** – Resource to identify.

Throws

- **IllegalStateException** – When a resource can be identified to languages with different names.

Returns Identified resource, or null if language could not be identified.

identifyToResource

IdentifiedResource **identifyToResource** (*FileObject* resource, *IProject* project)

Attempts to identify the active language of given resource, and return an identified resource.

Parameters

- **resource** – Resource to identify.
- **project** – The project to which the resource belongs; or null if not known.

Throws

- **IllegalStateException** – When a resource can be identified to languages with different names.

Returns Identified resource, or null if language could not be identified.

identifyToResource

IdentifiedResource **identifyToResource** (*FileObject* resource, *Iterable*<? extends *ILanguageImpl*> languages)

Attempts to identify the language of given resource, among given list of languages, and return an identified resource.

Parameters

- **resource** – Resource to identify.

Throws

- **`IllegalStateException`** – When a resource can be identified to multiple languages.

Returns Identified resource, or null if language could not be identified.

ILanguageImpl

public interface **ILanguageImpl** extends *IFacetContributions*

Interface that represents a language implementation. A language implementation is a view over all components that contribute to the implementation. An implementation belongs to a language. Facet operations return facets from all components.

Methods

belongsTo

ILanguage **belongsTo** ()

Returns Language this implementation belongs to.

components

Iterable<ILanguageComponent> **components** ()

Returns All components that contribute to this implementation.

config

ILanguageImplConfig **config** ()

Returns Configuration of this language implementation.

id

LanguageIdentifier **id** ()

Returns Identifier of this implementation.

locations

Iterable<FileObject> **locations** ()

Returns Locations of this implementation's components.

sequenceId

int **sequenceId** ()

Returns Maximum sequence identifier of this implementation's components.

ILanguageImplInternal

public interface **ILanguageImplInternal** extends *ILanguageImpl*

Methods

addComponent

boolean **addComponent** (*ILanguageComponent component*)

Adds a component to the implementation.

Parameters

- **component** – Component to add.

Returns True if the component was added, false if it already existed.

belongsToInternal

ILanguageInternal **belongsToInternal** ()

Returns Language this implementation belongs to.

removeComponent

boolean **removeComponent** (*ILanguageComponent component*)

Removes a component from the implementation.

Parameters

- **component** – Component to remove.

Returns True if the component was removed, false if it did not exist.

ILanguageInternal

public interface **ILanguageInternal** extends *ILanguage*

Methods

add

void **add** (*ILanguageImplInternal implementation*)

Adds a language implementation that belongs to this language.

Parameters

- **implementation** – Language implementation to add.

remove

void **remove** (*ILanguageImplInternal* implementation)
 Removes a language implementation that no longer belongs to this language.

Parameters

- **implementation** – Language implementation to remove.

ILanguageService

public interface **ILanguageService**

Interface for a language service that creates and destroys languages, maps names to active languages, and provides an observable of language changes. A language is active if it has the highest version, and highest loading date.

Methods

add

ILanguageComponent **add** (*ComponentCreationConfig* config)
 Adds language component created from given configuration object, and return the created component.

Parameters

- **config** – Request object to process.

Throws

- **IllegalStateException** – When a component with a different id has already been created at given component's location.

Returns Created component.

componentChanges

Observable<*LanguageComponentChange*> **componentChanges** ()

Returns Observable over language component changes.

create

ComponentCreationConfig **create** (*LanguageIdentifier* identifier, *FileObject* location, *Iterable*<*LanguageContributionIdentifier*> contribs, *ILanguageComponentConfig* config)

Creates a request object with given identifier and location, contributing to given language implementation identifiers. Returns a request object where facets can be added before passing it to *add(ComponentCreationConfig)*.

Parameters

- **identifier** – Identifier of the component to create.
- **location** – Location of the component to create.

- **contributes** – Identifiers of language implementations that the component should contribute to.
- **config** – Configuration of the component to create.

Returns Creation request object, when passed to `add(ComponentCreationConfig)` actually adds the language.

getAllComponents

`Iterable<? extends ILanguageComponent> getAllComponents ()`

Returns All language components.

getAllImpls

`Iterable<? extends ILanguageImpl> getAllImpls ()`

Returns All language implementations.

getAllImpls

`Iterable<? extends ILanguageImpl> getAllImpls (String groupId, String id)`

Gets language implementations with group id and id.

Parameters

- **groupId** – Group ID of the implementations to get.
- **id** – ID of the implementations to get.

Returns Implementations with given group id and id.

getAllLanguages

`Iterable<? extends ILanguage> getAllLanguages ()`

Returns All languages

getComponent

`ILanguageComponent getComponent (LanguageIdentifier identifier)`

Gets a language component by its identifier.

Parameters

- **identifier** – Identifier of the implementation to get.

Returns Component with given identifier, or null if it could not be found.

getComponent

ILanguageComponent **getComponent** (*FileName* location)

Gets a language component by its location.

Parameters

- **location** – Location of the implementation to get.

Returns Component at given location, or null if it could not be found.

getImpl

ILanguageImpl **getImpl** (*LanguageIdentifier* identifier)

Gets a language implementation by its identifier.

Parameters

- **identifier** – Identifier of the implementation to get.

Returns Implementation with given identifier, or null if it could not be found.

getLanguage

ILanguage **getLanguage** (*String* name)

Gets a language by its name.

Parameters

- **name** – Name of the language to get.

Returns Language with given name, or null if it could not be found.

implChanges

Observable<*LanguageImplChange*> **implChanges** ()

Returns Observable over language implementation changes.

remove

void **remove** (*ILanguageComponent* component)

Removes given language component.

Parameters

- **component** – Language component to remove.

Throws

- **IllegalStateException** – When component does not exist or has already been removed.

IdentificationFacet

public class **IdentificationFacet** implements *IFacet*
Represents a facet that can identify resources languages.

Constructors

IdentificationFacet

public **IdentificationFacet** (Func1<*FileObject*, *Boolean*> *identifier*)
Creates an identification facet using an identification function.

Parameters

- **identifier** – The identification function.

Methods

identify

public boolean **identify** (*FileObject file*)

IdentifiedResource

public class **IdentifiedResource**
Resource with an identified language and optionally dialect.

Fields

dialect

public final *ILanguageImpl* **dialect**
Identified dialect of the resource, or null if it does not have a dialect.

language

public final *ILanguageImpl* **language**
Identified language of the resource.

resource

public final *FileObject* **resource**
Resource.

Constructors

IdentifiedResource

```
public IdentifiedResource (FileObject resource, IdentifiedDialect identifiedDialect)
```

IdentifiedResource

```
public IdentifiedResource (FileObject resource, ILanguageImpl dialect, ILanguageImpl language)
```

Methods

dialectOrLanguage

```
public ILanguageImpl dialectOrLanguage ()
```

Returns Dialect of the resource, or the language if it does not belong to a dialect.

toString

```
public String toString ()
```

Language

```
public class Language implements ILanguage, ILanguageInternal
```

Constructors

Language

```
public Language (String name)
```

Methods

activeImpl

```
public ILanguageImpl activeImpl ()
```

add

```
public void add (ILanguageImplInternal implementation)
```

equals

```
public boolean equals (Object obj)
```

hashCode

public int **hashCode** ()

impls

public *Iterable*<? extends *ILanguageImpl*> **impls** ()

name

public *String* **name** ()

remove

public void **remove** (*ILanguageImplInternal* implementation)

toString

public *String* **toString** ()

LanguageComponent

public class **LanguageComponent** implements *ILanguageComponentInternal*

Constructors

LanguageComponent

public **LanguageComponent** (*LanguageIdentifier* identifier, *FileObject* location, int sequenceId, *Iterable*<*ILanguageImplInternal*> contributesTo, *ILanguageComponentConfig* config, *Iterable*<? extends *IFacet*> facets)

Methods

clearContributions

public void **clearContributions** ()

config

public *ILanguageComponentConfig* **config** ()

contributesTo

public *Iterable*<? extends *ILanguageImpl*> **contributesTo** ()

contributesToInternal

```
public Iterable<? extends ILanguageImplInternal> contributesToInternal ()
```

equals

```
public boolean equals (Object obj)
```

facet

```
public <T extends IFacet> T facet (Class<T> type)
```

facetContribution

```
public <T extends IFacet> FacetContribution<T> facetContribution (Class<T> type)
```

facetContributions

```
public <T extends IFacet> Iterable<FacetContribution<T>> facetContributions (Class<T> type)
```

facetContributions

```
public Iterable<FacetContribution<IFacet>> facetContributions ()
```

facets

```
public <T extends IFacet> Iterable<T> facets (Class<T> type)
```

facets

```
public Iterable<IFacet> facets ()
```

hasFacet

```
public boolean hasFacet (Class<? extends IFacet> type)
```

hashCode

```
public int hashCode ()
```

id

```
public LanguageIdentifier id ()
```

location

```
public FileObject location ()
```

sequenceId

```
public int sequenceId ()
```

toString

```
public String toString ()
```

LanguageComponentChange

```
public class LanguageComponentChange
```

Represents a change of a language component in the *ILanguageService*.

Fields**kind**

```
public final Kind kind
```

Kind of language change.

newComponent

```
public final ILanguageComponent newComponent
```

New language component. Value under different kinds:

- *Kind.Add*: Component that was added.
- *Kind.Reload*: Component before the reload.
- *Kind.Remove*: null

oldComponent

```
public final ILanguageComponent oldComponent
```

Existing language component. Value under different kinds:

- *Kind.Add*: null
- *Kind.Reload*: Component before the reload.
- *Kind.Remove*: Component that was removed.

Constructors

LanguageComponentChange

```
public LanguageComponentChange (Kind kind, ILanguageComponent oldComponent, ILanguageComponent newComponent)
```

Methods

equals

```
public boolean equals (Object obj)
```

hashCode

```
public int hashCode ()
```

toString

```
public String toString ()
```

LanguageComponentChange.Kind

```
public enum Kind
```

Enum Constants

Add

```
public static final LanguageComponentChange.Kind Add
```

Reload

```
public static final LanguageComponentChange.Kind Reload
```

Remove

```
public static final LanguageComponentChange.Kind Remove
```

LanguageContributionIdentifier

```
public class LanguageContributionIdentifier implements Serializable
```

Fields

id

public final *LanguageIdentifier* **id**

name

public final *String* **name**

Constructors

LanguageContributionIdentifier

public **LanguageContributionIdentifier** (*LanguageIdentifier* id, *String* name)

LanguageFileSelector

public class **LanguageFileSelector** implements *FileSelector*

Constructors

LanguageFileSelector

public **LanguageFileSelector** (*ILanguageIdentifierService* languageIdentifierService, *ILanguageImpl* language)

Methods

includeFile

public boolean **includeFile** (*FileSelectInfo* fileInfo)

traverseDescendents

public boolean **traverseDescendents** (*FileSelectInfo* fileInfo)

LanguageIdentifier

public class **LanguageIdentifier** implements *Comparable<LanguageIdentifier>*, *Serializable*

Fields

errorDescription

public static final *String* **errorDescription**

groupId

public final *String* **groupId**

id

public final *String* **id**

version

public final *LanguageVersion* **version**

Constructors

LanguageIdentifier

public **LanguageIdentifier** (*String* groupId, *String* id, *LanguageVersion* version)

LanguageIdentifier

public **LanguageIdentifier** (*LanguageIdentifier* identifier, *LanguageVersion* version)

Methods

compareTo

public int **compareTo** (*LanguageIdentifier* other)

equals

public boolean **equals** (*Object* obj)

hashCode

public int **hashCode** ()

parse

public static *LanguageIdentifier* **parse** (*String* identifier)

parseFull

public static *LanguageIdentifier* **parseFull** (*String* identifier)

toFileString

```
public String toFileString ()
```

toFullFileString

```
public String toFullFileString ()
```

toString

```
public String toString ()
```

valid

```
public boolean valid ()
```

valid

```
public static boolean valid (String identifier)
```

validId

```
public static boolean validId (String id)
```

LanguageIdentifierService

```
public class LanguageIdentifierService implements ILanguageIdentifierService
```

Constructors

LanguageIdentifierService

```
public LanguageIdentifierService (ILanguageService languageService, IDialectIdentifier dialectIdentifier, IProjectService projectService, IDependencyService dependencyService)
```

Methods

available

```
public boolean available (ILanguageImpl impl)
```

identify

```
public boolean identify (FileObject resource, ILanguageImpl language)
```

identify

```
public ILanguageImpl identify (FileObject resource)
```

identify

```
public ILanguageImpl identify (FileObject resource, IProject project)
```

identify

```
public ILanguageImpl identify (FileObject resource, Iterable<? extends ILanguageImpl> languages)
```

identifyToResource

```
public IdentifiedResource identifyToResource (FileObject resource)
```

identifyToResource

```
public IdentifiedResource identifyToResource (FileObject resource, IProject project)
```

identifyToResource

```
public IdentifiedResource identifyToResource (FileObject resource, Iterable<? extends ILanguageImpl>  
impls)
```

LanguageImplChange

```
public class LanguageImplChange
```

Represents a change of a language implementation in the *ILanguageService*.

Fields

impl

```
public final ILanguageImpl impl  
    Changed language implementation.
```

kind

```
public final Kind kind  
    Kind of language change.
```

Constructors

LanguageImplChange

public **LanguageImplChange** (*Kind* kind, *ILanguageImpl* impl)

Methods

equals

public boolean **equals** (*Object* obj)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

LanguageImplChange.Kind

public enum **Kind**

Enum Constants

Add

public static final *LanguageImplChange.Kind* **Add**

Reload

public static final *LanguageImplChange.Kind* **Reload**

Remove

public static final *LanguageImplChange.Kind* **Remove**

LanguageImplementation

public class **LanguageImplementation** implements *ILanguageImpl*, *ILanguageImplInternal*

Constructors

LanguageImplementation

public **LanguageImplementation** (*LanguageIdentifier id, ILanguageInternal belongsTo*)

Methods

addComponent

public boolean **addComponent** (*ILanguageComponent component*)

belongsTo

public *ILanguage* **belongsTo** ()

belongsToInternal

public *ILanguageInternal* **belongsToInternal** ()

components

public *Iterable<ILanguageComponent>* **components** ()

config

public *ILanguageImplConfig* **config** ()

equals

public boolean **equals** (*Object obj*)

facet

public <T extends IFacet> T **facet** (*Class<T> type*)

facetContribution

public <T extends IFacet> *FacetContribution<T>* **facetContribution** (*Class<T> type*)

facetContributions

public <T extends IFacet> *Iterable<FacetContribution<T>>* **facetContributions** (*Class<T> type*)

facetContributions

public *Iterable*<*FacetContribution*<*IFacet*>> **facetContributions** ()

facets

public <T extends *IFacet*> *Iterable*<T> **facets** (*Class*<T> *type*)

facets

public *Iterable*<*IFacet*> **facets** ()

hasFacet

public boolean **hasFacet** (*Class*<? extends *IFacet*> *type*)

hashCode

public int **hashCode** ()

id

public *LanguageIdentifier* **id** ()

locations

public *Iterable*<*FileObject*> **locations** ()

removeComponent

public boolean **removeComponent** (*ILanguageComponent* *component*)

sequenceId

public int **sequenceId** ()

toString

public *String* **toString** ()

LanguageService

public class **LanguageService** implements *ILanguageService*

Methods

add

public *ILanguageComponent* **add** (*ComponentCreationConfig* config)

componentChanges

public Observable<*LanguageComponentChange*> **componentChanges** ()

getAllComponents

public Iterable<? extends *ILanguageComponent*> **getAllComponents** ()

getAllImpls

public Iterable<? extends *ILanguageImpl*> **getAllImpls** ()

getAllImpls

public Iterable<? extends *ILanguageImpl*> **getAllImpls** (*String* groupId, *String* id)

getAllLanguages

public Iterable<? extends *ILanguage*> **getAllLanguages** ()

getComponent

public *ILanguageComponent* **getComponent** (*LanguageIdentifier* identifier)

getComponent

public *ILanguageComponent* **getComponent** (*FileName* location)

getImpl

public *ILanguageImpl* **getImpl** (*LanguageIdentifier* identifier)

getLanguage

public *ILanguage* **getLanguage** (*String* name)

implChanges

public Observable<*LanguageImplChange*> **implChanges** ()

remove

public void **remove** (*ILanguageComponent* component)

LanguageUtils

public class **LanguageUtils**

Methods

active

public static *ILanguageImpl* **active** (Iterable<? extends *ILanguageImpl*> impls)

allActiveComponents

public static Iterable<*ILanguageComponent*> **allActiveComponents** (*ILanguageService* languageService)

allActiveImpls

public static Iterable<*ILanguageImpl*> **allActiveImpls** (*ILanguageService* languageService)

toComponents

public static Set<*ILanguageComponent*> **toComponents** (Iterable<? extends *ILanguageImpl*> impls)

toImpls

public static Set<*ILanguageImpl*> **toImpls** (Iterable<? extends *ILanguageComponent*> components)

LanguageVersion

public class **LanguageVersion** implements *Comparable<LanguageVersion>*, *Serializable*
Representation for the version of a language. Follows the Maven versioning style.

Fields

errorDescription

public static final String **errorDescription**

major

public final int **major**

minor

public final Integer **minor**

patch

public final Integer **patch**

qualifier

public final String **qualifier**

Constructors

LanguageVersion

public **LanguageVersion** (int *major*)

LanguageVersion

public **LanguageVersion** (int *major*, int *minor*)

LanguageVersion

public **LanguageVersion** (int *major*, int *minor*, int *patch*)

LanguageVersion

public **LanguageVersion** (int *major*, Integer *minor*, Integer *patch*, String *qualifier*)

Methods

compareTo

public int **compareTo** (*LanguageVersion other*)

equals

public boolean **equals** (Object *obj*)

hashCode

```
public int hashCode ()
```

parse

```
public static LanguageVersion parse (String version)
```

toString

```
public String toString ()
```

valid

```
public static boolean valid (String version)
```

LanguagesFileSelector

```
public class LanguagesFileSelector implements FileSelector
```

Constructors

LanguagesFileSelector

```
public LanguagesFileSelector (ILanguageIdentifierService languageIdentifierService, Iterable<ILanguageImpl> languages)
```

Methods

includeFile

```
public boolean includeFile (FileSelectInfo fileInfo)
```

traverseDescendents

```
public boolean traverseDescendents (FileSelectInfo fileInfo)
```

ResourceExtensionFacet

```
public class ResourceExtensionFacet implements IFacet
```

Represents a facet that specifies the file extensions for languages. Complements the *IdentificationFacet*.

Constructors

ResourceExtensionFacet

```
public ResourceExtensionFacet (Iterable<String> extensions)
```

Methods

extensions

```
public Iterable<String> extensions ()
```

ResourceExtensionsIdentifier

```
public class ResourceExtensionsIdentifier implements Func1<FileObject, Boolean>, Serializable
```

Constructors

ResourceExtensionsIdentifier

```
public ResourceExtensionsIdentifier (Iterable<String> extensions)
```

Methods

call

```
public Boolean call (FileObject resource)
```

org.metaborg.core.language.dialect

IDialectIdentifier

```
public interface IDialectIdentifier  
    Interface for identifying the dialect of a resource.
```

Methods

identify

```
IdentifiedDialect identify (FileObject resource)  
    Attempts to identify the dialect of given resource.
```

Parameters

- **resource** – Resource to identify.

Throws

- *MetaborgException* – When resource requires a dialect that is not available.

Returns Identified dialect, or null if dialect could not be identified.

identify

boolean **identify** (*FileObject resource*, *ILanguageImpl dialect*)

Checks if given resource is of given dialect.

Parameters

- **resource** – Resource to check.
- **dialect** – Dialect to check against.

Throws

- *MetaborgException* – When resource requires a dialect that is not available.

Returns True if resource is of given dialect, false otherwise.

IDialectProcessor

public interface **IDialectProcessor**

Interface for processing dialect updates.

Methods

update

void **update** (*FileObject location*, *Iterable<ResourceChange> changes*)

Updates dialects using given changes.

Parameters

- **location** – Location to process changes for.
- **changes** – Resource changes to process.

update

void **update** (*LanguageImplChange change*)

Updates dialects using a language implementation change.

Parameters

- **change** – Language change to process.

IDialectService

public interface **IDialectService**

Methods

add

ILanguageImpl **add** (*String* name, *FileObject* location, *ILanguageImpl* base, *IFacet* syntaxFacet)

Creates a new dialect language for given base language and parser facet. The dialect replaces the parser facet, and retains all other facets of the base language.

Parameters

- **name** – Name of the new dialect language.
- **location** – Location of the new dialect language.
- **base** – Base language of the dialect.
- **syntaxFacet** – Syntax facet to replace the base language's syntax facet with.

Throws

- *MetaborgRuntimeException* – When dialect with given name already exists.

Returns Created dialect language.

getBase

ILanguageImpl **getBase** (*ILanguageImpl* dialect)

Gets the base language for given dialect.

Parameters

- **dialect** – Dialect to get base language for.

Returns Base language of given dialect, or null if given language is not a dialect or the dialect has been removed.

getDialect

ILanguageImpl **getDialect** (*String* name)

Gets dialect language with given name.

Parameters

- **name** – Name of the dialect to get.

Returns Dialect language with given name, or null if it does not exist.

getDialects

Iterable<*ILanguageImpl*> **getDialects** (*ILanguageImpl* base)

Gets all dialects for given base language

Parameters

- **base** – Base language of the dialects.

Returns Dialects for given base language.

hasDialect

boolean **hasDialect** (*String name*)

Returns if dialect with given name exists.

Parameters

- **name** – Name of the dialect to check.

Returns True if dialect exists, false if not.

remove

ILanguageImpl **remove** (*String name*)

Removes dialect with given name.

Parameters

- **name** – Name of the dialect to remove.

Throws

- *MetaborgRuntimeException* – When dialect with given name does not exist.

Returns Removed dialect language.

remove

Iterable<ILanguageImpl> **remove** (*ILanguageImpl base*)

Removes all dialects based on given language. Does nothing if there are no dialects of that language.

Parameters

- **base** – Base language to remove all dialects for.

Returns Removed dialect languages.

update

ILanguageImpl **update** (*String name*, *IFacet parserFacet*)

Updates dialect of given name, with a new parser facet.

Parameters

- **name** – Name of the dialect to update.
- **parserFacet** – Parser facet to update the dialect with.

Throws

- *MetaborgRuntimeException* – When dialect with given name does not exist.

Returns Updated dialect language.

update

Iterable<*ILanguageImpl*> **update** (*ILanguageImpl* base)

Updates all dialects based on base. Does nothing if there were no dialects based on base.

Parameters

- **base** – Base language for which to update dialects.

Returns Updated dialect languages.

IdentifiedDialect

public class **IdentifiedDialect**
Dialect with its base language.

Fields

base

public final *ILanguageImpl* **base**
Base language of the dialect.

dialect

public final *ILanguageImpl* **dialect**
The dialect.

Constructors

IdentifiedDialect

public **IdentifiedDialect** (*ILanguageImpl* dialect, *ILanguageImpl* base)

org.metaborg.core.menu

IMenu

public interface **IMenu** extends *IMenuItem*

Methods

action

IAction **action** (String name)

items

`Iterable<IMenuItem> items ()`

IMenuAction

public interface **IMenuAction** extends *IMenuItem*

Methods

action

`ITransformAction action ()`

IMenuItem

public interface **IMenuItem**

Methods

accept

void **accept** (*IMenuItemVisitor* visitor)
Accepts the specified visitor.

Parameters

- **visitor** – The visitor.

name

`String name ()`

Returns Name of the menu item.

IMenuItemVisitor

public interface **IMenuItemVisitor**
Visitor for menu items.

Methods

visitAction

void **visitAction** (*IMenuAction* action)
Visits the action.

Parameters

- **action** – The action to visit.

visitMenu

void **visitMenu** (*IMenu menu*)

Visits the menu.

Parameters

- **menu** – The menu to visit.

visitMenuItem

void **visitMenuItem** (*IMenuItem item*)

Visits the menu item. This method is called when no more specific visitor method applies.

Parameters

- **item** – The menu item to visit.

visitSeparator

void **visitSeparator** (*Separator separator*)

Visits the separator.

Parameters

- **separator** – The separator to visit.

IMenuService

public interface **IMenuService**

Interface for service that combines menus for language implementations.

Methods

menuItems

Iterable<*IMenuItem*> **menuItems** (*ILanguageImpl language*)

Gets the top-level menu items for given language implementation.

Parameters

- **language** – Language implementation to get menu items for.

Returns Top-level menu items.

Menu

public class **Menu** implements *IMenu*

Constructors

Menu

public **Menu** (*String name*)

Menu

public **Menu** (*String name*, *Collection<IMenuItem> items*)

Methods

accept

public void **accept** (*IMenuItemVisitor visitor*)

action

public *IAction* **action** (*String name*)

add

public void **add** (*IMenuItem item*)

add

public void **add** (*Iterable<? extends IMenuItem> items*)

items

public *Iterable<IMenuItem>* **items** ()

name

public *String* **name** ()

MenuAction

public class **MenuAction** implements *IMenuAction*

Fields

action

public final *ITransformAction* **action**

Constructors

MenuItemAction

public **MenuItemAction** (*ITransformAction* action)

Methods

accept

public void **accept** (*IMenuItemVisitor* visitor)

action

public *ITransformAction* **action** ()

name

public *String* **name** ()

Separator

public class **Separator** implements *IMenuItem*

Methods

accept

public void **accept** (*IMenuItemVisitor* visitor)

name

public *String* **name** ()

org.metaborg.core.messages

IMessage

public interface **IMessage**

Interface representing a message on a region in a source file.

Methods

exception

Throwable **exception** ()

Returns Exception belonging to this message, or null if there is no exception.

message

String **message** ()

Returns Message text.

region

ISourceRegion **region** ()

Returns Affected region inside the source, or null if the entire source is affected.

severity

MessageSeverity **severity** ()

Returns Message severity

source

FileObject **source** ()

Returns Source of the message, or null if the source is unknown.

type

MessageType **type** ()

Returns Message type.

IMessagePrinter

public interface **IMessagePrinter**
Interface for printing messages.

Methods

print

void **print** (*IMessage* message, boolean *pardoned*)
Prints given message.

Parameters

- **message** – Message to print.
- **pardoned** – If the (error or warning) message is pardoned, i.e. the message is acceptable even if it indicates a problem.

print

void **print** (*FileObject resource*, *String message*, *Throwable e*, boolean *pardoned*)

Prints given message and exception, located at a resource. Used if the source location is not available.

Parameters

- **resource** – Resource the message occurred in, or null if the message was detached.
- **message** – Message to print.
- **e** – Exception to print, or null if there is no exception.
- **pardoned** – If the (error or warning) message is pardoned, i.e. the message is acceptable even if it indicates a problem.

print

void **print** (*IPProject project*, *String message*, *Throwable e*, boolean *pardoned*)

Prints given message and exception, located at a project. Used if the source location or resource is not available.

Parameters

- **project** – Project the message occurred in.
- **message** – Message to print.
- **e** – Exception to print, or null if there is no exception.
- **pardoned** – If the (error or warning) message is pardoned, i.e. the message is acceptable even if it indicates a problem.

printSummary

void **printSummary** ()

Prints a summary based on printed messages before.

Message

public class **Message** implements *IMessage*

Constructors

Message

public **Message** (*String message*, *MessageSeverity severity*, *MessageType type*, *FileObject source*, *ISourceRegion region*, *Throwable exception*)

Methods**exception**

public *Throwable* **exception** ()

message

public *String* **message** ()

region

public *ISourceRegion* **region** ()

severity

public *MessageSeverity* **severity** ()

source

public *FileObject* **source** ()

toString

public *String* **toString** ()

type

public *MessageType* **type** ()

MessageBuilder

public class **MessageBuilder**

Methods**asAnalysis**

public *MessageBuilder* **asAnalysis** ()

asError

public *MessageBuilder* **asError** ()

asInternal

public *MessageBuilder* **asInternal** ()

asNote

public *MessageBuilder* **asNote** ()

asParser

public *MessageBuilder* **asParser** ()

asTransform

public *MessageBuilder* **asTransform** ()

asWarning

public *MessageBuilder* **asWarning** ()

build

public *IMessage* **build** ()

create

public static *MessageBuilder* **create** ()

withException

public *MessageBuilder* **withException** (*Throwable* exception)

withMessage

public *MessageBuilder* **withMessage** (*String* message)

withRegion

public *MessageBuilder* **withRegion** (*ISourceRegion* region)

withSeverity

public *MessageBuilder* **withSeverity** (*MessageSeverity* severity)

withSource

public *MessageBuilder* **withSource** (*FileObject source*)

withType

public *MessageBuilder* **withType** (*MessageType type*)

MessageCategory

public class **MessageCategory**

Fields

name

public final *String* **name**

Constructors

MessageCategory

public **MessageCategory** (*String name*)

Methods

equals

public boolean **equals** (*Object obj*)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

MessageFactory

public class **MessageFactory**

Methods

newAnalysisError

public static *Message* **newAnalysisError** (*FileObject* resource, *ISourceRegion* region, *String* msg, *Throwable* cause)

newAnalysisErrorAtTop

public static *Message* **newAnalysisErrorAtTop** (*FileObject* resource, *String* msg, *Throwable* cause)

newAnalysisMessage

public static *Message* **newAnalysisMessage** (*FileObject* resource, *ISourceRegion* region, *String* msg, *MessageSeverity* severity, *Throwable* cause)

newAnalysisMessageAtTop

public static *Message* **newAnalysisMessageAtTop** (*FileObject* resource, *String* msg, *MessageSeverity* severity, *Throwable* cause)

newAnalysisNote

public static *Message* **newAnalysisNote** (*FileObject* resource, *ISourceRegion* region, *String* msg, *Throwable* cause)

newAnalysisNoteAtTop

public static *Message* **newAnalysisNoteAtTop** (*FileObject* resource, *String* msg, *Throwable* cause)

newAnalysisWarning

public static *Message* **newAnalysisWarning** (*FileObject* resource, *ISourceRegion* region, *String* msg, *Throwable* cause)

newAnalysisWarningAtTop

public static *Message* **newAnalysisWarningAtTop** (*FileObject* resource, *String* msg, *Throwable* cause)

newAtTop

public static *Message* **newAtTop** (*FileObject* resource, *String* msg, *MessageType* type, *MessageSeverity* severity, *Throwable* cause)

newBuilderErrorAtTop

public static *Message* **newBuilderErrorAtTop** (FileObject *resource*, String *msg*, Throwable *cause*)

newBuilderWarningAtTop

public static *Message* **newBuilderWarningAtTop** (FileObject *resource*, String *msg*, Throwable *cause*)

newErrorAtTop

public static *Message* **newErrorAtTop** (FileObject *resource*, String *msg*, *MessageType* *type*, Throwable *cause*)

newMessage

public static *Message* **newMessage** (FileObject *resource*, *ISourceRegion* *region*, String *msg*, *MessageSeverity* *severity*, *MessageType* *type*, Throwable *cause*)

newNoteAtTop

public static *Message* **newNoteAtTop** (FileObject *resource*, String *msg*, *MessageType* *type*, Throwable *cause*)

newParseError

public static *Message* **newParseError** (FileObject *resource*, *ISourceRegion* *region*, String *msg*, Throwable *cause*)

newParseErrorAtTop

public static *Message* **newParseErrorAtTop** (FileObject *resource*, String *msg*, Throwable *cause*)

newParseMessage

public static *Message* **newParseMessage** (FileObject *resource*, *ISourceRegion* *region*, String *msg*, *MessageSeverity* *severity*, Throwable *cause*)

newParseWarning

public static *Message* **newParseWarning** (FileObject *resource*, *ISourceRegion* *region*, String *msg*, Throwable *cause*)

newParseWarningAtTop

public static *Message* **newParseWarningAtTop** (FileObject *resource*, String *msg*, Throwable *cause*)

newWarningAtTop

public static *Message* **newWarningAtTop** (*FileObject* resource, *String* msg, *MessageType* type, *Throwable* cause)

MessageSeverity

public enum **MessageSeverity**

Enum Constants

ERROR

public static final *MessageSeverity* **ERROR**

NOTE

public static final *MessageSeverity* **NOTE**

WARNING

public static final *MessageSeverity* **WARNING**

MessageType

public enum **MessageType**

Enum Constants

ANALYSIS

public static final *MessageType* **ANALYSIS**

INTERNAL

public static final *MessageType* **INTERNAL**

PARSER

public static final *MessageType* **PARSER**

TRANSFORMATION

public static final *MessageType* **TRANSFORMATION**

MessageUtils

public class **MessageUtils**

Methods

containsSeverity

public static boolean **containsSeverity** (*Iterable<IMessage> messages*, *MessageSeverity severity*)

highestSeverity

public static *MessageSeverity* **highestSeverity** (*Iterable<IMessage> messages*)

StreamMessagePrinter

public class **StreamMessagePrinter** implements *IMessagePrinter*
 Message printer implementation that prints detailed messages to a stream.

Constructors

StreamMessagePrinter

public **StreamMessagePrinter** (*ISourceTextService sourceTextService*, boolean *printHighlight*, boolean *printExceptions*, *OutputStream infoStream*, *OutputStream warnStream*, *OutputStream errorStream*)

StreamMessagePrinter

public **StreamMessagePrinter** (*ISourceTextService sourceTextService*, boolean *printHighlight*, boolean *printExceptions*, *ILogger logger*)

Methods

print

public void **print** (*IMessage message*, boolean *pardoned*)

print

public void **print** (*FileObject source*, *String message*, *Throwable e*, boolean *pardoned*)

print

public void **print** (*IProject project*, *String message*, *Throwable e*, boolean *pardoned*)

printSummary

```
public void printSummary ()
```

WithLocationStreamMessagePrinter

public class **WithLocationStreamMessagePrinter** implements *IMessagePrinter*

Prints note, warning, and error messages similar to large compilers such as GCC or Clang. That is, the message comes with filename, line, column, and severity. Also the affected code is underlined with carets (^).

Constructors

WithLocationStreamMessagePrinter

```
public WithLocationStreamMessagePrinter (ISourceTextService sourceTextService, IProjectService  
projectService, OutputStream outputStream)
```

Methods

print

```
public void print (IMessage message, boolean pardoned)
```

print

```
public void print (FileObject resource, String message, Throwable e, boolean pardoned)
```

print

```
public void print (IProject project, String message, Throwable e, boolean pardoned)
```

printSummary

```
public void printSummary ()
```

org.metaborg.core.outline

IOutline

```
public interface IOutline
```

Interface representing an outline.

Methods

expandTo

int **expandTo** ()

Returns Automatically expand the outline returned levels deep.

roots

Iterable<*IOutlineNode*> **roots** ()

Returns Root nodes of the outline.

IOutlineNode

public interface **IOutlineNode**

Interface representing a node in an outline tree view.

Methods

icon

FileObject **icon** ()

Returns File object containing an icon, or null if there is no icon.

label

String **label** ()

Returns Label

nodes

Iterable<*IOutlineNode*> **nodes** ()

Returns Sub nodes

origin

ISourceRegion **origin** ()

Returns Region in the source text this node originates from, or null if no region is available.

parent

IOutlineNode **parent** ()

Returns Parent node, or null if this is a root.

IOutlineService

public interface **IOutlineService**<P extends IParseUnit, A extends IAnalyzeUnit>
 Interface for creating outlines.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.

Methods

available

boolean **available** (*ILanguageImpl langImpl*)
 Checks if outlining is available for given language implementation.

Parameters

- **langImpl** – Language implementation to check.

Returns True if outlining is available, false if not.

outline

IOutline **outline** (P *result*)
 Creates an outline from given parse unit.

Parameters

- **result** – Parsed result.

Throws

- *MetaborgException* – When creating an outline fails unexpectedly.

Returns Created outline, or null if the outline is empty.

outline

IOutline **outline** (A *result*)
 Creates an outline from given analyze unit.

Parameters

- **result** – Analyzed result.

Throws

- *MetaborgException* – When creating an outline fails unexpectedly.

Returns Created outline, or null if the outline is empty.

Outline

public class **Outline** implements *IOutline*

Fields

expandTo

public final int **expandTo**

roots

public final *Iterable*<*IOutlineNode*> **roots**

Constructors

Outline

public **Outline** (*Iterable*<*IOutlineNode*> roots, int expandTo)

Methods

expandTo

public int **expandTo** ()

roots

public *Iterable*<*IOutlineNode*> **roots** ()

OutlineNode

public class **OutlineNode** implements *IOutlineNode*

Constructors

OutlineNode

public **OutlineNode** (*String* label, *FileObject* icon, *ISourceRegion* origin, *IOutlineNode* parent)

Methods

addChild

public void **addChild** (*IOutlineNode* child)

icon

public *FileObject* **icon** ()

label

public *String* **label** ()

nodes

public *Iterable*<*IOutlineNode*> **nodes** ()

origin

public *ISourceRegion* **origin** ()

parent

public *IOutlineNode* **parent** ()

toString

public *String* **toString** ()

org.metaborg.core.plugin

IModulePluginLoader

public interface **IModulePluginLoader**

Loads static *Module* plugins which can be passed to a Guice *Injector*.

Methods

modules

Iterable<*Module*> **modules** ()

Returns All modules provided by plugins.

IServiceModulePlugin

public interface **IServiceModulePlugin**

Plugin that creates *Modules* that are passed to Metaborg's Guice *Injector* at startup.

Methods

modules

`Iterable<Module> modules ()`

Returns All modules provided by this plugin.

InjectorFactory

public class **InjectorFactory**

Utility methods for creating Guice `Injector` instances.

Methods

create

public static `Injector` **create** (`Iterable<Module> modules`)

create

public static `Injector` **create** (`Module... modules`)

createChild

public static `Injector` **createChild** (`Injector parent`, `Iterable<Module> modules`)

createChild

public static `Injector` **createChild** (`Injector parent`, `Module... modules`)

modules

public static `Iterable<Module> modules` (`IModulePluginLoader loader`, `Iterable<Module> modules`)

modules

public static `Iterable<Module> modules` (`IModulePluginLoader loader`, `Module... modules`)

ServiceModulePluginLoader

public class **ServiceModulePluginLoader**<T extends `IServiceModulePlugin`> implements `IModulePluginLoader`
Module plugin loader using Java's `ServiceLoader`.

Constructors

ServiceModulePluginLoader

```
public ServiceModulePluginLoader (Class<T> serviceClass)
```

Methods

modules

```
public Iterable<Module> modules ()
```

org.metaborg.core.processing

BlockingProcessor

public class **BlockingProcessor**<P extends *IParseUnit*, A extends *IAnalyzeUnit*, AU extends *IAnalyzeUnitUpdate*, T extends *ITrajectory*> implements *IProcessor* Processor implementation that uses *BlockingTask* as task implementation. Tasks execute and block when scheduled.

Constructors

BlockingProcessor

```
public BlockingProcessor (IDialectProcessor dialectProcessor, IBuilder<P, A, AU, T> builder, ILanguageChangeProcessor languageChangeProcessor)
```

Methods

build

```
public ITask<? extends IBuildOutput<P, A, AU, T>> build (BuildInput input, IProgress progressReporter, ICancel cancellationToken)
```

clean

```
public ITask<?> clean (CleanInput input, IProgress progressReporter, ICancel cancellationToken)
```

languageChange

```
public ITask<?> languageChange (LanguageComponentChange change)
```

languageChange

```
public ITask<?> languageChange (LanguageImplChange change)
```

updateDialects

public *ITask*<?> **updateDialects** (*FileObject* location, *Iterable*<*ResourceChange*> changes)

BlockingTask

public class **BlockingTask**<T> implements *ITask*<T>

Task implementation that executes a function in blocking way when scheduled. Does not support cancellation.

Constructors

BlockingTask

public **BlockingTask** (*Func0*<T> func)

Methods

block

public *ITask*<T> **block** ()

cancel

public void **cancel** ()

cancel

public void **cancel** (int *killTimeout*)

cancelled

public boolean **cancelled** ()

completed

public boolean **completed** ()

result

public T **result** ()

schedule

public *ITask*<T> **schedule** ()

CancellationToken

public class **CancellationToken** implements ICancel
Simple cancellation token implementation.

Methods

cancel

public void **cancel** ()

cancelled

public boolean **cancelled** ()

throwIfCancelled

public void **throwIfCancelled** ()

ICancellationToken

public interface **ICancellationToken** extends ICancel
Interface for figuring out if something has been cancelled.

ILanguageChangeProcessor

public interface **ILanguageChangeProcessor**
Interface for processing language change events. Used internally only, clients should use a *IProcessorRunner* which handles language change events automatically.

Methods

processComponentChange

void **processComponentChange** (*LanguageComponentChange change*)
Process given language component change event.

Parameters

- **change** – Language implementation component event to process.

processImplChange

void **processImplChange** (*LanguageImplChange change*)
Process given language implementation change event.

Parameters

- **change** – Language implementation change event to process.

IProcessor

public interface **IProcessor**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITransformUnit>
Interface for creating processing tasks. Used internally, clients should use a *IProcessorRunner*.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.
- **<AU>** – Type of analyze unit updates.
- **<T>** – Type of transform units.

Methods

build

ITask<? extends *IBuildOutput*<P, A, AU, T>> **build** (*BuildInput* input, *IProgress* progressReporter, *ICancel* cancellationToken)

See also: *IProcessorRunner*.*build* (*BuildInput*, *IProgress*, *ICancel*)

clean

ITask<?> **clean** (*CleanInput* input, *IProgress* progressReporter, *ICancel* cancellationToken)

See also: *IProcessorRunner*.*clean* (*CleanInput*, *IProgress*, *ICancel*)

languageChange

ITask<?> **languageChange** (*LanguageComponentChange* change)

Creates a task that processes given language component change.

Parameters

- **change** – Language implementation change to process.

Returns Task that processes given language change.

languageChange

ITask<?> **languageChange** (*LanguageImplChange* change)

Creates a task that processes given language implementation change.

Parameters

- **change** – Language implementation change to process.

Returns Task that processes given language change.

updateDialects

ITask<?> **updateDialects** (*FileObject* location, *Iterable*<*ResourceChange*> changes)

See also: *IProcessorRunner*.*updateDialects* (*FileObject*, *Iterable*)

IProcessorRunner

public interface **IProcessorRunner**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITransformUnit>
 Interface for language processing. Handles building and cleaning on-demand, and language change events automatically.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.
- **<AU>** – Type of analyze unit updates.
- **<T>** – Type of transform units.

Methods

build

ITask<? extends *IBuildOutput*<P, A, AU, T>> **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)
 Creates a task that builds with given build input.

Parameters

- **input** – Build input to use.
- **progress** – Progress reporter, or null to use a processor-specific implementation for progress reporting.
- **cancel** – Cancellation token, or null to use a processor-specific implementation for cancellation.

Returns Task that builds with given input, and has the build output as result. Schedule the task and wait for it to complete to get the build output.

clean

ITask<?> **clean** (*CleanInput* input, *IProgress* progress, *ICancel* cancel)
 Creates a task that cleans with given clean input.

Parameters

- **input** – Clean input to use.
- **progress** – Progress reporter, or null to use a processor-specific implementation for progress reporting.
- **cancel** – Cancellation token, or null to use a processor-specific implementation for cancellation.

Returns Task that cleans with given input.

updateDialects

ITask<?> **updateDialects** (*FileObject* location, *Iterable*<*ResourceChange*> changes)
 Creates a task that updates dialects using given changes.

Parameters

- **location** – Location to process changes at.
- **changes** – Resource changes to process.

Returns Task that processes dialect updates.

IProgressReporter

public interface **IProgressReporter** extends IProgress
Interface for progress reporting.

ITask

public interface **ITask**<T>
Interface for asynchronous task with cancellation.

Parameters

- <T> – Type of the result.

Methods

block

ITask<T> **block** ()
Blocks until the task has been completed or cancelled, and return itself.

Throws

- **InterruptedException** – When the task has been cancelled while blocking.

cancel

void **cancel** ()
Request cancellation.

cancel

void **cancel** (int *forceTimeout*)
Request cancellation, force cancel after after *stopTimeout* milliseconds.

Parameters

- **forceTimeout** – Timeout in milliseconds after which the cancellation is forced.

cancelled

boolean **cancelled** ()
Returns If the task has been cancelled.

completed

boolean **completed** ()

Returns If the task has been completed.

result

T **result** ()

Returns Result of the task, or null if it has been cancelled, or not completed yet.

schedule

ITask<T> **schedule** ()

Schedule this task and returns itself.

LanguageChangeProcessor

public class **LanguageChangeProcessor** implements *ILanguageChangeProcessor*
Default implementation for the language change processor.

Constructors

LanguageChangeProcessor

public **LanguageChangeProcessor** (*IDialectProcessor* dialectProcessor, *IContextProcessor* contextProcessor, *IEditorRegistry* editorRegistry, *Set*<*ILanguageCache*> languageCaches)

Methods

addedComponent

protected void **addedComponent** (*ILanguageComponent* component)
Component was added

Parameters

- **component** – Added component

addedImpl

protected void **addedImpl** (*ILanguageImpl* impl)
Implementation was added

Parameters

- **impl** – Added implementation

processComponentChange

public void **processComponentChange** (*LanguageComponentChange* change)

processImplChange

public void **processImplChange** (*LanguageImplChange* change)

reloadedComponent

protected void **reloadedComponent** (*ILanguageComponent* oldComponent, *ILanguageComponent* newComponent)

Component was reloaded

Parameters

- **oldComponent** – Component before the reload
- **newComponent** – Component after the reload

reloadedImpl

protected void **reloadedImpl** (*ILanguageImpl* impl)

Implementation was reloaded

Parameters

- **impl** – Reloaded implementation

removedComponent

protected void **removedComponent** (*ILanguageComponent* component)

Component was removed

Parameters

- **component** – Removed component

removedImpl

protected void **removedImpl** (*ILanguageImpl* impl)

Implementation was removed

Parameters

- **impl** – Removed implementation

NullCancel

public class **NullCancel** implements ICancel
Cancellation token implementation that never cancels.

Methods

cancel

public void **cancel** ()

cancelled

public boolean **cancelled** ()

throwIfCancelled

public void **throwIfCancelled** ()

NullCancellationToken

public class **NullCancellationToken** extends *NullCancel* implements ICancel
Cancellation token implementation that never cancels.

NullProgress

public class **NullProgress** implements IProgress
Progress reporter implementation that ignores all progress reporting.

Methods

setDescription

public void **setDescription** (*String description*)

setWorkRemaining

public void **setWorkRemaining** (int *ticks*)

subProgress

public IProgress **subProgress** (int *ticks*)

work

public void **work** (int *ticks*)

NullProgressReporter

public class **NullProgressReporter** extends *NullProgress* implements IProgress
Progress reporter implementation that ignores all progress reporting.

ProcessorRunner

public class **ProcessorRunner**<P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate, T extends ITranslatingUnit> implements IProcessor<P, A, AU, T>
Default implementation for the processor runner.

Constructors

ProcessorRunner

public **ProcessorRunner** (*IProcessor*<P, A, AU, T> *processor*, *ILanguageService* *languageService*)

Methods

build

public *ITask*<? extends *IBuildOutput*<P, A, AU, T>> **build** (*BuildInput* *input*, IProgress *progress*, ICancel *cancel*)

clean

public *ITask*<?> **clean** (*CleanInput* *input*, IProgress *progress*, ICancel *cancel*)

updateDialects

public *ITask*<?> **updateDialects** (*FileObject* *location*, *Iterable*<*ResourceChange*> *changes*)

org.metaborg.core.processing.analyze

AnalysisChange

public class **AnalysisChange**<A extends IAnalyzeUnit>

Fields

exception

public final *AnalysisException* **exception**

kind

public final *UpdateKind* **kind**

resource

public final *FileObject* **resource**

result

public final A **result**

Constructors

AnalysisChange

protected **AnalysisChange** (*UpdateKind* kind, *FileObject* resource, A result, *AnalysisException* exception)

Methods

error

public static <A extends IAnalyzeUnit> *AnalysisChange*<A> **error** (*FileObject* resource, *AnalysisException* exception)

Creates an analysis change that represents an error that occurred while updating an analysis result.

Parameters

- **resource** – Changed resource.
- **exception** – Error that occurred.

Returns Analysis change.

invalidate

public static <A extends IAnalyzeUnit> *AnalysisChange*<A> **invalidate** (*FileObject* resource)

Creates an analysis change that represents an invalidation of given resource.

Parameters

- **resource** – Resource to invalidate.

Returns Analysis change.

remove

public static <A extends IAnalyzeUnit> *AnalysisChange*<A> **remove** (*FileObject* resource)

Creates an analysis change that represents removal of an analysis result.

Parameters

- **resource** – Resource that was removed.

Returns Analysis change.

update

public static <A extends IAnalyzeUnit> *AnalysisChange*<A> **update** (*FileObject* resource, A result)
Creates an analysis change that represents an update to the analysis result.

Parameters

- **resource** – Changed resource.
- **result** – Updated analysis result.
- **parentResult** – Parent of the updated analysis result.

Returns Analysis change.

AnalysisResultProcessor

public class **AnalysisResultProcessor**<I extends IInputUnit, P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnal

Constructors

AnalysisResultProcessor

public **AnalysisResultProcessor** (*IAnalysisService*<P, A, AU> analysisService, *IParseResultRe-*
quester<I, P> parseResultRequester)

Methods

error

public void **error** (*FileObject* resource, *AnalysisException* exception)

error

public void **error** (*Iterable*<P> results, *AnalysisException* exception)

get

public A **get** (*FileObject* resource)

invalidate

public void **invalidate** (*FileObject* resource)

invalidate

public void **invalidate** (*Iterable*<P> *results*)

remove

public void **remove** (*FileObject* *resource*)

request

public Observable<A> **request** (*I* *input*, *IContext* *context*)

update

public void **update** (*A* *result*, *Set*<*FileName*> *removedResources*)

updates

public Observable<*AnalysisChange*<A>> **updates** (*FileObject* *resource*)

IAnalysisResultProcessor

public interface **IAnalysisResultProcessor**<*I* extends *IInputUnit*, *P* extends *IParseUnit*, *A* extends *IAnalyzeUnit*> extends *IAnalysisResultRequester*, *IAnalysisResultUpdater*.
Typedef interface for combining *IAnalysisResultRequester* and *IAnalysisResultUpdater*.

IAnalysisResultRequester

public interface **IAnalysisResultRequester**<*I* extends *IInputUnit*, *A* extends *IAnalyzeUnit*>
Interface for requesting single analysis results or updates for analysis results.

Parameters

- <P> – Type of parse units.
- <A> – Type of analyze units.

Methods

get

A **get** (*FileObject* *resource*)

Returns Latest analysis result for given resource, or null if there is none.

request

Observable<A> **request** (I input, IContext context)

Requests the analysis result for given resource. When subscribing to the returned observer, it always returns a single element; the latest analysis result, or pushes an error if an error occurred while getting it. If the analysis result is cached, the observable will immediately push it. If the analysis result has been invalidated (when it is in the process of being updated), it will be pushed when it has been updated. If there is no analysis result yet, it will request a parse result, analyze the resource in given context, and push the analysis result. The simplest way to get the analysis result is to wait for it: `result = requester.request(resource, context, text).toBlocking().single();`

Parameters

- **resource** – Resource to get the analysis result for.
- **context** – Context in which the analysis should be performed, in case there is no analysis result for given resource.
- **text** – Text which should be parsed, in case there is no parse result for given resource.

Returns Cold observable which pushes a single element when subscribed; the latest analysis result, or pushes an error if an error occurred while getting it.

updates

Observable<AnalysisChange<A>> **updates** (FileObject resource)

Returns an observable that pushes analysis result updates to subscribers for given resource.

Parameters

- **resource** – Resource to push updates for.

Returns Hot observable that pushes updates to subscribers for given resource.

IAnalysisResultUpdater

public interface **IAnalysisResultUpdater**<P extends IParseUnit, A extends IAnalyzeUnit>

Interface for updating analysis results which are requested by an *IAnalysisResultRequester*.

Parameters

- <P> – Type of parse units.
- <A> – Type of analyze units.

Methods

error

void **error** (FileObject resource, AnalysisException exception)

Sets an analysis error for given resource. Pushes the analysis error to subscribed requests.

Parameters

- **resource** – Resource to set an analysis error for.
- **exception** – Analysis error to set.

error

void **error** (*Iterable<P> results*, *AnalysisException exception*)

Sets an analysis error for sources in given parse result. Pushes analysis errors to subscribed requests.

Parameters

- **results** – Parse results with sources to set an analysis error for.
- **exception** – Analysis error to set.

invalidate

void **invalidate** (*FileObject resource*)

Invalidates the analysis result for given resource. Must be followed by a call to *update* or *error* for that resource eventually. Failing to do so will block any request made while resource was in an invalid state.

Parameters

- **resource** – Resource to invalidate.

invalidate

void **invalidate** (*Iterable<P> results*)

Invalidates the analysis results for sources in given parse results. Must be followed by a call to *update* or *error* for those resources eventually. Failing to do so will block any requests made while resources were in invalid states.

Parameters

- **results** – Parse results with sources to invalidate.

remove

void **remove** (*FileObject resource*)

Removes cached analysis results for given resource.

Parameters

- **resource** – Resource to remove cached analysis results for.

update

void **update** (*A result*, *Set<FileName> removedResources*)

Updates the analysis result for a single resource. Pushes the analysis result to subscribed requests. Removes cached analysis results for given removed resource.

Parameters

- **result** – Result to update.
- **parentResult** – Parent of the result to update.
- **removedResources** – Set of resources that have actually been removed instead of updated. Used for legacy analysis where removal is indicated by an empty tuple as parse result.

org.metaborg.core.processing.parse

IParseResultProcessor

public interface **IParseResultProcessor**<I extends IInputUnit, P extends IParseUnit> extends *IParseResultRequester*<I, P>, *IParseResultUpdater*
 Typedef interface for combining *IParseResultRequester* and *IParseResultUpdater*.

IParseResultRequester

public interface **IParseResultRequester**<I extends IInputUnit, P extends IParseUnit>
 Interface for requesting single parse results or updates for parse results.

Methods

get

P **get** (*FileObject resource*)

Returns Latest parse result for given resource, or null if there is none.

request

Observable<P> **request** (I *unit*)

Requests the parse result for given resource. When subscribing to the returned observer, it always returns a single element; the latest parse result, or pushes an error if an error occurred while getting it. If the parse result is cached, the observable will immediately push it. If the parse result has been invalidated (when it is in the process of being updated), it will be pushed when it has been updated. If there is no parse result yet, it will parse with given text and push the parse result. The simplest way to get the parse result is to wait for it: `result = requester.request(resource, language, text).toBlocking().single();`

Parameters

- **resource** – Resource to get the parse result for.
- **language** – Language given text should be parsed with, in case there is no parse result for given resource.
- **text** – Text which should be parsed, in case there is no parse result for given resource.

Returns Cold observable which pushes a single element when subscribed; the latest parse result, or pushes an error if an error occurred while getting it.

updates

Observable<*ParseChange*<P>> **updates** (*FileObject resource*)

Returns an observable that pushes parse result updates to subscribers for given resource.

Parameters

- **resource** – Resource to push updates for.

Returns Hot observable that pushes updates to subscribers for given resource.

IParseResultUpdater

public interface **IParseResultUpdater**<P extends IParseUnit>

Interface for updating parse results which are requested by an *IParseResultRequester*.

Methods

error

void **error** (*FileObject resource*, *ParseException exception*)

Sets a parse error for given resource. Pushes the parse error to subscribed requests.

Parameters

- **resource** – Resource to set a parse error for.
- **exception** – Parse error to set.

invalidate

void **invalidate** (*FileObject resource*)

Invalidates the parse result for given resource. Must be followed by a call to *update* or *error* for that resource eventually. Failing to do so will block any request made while resource was in an invalid state.

Parameters

- **resource** – Resource to invalidate.

remove

void **remove** (*FileObject resource*)

Removes cached parse results for given resource.

Parameters

- **resource** – Resource to remove cached parse results for.

update

void **update** (*FileObject resource*, P *unit*)

Updates the parse result for a single resource. Pushes the parse result to subscribed requests.

Parameters

- **result** – Result to update.
- **result** – Parent of the result to update.

ParseChange

public class **ParseChange**<P extends IParseUnit>

Fields

exception

public final *ParseException* **exception**

kind

public final *UpdateKind* **kind**

resource

public final *FileObject* **resource**

unit

public final P **unit**

Constructors

ParseChange

protected **ParseChange** (*UpdateKind* kind, *FileObject* resource, P unit, *ParseException* exception)

Methods

error

public static <P extends *IParseUnit*> *ParseChange*<P> **error** (*ParseException* exception)
Creates a parse change that represents an error that occurred while updating a parse result.

Parameters

- **exception** – Error that occurred.

Returns Parse change.

invalidate

public static <P extends *IParseUnit*> *ParseChange*<P> **invalidate** (*FileObject* resource)
Creates a parse change that represents an invalidation of given resource.

Parameters

- **resource** – Resource to invalidate.

Returns Parse change.

remove

public static <P extends IParseUnit> *ParseChange*<P> **remove** (*FileObject* resource)
Creates a parse change that represents removal of a parse result.

Parameters

- **resource** – Resource that was removed.

Returns Parse change.

update

public static <P extends IParseUnit> *ParseChange*<P> **update** (P unit)
Creates a parse change that represents an update to the parse result.

Parameters

- **result** – Updated parse result.

Returns Parse change.

ParseResultProcessor

public class **ParseResultProcessor**<I extends IInputUnit, P extends IParseUnit> implements *IParseResultProcessor*<I, P>

Constructors

ParseResultProcessor

public **ParseResultProcessor** (*ISyntaxService*<I, P> syntaxService)

Methods

error

public void **error** (*FileObject* resource, *ParseException* exception)

get

public P **get** (*FileObject* resource)

invalidate

public void **invalidate** (*FileObject* resource)

remove

public void **remove** (*FileObject* resource)

request

public Observable<P> **request** (I *input*)

update

public void **update** (FileObject *resource*, P *unit*)

updates

public Observable<ParseChange<P>> **updates** (FileObject *resource*)

org.metaborg.core.project

ConfigBasedProjectService

public class **ConfigBasedProjectService** implements *IPProjectService*

Constructors

ConfigBasedProjectService

public **ConfigBasedProjectService** (*ISourceTextService* *sourceTextService*, *IPProjectConfigService* *projectConfigService*)

Methods

get

public *IPProject* **get** (FileObject *resource*)

DummyProjectService

public class **DummyProjectService** implements *IPProjectService*

Methods

get

public *IPProject* **get** (FileObject *resource*)

IPProject

public interface **IPProject**

Methods

config

IProjectConfig **config** ()

Gets the configuration of the project. The configuration is read only once when this class is instantiated. To get a new configuration, get a new instance of this class.

Returns Configuration of the project, or null when there is no configuration for this project.

location

FileObject **location** ()

Gets the location of the root folder of the project.

Returns Location of the root folder.

IProjectService

public interface **IProjectService**

Interface for retrieving projects of resources.

Methods

get

IProject **get** (*FileObject resource*)

Retrieves the project of given resource.

Parameters

- **resource** – Resource to retrieve project for.

Returns Retrieved project, or null if no project could be retrieved.

ISimpleProjectService

public interface **ISimpleProjectService** extends *IProjectService*

Specialization of the *IProjectService* that supports creating and removing projects. Project instances are returned based on the file names of projects and resources. Nested projects are not supported.

Methods

create

IProject **create** (*FileObject location*)

Creates a project at given location.

Throws

- *MetaborgException* – When a project already exists at given location, or when given location is nested in another project.

Returns Created project.

remove

void **remove** (*IProject project*)

Removes given project.

Parameters

- **project** – Project to remove.

Throws

- *MetaborgException* – When given project does not exist in this project service.

NameUtil

public class **NameUtil**

Methods

isValidFileExtension

public static boolean **isValidFileExtension** (*String ext*)

toJavaId

public static *String* **toJavaId** (*String id*)

Project

public class **Project** implements *IProject*

A project.

Constructors

Project

public **Project** (*FileObject location*, *IProjectConfig config*)

Methods

config

public *IProjectConfig* **config** ()

location

```
public FileObject location ()
```

toString

```
public String toString ()
```

ProjectException

```
public class ProjectException extends MetaborgException
```

Constructors

ProjectException

```
public ProjectException ()
```

ProjectException

```
public ProjectException (String message)
```

ProjectException

```
public ProjectException (String message, Throwable cause)
```

ProjectException

```
public ProjectException (Throwable cause)
```

SimpleProjectService

```
public class SimpleProjectService implements ISimpleProjectService
```

Constructors

SimpleProjectService

```
public SimpleProjectService (ISourceTextService sourceTextService, IProjectConfigService project-  
ConfigService)
```


Methods

create

public *IProject* **create** (*FileObject location*)

get

public *IProject* **get** (*FileObject resource*)

remove

public void **remove** (*IProject project*)

SingleFileProjectService

public class **SingleFileProjectService** implements *IProjectService*

Creates a project from a single file with the parent directory as project location (if possible, otherwise just the file) and no config (== null). Never returns null for the project. Doesn't cache projects.

Methods

get

public *IProject* **get** (*FileObject resource*)

org.metaborg.core.resource

DefaultFileSystemManagerProvider

public class **DefaultFileSystemManagerProvider** implements *Provider<FileSystemManager>*

Guice provider for the VFS file system manager. Subclass and override the protected methods, and bind the provider in your Guice module, to customize the file providers.

Methods

addDefaultProvider

protected void **addDefaultProvider** (*DefaultFileSystemManager manager*)

addProviders

protected void **addProviders** (*DefaultFileSystemManager manager*)

get

public [FileSystemManager](#) **get** ()

setBaseFile

protected void **setBaseFile** ([DefaultFileSystemManager](#) *manager*)

IResourceChangeService

public interface **IResourceChangeService**
Interface for subscribing to resource changes.

Methods

changes

Observable<[ResourceChange](#)> **changes** ()
Returns an observable over resource changes. This returns a ‘hot’ observable, meaning that any changes that occurred before subscribing are NOT observed.

IResourceService

public interface **IResourceService** extends [AutoCloseable](#)
Interface for access to the virtual file system.

Methods

localFile

File **localFile** ([FileObject](#) *resource*)
Attempts to get a local file for given resource, or copies the resource to the local file system if it does not reside on the local file system.

Parameters

- **resource** – Resource to get a local file for.

Throws

- [MetaborgRuntimeException](#) – When given resource does not exist.

Returns Local file.

localFile

File **localFile** ([FileObject](#) *resource*, [FileObject](#) *dir*)
Attempts to get a local file for given resource, or copies the resource to the local file system at given directory if it does not reside on the local file system.

Parameters

- **resource** – Resource to get a local file for.
- **dir** – Directory to copy the resources to if they are not on a local filesystem. Must be on the local filesystem.

Throws

- *MetaborgRuntimeException* – When given resource does not exist.

Returns Local file.

localPath

File **localPath** (*FileObject resource*)

Attempts to get a local file handle for given resource.

Parameters

- **resource** – Resource to get a local file handle for.

Returns Local file handle, or null if given resource does not reside on the local file system.

resolve

FileObject **resolve** (*String uri*)

Returns a file system object for given (absolute or relative to the root) URI. The given URI will be encoded (, /, and : symbols will not be encoded) in its entirety. If your URI is already encoded, convert it to an [URI](#) and call *resolve (URI)* instead. See [FVS file systems](#) for examples of URIs.

Parameters

- **uri** – Absolute or relative to the root URI to resolve.

Throws

- *MetaborgRuntimeException* – When uri is invalid.

Returns File system object for given URI.

resolve

FileObject **resolve** (*File file*)

Returns a local file system object for given Java file system object.

Parameters

- **file** – Java file system object to resolve.

Throws

- *MetaborgRuntimeException* – When file is invalid.

Returns File system object for given Java file system object.

resolve

FileObject **resolve** (*URI uri*)

Returns a file system object for given Java URI object. See [FVS file systems](#) for examples of URIs.

Parameters

- **uri** – Java URI object to resolve.

Throws

- *MetaborgRuntimeException* – When uri is invalid.

Returns File system object for given Java URI object.

resolve

FileObject resolve (FileObject parent, String path)

Tries to resolve path as an absolute path first, if that fails, resolves path relative to parent. If path is absolute but does not have a scheme, it is assumed to be on the local file system.

Parameters

- **parent** – Parent file object to resolve relatively to, if path is a relative path.
- **path** – Path to resolve

Throws

- *MetaborgRuntimeException* – When absolute or relative resolution fails.

Returns File system object for given path.

resolveToName

FileName resolveToName (String uri)

Returns a file name for given URI. The given URI will be encoded (, /, and : symbols will not be encoded) in its entirety. If your URI is already encoded, convert it to an [URI](#) and call *resolveToName (URI)* instead. See [FVS file systems](#) for examples of URIs.

Parameters

- **uri** – URI to resolve to a name.

Throws

- *MetaborgRuntimeException* – When uri is invalid.

Returns File name for given URI.

resolveToName

FileName resolveToName (URI uri)

Returns a file name for given Java URI object. See [FVS file systems](#) for examples of URIs.

Parameters

- **uri** – Java URI object to resolve to a name.

Throws

- *MetaborgRuntimeException* – When uri is invalid.

Returns File name for given Java URI object.

root

`FileObject root ()`

Returns the root file system object.

Throws

- *MetaborgRuntimeException* – if an error occurs.

Returns The root file system object.

IResourceTreeChange

public interface **IResourceTreeChange**

Interface for changes on resource trees between two discrete points in time. A tree represents a change in a resource, and changes in child resources.

Methods

children

`Iterable<IResourceTreeChange> children ()`

Returns changes in children of the changed resource. Only child resources with changes will be returned. The returned changes are also trees, which can be traversed further.

kind

`ResourceChangeKind kind ()`

Returns the kind of change.

resource

`FileObject resource ()`

Returns the resource that has changed.

IdentifiedResourceChange

public class **IdentifiedResourceChange**

Resource change with an identified language and dialect.

Fields

change

public final *ResourceChange* **change**

Resource change.

dialect

public final *ILanguageImpl* **dialect**

Identified dialect of the resource change, or null if it does not have a dialect.

language

public final *ILanguageImpl* **language**

Identified language of the resource change.

Constructors

IdentifiedResourceChange

public **IdentifiedResourceChange** (*ResourceChange* change, *IdentifiedDialect* identifiedDialect)

IdentifiedResourceChange

public **IdentifiedResourceChange** (*ResourceChange* change, *IdentifiedResource* identifiedResource)

IdentifiedResourceChange

public **IdentifiedResourceChange** (*ResourceChange* change, *ILanguageImpl* dialect, *ILanguageImpl* language)

Methods

dialectOrLanguage

public *ILanguageImpl* **dialectOrLanguage** ()

Returns Dialect of the resource change, or the language if it does not belong to a dialect.

toString

public *String* **toString** ()

ResourceChange

public final class **ResourceChange** implements *Serializable*

Fields

from

public final [FileObject](#) **from**
Resource based on the value of *ResourceChange.kind*.

- *ResourceChangeKind.Rename*: resource it was renamed from.
- *ResourceChangeKind.Copy*: resource it was copied from.
- otherwise: null

kind

public final *ResourceChangeKind* **kind**
Kind of change.

resource

public final [FileObject](#) **resource**
Resource that has changed.

to

public final [FileObject](#) **to**
Resource based on the value of *ResourceChange.kind*.

- *ResourceChangeKind.Rename*: resource it was renamed to.
- *ResourceChangeKind.Copy*: resource it was copied to.
- otherwise: null

Constructors

ResourceChange

public **ResourceChange** ([FileObject](#) resource, *ResourceChangeKind* kind, [FileObject](#) renamedFrom, [FileObject](#) renamedTo)

ResourceChange

public **ResourceChange** ([FileObject](#) resource, *ResourceChangeKind* kind)

ResourceChange

public **ResourceChange** ([FileObject](#) resource)

Methods

toString

```
public String toString()
```

ResourceChangeKind

```
public enum ResourceChangeKind
```

Enum Constants

Copy

```
public static final ResourceChangeKind Copy
```

Create

```
public static final ResourceChangeKind Create
```

Delete

```
public static final ResourceChangeKind Delete
```

Modify

```
public static final ResourceChangeKind Modify
```

Rename

```
public static final ResourceChangeKind Rename
```

ResourceService

```
public class ResourceService implements IResourceService
```

Constructors

ResourceService

```
public ResourceService(FileSystemManager fileSystemManager, ClassLoader classLoader)
```


Methods

close

public void **close** ()

localFile

public File **localFile** (FileObject *resource*)

localFile

public File **localFile** (FileObject *resource*, FileObject *dir*)

localPath

public File **localPath** (FileObject *resource*)

resolve

public FileObject **resolve** (String *uri*)

resolve

public FileObject **resolve** (File *file*)

resolve

public FileObject **resolve** (URI *uri*)

resolve

public FileObject **resolve** (FileObject *parent*, String *path*)

resolveToName

public FileName **resolveToName** (String *uri*)

resolveToName

public FileName **resolveToName** (URI *uri*)

root

```
public FileObject root ()
```

ResourceUtils

```
public class ResourceUtils
```

Methods

find

```
public static Iterable<FileObject> find (FileObject base, FileSelector selector)
```

find

```
public static Iterable<FileObject> find (FileObject base)
```

toChanges

```
public static Iterable<ResourceChange> toChanges (Iterable<FileObject> resources, ResourceChangeKind  
                                                    kind)
```

org.metaborg.core.source

AffectedSourceHelper

```
public class AffectedSourceHelper  
    Helper class for highlighting code in consoles.
```

Methods

affectedSourceText

```
public static String affectedSourceText (ISourceRegion region, String sourceText, String indentation)  
    Returns a multi-line string that highlights the affected source code region, given the full source text and inden-  
    tation to use.
```

Parameters

- **region** – Region in the source text that should be highlighted.
- **sourceText** – Full source text.
- **indentation** – Indentation to add to each line in the resulting string.

Returns Multi-line string that highlights the affected source code region.

ISourceLocation

public interface **ISourceLocation**
Represents a region in a resource.

Methods

region

ISourceRegion **region** ()

Returns Region in the source file.

resource

FileObject **resource** ()

Returns Resource of the source file, or null if the source file could not be determined.

ISourceRegion

public interface **ISourceRegion** extends *Serializable*

Interface for representing a finite region in source code text. A region has:

- Offset - number of characters from the beginning of the source text, with interval [0,#chars).
- Row - row or line in the source text, with interval [0,#rows), or -1 if the row is not supported.
- Column - column in the source text, with interval [0,#columns@row), or -1 if the column is not supported.

Both the starting and ending numbers are inclusive.

Methods

contains

boolean **contains** (*ISourceRegion* *region*)

Checks if this region contains given region.

Parameters

- **region** – Other region to check.

Returns True if this region contains given region, false otherwise.

endColumn

int **endColumn** ()

Returns Inclusive ending column in the source text with interval [0,#columns@row), or -1 if not supported by this source region.

endOffset

int **endOffset** ()

Returns Inclusive ending offset, the number of characters from the beginning of the source text with interval [0,#chars).

endRow

int **endRow** ()

Returns Inclusive ending row or line in the source text with interval [0,#rows), or -1 if not supported by this source region.

length

int **length** ()

Returns Length of the source region.

startColumn

int **startColumn** ()

Returns Inclusive starting column in the source text with interval [0,#columns@row), or -1 if not supported by this source region.

startOffset

int **startOffset** ()

Returns Inclusive starting offset, the number of characters from the beginning of the source text with interval [0,#chars).

startRow

int **startRow** ()

Returns Inclusive starting row or line in the source text with interval [0,#rows), or -1 if not supported by this source region.

ISourceTextService

public interface **ISourceTextService**

Interface for retrieving text of resources.

Methods

text

String **text** (FileObject *resource*)

Retrieves the text for given resource.

Parameters

- **resource** – Resource to retrieve text for.

Returns Text for given resource.

SourceLocation

public class **SourceLocation** implements *ISourceLocation*

Fields

region

public final *ISourceRegion* **region**

resource

public final FileObject **resource**

Constructors

SourceLocation

public **SourceLocation** (*ISourceRegion* *region*, FileObject *resource*)

Methods

equals

public boolean **equals** (Object *obj*)

hashCode

public int **hashCode** ()

region

public *ISourceRegion* **region** ()

resource

public `FileObject` **resource** ()

toString

public `String` **toString** ()

SourceRegion

public class **SourceRegion** implements *ISourceRegion*

Constructors

SourceRegion

public **SourceRegion** (int *offset*)

Creates a zero-length source region from a single offset. Row and column fields are set to -1 to indicate that they are not supported.

Parameters

- **offset** – Offset in the source file.

SourceRegion

public **SourceRegion** (int *startOffset*, int *endOffset*)

Creates a source region from a starting and ending offset. Row and column fields are set to -1 to indicate that they are not supported.

Parameters

- **startOffset** – Starting offset in the source file.
- **endOffset** – Ending offset in the source file.

SourceRegion

public **SourceRegion** (int *startOffset*, int *startRow*, int *startColumn*, int *endOffset*, int *endRow*, int *endColumn*)

Methods

contains

public boolean **contains** (*ISourceRegion* *region*)

endColumn

public int **endColumn** ()

endOffset

public int **endOffset** ()

endRow

public int **endRow** ()

equals

public boolean **equals** (Object *obj*)

hashCode

public int **hashCode** ()

length

public int **length** ()

startColumn

public int **startColumn** ()

startOffset

public int **startOffset** ()

startRow

public int **startRow** ()

toString

public String **toString** ()

SourceTextService

public class **SourceTextService** implements *ISourceTextService*

Methods

text

public [String](#) **text** ([FileObject](#) *resource*)

org.metaborg.core.style

ICategorizerService

public interface **ICategorizerService**<P extends [IParseUnit](#), A extends [IAnalyzeUnit](#), F>
Interface for categorization of parse and analysis results.

Parameters

- **<P>** – Type of parse units
- **<A>** – Type of analyze units.
- **<F>** – Type of fragments.

Methods

categorize

[Iterable](#)<[IRegionCategory](#)<F>> **categorize** ([ILanguageImpl](#) *langImpl*, P *result*)
Returns a categorization of given parse result.

Parameters

- **langImpl** – Language implementation that contains the categorization logic.
- **parseResult** – Parse result to categorize.

Returns [Iterable](#) over categories assigned to regions of the source text. Regions do not overlap and are iterated over in ascending order.

categorize

[Iterable](#)<[IRegionCategory](#)<F>> **categorize** ([ILanguageImpl](#) *langImpl*, A *result*)
Returns a categorization of given analysis result.

Parameters

- **langImpl** – Language implementation that contains the categorization logic.
- **analysisResult** – Analysis result to categorize.

Returns [Iterable](#) over categories assigned to regions of the source text. Regions do not overlap and are iterated over in ascending order.

ICategory

public interface **ICategory** extends [Serializable](#)

Methods

name

String **name** ()

IRegionCategory

public interface **IRegionCategory**<F>

Interface for categories that range over a region in source text. Created by the *ICategorizerService* from a parse or analysis result.

Parameters

- <F> – Type of fragments.

Methods

category

ICategory **category** ()

Returns Category assigned to the region.

fragment

F **fragment** ()

Returns Fragment associated with the region, or null if there is no such association.

region

ISourceRegion **region** ()

Returns Region in source text over which the category spans.

IRegionStyle

public interface **IRegionStyle**<F>

Interface for styles that range over a region in source text. Created by the *IStylerService* from a categorization of a parse or analysis result.

Parameters

- <F> – Type of fragments.

Methods

fragment

F **fragment** ()

Returns Fragment associated with the region, or null if there is no such association.

region

ISourceRegion **region** ()

Returns Region in source text over which the style spans.

style

IStyle **style** ()

Returns Style assigned to the region.

IStyle

public interface **IStyle** extends *Serializable*
Interface for text styles.

Methods

backgroundColor

Color **backgroundColor** ()

Returns Background color

bold

boolean **bold** ()

Returns If text should be in bold.

color

Color **color** ()

Returns Text color

italic

boolean **italic** ()

Returns If text should be in italic.

strikeout

boolean **strikeout** ()

Returns If text should be strikeout.

underscore

boolean **underscore** ()

Returns If text should be underscored.

IStylerService

public interface **IStylerService**<F>

Interface for styling of categorized parse and analysis results.

Parameters

- <F> – Type of fragments.

Methods

styleAnalyzed

Iterable<IRegionStyle<F>> **styleAnalyzed** (*ILanguageImpl langImpl*, *Iterable<IRegionCategory<F>> categorization*)

Returns a styling of given categorized analysis result.

Parameters

- **langImpl** – Language implementation that contains the styling logic.
- **categorization** – Analysis result categorization to style.

Returns Iterable over styles assigned to regions of the source text. Regions do not overlap and are iterated over in ascending order.

styleParsed

Iterable<IRegionStyle<F>> **styleParsed** (*ILanguageImpl langImpl*, *Iterable<IRegionCategory<F>> categorization*)

Returns a styling of given categorized parse result.

Parameters

- **langImpl** – Language implementation that contains the styling logic.
- **categorization** – Parse result categorization to style.

Returns Iterable over styles assigned to regions of the source text. Regions do not overlap and are iterated over in ascending order.

RegionCategory

public class **RegionCategory**<F> implements *IRegionCategory*<F>

Constructors

RegionCategory

public **RegionCategory** (*ISourceRegion* region, *ICategory* category, F fragment)

Methods

category

public *ICategory* **category** ()

fragment

public F **fragment** ()

region

public *ISourceRegion* **region** ()

toString

public *String* **toString** ()

RegionStyle

public class **RegionStyle**<F> implements *IRegionStyle*<F>

Constructors

RegionStyle

public **RegionStyle** (*ISourceRegion* region, *IStyle* style, F fragment)

Methods

fragment

public F **fragment** ()

region

public *ISourceRegion* **region** ()

style

public *IStyle* **style** ()

toString

public *String* **toString** ()

Style

public class **Style** implements *IStyle*

Constructors

Style

public **Style** (*Color* color, *Color* backgroundColor, boolean bold, boolean italic, boolean underscore, boolean *strikeout*)

Methods

backgroundColor

public *Color* **backgroundColor** ()

bold

public boolean **bold** ()

color

public *Color* **color** ()

equals

public boolean **equals** (*Object* obj)

hashCode

public int **hashCode** ()

italic

public boolean **italic** ()

strikeout

public boolean **strikeout** ()

toString

public **String** **toString** ()

underscore

public boolean **underscore** ()

org.metaborg.core.syntax

FenceCharacters

public class **FenceCharacters**

Fields

close

public final **String** **close**

open

public final **String** **open**

Constructors

FenceCharacters

public **FenceCharacters** (**String** *open*, **String** *close*)

Methods

equals

public boolean **equals** (**Object** *obj*)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

IInputUnit

public interface **IInputUnit** extends *IUnit*

Unit representing a textual source file of a certain language implementation. An input unit can be passed to the *ISyntaxService* to parse the source file into a *IParseUnit*.

Methods

dialect

ILanguageImpl **dialect** ()

Returns Dialect of the source file, or null if it has no dialect.

langImpl

ILanguageImpl **langImpl** ()

Returns Language implementation of the source file.

text

String **text** ()

Returns Text of the source file.

IParseUnit

public interface **IParseUnit** extends *IUnit*

Unit representing a parsed source file. A parse unit can be passed to the *IAnalysisService* to analyze the parse unit into a *IAnalyzeUnit*, or passed to the *ITransformService* to transform the parse unit into a *ITransformUnit*.

Methods

duration

long **duration** ()

Returns Parse duration in nanoseconds, or -1 if the duration is unknown.

input

IInputUnit **input** ()

Returns The input unit this unit was made with.

messages

`Iterable<IMessage> messages ()`

Returns Messages produced by the parser.

success

`boolean success ()`

Returns True if parsing was successful, i.e. the parser produced a result and no errors were encountered. False otherwise.

valid

`boolean valid ()`

Returns True if this unit is valid, i.e. the parser parsed the source file without exceptions. Even when this unit is valid, it may still be unsuccessful, use `success ()` to check for that.

IParser

public interface **IParser**<I extends IInputUnit, P extends IParseUnit>

Interface for a context-free parser implementation.

Parameters

- **<I>** – Type of input units.
- **<P>** – Type of parse units.

Methods

parse

P parse (I *input*, IProgress *progress*, ICancel *cancel*)

Parses given input unit into a parse unit.

Parameters

- **input** – Input unit to parse.

Throws

- **InterruptedException** – When parsing is cancelled.
- **ParseException** – When parsing fails unexpectedly.

Returns Parse unit.

parseAll

Collection<P> parseAll (Iterable<I> *inputs*, IProgress *progress*, ICancel *cancel*)

Parses all given input units into a parse units.

Parameters

- **inputs** – Input units to parse.

Throws

- **InterruptedException** – When parsing is cancelled.
- **ParseException** – When parsing fails unexpectedly.

Returns Parse units.

ISyntaxService

public interface **ISyntaxService**<I extends IInputUnit, P extends IParseUnit>

Interface for context-free syntactical services, including parsing and information about lexical characters.

Parameters

- **<I>** – Type of input units.
- **<P>** – Type of parse units.

Methods

available

boolean **available** (*ILanguageImpl langImpl*)

Checks if syntactical services are available for given language implementation.

Parameters

- **langImpl** – Language implementation to check.

Returns True if syntactical services are available, false if not.

fenceCharacters

Iterable<*FenceCharacters*> **fenceCharacters** (*ILanguageImpl langImpl*)

Returns Fence (brackets, parentheses, etc.) open and close characters for given language.

multiLineCommentCharacters

Iterable<*MultiLineCommentCharacters*> **multiLineCommentCharacters** (*ILanguageImpl langImpl*)

Returns Multi line comment prefix and postfix characters for given language.

parse

P **parse** (I *input*, IProgress *progress*, ICancel *cancel*)

Parses given input unit into a parse unit.

Parameters

- **input** – Input unit to parse.

- **progress** – Progress reporter.
- **cancel** – Cancellation token.

Throws

- **InterruptedException** – When parsing is cancelled.
- **ParseException** – When parsing fails unexpectedly.

Returns Parse unit.

parse

P **parse** (*I input*)

Parses given input unit into a parse unit.

Parameters

- **input** – Input unit to parse.

Throws

- **ParseException** – When parsing fails unexpectedly.

Returns Parse unit.

parseAll

Collection<P> **parseAll** (*Iterable<I> inputs, IProgress progress, ICancel cancel*)

Parses all given input units into a parse units.

Parameters

- **inputs** – Input units to parse.
- **progress** – Progress reporter.
- **cancel** – Cancellation token.

Throws

- **InterruptedException** – When parsing is cancelled.
- **ParseException** – When parsing fails unexpectedly.

Returns Parse units.

parseAll

Collection<P> **parseAll** (*Iterable<I> inputs*)

Parses all given input units into a parse units.

Parameters

- **inputs** – Input units to parse.

Throws

- **ParseException** – When parsing fails unexpectedly.

Returns Parse units.

singleLineCommentPrefixes

`Iterable<String> singleLineCommentPrefixes (ILanguageImpl langImpl)`

Returns Single line comment prefix characters for given language.

MultiLineCommentCharacters

public class **MultiLineCommentCharacters**

Fields

postfix

public final `String` **postfix**

prefix

public final `String` **prefix**

Constructors

MultiLineCommentCharacters

public **MultiLineCommentCharacters** (`String` *prefix*, `String` *postfix*)

Methods

equals

public boolean **equals** (`Object` *obj*)

hashCode

public int **hashCode** ()

toString

public `String` **toString** ()

ParseException

public class **ParseException** extends *MetaborgException*

Exception indicating that parsing failed unexpectedly.

Fields

unit

public final *InputUnit* **unit**

Constructors

ParseException

public **ParseException** (*InputUnit* unit)

ParseException

public **ParseException** (*InputUnit* unit, *String* message)

ParseException

public **ParseException** (*InputUnit* unit, *Throwable* cause)

ParseException

public **ParseException** (*InputUnit* unit, *String* message, *Throwable* cause)

ParseFacet

public class **ParseFacet** implements *IFacet*

Fields

type

public final *String* **type**

Constructors

ParseFacet

public **ParseFacet** (*String* type)

SyntaxService

public abstract class **SyntaxService**<I extends *IInputUnit*, P extends *IParseUnit*> implements *ISyntaxService*<I, P>

Constructors

SyntaxService

public **SyntaxService** (*Map*<*String*, ? extends *IParser*<*I*, *P*>> *parsers*)

Methods

available

public boolean **available** (*ILanguageImpl langImpl*)

parse

public *P* **parse** (*I input*, *IProgress progress*, *ICancel cancel*)

parseAll

public *Collection*<*P*> **parseAll** (*Iterable*<*I*> *inputs*, *IProgress progress*, *ICancel cancel*)

org.metaborg.core.tracing

Hover

public class **Hover**
Represents hover information produced by the hover service.

Fields

region

public final *ISourceRegion* **region**
Region in the source file where the hover information is for.

text

public final *String* **text**
Text to show as hover information.

Constructors

Hover

public **Hover** (*ISourceRegion region*, *String text*)

IHoverService

public interface **IHoverService**<P extends IParseUnit, A extends IAnalyzeUnit>
 Interface for getting hover tooltip information.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.

Methods

available

boolean **available** (*ILanguageImpl* language)
 Checks if hover tooltip information is available for given language implementation.

Parameters

- **language** – Language implementation to check.

Returns True if hover tooltip information is available, false if not.

hover

Hover **hover** (int offset, P input)
 Attempts to get hover tooltip information at `offset` in the source text, using given parsed input for resolving and tracing.

Parameters

- **offset** – Offset in the source text.
- **input** – Parsed input to use for tracing.

Throws

- *MetaborgException* – When retrieving information fails unexpectedly.

Returns Hover tooltip information if successful, or null if no information can be retrieved.

hover

Hover **hover** (int offset, A input)
 Attempts to get hover tooltip information at `offset` in the source text, using given analyzed input for resolving and tracing.

Parameters

- **offset** – Offset in the source text.
- **input** – Analyzed input to use for tracing.

Throws

- *MetaborgException* – When retrieving information fails unexpectedly.

Returns Hover tooltip information if successful, or null if no information can be retrieved.

IResolverService

public interface **IResolverService**<P extends IParseUnit, A extends IAnalyzeUnit>

Interface for reference resolution, resolving use sites to their definition sites.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.

Methods

available

boolean **available** (*ILanguageImpl* language)

Checks if reference resolution is available for given language implementation.

Parameters

- **language** – Language implementation to check.

Returns True if reference resolution is available, false if not.

resolve

Resolution **resolve** (int offset, P input)

Attempt to resolve use site at `offset` in the source text, using given parse result for resolving and tracing.

Parameters

- **offset** – Offset in the source text to perform reference resolution for.
- **input** – Parsed input to use for resolving and tracing.

Throws

- *MetaborgException* – When reference resolution fails unexpectedly.

Returns Resolution if reference resolution was successful, or null if no resolution could be made.

resolve

Resolution **resolve** (int offset, A input)

Attempt to resolve use site at `offset` in the source text, using given analysis result for resolving and tracing.

Parameters

- **offset** – Offset in the source text to perform reference resolution for.
- **input** – Analyzed input to use for resolving and tracing.

Throws

- *MetaborgException* – When reference resolution fails unexpectedly.

Returns Resolution if reference resolution was successful, or null if no resolution could be made.

ITracingService

public interface **ITracingService**<P extends IParseUnit, A extends IAnalyzeUnit, T extends ITransformUnit<?>, F>
 Interface for tracing between parsed, analyzed, and transformed fragments and results, and their region in source files.

Parameters

- **<P>** – Type of parse units
- **<A>** – Type of analyze units.
- **<T>** – Type of transform units.
- **<F>** – Type of fragments.

Methods

fragments

Iterable<F> **fragments** (P *result*, *ISourceRegion* *region*)

Finds a fragment and its ancestors that contain given region, in given parse result.

Parameters

- **result** – Parsed result to get fragments from.
- **region** – Region inside the result to get fragments for.

Returns Fragment and its ancestors that contain given region. The returned iterable iterates from deepest (leaf) fragment to outermost (root) fragment. An empty iterable is returned when no fragments could be found.

fragments

Iterable<F> **fragments** (A *result*, *ISourceRegion* *region*)

Finds a fragment and its ancestors that contain given region, in given analysis file result.

Parameters

- **result** – Analyzed result to get fragments from.
- **region** – Region inside the result to get fragments for.

Returns Fragment and its ancestors that contain given region. The returned iterable iterates from deepest (leaf) fragment to outermost (root) fragment. An empty iterable is returned when no fragments could be found.

fragments

Iterable<F> **fragments** (T *result*, *ISourceRegion* *region*)

Finds a fragment and its ancestors that contain given region, in given transform result.

Parameters

- **result** – Transformed result to get fragments from.
- **region** – Region inside the to get fragments for.

Returns Fragment and its ancestors that contain given region. The returned iterable iterates from deepest (leaf) fragment to outermost (root) fragment. An empty iterable is returned when no fragments could be found.

fragmentsWithin

`Iterable<F> fragmentsWithin (P result, ISourceRegion region)`

Finds all fragments contained within the given region. This only returns the outermost fragments that are contained in the region. Their children are trivially also contained in the region and will not be added separately to the returned result.

Parameters

- **result** – Parsed result to get fragments from.
- **region** – Region inside the result to get fragments for.

Returns Fragments contained within the given region. An empty iterable is returned when no fragments could be found.

fragmentsWithin

`Iterable<F> fragmentsWithin (A result, ISourceRegion region)`

Finds all fragments contained within the given region. This only returns the outermost fragments that are contained in the region. Their children are trivially also contained in the region and will not be added separately to the returned result.

Parameters

- **result** – Analyzed result to get fragments from.
- **region** – Region inside the result to get fragments for.

Returns Fragments contained within the given region. An empty iterable is returned when no fragments could be found.

fragmentsWithin

`Iterable<F> fragmentsWithin (T result, ISourceRegion region)`

Finds all fragments contained within the given region. This only returns the outermost fragments that are contained in the region. Their children are trivially also contained in the region and will not be added separately to the returned result.

Parameters

- **result** – Transformed result to get fragments from.
- **region** – Region inside the result to get fragments for.

Returns Fragments contained within the given region. An empty iterable is returned when no fragments could be found.

location

`ISourceLocation location (F fragment)`

Retrieves the source location of given fragment.

Parameters

- **fragment** – Fragment to get source location for.

Returns Source location, or null if it could not be determined.

origin

F **origin** (F *fragment*)

Retrieves the originating fragment of given fragment.

Parameters

- **fragment** – Fragment to get origin for.

Returns Originating fragment, or null if it could not be determined.

Resolution

public class **Resolution**

Represents a resolution produced by reference resolution.

Fields

highlight

public final *ISourceRegion* **highlight**

Area in the source file to highlight as a hyperlink.

targets

public final *Iterable*<*ISourceLocation*> **targets**

Resolution targets. Multiple targets indicate resolution to multiple valid locations.

Constructors

Resolution

public **Resolution** (*ISourceRegion* highlight, *Iterable*<*ISourceLocation*> targets)

org.metaborg.core.transform

ITransformConfig

public interface **ITransformConfig**

Optional configuration for the transform service.

Methods

dryRun

public boolean **dryRun** ()

If this returns true, the transformation should be performed without side effects like writing output files.

ITransformOutput

public interface **ITransformOutput**

Class representing output of a transformation.

Methods

name

String **name** ()

Name of the output result, usually a string representation of the output file.

output

FileObject **output** ()

Output file, or null if output was not written to a file.

ITransformService

public interface **ITransformService**<P extends IParseUnit, A extends IAnalyzeUnit, TP extends ITransformUnit<P>, TA extends

Interface for transformations on parsed or analyzed files.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.
- **<TP>** – Type of transform units with parse units as input.
- **<TA>** – Type of transform units with analyze units as input.

Methods

available

boolean **available** (*IContext context*, *ITransformGoal goal*)

Checks if transform actions are available for given context and goal.

Parameters

- **context** – Context to check transform actions from.
- **goal** – Goal to check transform actions for.

Returns True if transform actions are available, false if not.

requiresAnalysis

boolean **requiresAnalysis** (*IContext context*, *ITransformGoal goal*)

Checks if analysis is required before transformation, for given context and goal.

Parameters

- **context** – Context to check from.
- **goal** – Goal to check for.

Returns True if analysis is required, false if not.

transform

Collection<TP> **transform** (P *input*, *IContext context*, *ITransformGoal goal*)

Transforms parse input in a context with given goal.

Parameters

- **input** – Parsed input to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation result.

transform

Collection<TP> **transform** (P *input*, *IContext context*, *ITransformGoal goal*, *ITransformConfig config*)

Transforms parse input in a context with given goal.

Parameters

- **input** – Parsed input to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.
- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation result.

transform

TP **transform** (P *input*, *IContext context*, *TransformActionContrib action*)

Transforms parse input in a context with given action.

Parameters

- **input** – Parsed input to transform.

- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.

Throws

- *TransformException* – When transformation action requires analysis.

Returns Transformation result.

transform

TP **transform** (P *input*, *IContext* *context*, *TransformActionContrib* *action*, *ITransformConfig* *config*)

Transforms parse input in a context with given action.

Parameters

- **input** – Parsed input to transform.
- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.
- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When transformation action requires analysis.

Returns Transformation result.

transform

Collection<TA> **transform** (A *input*, *IContext* *context*, *ITransformGoal* *goal*)

Transforms analyzed input in a context with given goal.

Parameters

- **input** – Analyzed input to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation result.

transform

Collection<TA> **transform** (A *input*, *IContext* *context*, *ITransformGoal* *goal*, *ITransformConfig* *config*)

Transforms analyzed input in a context with given goal.

Parameters

- **input** – Analyzed input to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.

- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation result.

transform

TA **transform** (A *input*, *IContext context*, *TransformActionContrib action*)

Transforms analyzed input in a context with given action.

Parameters

- **input** – Analyzed input to transform.
- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation result.

transform

TA **transform** (A *input*, *IContext context*, *TransformActionContrib action*, *ITransformConfig config*)

Transforms analyzed input in a context with given action.

Parameters

- **input** – Analyzed input to transform.
- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.
- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation result.

transformAllAnalyzed

Collection<TA> **transformAllAnalyzed** (Iterable<A> *inputs*, *IContext context*, *ITransformGoal goal*)

Transforms analyzed inputs in a context with given goal.

Parameters

- **inputs** – Analyzed inputs to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation results.

transformAllAnalyzed

`Collection<TA> transformAllAnalyzed(Iterable<A> inputs, IContext context, ITransformGoal goal, ITransformConfig config)`

Transforms analyzed inputs in a context with given goal.

Parameters

- **inputs** – Analyzed inputs to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.
- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation results.

transformAllAnalyzed

`Collection<TA> transformAllAnalyzed(Iterable<A> inputs, IContext context, TransformActionContrib action)`

Transforms analyzed inputs in a context with given action.

Parameters

- **input** – Analyzed inputs to transform.
- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation results.

transformAllAnalyzed

`Collection<TA> transformAllAnalyzed(Iterable<A> inputs, IContext context, TransformActionContrib action, ITransformConfig config)`

Transforms analyzed inputs in a context with given action.

Parameters

- **input** – Analyzed inputs to transform.
- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.
- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation results.

transformAllParsed

`Collection<TP> transformAllParsed (Iterable<P> inputs, IContext context, ITransformGoal goal)`

Transforms parse inputs in a context with given goal.

Parameters

- **inputs** – Parsed inputs to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation results.

transformAllParsed

`Collection<TP> transformAllParsed (Iterable<P> inputs, IContext context, ITransformGoal goal, ITransformConfig config)`

Transforms parse inputs in a context with given goal.

Parameters

- **inputs** – Parsed inputs to transform.
- **context** – Context in which to apply transformation.
- **goal** – Transform goal to execute.
- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When the transformation fails unexpectedly.

Returns Transformation results.

transformAllParsed

`Collection<TP> transformAllParsed (Iterable<P> inputs, IContext context, TransformActionContrib action)`

Transforms parse input in a context with given action.

Parameters

- **inputs** – Parsed inputs to transform.
- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.

Throws

- *TransformException* – When transformation action requires analysis.

Returns Transformation results.

transformAllParsed

`Collection<TP> transformAllParsed (Iterable<P> inputs, IContext context, TransformActionContrib action, ITransformConfig config)`

Transforms parse input in a context with given action.

Parameters

- **inputs** – Parsed inputs to transform.
- **context** – Context in which to apply transformation.
- **action** – Transform action to execute.
- **config** – Configuration settings for the execution of the transformation.

Throws

- *TransformException* – When transformation action requires analysis.

Returns Transformation results.

ITransformUnit

public interface **ITransformUnit**<I extends IUnit> extends *IUnit*

Unit representing a transformed source file.

Parameters

- **<I>** – Type of input unit.

Methods

action

TransformActionContrib **action** ()

Returns The action that was used to execute the transformation.

context

IContext **context** ()

Returns The context that was used during transformation.

duration

long **duration** ()

Returns Transformation duration in nanoseconds, or -1 if the duration is unknown.

input

`I input ()`

Returns The unit this unit was made with.

messages

`Iterable<IMessage> messages ()`

Returns Messages produced by the transformer.

outputs

`Iterable<? extends ITransformOutput> outputs ()`

Returns Outputs of the transformation. Empty if `valid()` returns false.

success

`boolean success ()`

Returns True if transformation was successful, i.e. the transformed produced a result and no errors were encountered. False otherwise.

valid

`boolean valid ()`

Returns True if this unit is valid, i.e. the transformed transformed the input unit without exceptions. Even when the unit is valid, it may still be unsuccessful, use `success()` to check for that.

ITransformer

public interface **ITransformer**<P extends IParseUnit, A extends IAnalyzeUnit, TP extends ITransformUnit<P>, TA extends ITransformUnit<A>> Interface for transformation implementations.

Parameters

- **<P>** – Type of parse units.
- **<A>** – Type of analyze units.
- **<TP>** – Type of transform units with parse units as input.
- **<TA>** – Type of transform units with analyze units as input.

Methods

transform

TP **transform** (P input, IContext context, TransformActionContrib action, ITransformConfig config)

transform

TA **transform** (A *input*, *IContext context*, *TransformActionContrib action*, *ITransformConfig config*)

transformAllAnalyzed

Collection<TA> **transformAllAnalyzed** (Iterable<A> *inputs*, *IContext context*, *TransformActionContrib action*, *ITransformConfig config*)

transformAllParsed

Collection<TP> **transformAllParsed** (Iterable<P> *inputs*, *IContext context*, *TransformActionContrib action*, *ITransformConfig config*)

TransformConfig

public class **TransformConfig** implements *ITransformConfig*

Constructors

TransformConfig

public **TransformConfig** ()

TransformConfig

public **TransformConfig** (boolean *dry*)

Methods

dryRun

public boolean **dryRun** ()

TransformException

public class **TransformException** extends *MetaborgException*
Exception indicating that transformation failed unexpectedly.

Constructors

TransformException

public **TransformException** (String *msg*)

TransformException

```
public TransformException (String msg, Throwable t)
```

TransformException

```
public TransformException (Throwable t)
```

TransformService

```
public class TransformService<P extends IParseUnit, A extends IAnalyzeUnit, TP extends ITransformUnit<P>, TA extends ITran
```

Constructors

TransformService

```
public TransformService (IActionService actionService, ITransformer<P, A, TP, TA> transformer)
```

Methods

available

```
public boolean available (IContext context, ITransformGoal goal)
```

requiresAnalysis

```
public boolean requiresAnalysis (IContext context, ITransformGoal goal)
```

transform

```
public Collection<TP> transform (P input, IContext context, ITransformGoal goal, ITransformConfig config)
```

transform

```
public TP transform (P input, IContext context, TransformActionContrib action, ITransformConfig config)
```

transform

```
public Collection<TA> transform (A input, IContext context, ITransformGoal goal, ITransformConfig config)
```

transform

```
public TA transform (A input, IContext context, TransformActionContrib action, ITransformConfig config)
```

transformAllAnalyzed

```
public Collection<TA> transformAllAnalyzed (Iterable<A> inputs, IContext context, ITransformGoal goal, ITransformConfig config)
```

transformAllAnalyzed

```
public Collection<TA> transformAllAnalyzed (Iterable<A> inputs, IContext context, TransformActionContrib action, ITransformConfig config)
```

transformAllParsed

```
public Collection<TP> transformAllParsed (Iterable<P> inputs, IContext context, ITransformGoal goal, ITransformConfig config)
```

transformAllParsed

```
public Collection<TP> transformAllParsed (Iterable<P> inputs, IContext context, TransformActionContrib action, ITransformConfig config)
```

org.metaborg.core.unit

IInputUnitService

```
public interface IInputUnitService<I extends IInputUnit>
```

Methods

emptyInputUnit

```
I emptyInputUnit (FileObject source, ILanguageImpl langImpl, ILanguageImpl dialect)
```

emptyInputUnit

```
I emptyInputUnit (ILanguageImpl langImpl, ILanguageImpl dialect)
```

inputUnit

```
I inputUnit (FileObject source, String text, ILanguageImpl langImpl, ILanguageImpl dialect)
```

inputUnit

```
I inputUnit (String text, ILanguageImpl langImpl, ILanguageImpl dialect)
```

IUnit

public interface **IUnit**

Results of operations on a single source file. Extensible through unit contributions.

Methods

detached

boolean **detached** ()

Returns True if the unit is detached, i.e. the source is unknown. False otherwise.

source

FileObject **source** ()

Returns Source file that operations were executed on, or `null` if the source file is unknown. The source file can be unknown when executing operations on a string of text in memory for example. When the source is unknown, this unit is detached.

unitContrib

IUnitContrib **unitContrib** (String *id*)

Returns a unit contribution with given identifier.

Parameters

- **id** – Unit contribution identifier.

Returns Unit contribution with given identifier, or null if it does not exist.

unitContribs

Iterable<*IUnitContrib*> **unitContribs** ()

Returns All unit contributions.

IUnitContrib

public interface **IUnitContrib**

Methods

id

String **id** ()

IUnitService

public interface **IUnitService** <I extends IInputUnit, P extends IParseUnit, A extends IAnalyzeUnit, AU extends IAnalyzeUnitUpdate>

Methods

emptyAnalyzeUnit

A **emptyAnalyzeUnit** (P *input*, *IContext context*)

emptyAnalyzeUnitUpdate

AU **emptyAnalyzeUnitUpdate** (FileObject *source*, *IContext context*)

emptyParseUnit

P **emptyParseUnit** (I *input*)

emptyTransformUnit

TP **emptyTransformUnit** (P *input*, *IContext context*, TransformActionContrib *action*)

emptyTransformUnit

TA **emptyTransformUnit** (A *input*, *IContext context*, TransformActionContrib *action*)

org.metaborg.spoofox.core

Spoofox

public class **Spoofox** extends *MetaBorgGeneric<ISpoofoxInputUnit, ISpoofoxParseUnit, ISpoofoxAnalyzeUnit, ISpoofoxAnalyzeUnit>*
Facade for instantiating and accessing the Metaborg API, instantiated with the Spoofox implementation.

Fields

strategoCommon

public final *IStrategoCommon* **strategoCommon**

strategoRuntimeService

public final *IStrategoRuntimeService* **strategoRuntimeService**

termFactoryService

public final *ITermFactoryService* **termFactoryService**

Constructors

Spoofox

public **Spoofox** (*IModulePluginLoader* loader, *SpoofoxModule* module, *Module...* additionalModules)
Instantiate the MetaBorg API with a Spoofox implementation.

Parameters

- **loader** – Module plugin loader to use.
- **module** – Spoofax module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

Spoofax

public **Spoofax** (*SpoofaxModule* module, *Module...* additionalModules)
Instantiate the MetaBorg API with a Spoofax implementation.

Parameters

- **module** – Spoofax module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

Spoofax

public **Spoofax** (*IModulePluginLoader* loader, *Module...* additionalModules)
Instantiate the MetaBorg API with a Spoofax implementation.

Parameters

- **loader** – Module plugin loader to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

Spoofax

public **Spoofax** (*Module...* additionalModules)
Instantiate the MetaBorg API with a Spoofax implementation.

Parameters

- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

Methods

defaultModule

protected static *SpoofaxModule* **defaultModule** ()

SpoofaxConstants

public class **SpoofaxConstants**

Fields

DIR_BUILD

public static final *String* **DIR_BUILD**

DIR_CACHE

public static final *String* **DIR_CACHE**

DIR_CLASSES

public static final *String* **DIR_CLASSES**

DIR_EDITOR

public static final *String* **DIR_EDITOR**

DIR_ICONS

public static final *String* **DIR_ICONS**

DIR_INCLUDE

public static final *String* **DIR_INCLUDE**

DIR_LIB

public static final *String* **DIR_LIB**

DIR_OUTPUT

public static final *String* **DIR_OUTPUT**

DIR_SRCGEN

public static final `String` **DIR_SRCGEN**

DIR_SRCGEN_SYNTAX

public static final `String` **DIR_SRCGEN_SYNTAX**

DIR_STR_JAVA

public static final `String` **DIR_STR_JAVA**

DIR_STR_JAVA_CLASSES

public static final `String` **DIR_STR_JAVA_CLASSES**

DIR_STR_JAVA_TRANS

public static final `String` **DIR_STR_JAVA_TRANS**

DIR_SYNTAX

public static final `String` **DIR_SYNTAX**

DIR_TESTCLASSES

public static final `String` **DIR_TESTCLASSES**

DIR_TRANS

public static final `String` **DIR_TRANS**

LANG_ATERM_ID

public static final `String` **LANG_ATERM_ID**

LANG_ATERM_NAME

public static final `String` **LANG_ATERM_NAME**

LANG_DYNSEM_ID

public static final `String` **LANG_DYNSEM_ID**

LANG_DYNSEM_NAME

public static final [String](#) **LANG_DYNSEM_NAME**

LANG_ESV_ID

public static final [String](#) **LANG_ESV_ID**

LANG_ESV_NAME

public static final [String](#) **LANG_ESV_NAME**

LANG_NABL_ID

public static final [String](#) **LANG_NABL_ID**

LANG_NABL_NAME

public static final [String](#) **LANG_NABL_NAME**

LANG_SDF3_ID

public static final [String](#) **LANG_SDF3_ID**

LANG_SDF3_NAME

public static final [String](#) **LANG_SDF3_NAME**

LANG_SDF_ID

public static final [String](#) **LANG_SDF_ID**

LANG_SDF_NAME

public static final [String](#) **LANG_SDF_NAME**

LANG_STRATEGO_ID

public static final [String](#) **LANG_STRATEGO_ID**

LANG_STRATEGO_NAME

public static final [String](#) **LANG_STRATEGO_NAME**

LANG_TS_ID

public static final [String](#) **LANG_TS_ID**

LANG_TS_NAME

public static final [String](#) **LANG_TS_NAME**

LIB_ANALYSIS2_ID

public static final [String](#) **LIB_ANALYSIS2_ID**

LIB_ANALYSIS2_NAME

public static final [String](#) **LIB_ANALYSIS2_NAME**

LIB_ANALYSIS_ID

public static final [String](#) **LIB_ANALYSIS_ID**

LIB_ANALYSIS_NAME

public static final [String](#) **LIB_ANALYSIS_NAME**

META_LANG_IDS

public static final [Set](#)<[String](#)> **META_LANG_IDS**

META_LANG_NAMES

public static final [Set](#)<[String](#)> **META_LANG_NAMES**

Methods

isMetaLanguage

public static boolean **isMetaLanguage** (*ILanguageImpl* language)

isMetaLanguage

public static boolean **isMetaLanguage** (*LanguageIdentifier* identifier)

isMetaLanguage

public static boolean **isMetaLanguage** (*String groupId, String id*)

isMetaLanguage

public static boolean **isMetaLanguage** (*String name*)

SpooifaxModule

public class **SpooifaxModule** extends *MetaborgModule*
 Guice module that specifies which implementations to use for services and factories.

Constructors

SpooifaxModule

public **SpooifaxModule** ()

SpooifaxModule

public **SpooifaxModule** (*ClassLoader resourceClassLoader*)

Methods

bindAction

protected void **bindAction** ()

bindAnalysis

protected void **bindAnalysis** ()
 Overrides *MetaborgModule.bindAnalysis()* to provide Spooifax-specific bindings with Spooifax interfaces, and to provide analyzers.

bindBuilder

protected void **bindBuilder** ()
 Overrides *MetaborgModule.bindBuilder()* to provide Spooifax-specific bindings with generics filled in as *IStrategoTerm*.

bindCategorizer

protected void **bindCategorizer** ()

bindCompletion

protected void **bindCompletion** ()

bindContextFactories

protected void **bindContextFactories** (MapBinder<String, *ContextFactory*> *binder*)

bindLanguage

protected void **bindLanguage** ()

bindLanguagePathProviders

protected void **bindLanguagePathProviders** (Multibinder<*ILanguagePathProvider*> *binder*)

bindMenu

protected void **bindMenu** ()

bindOutline

protected void **bindOutline** ()

bindParsers

protected void **bindParsers** (MapBinder<String, *IParser*<*ISpoofaxInputUnit*, *ISpoofaxParseUnit*>>
 parserBinder, MapBinder<String, *ISpoofaxParser*> *spoofaxParserBinder*)

bindPrimitive

protected static void **bindPrimitive** (Multibinder<AbstractPrimitive> *binder*, AbstractPrimitive *primitive*)

bindPrimitive

protected static void **bindPrimitive** (Multibinder<AbstractPrimitive> *binder*, Class<? extends Abstract-
 Primitive> *primitive*)

bindPrimitiveLibrary

protected static void **bindPrimitiveLibrary** (Multibinder<IOperatorRegistry> *binder*, Class<? extends
 IOperatorRegistry> *primitiveLibrary*)

bindProcessor

protected void **bindProcessor** ()

Overrides *MetaborgModule.bindProcessor()* to provide Spoofax-specific bindings with generics filled in as *IStrategoTerm*.

bindProcessorRunner

protected void **bindProcessorRunner** ()

Overrides *MetaborgModule.bindProcessorRunner()* to provide Spoofax-specific bindings with generics filled in as *IStrategoTerm*.

bindStyler

protected void **bindStyler** ()

bindSyntax

protected void **bindSyntax** ()

bindTracing

protected void **bindTracing** ()

bindTransformer

protected void **bindTransformer** ()

bindUnit

protected void **bindUnit** ()

configure

protected void **configure** ()

org.metaborg.spoofax.core.action

ActionFacet

public class **ActionFacet** implements *IFacet*

Fields

actions

public final Multimap<*ITransformGoal*, *ITransformAction*> **actions**

menuItems

public final Iterable<? extends *MenuItem*> **menuItems**

Constructors

ActionFacet

public **ActionFacet** (Multimap<*ITransformGoal*, *ITransformAction*> *actions*, Iterable<? extends *MenuItem*> *menuItems*)

Methods

actions

public Iterable<*ITransformAction*> **actions** (*ITransformGoal* *goal*)

ActionFacetFromESV

public class **ActionFacetFromESV**

Methods

create

public static *ActionFacet* **create** (IStrategoAppl *esv*)

ActionService

public class **ActionService** implements *IActionService*

Methods

actionContributions

public Collection<*TransformActionContrib*> **actionContributions** (*ILanguageImpl* *language*, *ITransformGoal* *goal*)

actions

public [Collection](#)<[ITransformAction](#)> **actions** ([ILanguageImpl](#) language, [ITransformGoal](#) goal)

available

public boolean **available** ([ILanguageImpl](#) language, [ITransformGoal](#) goal)

requiresAnalysis

public boolean **requiresAnalysis** ([ILanguageImpl](#) language, [ITransformGoal](#) goal)

TransformAction

public class **TransformAction** implements [ITransformAction](#)

Fields

flags

public final [TransformActionFlags](#) **flags**

goal

public final [ITransformGoal](#) **goal**

name

public final [String](#) **name**

strategy

public final [String](#) **strategy**

Constructors

TransformAction

public **TransformAction** ([String](#) name, [ITransformGoal](#) goal, [TransformActionFlags](#) flags, [String](#) strategy)

Methods

flags

public [TransformActionFlags](#) **flags** ()

goal

public *ITransformGoal* **goal** ()

name

public *String* **name** ()

toString

public *String* **toString** ()

org.metaborg.spoofax.core.analysis

AnalysisCommon

public class **AnalysisCommon**

Constructors

AnalysisCommon

public **AnalysisCommon** (*ISpoofaxTracingService* tracingService)

Methods

ambiguityMessages

public *Collection*<*IMessage*> **ambiguityMessages** (*FileObject* resource, *IStrategoTerm* ast)

analysisFailedMessage

public *String* **analysisFailedMessage** (*HybridInterpreter* interpreter)

messages

public *Collection*<*IMessage*> **messages** (*FileObject* resource, *MessageSeverity* severity, *IStrategoTerm* messagesTerm)

AnalysisFacet

public class **AnalysisFacet** implements *IFacet*

Fields

strategyName

public final [String](#) **strategyName**

Constructors

AnalysisFacet

public **AnalysisFacet** ([String](#) *strategyName*)

AnalysisFacetFromESV

public class **AnalysisFacetFromESV**

Methods

create

public static [AnalysisFacet](#) **create** ([IStrategoAppl](#) *esv*)

hasAnalysis

public static boolean **hasAnalysis** ([IStrategoAppl](#) *esv*)

type

public static [String](#) **type** ([IStrategoAppl](#) *esv*)

ISpoofoxAnalysisService

public interface **ISpoofoxAnalysisService** extends [IAnalysisService](#)<[ISpoofoxParseUnit](#), [ISpoofoxAnalyzeUnit](#), [ISpoofoxAnalysisResult](#)>
 Typedef interface for [IAnalysisService](#) with Spoofox interfaces.

Methods

analyze

[ISpoofoxAnalyzeResult](#) **analyze** ([ISpoofoxParseUnit](#) *input*, [IContext](#) *context*, [IProgress](#) *progress*, [ICancel](#) *cancel*)
 { @inheritDoc }

analyze

ISpoofaxAnalyzeResult **analyze** (*ISpoofaxParseUnit* input, *IContext* context)
 { @inheritDoc }

analyzeAll

ISpoofaxAnalyzeResults **analyzeAll** (*Iterable*<*ISpoofaxParseUnit*> inputs, *IContext* context, *IProgress* progress, *ICancel* cancel)
 { @inheritDoc }

analyzeAll

ISpoofaxAnalyzeResults **analyzeAll** (*Iterable*<*ISpoofaxParseUnit*> inputs, *IContext* context)
 { @inheritDoc }

ISpoofaxAnalyzeResult

public interface **ISpoofaxAnalyzeResult** extends *IAnalyzeResult*<*ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnitUpdate*>
 Typedef interface for *IAnalyzeResult* with Spoofax interfaces.

Methods

debugData

Object **debugData** ()
Returns Debug data produced by analysis, or null if there is none.

ISpoofaxAnalyzeResults

public interface **ISpoofaxAnalyzeResults** extends *IAnalyzeResults*<*ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnitUpdate*>
 Typedef interface for *IAnalyzeResults* with Spoofax interfaces.

Methods

debugData

Object **debugData** ()
Returns Debug data produced by analysis, or null if there is none.

ISpoofaxAnalyzer

public interface **ISpoofaxAnalyzer** extends *IAnalyzer*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnitUpdate*>
 Typedef interface for *IAnalyzer* with Spoofax interfaces.

Methods

analyze

ISpoofaxAnalyzeResult **analyze** (*ISpoofaxParseUnit* input, *IContext* context, *IProgress* progress, *ICancel* cancel)
{ @inheritDoc }

analyzeAll

ISpoofaxAnalyzeResults **analyzeAll** (*Iterable*<*ISpoofaxParseUnit*> inputs, *IContext* context, *IProgress* progress, *ICancel* cancel)
{ @inheritDoc }

SpoofoxAnalysisService

public class **SpoofoxAnalysisService** extends *AnalysisService*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnitUpdate*>
Typedef class for *AnalysisService* with Spoofox interfaces.

Methods

analyze

public *ISpoofaxAnalyzeResult* **analyze** (*ISpoofaxParseUnit* input, *IContext* context, *IProgress* progress, *ICancel* cancel)

analyzeAll

public *ISpoofaxAnalyzeResults* **analyzeAll** (*Iterable*<*ISpoofaxParseUnit*> inputs, *IContext* context, *IProgress* progress, *ICancel* cancel)

SpoofoxAnalyzeResult

public class **SpoofoxAnalyzeResult** extends *AnalyzeResult*<*ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnitUpdate*> implements *ISpoofaxAnalyzeResult*
Typedef class for *AnalyzeResult* with Spoofox interfaces.

Constructors

SpoofoxAnalyzeResult

public **SpoofoxAnalyzeResult** (*ISpoofaxAnalyzeUnit* result, *Collection*<*ISpoofaxAnalyzeUnitUpdate*> updates, *IContext* context, *Object* debugData)

SpoofoxAnalyzeResult

public **SpoofoxAnalyzeResult** (*ISpoofaxAnalyzeUnit* result, *Collection*<*ISpoofaxAnalyzeUnitUpdate*> updates, *IContext* context)

SpoofaxAnalyzeResult

public **SpoofaxAnalyzeResult** (*ISpoofaxAnalyzeUnit* result, *IContext* context, *Object* debugData)

SpoofaxAnalyzeResult

public **SpoofaxAnalyzeResult** (*ISpoofaxAnalyzeUnit* result, *IContext* context)

Methods

debugData

public *Object* **debugData** ()

SpoofaxAnalyzeResults

public class **SpoofaxAnalyzeResults** extends *AnalyzeResults<ISpoofaxAnalyzeUnit, ISpoofaxAnalyzeUnitUpdate>* implements *IAnalyzeResults*
Typedef class for *AnalyzeResults* with Spoofax interfaces.

Constructors

SpoofaxAnalyzeResults

public **SpoofaxAnalyzeResults** (*Collection<ISpoofaxAnalyzeUnit>* results, *Collection<ISpoofaxAnalyzeUnitUpdate>* updates, *IContext* context, *Object* debugData)

SpoofaxAnalyzeResults

public **SpoofaxAnalyzeResults** (*Collection<ISpoofaxAnalyzeUnit>* results, *Collection<ISpoofaxAnalyzeUnitUpdate>* updates, *IContext* context)

SpoofaxAnalyzeResults

public **SpoofaxAnalyzeResults** (*Collection<ISpoofaxAnalyzeUnit>* results, *IContext* context, *Object* debugData)

SpoofaxAnalyzeResults

public **SpoofaxAnalyzeResults** (*Collection<ISpoofaxAnalyzeUnit>* results, *IContext* context)

SpoofaxAnalyzeResults

public **SpoofaxAnalyzeResults** (*IContext* context, *Object* debugData)

SpoofoxAnalyzeResults

public **SpoofoxAnalyzeResults** (*IContext context*)

Methods

debugData

public *Object* **debugData** ()

org.metaborg.spoofox.core.analysis.constraint

AbstractConstraintAnalyzer

abstract class **AbstractConstraintAnalyzer**<C extends ISpoofaxScopeGraphContext<?>> implements *ISpoofaxAnalyzer*

Fields

analysisCommon

protected final *AnalysisCommon* **analysisCommon**

resourceService

protected final *IResourceService* **resourceService**

runtimeService

protected final *IStrategoRuntimeService* **runtimeService**

strategoCommon

protected final *IStrategoCommon* **strategoCommon**

strategoTerms

protected final *StrategoTerms* **strategoTerms**

termFactory

protected final *ITermFactory* **termFactory**

tracingService

protected final *ISpoofaxTracingService* **tracingService**

Constructors

AbstractConstraintAnalyzer

public **AbstractConstraintAnalyzer** (*AnalysisCommon* analysisCommon, *IResourceService* resourceService, *IStrategoRuntimeService* runtimeService, *IStrategoCommon* strategoCommon, *ITermFactoryService* termFactoryService, *ISpoofaxTracingService* tracingService)

Methods

analyze

public *ISpoofaxAnalyzeResult* **analyze** (*ISpoofaxParseUnit* input, *IContext* genericContext, *IProgress* progress, *ICancel* cancel)

analyzeAll

public *ISpoofaxAnalyzeResults* **analyzeAll** (*Iterable*<*ISpoofaxParseUnit*> inputs, *IContext* genericContext, *IProgress* progress, *ICancel* cancel)

analyzeAll

protected abstract *ISpoofaxAnalyzeResults* **analyzeAll** (*Map*<*String*, *ISpoofaxParseUnit*> changed, *Map*<*String*, *ISpoofaxParseUnit*> removed, *C* context, *HybridInterpreter* runtime, *String* strategy, *IProgress* progress, *ICancel* cancel)

doAction

protected *Optional*<*ITerm*> **doAction** (*String* strategy, *ITerm* action, *ISpoofaxScopeGraphContext*<?> context, *HybridInterpreter* runtime)

doCustomAction

protected *Optional*<*ITerm*> **doCustomAction** (*String* strategy, *ITerm* action, *ISpoofaxScopeGraphContext*<?> context, *HybridInterpreter* runtime)

merge

protected *Collection*<*IMessage*> **merge** (*Collection*<*IMessage*> m1, *Collection*<*IMessage*> m2)

message

protected *IMessage* **message** (ITerm *originatingTerm*, String *message*, *MessageSeverity* *severity*)

messages

protected Collection<*IMessage*> **messages** (Collection<EditorMessage> *messages*, *MessageSeverity* *severity*)

messages

protected Collection<*IMessage*> **messages** (ISolution *solution*, MessageKind *kind*, *MessageSeverity* *severity*)

messagesByFile

protected Multimap<String, *IMessage*> **messagesByFile** (Collection<*IMessage*> *messages*)

ConstraintDebugData

public class **ConstraintDebugData**

Fields

collectionTime

public final long **collectionTime**

finalizeTime

public final long **finalizeTime**

solverTime

public final long **solverTime**

totalTime

public final long **totalTime**

Constructors

ConstraintDebugData

public **ConstraintDebugData** (long *totalTime*, long *collectionTime*, long *solverTime*, long *finalizeTime*)

Methods

toString

```
public String toString()
```

ConstraintMultiFileAnalyzer

```
public class ConstraintMultiFileAnalyzer extends AbstractConstraintAnalyzer<IMultiFileScopeGraphContext> implements
```

Fields

name

```
public static final String name
```

Constructors

ConstraintMultiFileAnalyzer

```
public ConstraintMultiFileAnalyzer (AnalysisCommon analysisCommon, ISpoofaxUnitService unitService, IResourceService resourceService, IStrategoRuntimeService runtimeService, IStrategoCommon strategoCommon, ITermFactoryService termFactoryService, ISpoofaxTracingService tracingService)
```

Methods

analyzeAll

```
protected ISpoofaxAnalyzeResults analyzeAll (Map<String, ISpoofaxParseUnit> changed, Map<String, ISpoofaxParseUnit> removed, IMultiFileScopeGraphContext context, HybridInterpreter runtime, String strategy, IProgress progress, ICancel cancel)
```

ConstraintSingleFileAnalyzer

```
public class ConstraintSingleFileAnalyzer extends AbstractConstraintAnalyzer<ISingleFileScopeGraphContext> implements
```

Fields

logger

```
public static final ILogger logger
```

name

public static final String **name**

Constructors**ConstraintSingleFileAnalyzer**

public **ConstraintSingleFileAnalyzer** (*AnalysisCommon* analysisCommon, *ISpoofaxUnitService* unitService, *IResourceService* resourceService, *IStrategoRuntimeService* runtimeService, *IStrategoCommon* strategoCommon, *ITermFactoryService* termFactoryService, *ISpoofaxTracingService* tracingService)

Methods**analyzeAll**

protected *ISpoofaxAnalyzeResults* **analyzeAll** (Map<String, *ISpoofaxParseUnit*> changed, Map<String, *ISpoofaxParseUnit*> removed, *ISingleFileScopeGraphContext* context, HybridInterpreter runtime, String strategy, IProgress progress, ICancel cancel)

org.metaborg.spoofox.core.analysis.legacy**StrategoAnalyzer**

public class **StrategoAnalyzer** implements *ISpoofaxAnalyzer*
 Analyzer for legacy Stratego projects. Calls the analysis strategy for each input.

Fields**name**

public static final String **name**

Constructors**StrategoAnalyzer**

public **StrategoAnalyzer** (*IResourceService* resourceService, *ISpoofaxUnitService* unitService, *ITermFactoryService* termFactoryService, *IStrategoRuntimeService* runtimeService, *IStrategoCommon* strategoCommon, *AnalysisCommon* analysisCommon)

Methods

analyze

```
public ISpoofaxAnalyzeResult analyze (ISpoofaxParseUnit input, IContext context, IProgress progress, ICancel cancel)
```

analyzeAll

```
public ISpoofaxAnalyzeResults analyzeAll (Iterable<ISpoofaxParseUnit> inputs, IContext context, IProgress progress, ICancel cancel)
```

org.metaborg.spoofax.core.analysis.taskengine

AnalysisDebugResult

```
public class AnalysisDebugResult implements Serializable
```

Fields

evaluatedTasks

```
public final IStrategoList evaluatedTasks
```

indexEntriesAdded

```
public final int indexEntriesAdded
```

indexEntriesRemoved

```
public final int indexEntriesRemoved
```

skippedTasks

```
public final IStrategoList skippedTasks
```

tasksAdded

```
public final int tasksAdded
```

tasksInvalidated

```
public final int tasksInvalidated
```

tasksRemoved

public final int **tasksRemoved**

unevaluatedTasks

public final IStrategoList **unevaluatedTasks**

Constructors

AnalysisDebugResult

public **AnalysisDebugResult** (int *indexEntriesRemoved*, int *indexEntriesAdded*, int *tasksRemoved*, int *tasksAdded*, int *tasksInvalidated*, IStrategoList *evaluatedTasks*, IStrategoList *skippedTasks*, IStrategoList *unevaluatedTasks*)

AnalysisDebugResult

public **AnalysisDebugResult** (ITermFactory *factory*)

AnalysisTimeResult

public class **AnalysisTimeResult** implements [Serializable](#)

Fields

collect

public final long **collect**

indexPersist

public final long **indexPersist**

parse

public final long **parse**

postTrans

public final long **postTrans**

preTrans

public final long **preTrans**

taskEval

public final long **taskEval**

taskPersist

public final long **taskPersist**

Constructors

AnalysisTimeResult

public **AnalysisTimeResult** (long *parse*, long *preTrans*, long *collect*, long *taskEval*, long *postTrans*, long *indexPersist*, long *taskPersist*)

AnalysisTimeResult

public **AnalysisTimeResult** ()

TaskEngineAnalyzer

public class **TaskEngineAnalyzer** implements *ISpoofaxAnalyzer*
Analyzer for NaBL + TS + index + task engine projects. Calls the analysis strategy with a list of all inputs.

Fields

name

public static final String **name**

Constructors

TaskEngineAnalyzer

public **TaskEngineAnalyzer** (*IResourceService* *resourceService*, *ISpoofaxUnitService* *unitService*, *ITermFactoryService* *termFactoryService*, *IStrategoRuntimeService* *runtimeService*, *IStrategoCommon* *strategoCommon*, *AnalysisCommon* *analysisCommon*)

Methods

analyze

public *ISpoofaxAnalyzeResult* **analyze** (*ISpoofaxParseUnit* *input*, *IContext* *context*, *IProgress* *progress*, *ICancel* *cancel*)

analyzeAll

```
public ISpoofaxAnalyzeResults analyzeAll (Iterable<ISpoofaxParseUnit> inputs, IContext context,
                                           IProgress progress, ICancel cancel)
```

TaskEngineAnalyzerData

```
public class TaskEngineAnalyzerData
```

Fields

affectedPartitions

```
public final Iterable<String> affectedPartitions
```

debugResult

```
public final AnalysisDebugResult debugResult
```

timeResult

```
public final AnalysisTimeResult timeResult
```

Constructors

TaskEngineAnalyzerData

```
public TaskEngineAnalyzerData (Iterable<String> affectedPartitions, AnalysisDebugResult debugRe-
                               sult, AnalysisTimeResult timeResult)
```

org.metaborg.spoofox.core.build

ISpoofaxBuildOutput

```
public interface ISpoofaxBuildOutput extends IBuildOutput<ISpoofaxParseUnit, ISpoofaxAnalyzeUnit, ISpoofaxAnalyzeUnitUp>
    Typedef interface for IBuildOutput with Spoofox interfaces.
```

ISpoofaxBuildOutputInternal

```
public interface ISpoofaxBuildOutputInternal extends IBuildOutputInternal<ISpoofaxParseUnit, ISpoofaxAnalyzeUnit, ISpo>
    Typedef interface for IBuildOutputInternal with Spoofox interfaces.
```

ISpoofaxBuilder

```
public interface ISpoofaxBuilder extends IBuilder<ISpoofaxParseUnit, ISpoofaxAnalyzeUnit, ISpoofaxAnalyzeUnitUpdate, ISpo>
    Typedef interface for IBuilder with Spoofox interfaces.
```

Methods

build

ISpoofaxBuildOutput **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)

build

ISpoofaxBuildOutput **build** (*BuildInput* input)

SpoofaxBuildOutput

public class **SpoofaxBuildOutput** extends *BuildOutput*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnitUpdate*, *I*
 Typedef class for *BuildOutput* with Spoofax interfaces.

SpoofaxBuilder

public class **SpoofaxBuilder** extends *Builder*<*ISpoofaxInputUnit*, *ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnit*
 Typedef class for *Builder* with Spoofax interfaces.

Constructors

SpoofaxBuilder

public **SpoofaxBuilder** (*IResourceService* resourceService, *ILanguageIdentifierService* languageIdenti-
 fier, *ILanguagePathService* languagePathService, *ISpoofaxUnitService* unit-
 Service, *ISourceTextService* sourceTextService, *ISpoofaxSyntaxService* syn-
 taxService, *IContextService* contextService, *ISpoofaxAnalysisService* analysis-
 Service, *ISpoofaxTransformService* transformService, *ISpoofaxParseResultUp-*
dater parseResultUpdater, *ISpoofaxAnalysisResultUpdater* analysisResultUp-
 dater, *Provider*<*IBuildOutputInternal*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeU-*
nit, *ISpoofaxAnalyzeUnitUpdate*, *ISpoofaxTransformUnit*<?>>> buildOutput-
 Provider)

Methods

build

public *ISpoofaxBuildOutput* **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)

build

public *ISpoofaxBuildOutput* **build** (*BuildInput* input)

org.metaborg.spoofox.core.build.paths

BuiltinLanguagePathProvider

public class **BuiltinLanguagePathProvider** implements *ILanguagePathProvider*

Methods

includePaths

public *Iterable*<*FileObject*> **includePaths** (*IProject* project, *String* languageName)

sourcePaths

public *Iterable*<*FileObject*> **sourcePaths** (*IProject* project, *String* languageName)

org.metaborg.spoofox.core.completion

CompletionDefinition

public class **CompletionDefinition**

Fields

description

public final *String* **description**

expectedSort

public final *IStrategoTerm* **expectedSort**

items

public final *Iterable*<*ICompletionItem*> **items**

producedSort

public final *IStrategoTerm* **producedSort**

Constructors

CompletionDefinition

public **CompletionDefinition** (*IStrategoTerm producedSort, IStrategoTerm expectedSort, String description, Iterable<ICompletionItem> items*)

ISpoofaxCompletionService

public interface **ISpoofaxCompletionService** extends *ICompletionService<ISpoofaxParseUnit>*
 Typedef interface for *ICompletionService* with Spoofax interfaces.

JSGLRCompletionService

public class **JSGLRCompletionService** implements *ISpoofaxCompletionService*

Constructors

JSGLRCompletionService

public **JSGLRCompletionService** (*ITermFactoryService termFactoryService, IStrategoRuntimeService strategoRuntimeService, IStrategoCommon strategoCommon, IResourceService resourceService, ISpoofaxUnitService unitService, ISpoofaxSyntaxService syntaxService*)

Methods

completionCorrectPrograms

public *Collection<ICompletion>* **completionCorrectPrograms** (*int position, boolean blankLineCompletion, ISpoofaxParseUnit parseResult*)

completionEmptyProgram

public *Collection<? extends ICompletion>* **completionEmptyProgram** (*Iterable<String> startSymbols, int endOffset, ILanguageImpl language, FileObject location*)

completionErroneousPrograms

public *Collection<ICompletion>* **completionErroneousPrograms** (*int cursorPosition, Iterable<IStrategoTerm> completionTerms, ISpoofaxParseUnit completionParseResult*)

completionErroneousProgramsNested

```
public Collection<? extends ICompletion> completionErroneousProgramsNested (int cursorPosition, Collection<IStrategoTerm> nestedCompletionTerms, ISpoofaxParseUnit completionParseResult)
```

fromTokens

```
protected ISourceLocation fromTokens (IStrategoTerm fragment, HybridInterpreter runtime, ITermFactory termFactory, int position, String languageName, Map<IStrategoTerm, Boolean> leftRecursiveTerms, Map<IStrategoTerm, Boolean> rightRecursiveTerms)
```

get

```
public Iterable<ICompletion> get (int position, ISpoofaxParseUnit parseInput, boolean nested)
```

listsCompletions

```
public Collection<ICompletion> listsCompletions (int position, boolean blankLineCompletion, Iterable<IStrategoList> lists, String languageName, ILanguageComponent component, FileObject location)
```

optionalCompletions

```
public Collection<ICompletion> optionalCompletions (Iterable<IStrategoTerm> optionals, boolean blankLineCompletion, String languageName, ILanguageComponent component, FileObject location)
```

placeholderCompletions

```
public Collection<ICompletion> placeholderCompletions (IStrategoAppl placeholder, String languageName, ILanguageComponent component, FileObject location)
```

PlaceholderCompletionItem

```
public class PlaceholderCompletionItem implements IPlaceholderCompletionItem
```

Fields

endOffset

public final int **endOffset**

name

public final *String* **name**

optional

public final boolean **optional**

sort

public final *String* **sort**

startOffset

public final int **startOffset**

Constructors

PlaceholderCompletionItem

public **PlaceholderCompletionItem** (*String* *sort*, int *startOffset*, int *endOffset*, boolean *optional*)

Methods

endOffset

public int **endOffset** ()

name

public *String* **name** ()

optional

public boolean **optional** ()

placeholderText

public *String* **placeholderText** ()

startOffset

public int **startOffset** ()

toString

public *String* **toString** ()

SyntacticCompletionFacet

public class **SyntacticCompletionFacet** implements *IFacet*

Constructors

SyntacticCompletionFacet

public **SyntacticCompletionFacet** (Multimap<*Integer*, *CompletionDefinition*> *completionDefinitions*)

Methods

get

public *Iterable*<*CompletionDefinition*> **get** (int *s*)

org.metaborg.spoofox.core.context

ContextFacetFromESV

public class **ContextFacetFromESV**

Methods

hasContext

public static boolean **hasContext** (IStrategoAppl *esv*)

type

public static *String* **type** (IStrategoAppl *esv*)

IIndexTaskContext

public interface **IIndexTaskContext** extends *IContext*, IIndexContext, ITaskEngineContext

IndexTaskContext

public class **IndexTaskContext** implements *IContext*, *IContextInternal*, *IIndexTaskContext*

Constructors

IndexTaskContext

public **IndexTaskContext** (*Injector* injector, *ITermFactoryService* termFactoryService, *ContextIdentifier* identifier)

Methods

equals

public boolean **equals** (*Object* obj)

hashCode

public int **hashCode** ()

identifier

public *ContextIdentifier* **identifier** ()

index

public *IIndex* **index** ()

init

public void **init** ()

injector

public *Injector* **injector** ()

language

public *ILanguageImpl* **language** ()

load

public void **load** ()

location

```
public FileObject location ()
```

persist

```
public void persist ()
```

project

```
public IProject project ()
```

read

```
public IClosableLock read ()
```

reset

```
public void reset ()
```

taskEngine

```
public ITaskEngine taskEngine ()
```

toString

```
public String toString ()
```

unload

```
public void unload ()
```

write

```
public IClosableLock write ()
```

IndexTaskContextFactory

```
public class IndexTaskContextFactory implements IContextFactory
```

Fields

name

public static final [String](#) **name**

Constructors

IndexTaskContextFactory

public **IndexTaskContextFactory** ([Injector](#) *injector*, [ITermFactoryService](#) *termFactoryService*)

Methods

create

public [IndexTaskContext](#) **create** ([ContextIdentifier](#) *identifier*)

createTemporary

public [IndexTaskTemporaryContext](#) **createTemporary** ([ContextIdentifier](#) *identifier*)

IndexTaskTemporaryContext

public class **IndexTaskTemporaryContext** implements [ITemporaryContextInternal](#), [IndexTaskContext](#)

Constructors

IndexTaskTemporaryContext

public **IndexTaskTemporaryContext** ([IndexTaskContext](#) *context*)

Methods

close

public void **close** ()

identifier

public [ContextIdentifier](#) **identifier** ()

index

public [IIndex](#) **index** ()

init

public void **init** ()

injector

public *Injector* **injector** ()

language

public *ILanguageImpl* **language** ()

load

public void **load** ()

location

public *FileObject* **location** ()

persist

public void **persist** ()

project

public *IProject* **project** ()

read

public *IClosableLock* **read** ()

reset

public void **reset** ()

taskEngine

public *ITaskEngine* **taskEngine** ()

unload

public void **unload** ()

write

public IClosableLock **write** ()

LegacyContext

public class **LegacyContext** implements *IContext*, *IContextInternal*, *ITemporaryContextInternal*

Constructors

LegacyContext

public **LegacyContext** (*Injector* injector, *ContextIdentifier* identifier)

Methods

close

public void **close** ()

identifier

public *ContextIdentifier* **identifier** ()

init

public void **init** ()

injector

public *Injector* **injector** ()

language

public *ILanguageImpl* **language** ()

load

public void **load** ()

location

public *FileObject* **location** ()

persist

public void **persist** ()

project

public *IProject* **project** ()

read

public IClosableLock **read** ()

reset

public void **reset** ()

unload

public void **unload** ()

write

public IClosableLock **write** ()

LegacyContextFactory

public class **LegacyContextFactory** implements *IContextFactory*

Fields

name

public static final *String* **name**

Constructors

LegacyContextFactory

public **LegacyContextFactory** (*Injector injector*)

Methods

create

public *LegacyContext* **create** (*ContextIdentifier identifier*)

createTemporary

public *LegacyContext* **createTemporary** (*ContextIdentifier* identifier)

org.metaborg.spoofax.core.context.scopegraph

AbstractScopeGraphContext

abstract class **AbstractScopeGraphContext**<S extends Serializable> implements *IContextInternal*

Fields

state

protected S **state**

Constructors

AbstractScopeGraphContext

public **AbstractScopeGraphContext** (*Injector* injector, *ContextIdentifier* identifier)

Methods

equals

public boolean **equals** (*Object* obj)

guard

public IClosableLock **guard** ()

hashCode

public int **hashCode** ()

identifier

public *ContextIdentifier* **identifier** ()

init

public void **init** ()

initState

protected abstract S **initState** ()

injector

public *Injector* **injector** ()

language

public *ILanguageImpl* **language** ()

load

public void **load** ()

location

public *FileObject* **location** ()

persist

public void **persist** ()

project

public *IProject* **project** ()

read

public *IClosableLock* **read** ()

reset

public void **reset** ()

toString

public *String* **toString** ()

unload

public void **unload** ()

write

public IClosableLock **write** ()

AbstractTemporaryScopeGraphContext

public abstract class **AbstractTemporaryScopeGraphContext**<U extends IScopeGraphUnit> implements *ISpoofaxScopeGraphContext*

Constructors

AbstractTemporaryScopeGraphContext

public **AbstractTemporaryScopeGraphContext** (*ISpoofaxScopeGraphContext*<U> context)

Methods

close

public void **close** ()

guard

public IClosableLock **guard** ()

identifier

public *ContextIdentifier* **identifier** ()

init

public void **init** ()

injector

public *Injector* **injector** ()

language

public *ILanguageImpl* **language** ()

load

public void **load** ()

location

```
public FileObject location ()
```

persist

```
public void persist ()
```

project

```
public IProject project ()
```

read

```
public IClosableLock read ()
```

removeUnit

```
public void removeUnit (String source)
```

reset

```
public void reset ()
```

unit

```
public U unit (String source)
```

units

```
public Collection<U> units ()
```

unload

```
public void unload ()
```

write

```
public IClosableLock write ()
```

IMultiFileScopeGraphContext

```
public interface IMultiFileScopeGraphContext extends ISpoofaxScopeGraphContext<IMultiFileScopeGraphUnit>
```

Methods

clear

void **clear** ()

finalResult

`Optional<FinalResult>` **finalResult** ()

initialResult

`Optional<InitialResult>` **initialResult** ()

setCustomSolution

void **setCustomSolution** (CustomSolution *solution*)

setFinalResult

void **setFinalResult** (FinalResult *result*)

setInitialResult

void **setInitialResult** (InitialResult *result*)

setSolution

void **setSolution** (Solution *solution*)

IMultiFileScopeGraphUnit

public interface **IMultiFileScopeGraphUnit** extends IScopeGraphUnit

Methods

clear

void **clear** ()

normalizedConstraints

`Optional<Iterable<IConstraint>>` **normalizedConstraints** ()

setNormalizedConstraints

void **setNormalizedConstraints** (*Iterable*<*IConstraint*> *result*)

setUnitResult

void **setUnitResult** (*UnitResult* *result*)

unitResult

Optional<*UnitResult*> **unitResult** ()

IScopeGraphContextInternal

public interface **IScopeGraphContextInternal** extends *IContextInternal*, *IScopeGraphContext*<*IScopeGraphUnit*>

ISingleFileScopeGraphContext

public interface **ISingleFileScopeGraphContext** extends *ISpoofoxScopeGraphContext*<*ISingleFileScopeGraphUnit*>

ISingleFileScopeGraphUnit

public interface **ISingleFileScopeGraphUnit** extends *IScopeGraphUnit*

Methods

clear

void **clear** ()

finalResult

Optional<*FinalResult*> **finalResult** ()

initialResult

Optional<*InitialResult*> **initialResult** ()

setCustomSolution

void **setCustomSolution** (*CustomSolution* *solution*)

setFinalResult

void **setFinalResult** (FinalResult *result*)

setInitialResult

void **setInitialResult** (InitialResult *result*)

setSolution

void **setSolution** (Solution *solution*)

setUnitResult

void **setUnitResult** (UnitResult *result*)

unitResult

Optional<UnitResult> **unitResult** ()

ISpoofaxScopeGraphContext

public interface **ISpoofaxScopeGraphContext**<U extends IScopeGraphUnit> extends *IContextInternal*, IScopeGraphContext<U>

Methods

removeUnit

void **removeUnit** (String *resource*)
Remove unit from the context

MultiFileScopeGraphContext

public class **MultiFileScopeGraphContext** extends *AbstractScopeGraphContext<State>* implements *IMultiFileScopeGraphContext*

Constructors

MultiFileScopeGraphContext

public **MultiFileScopeGraphContext** (Injector *injector*, *ContextIdentifier* *identifier*)

Methods

clear

public void **clear** ()

finalResult

public [Optional](#)<FinalResult> **finalResult** ()

initState

protected [State](#) **initState** ()

initialResult

public [Optional](#)<InitialResult> **initialResult** ()

removeUnit

public void **removeUnit** ([String](#) *resource*)

setCustomSolution

public void **setCustomSolution** (CustomSolution *solution*)

setFinalResult

public void **setFinalResult** (FinalResult *result*)

setInitialResult

public void **setInitialResult** (InitialResult *result*)

setSolution

public void **setSolution** (Solution *solution*)

unit

public [IMultiFileScopeGraphUnit](#) **unit** ([String](#) *resource*)

units

public [Collection](#)<[IMultiFileScopeGraphUnit](#)> **units** ()

MultiFileScopeGraphContext.State

static class **State** implements [Serializable](#)

Fields

customSolution

CustomSolution **customSolution**

finalResult

FinalResult **finalResult**

initialResult

InitialResult **initialResult**

solution

Solution **solution**

units

final [Map](#)<[String](#), [IMultiFileScopeGraphUnit](#)> **units**

Constructors

State

public **State** ()

Methods

clear

public void **clear** ()

MultiFileScopeGraphContext.State.Unit

class **Unit** implements [IMultiFileScopeGraphUnit](#)

Methods

clear

public void **clear** ()

customSolution

public [Optional](#)<CustomSolution> **customSolution** ()

fresh

public Fresh **fresh** ()

normalizedConstraints

public [Optional](#)<[Iterable](#)<[IConstraint](#)>> **normalizedConstraints** ()

resource

public [String](#) **resource** ()

setNormalizedConstraints

public void **setNormalizedConstraints** ([Iterable](#)<[IConstraint](#)> *constraints*)

setUnitResult

public void **setUnitResult** ([UnitResult](#) *result*)

solution

public [Optional](#)<[Solution](#)> **solution** ()

unitResult

public [Optional](#)<[UnitResult](#)> **unitResult** ()

MultiFileScopeGraphContextFactory

public class **MultiFileScopeGraphContextFactory** implements [IContextFactory](#)

Fields

name

public static final [String](#) **name**

Constructors

MultiFileScopeGraphContextFactory

public **MultiFileScopeGraphContextFactory** ([Injector](#) *injector*)

Methods

create

public *IMultiFileScopeGraphContext* **create** ([ContextIdentifier](#) *identifier*)

createTemporary

public *TemporaryMultiFileScopeGraphContext* **createTemporary** ([ContextIdentifier](#) *identifier*)

SingleFileScopeGraphContext

public class **SingleFileScopeGraphContext** extends *AbstractScopeGraphContext<State>* implements *ISingleFileScopeGraphContext*

Constructors

SingleFileScopeGraphContext

public **SingleFileScopeGraphContext** ([Injector](#) *injector*, [ContextIdentifier](#) *identifier*)

Methods

initState

protected [State](#) **initState** ()

removeUnit

public void **removeUnit** ([String](#) *resource*)

unit

public *ISingleFileScopeGraphUnit* **unit** ([String](#) *resource*)

units

public [Collection](#)<[ISingleFileScopeGraphUnit](#)> **units** ()

SingleFileScopeGraphContext.State

static class **State** implements [Serializable](#)

Fields

units

final [Map](#)<[String](#), [ISingleFileScopeGraphUnit](#)> **units**

SingleFileScopeGraphContext.State.Unit

class **Unit** implements [ISingleFileScopeGraphUnit](#)

Methods

clear

public void **clear** ()

customSolution

public [Optional](#)<[CustomSolution](#)> **customSolution** ()

finalResult

public [Optional](#)<[FinalResult](#)> **finalResult** ()

fresh

public [Fresh](#) **fresh** ()

initialResult

public [Optional](#)<[InitialResult](#)> **initialResult** ()

resource

public [String](#) **resource** ()

setCustomSolution

public void **setCustomSolution** (CustomSolution *solution*)

setFinalResult

public void **setFinalResult** (FinalResult *result*)

setInitialResult

public void **setInitialResult** (InitialResult *result*)

setSolution

public void **setSolution** (Solution *solution*)

setUnitResult

public void **setUnitResult** (UnitResult *result*)

solution

public [Optional](#)<Solution> **solution** ()

unitResult

public [Optional](#)<UnitResult> **unitResult** ()

SingleFileScopeGraphContextFactory

public class **SingleFileScopeGraphContextFactory** implements *IContextFactory*

Fields

name

public static final [String](#) **name**

Constructors

SingleFileScopeGraphContextFactory

public **SingleFileScopeGraphContextFactory** ([Injector](#) *injector*)

Methods

create

public *ISingleFileScopeGraphContext* **create** (*ContextIdentifier identifier*)

createTemporary

public *TemporarySingleFileScopeGraphContext* **createTemporary** (*ContextIdentifier identifier*)

TemporaryMultiFileScopeGraphContext

public class **TemporaryMultiFileScopeGraphContext** extends *AbstractTemporaryScopeGraphContext<IMultiFileScopeGraphContext>*

Constructors

TemporaryMultiFileScopeGraphContext

public **TemporaryMultiFileScopeGraphContext** (*IMultiFileScopeGraphContext context*)

Methods

clear

public void **clear** ()

finalResult

public *Optional<FinalResult>* **finalResult** ()

initialResult

public *Optional<InitialResult>* **initialResult** ()

setCustomSolution

public void **setCustomSolution** (*CustomSolution solution*)

setFinalResult

public void **setFinalResult** (*FinalResult result*)

setInitialResult

public void **setInitialResult** (*InitialResult result*)

setSolution

public void **setSolution** (Solution *solution*)

TemporarySingleFileScopeGraphContext

public class **TemporarySingleFileScopeGraphContext** extends *AbstractTemporaryScopeGraphContext<ISingleFileScopeGraphContext>*

Constructors

TemporarySingleFileScopeGraphContext

public **TemporarySingleFileScopeGraphContext** (*ISingleFileScopeGraphContext context*)

org.metaborg.spoofax.core.esv

ESVReader

public class **ESVReader**
Term reading utility class for ESV abstract syntax.

Methods

collectTerms

public static *ArrayList<IStrategoAppl>* **collectTerms** (*IStrategoAppl term*, *String... constructors*)

concatTermStrings

public static *String* **concatTermStrings** (*IStrategoList values*)

cons

public static *String* **cons** (*IStrategoTerm t*)

findTerm

public static *IStrategoAppl* **findTerm** (*IStrategoTerm term*, *String constructor*)

getProperty

public static *String* **getProperty** (*IStrategoAppl document*, *String name*)

getProperty

public static `String` **getProperty** (`IStrategoAppl` *document*, `String` *name*, `String` *defaultValue*)

termContents

public static `String` **termContents** (`IStrategoTerm` *t*)

termListContents

public static `List<String>` **termListContents** (`IStrategoTerm` *t*)

org.metaborg.spoofax.core.language

ComponentFactoryRequest

public class **ComponentFactoryRequest** implements *IComponentCreationConfigRequest*

Constructors

ComponentFactoryRequest

public **ComponentFactoryRequest** (`FileObject` *location*, *ILanguageComponentConfig* *config*, `IStrategoAppl` *esvTerm*, *SyntaxFacet* *syntaxFacet*, *StrategoRuntimeFacet* *strategoRuntimeFacet*)

Initializes a new instance for a successful request.

Parameters

- **location** – The location of the language component.
- **config** – The configuration of the language component.
- **esvTerm** – The ESV term.
- **syntaxFacet** – The syntax facet.
- **strategoRuntimeFacet** – The Stratego runtime facet.

ComponentFactoryRequest

public **ComponentFactoryRequest** (`FileObject` *location*, `Collection<String>` *errors*, `Collection<Throwable>` *exceptions*)

Initializes a new instance for a failed request.

Parameters

- **location** – The location of the language component.
- **errors** – The error messages that were raised during the request.
- **exceptions** – The exceptions that were raised during the request.

ComponentFactoryRequest

public **ComponentFactoryRequest** (*FileObject location*, *Collection<String> errors*)
Initializes a new instance for a failed request.

Parameters

- **location** – The location of the language component.
- **errors** – The error messages that were raised during the request.

ComponentFactoryRequest

public **ComponentFactoryRequest** (*FileObject location*, *String error*)
Initializes a new instance for a failed request.

Parameters

- **location** – The location of the language component.
- **error** – The error message that was raised during the request.

ComponentFactoryRequest

public **ComponentFactoryRequest** (*FileObject location*, *Throwable exception*)
Initializes a new instance for a failed request.

Parameters

- **location** – The location of the language component.
- **exception** – The exception that was raised during the request.

Methods

config

```
public ILanguageComponentConfig config ()  
    { @inheritDoc }
```

errors

```
public Collection<String> errors ()  
    { @inheritDoc }
```

esvTerm

```
public IStrategoAppl esvTerm ()  
    Gets the ESV term.
```

Returns The ESV term; or `null` when there is no ESV term.

exceptions

```
public Collection<Throwable> exceptions ()
    { @inheritDoc }
```

location

```
public FileObject location ()
    { @inheritDoc }
```

strategoRuntimeFacet

```
public StrategoRuntimeFacet strategoRuntimeFacet ()
    Gets the Stratego runtime facet.
```

Returns The Stratego runtime facet; or `null` when there is no Stratego runtime facet.

syntaxFacet

```
public SyntaxFacet syntaxFacet ()
    Gets the syntax facet.
```

Returns The syntax facet; or `null` when there is no Syntax facet.

toString

```
public String toString ()
    { @inheritDoc }
```

valid

```
public boolean valid ()
    { @inheritDoc }
```

LanguageComponentFactory

public class **LanguageComponentFactory** implements *ILanguageComponentFactory*

Constructors

LanguageComponentFactory

```
public LanguageComponentFactory (IResourceService resourceService, ILanguageComponentConfigService componentConfigService, ITermFactoryService termFactoryService, Map<String, IContextFactory> contextFactories, Map<String, IContextStrategy> contextStrategies, Map<String, ISpoofaxAnalyzer> analyzers)
```

Methods

createConfig

public *ComponentCreationConfig* **createConfig** (*IComponentCreationConfigRequest* configRequest)

createConfigs

public *Collection*<*ComponentCreationConfig*> **createConfigs** (*Iterable*<*IComponentCreationConfigRequest*> requests)

requestAllInDirectory

public *Collection*<*IComponentCreationConfigRequest*> **requestAllInDirectory** (*FileObject* directory)

requestFromArchive

public *IComponentCreationConfigRequest* **requestFromArchive** (*FileObject* archiveFile)

requestFromDirectory

public *IComponentCreationConfigRequest* **requestFromDirectory** (*FileObject* directory)

LanguageDiscoveryService

public class **LanguageDiscoveryService** implements *ILanguageDiscoveryService*

Constructors

LanguageDiscoveryService

public **LanguageDiscoveryService** (*ILanguageService* languageService, *ILanguageComponentFactory* componentFactory)

Methods

componentFromArchive

public *ILanguageComponent* **componentFromArchive** (*FileObject* archiveFile)

componentFromDirectory

public *ILanguageComponent* **componentFromDirectory** (*FileObject* directory)

discover

public *ILanguageComponent* **discover** (*ILanguageDiscoveryRequest* request)

discover

public *Iterable*<*ILanguageComponent*> **discover** (*Iterable*<*ILanguageDiscoveryRequest*> requests)

languageFromArchive

public *ILanguageImpl* **languageFromArchive** (*FileObject* archiveFile)

languageFromDirectory

public *ILanguageImpl* **languageFromDirectory** (*FileObject* directory)

languagesFromArchive

public *Set*<*ILanguageImpl*> **languagesFromArchive** (*FileObject* archiveFile)

languagesFromDirectory

public *Set*<*ILanguageImpl*> **languagesFromDirectory** (*FileObject* directory)

request

public *Iterable*<*ILanguageDiscoveryRequest*> **request** (*FileObject* location)

scanComponentsInDirectory

public *Set*<*ILanguageComponent*> **scanComponentsInDirectory** (*FileObject* directory)

scanLanguagesInDirectory

public *Set*<*ILanguageImpl*> **scanLanguagesInDirectory** (*FileObject* directory)

LanguageFileScanSelector

public class **LanguageFileScanSelector** implements *FileSelector*

Methods

includeFile

public boolean **includeFile** ([FileSelectInfo](#) *fileInfo*)

traverseDescendents

public boolean **traverseDescendents** ([FileSelectInfo](#) *fileInfo*)

org.metaborg.spoofax.core.language.dialect

DialectIdentifier

public class **DialectIdentifier** implements *IDialectIdentifier*

Constructors

DialectIdentifier

public **DialectIdentifier** (*ILanguageService* *languageService*, *IDialectService* *dialectService*,
ITermFactoryService *termFactoryService*)

Methods

identify

public *IdentifiedDialect* **identify** ([FileObject](#) *resource*)

identify

public boolean **identify** ([FileObject](#) *resource*, *ILanguageImpl* *dialect*)

metaResource

public static [FileObject](#) **metaResource** ([FileObject](#) *resource*)

DialectProcessor

public class **DialectProcessor** implements *IDialectProcessor*

Constructors

DialectProcessor

```
public DialectProcessor (ILanguageService languageService, IDialectService dialectService)
```

Methods

update

```
public void update (FileObject location, Iterable<ResourceChange> changes)
```

update

```
public void update (LanguageImplChange change)
```

DialectService

```
public class DialectService implements IDialectService
```

Default implementation for the dialect service. It is mostly generic, but contains some logic for .meta files, which are Spoofax-specific. A dialect is simply a language implementation, with a single component, that mimics its base language, but has a different name and a few different facets. Dialects are created by copying over all facets from a language implementation into a new language implementation, except that:

- *ResourceExtensionFacet*: removed to prevent dialects from overriding an extension of the base language.
- *IdentificationFacet*: wrapped by *MetaFileIdentifier* such that files without a corresponding .meta file do not identify to the dialect.
- *SyntaxFacet*: replaced by the dialect's syntax facet that uses a different parse table.

Constructors

DialectService

```
public DialectService (ILanguageService languageService)
```

Methods

add

```
public ILanguageImpl add (String name, FileObject location, ILanguageImpl base, IFacet syntaxFacet)
```

getBase

```
public ILanguageImpl getBase (ILanguageImpl dialect)
```

getDialect

public *ILanguageImpl* **getDialect** (*String name*)

getDialects

public *Iterable*<*ILanguageImpl*> **getDialects** (*ILanguageImpl base*)

hasDialect

public boolean **hasDialect** (*String name*)

remove

public *ILanguageImpl* **remove** (*String name*)

remove

public *Iterable*<*ILanguageImpl*> **remove** (*ILanguageImpl base*)

update

public *ILanguageImpl* **update** (*String name*, *IFacet syntaxFacet*)

update

public *Iterable*<*ILanguageImpl*> **update** (*ILanguageImpl base*)

MetaFileIdentifier

public class **MetaFileIdentifier** implements *Func1*<*FileObject*, *Boolean*>

Constructors

MetaFileIdentifier

public **MetaFileIdentifier** (*IdentificationFacet identification*)

Methods

call

public *Boolean* **call** (*FileObject resource*)

org.metaborg.spoofax.core.menu

MenuService

public class **MenuService** implements *IMenuService*

Methods

menuItems

public *Iterable*<*IMenuItem*> **menuItems** (*ILanguageImpl* language)

org.metaborg.spoofax.core.outline

ISpoofaxOutlineService

public interface **ISpoofaxOutlineService** extends *IOutlineService*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*>
Typedef interface for *IResolverService* with Spoofax interfaces.

OutlineFacet

public class **OutlineFacet** implements *IFacet*

Fields

expandTo

public final int **expandTo**

strategyName

public final *String* **strategyName**

Constructors

OutlineFacet

public **OutlineFacet** (*String* strategyName, int expandTo)

OutlineFacetFromESV

public class **OutlineFacetFromESV**

Methods

create

public static *OutlineFacet* **create** (*IStrategoApplet* esv)

OutlineService

public class **OutlineService** implements *ISpoofaxOutlineService*

Constructors

OutlineService

public **OutlineService** (*IProjectService* projectService, *IContextService* contextService, *IStrategoRuntimeService* strategoRuntimeService, *ISpoofaxTracingService* tracingService, *IStrategoCommon* common)

Methods

available

public boolean **available** (*ILanguageImpl* language)

outline

public *IOutline* **outline** (*ISpoofaxParseUnit* result)

outline

public *IOutline* **outline** (*ISpoofaxAnalyzeUnit* result)

org.metaborg.spoofax.core.processing

ISpoofaxProcessor

public interface **ISpoofaxProcessor** extends *IProcessor*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxAnalyzeUnitUpdate*,
Typedef interface for *IProcessor* with Spoofox interfaces.

Methods

build

ITask<*ISpoofaxBuildOutput*> **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)
{ @inheritDoc }

ISpoofoxProcessorRunner

public interface **ISpoofoxProcessorRunner** extends *IProcessorRunner*<*ISpoofoxParseUnit*, *ISpoofoxAnalyzeUnit*, *ISpoofoxAnalyzeUnit*>
 Typedef interface for *IProcessorRunner* with Spoofox interfaces.

Methods

build

ITask<*ISpoofoxBuildOutput*> **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)
 { @inheritDoc }

SpoofoxBlockingProcessor

public class **SpoofoxBlockingProcessor** extends *BlockingProcessor*<*ISpoofoxParseUnit*, *ISpoofoxAnalyzeUnit*, *ISpoofoxAnalyzeUnit*>
 Typedef class for *BlockingProcessor* with Spoofox interfaces.

Constructors

SpoofoxBlockingProcessor

public **SpoofoxBlockingProcessor** (*IDialectProcessor* dialectProcessor, *ISpoofoxBuilder* builder, *ILanguageChangeProcessor* languageChangeProcessor)

Methods

build

public *ITask*<*ISpoofoxBuildOutput*> **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)

SpoofoxProcessorRunner

public class **SpoofoxProcessorRunner** extends *ProcessorRunner*<*ISpoofoxParseUnit*, *ISpoofoxAnalyzeUnit*, *ISpoofoxAnalyzeUnit*>
 Typedef class for *ProcessorRunner* with Spoofox interfaces.

Constructors

SpoofoxProcessorRunner

public **SpoofoxProcessorRunner** (*ISpoofoxProcessor* processor, *ILanguageService* languageService)

Methods

build

public *ITask*<*ISpoofoxBuildOutput*> **build** (*BuildInput* input, *IProgress* progress, *ICancel* cancel)

org.metaborg.spoofax.core.processing.analyze

ISpoofaxAnalysisResultProcessor

public interface **ISpoofaxAnalysisResultProcessor** extends *IAnalysisResultProcessor<ISpoofaxInputUnit, ISpoofaxParseUnit>*
 Typedef interface for *IAnalysisResultProcessor* with Spoofax interfaces.

ISpoofaxAnalysisResultRequester

public interface **ISpoofaxAnalysisResultRequester** extends *IAnalysisResultRequester<ISpoofaxInputUnit, ISpoofaxAnalyzeUnit>*
 Typedef interface for *IAnalysisResultRequester* with Spoofax interfaces.

ISpoofaxAnalysisResultUpdater

public interface **ISpoofaxAnalysisResultUpdater** extends *IAnalysisResultUpdater<ISpoofaxParseUnit, ISpoofaxAnalyzeUnit>*
 Typedef interface for *IAnalysisResultUpdater* with Spoofax interfaces.

SpoofaxAnalysisResultProcessor

public class **SpoofaxAnalysisResultProcessor** extends *AnalysisResultProcessor<ISpoofaxInputUnit, ISpoofaxParseUnit, ISpoofaxAnalyzeUnit>*
 Typedef class for *AnalysisResultProcessor* with Spoofax interfaces.

Constructors

SpoofaxAnalysisResultProcessor

public **SpoofaxAnalysisResultProcessor** (*ISpoofaxAnalysisService* analysisService, *ISpoofaxParseResultRequester* parseResultRequester)

org.metaborg.spoofax.core.processing.parse

ISpoofaxParseResultProcessor

public interface **ISpoofaxParseResultProcessor** extends *IParseResultProcessor<ISpoofaxInputUnit, ISpoofaxParseUnit>*, *ISpoofaxParseResultRequester*
 Typedef interface for *IParseResultProcessor* with Spoofax interfaces.

ISpoofaxParseResultRequester

public interface **ISpoofaxParseResultRequester** extends *IParseResultRequester<ISpoofaxInputUnit, ISpoofaxParseUnit>*
 Typedef interface for *IParseResultRequester* with Spoofax interfaces.

ISpoofaxParseResultUpdater

public interface **ISpoofaxParseResultUpdater** extends *IParseResultUpdater<ISpoofaxParseUnit>*
 Typedef interface for *IParseResultUpdater* with Spoofax interfaces.

SpoofaxParseResultProcessor

public class **SpoofaxParseResultProcessor** extends *ParseResultProcessor<ISpoofaxInputUnit, ISpoofaxParseUnit>* implements *ParseResultProcessor*
Typedef class for *ParseResultProcessor* with Spoofax interfaces.

Constructors

SpoofaxParseResultProcessor

public **SpoofaxParseResultProcessor** (*ISpoofaxSyntaxService* syntaxService)

org.metaborg.spoofax.core.resource

SpoofaxIgnoresSelector

public class **SpoofaxIgnoresSelector** implements *FileSelector*

Methods

includeFile

public boolean **includeFile** (*FileSelectInfo* fileInfo)

traverseDescendents

public boolean **traverseDescendents** (*FileSelectInfo* fileInfo)

org.metaborg.spoofax.core.shell

ShellFacet

public class **ShellFacet** implements *IFacet*
Facet for the interactive shell of a language.

Constructors

ShellFacet

public **ShellFacet** (*String* commandPrefix, *String* evaluationMethod, *String* shellStartSymbol)

Methods

getCommandPrefix

public [String](#) **getCommandPrefix** ()

Returns The prefix for all commands entered in the REPL.

getEvaluationMethod

public [String](#) **getEvaluationMethod** ()

Returns The evaluation method to use.

getShellStartSymbol

public [String](#) **getShellStartSymbol** ()

Returns The start symbol for shell-specific language syntax.

toString

public [String](#) **toString** ()

ShellFacetFromESV

public class **ShellFacetFromESV**

Methods

create

public static [ShellFacet](#) **create** (IStrategoAppl *esv*)

org.metaborg.spoofax.core.stratego

IStrategoCommon

public interface **IStrategoCommon**

Methods

builderInputTerm

IStrategoTerm **builderInputTerm** (IStrategoTerm *ast*, [FileObject](#) *resource*, [FileObject](#) *location*)

Creates an input term for a builder.

Parameters

- **ast** – Term to use as the AST.
- **resource** – Location of the input resource.
- **location** – Location of the input context.

Throws

- **MetaborgException** – When `resource` or `location` do not reside on the local file system.

Returns A 5-tuple input term (selected, position, ast, path, project-path).

invoke

IStrategoTerm **invoke** (*ILanguageComponent* component, *IContext* context, IStrategoTerm input, *String* strategy)

Invokes a Stratego strategy in given component.

Parameters

- **component** – Component to invoke the strategy in.
- **context** – Context to initialize the runtime with.
- **input** – Input term
- **strategy** – Name of the strategy to call.

Throws

- **MetaborgException** – When invoking the strategy fails unexpectedly.

Returns Resulting term, or null if the strategy failed.

invoke

IStrategoTerm **invoke** (*ILanguageImpl* impl, *IContext* context, IStrategoTerm input, *String* strategy)

Invokes a Stratego strategy in components of given language implementation. Returns the first result that succeeds.

Parameters

- **impl** – Language implementation to invoke the strategy in.
- **context** – Context to initialize the runtime with.
- **input** – Input term
- **strategy** – Name of the strategy to call.

Throws

- **MetaborgException** – When invoking the strategy fails unexpectedly.

Returns Resulting term, or null if the strategy failed.

invoke

IStrategoTerm **invoke** (*ILanguageImpl* impl, *FileObject* location, IStrategoTerm input, *String* strategy)

Invokes a Stratego strategy in components of given language implementation. Returns the first result that succeeds.

Parameters

- **impl** – Language implementation to invoke the strategy in.
- **location** – Location to initialize the Stratego runtime with.
- **input** – Input term
- **strategy** – Name of the strategy to call.

Throws

- *MetaborgException* – When invoking the strategy fails unexpectedly.

Returns Resulting term, or null if the strategy failed.

invoke

IStrategoTerm **invoke** (HybridInterpreter *runtime*, IStrategoTerm *input*, String *strategy*)

Invokes a Strategy strategy in given runtime.

Parameters

- **runtime** – Stratego runtime to invoke the strategy in.
- **input** – Input term
- **strategy** – Name of the strategy to call.

Throws

- *MetaborgException* – When invoking the strategy fails unexpectedly.

Returns Resulting term, or null if the strategy failed.

localLocationTerm

IStrategoString **localLocationTerm** (File *localLocation*)

Converts a location into a Stratego string.

Parameters

- **localLocation** – Location to convert.

Returns Stratego string with location.

localResourceTerm

IStrategoString **localResourceTerm** (File *localResource*, File *localLocation*)

Converts a resource relative to a location into a Stratego string.

Parameters

- **localResource** – Resource to convert.
- **localLocation** – Location to convert relative to.

Returns Stratego string with resource.

prettyPrint

IStrategoString **prettyPrint** (IStrategoTerm *term*)

Pretty prints an ATerm.

Parameters

- **term** – ATerm to pretty print.

Returns Pretty printed ATerm as a Stratego string.

toString

String **toString** (IStrategoTerm *term*)

Turns given term into a string. If the term is a string, return the string. Otherwise, return a pretty-printed term.

Parameters

- **term** – Term to convert to a string.

Returns Result as a string.

IStrategoRuntimeService

public interface **IStrategoRuntimeService** extends *ILanguageCache*

Interface for a service that returns Stratego runtimes. Runtimes are created once and then cached, subsequent calls are faster.

Methods

genericRuntime

HybridInterpreter **genericRuntime** ()

Returns Generic Stratego runtime, with just the standard libraries loaded.

runtime

HybridInterpreter **runtime** (*ILanguageComponent* *component*, *IContext* *context*, boolean *typesmart*)

Returns a new Stratego runtime for given component, initialized with given context.

Parameters

- **component** – Language component to load the Stratego CTree and JAR files from.
- **context** – Context to initialize the runtime with.
- **typesmart** – Whether the runtime should do typesmart analysis.

Throws

- *MetaborgException* – When loading a Stratego CTree or JAR fails.

Returns New Stratego runtime.

runtime

HybridInterpreter **runtime** (*ILanguageComponent* component, *FileObject* location, boolean typesmart)

Returns a new Stratego runtime for given component, initialized without a context.

Parameters

- **component** – Language component to load the Stratego CTree and JAR files from.
- **location** – Location to initialize the runtime with.
- **typesmart** – Whether the runtime should do typesmart analysis.

Throws

- *MetaborgException* – When loading a Stratego CTree or JAR fails.

Returns New Stratego runtime.

ResourceAgent

public class **ResourceAgent** extends IOAgent

Constructors

ResourceAgent

public **ResourceAgent** (*IResourceService* resourceService)

ResourceAgent

public **ResourceAgent** (*IResourceService* resourceService, *FileObject* initialDir)

ResourceAgent

public **ResourceAgent** (*IResourceService* resourceService, *FileObject* initialDir, *OutputStream* stdout)

ResourceAgent

public **ResourceAgent** (*IResourceService* resourceService, *FileObject* initialDir, *OutputStream* stdout, *OutputStream* stderr)

Methods

closeAllFiles

public void **closeAllFiles** ()

closeRandomAccessFile

public boolean **closeRandomAccessFile** (int *fd*)

createTempDir

public String **createTempDir** (String *prefix*)

createTempFile

public String **createTempFile** (String *prefix*)

defaultStderr

public static OutputStream **defaultStderr** (String... *excludePatterns*)

defaultStdout

public static OutputStream **defaultStdout** (String... *excludePatterns*)

exists

public boolean **exists** (String *fn*)

getDefinitionDir

public String **getDefinitionDir** ()

getDefinitionDirResource

public FileObject **getDefinitionDirResource** ()

getReader

public Reader **getReader** (int *fd*)

getTempDir

public String **getTempDir** ()

getTempDirResource

public FileObject **getTempDirResource** ()

getWorkingDir

public `String` **getWorkingDir** ()

getWorkingDirResource

public `FileObject` **getWorkingDirResource** ()

getWriter

public `Writer` **getWriter** (int *fd*)

internalGetInputStream

public `InputStream` **internalGetInputStream** (int *fd*)

internalGetOutputStream

public `OutputStream` **internalGetOutputStream** (int *fd*)

isDirectory

public boolean **isDirectory** (`String` *fn*)

mkDirs

public boolean **mkDirs** (`String` *dn*)

mkdir

public boolean **mkdir** (`String` *dn*)

openFile

public `File` **openFile** (`String` *fn*)

openFileOutputStream

public `OutputStream` **openFileOutputStream** (`String` *fn*)

openInputStream

public `InputStream` **openInputStream** (`String` *fn*, boolean *isDefinitionFile*)

openRandomAccessFile

```
public int openRandomAccessFile (String fn, String mode)
```

printError

```
public void printError (String error)
```

readString

```
public String readString (int fd)
```

readable

```
public boolean readable (String fn)
```

readdir

```
public String[] readdir (String fn)
```

rmdir

```
public boolean rmdir (String dn)
```

setAbsoluteDefinitionDir

```
public void setAbsoluteDefinitionDir (FileObject dir)
```

setAbsoluteWorkingDir

```
public void setAbsoluteWorkingDir (FileObject dir)
```

setDefinitionDir

```
public void setDefinitionDir (String newDefinitionDir)
```

setWorkingDir

```
public void setWorkingDir (String newWorkingDir)
```

writable

```
public boolean writable (String fn)
```

writeChar

public void **writeChar** (int *fd*, int *c*)

StrategoCommon

public class **StrategoCommon** implements *IStrategoCommon*
Common code for using Stratego transformations in Spoofax.

Constructors

StrategoCommon

public **StrategoCommon** (*IStrategoRuntimeService* *strategoRuntimeService*, *ITermFactoryService* *termFactoryService*)

Methods

builderInputTerm

public *IStrategoTerm* **builderInputTerm** (*IStrategoTerm* *ast*, *FileObject* *resource*, *FileObject* *location*)

invoke

public *IStrategoTerm* **invoke** (*ILanguageComponent* *component*, *IContext* *context*, *IStrategoTerm* *input*, *String* *strategy*)

invoke

public *IStrategoTerm* **invoke** (*ILanguageImpl* *impl*, *IContext* *context*, *IStrategoTerm* *input*, *String* *strategy*)

invoke

public *IStrategoTerm* **invoke** (*ILanguageImpl* *impl*, *FileObject* *location*, *IStrategoTerm* *input*, *String* *strategy*)

invoke

public *IStrategoTerm* **invoke** (*HybridInterpreter* *runtime*, *IStrategoTerm* *input*, *String* *strategy*)

localLocationTerm

public *IStrategoString* **localLocationTerm** (*File* *localLocation*)

localResourceTerm

public IStrategoString **localResourceTerm** (*File localResource*, *File localLocation*)

prettyPrint

public IStrategoString **prettyPrint** (IStrategoTerm *term*)

toString

public *String* **toString** (IStrategoTerm *term*)

StrategoRuntimeClassLoader

public class **StrategoRuntimeClassLoader** extends *ClassLoader*

Constructors

StrategoRuntimeClassLoader

public **StrategoRuntimeClassLoader** (*Iterable<ClassLoader> additionalClassLoaders*)

Methods

loadClass

protected *Class<?>* **loadClass** (*String name*, boolean *resolve*)

StrategoRuntimeFacet

public class **StrategoRuntimeFacet** implements *IFacet*
Represents the Stratego runtime facet of a language.

Fields

ctreeFiles

public final *Iterable<FileObject>* **ctreeFiles**

jarFiles

public final *Iterable<FileObject>* **jarFiles**

Constructors

StrategoRuntimeFacet

```
public StrategoRuntimeFacet (Iterable<FileObject> ctreeFiles, Iterable<FileObject> jarFiles)
```

Methods

available

```
public Iterable<String> available (IResourceService resourceService)  
    Checks if all CTree and JAR files exist, returns errors if not.
```

Throws

- **IOException** – When a file operation fails.

Returns Errors, or empty if there are no errors.

StrategoRuntimeFacetFromESV

```
public class StrategoRuntimeFacetFromESV
```

Methods

create

```
public static StrategoRuntimeFacet create (IStrategoAppl esv, FileObject location)
```

StrategoRuntimeService

```
public class StrategoRuntimeService implements IStrategoRuntimeService
```

Constructors

StrategoRuntimeService

```
public StrategoRuntimeService (IResourceService resourceService, ITermFactoryService termFactoryService,  
    Set<IOperatorRegistry> strategoLibraries, ParseStrategoFileStrategy parseStrategoFileStrategy,  
    IProjectService projectService, Set<ClassLoader> additionalClassLoaders)
```

Methods

genericRuntime

```
public HybridInterpreter genericRuntime ()
```

invalidateCache

public void **invalidateCache** (*ILanguageComponent* component)

invalidateCache

public void **invalidateCache** (*ILanguageImpl* impl)

runtime

public HybridInterpreter **runtime** (*ILanguageComponent* component, *IContext* context, boolean typesmart)

runtime

public HybridInterpreter **runtime** (*ILanguageComponent* component, *FileObject* location, boolean typesmart)

org.metaborg.spoofox.core.stratego.primitive

AbsolutePathPrimitive

public class **AbsolutePathPrimitive** extends *ASpoofoxPrimitive*

Constructors

AbsolutePathPrimitive

public **AbsolutePathPrimitive** (*IResourceService* resourceService)

Methods

call

protected *IStrategoTerm* **call** (*IStrategoTerm* current, *Strategy*[] svars, *IStrategoTerm*[] tvars, *ITermFactory* factory, *IContext* context)

CallStrategyPrimitive

public class **CallStrategyPrimitive** extends *ASpoofoxContextPrimitive*

Constructors

CallStrategyPrimitive

```
public CallStrategyPrimitive (IDependencyService dependencyService, IContextService contextService, IStrategoCommon common)
```

Methods

call

```
protected IStrategoTerm call (IStrategoTerm current, Strategy[] svars, IStrategoTerm[] tvars, ITermFactory factory, IContext currentContext)
```

DigestPrimitive

```
public class DigestPrimitive extends ASpoofaxPrimitive
```

Constructors

DigestPrimitive

```
public DigestPrimitive ()
```

Methods

call

```
protected IStrategoTerm call (IStrategoTerm current, Strategy[] svars, IStrategoTerm[] tvars, ITermFactory factory, IContext context)
```

IsLanguageActivePrimitive

```
public class IsLanguageActivePrimitive extends ASpoofaxContextPrimitive
```

Constructors

IsLanguageActivePrimitive

```
public IsLanguageActivePrimitive (ILanguageService languageService)
```

Methods

call

```
protected IStrategoTerm call (IStrategoTerm current, Strategy[] svars, IStrategoTerm[] tvars, ITermFactory factory, IContext currentContext)
```

LanguageComponentsPrimitive

public class **LanguageComponentsPrimitive** extends *ASpoofaxContextPrimitive*

Constructors

LanguageComponentsPrimitive

public **LanguageComponentsPrimitive** ()

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* *context*)

LanguageImplementationPrimitive

public class **LanguageImplementationPrimitive** extends *ASpoofaxContextPrimitive*

Constructors

LanguageImplementationPrimitive

public **LanguageImplementationPrimitive** ()

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* *context*)

LanguageIncludeDirectoriesPrimitive

public class **LanguageIncludeDirectoriesPrimitive** extends *ASpoofaxContextPrimitive*

Constructors

LanguageIncludeDirectoriesPrimitive

public **LanguageIncludeDirectoriesPrimitive** (*ILanguagePathService* *languagePathService*, *IProjectService* *projectService*)

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* *context*)

LanguageIncludeFilesPrimitive

public class **LanguageIncludeFilesPrimitive** extends *ASpoofaxContextPrimitive*

Constructors

LanguageIncludeFilesPrimitive

public **LanguageIncludeFilesPrimitive** (*ILanguageService* *languageService*, *ILanguagePathService* *languagePathService*, *IProjectService* *projectService*)

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* *context*)

LanguagePrimitive

public class **LanguagePrimitive** extends *ASpoofaxContextPrimitive*

Constructors

LanguagePrimitive

public **LanguagePrimitive** ()

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* *context*)

LanguageSourceDirectoriesPrimitive

public class **LanguageSourceDirectoriesPrimitive** extends *ASpoofaxContextPrimitive*

Constructors

LanguageSourceDirectoriesPrimitive

```
public LanguageSourceDirectoriesPrimitive (ILanguagePathService languagePathService, IProjectService projectService)
```

Methods

call

```
protected IStrategoTerm call (IStrategoTerm current, Strategy[] svars, IStrategoTerm[] tvars, ITermFactory factory, IContext context)
```

LanguageSourceFilesPrimitive

```
public class LanguageSourceFilesPrimitive extends ASpoofaxContextPrimitive
```

Constructors

LanguageSourceFilesPrimitive

```
public LanguageSourceFilesPrimitive (ILanguageService languageService, ILanguagePathService languagePathService, IProjectService projectService)
```

Methods

call

```
protected IStrategoTerm call (IStrategoTerm current, Strategy[] svars, IStrategoTerm[] tvars, ITermFactory factory, IContext context)
```

LocalPathPrimitive

```
public class LocalPathPrimitive extends ASpoofaxPrimitive
```

Constructors

LocalPathPrimitive

```
public LocalPathPrimitive (IResourceService resourceService)
```

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* *context*)

LocalReplicatePrimitive

public class **LocalReplicatePrimitive** extends *ASpoofoxPrimitive*

Constructors

LocalReplicatePrimitive

public **LocalReplicatePrimitive** (*IResourceService* *resourceService*)

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* *context*)

ParsePrimitive

public class **ParsePrimitive** extends *ASpoofoxPrimitive*

Constructors

ParsePrimitive

public **ParsePrimitive** (*IResourceService* *resourceService*, *ILanguageService* *languageService*, *ILanguageIdentifierService* *languageIdentifierService*, *IDialectIdentifier* *dialectIdentifier*, *ISpoofoxUnitService* *unitService*, *ISourceTextService* *sourceTextService*, *ISpoofoxSyntaxService* *syntaxService*)

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *org.spoofox.interpreter.core.IContext* *strategoContext*)

ProjectPathPrimitive

public class **ProjectPathPrimitive** extends *ASpoofoxContextPrimitive*

Constructors

ProjectPathPrimitive

```
public ProjectPathPrimitive ()
```

Methods

call

```
protected IStrategoTerm call (IStrategoTerm current, Strategy[] svars, IStrategoTerm[] tvars, ITermFactory  
                                factory, IContext context)
```

ScopeGraphLibrary

```
public class ScopeGraphLibrary extends GenericPrimitiveLibrary
```

Fields

REGISTRY_NAME

```
public static final String REGISTRY_NAME
```

Constructors

ScopeGraphLibrary

```
public ScopeGraphLibrary (Set<AbstractPrimitive> primitives)
```

SpoofaxPrimitiveLibrary

```
public class SpoofaxPrimitiveLibrary extends GenericPrimitiveLibrary
```

Fields

name

```
public static final String name
```

Constructors

SpoofaxPrimitiveLibrary

```
public SpoofaxPrimitiveLibrary (Set<AbstractPrimitive> primitives)
```

org.metaborg.spoofax.core.stratego.primitive.generic

ASpoofaxContextPrimitive

public abstract class **ASpoofaxContextPrimitive** extends *ASpoofaxPrimitive*

A primitive base class that requires a Spoofax context to be available.

Constructors

ASpoofaxContextPrimitive

public **ASpoofaxContextPrimitive** (*String name*, int *svars*, int *tvars*)

Methods

call

protected abstract IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext context*)

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, org.spoofax.interpreter.core.IContext *strategoContext*)

ASpoofaxPrimitive

public abstract class **ASpoofaxPrimitive** extends AbstractPrimitive

An improved primitive base class.

Constructors

ASpoofaxPrimitive

public **ASpoofaxPrimitive** (*String name*, int *svars*, int *tvars*)

Methods

call

protected abstract IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext context*)

call

public boolean **call** (*IContext context*, Strategy[] *svars*, IStrategoTerm[] *tvars*)

metaborgContext

protected org.metaborg.core.context.*IContext* **metaborgContext** (*IContext* strategoContext)

DummyPrimitive

public class **DummyPrimitive** extends AbstractPrimitive

Constructors

DummyPrimitive

public **DummyPrimitive** (*String* name, int strategyArity, int termArity)

Methods

call

public boolean **call** (*IContext* env, Strategy[] strategies, IStrategoTerm[] terms)

GenericPrimitiveLibrary

public class **GenericPrimitiveLibrary** extends AbstractStrategoOperatorRegistry

Constructors

GenericPrimitiveLibrary

public **GenericPrimitiveLibrary** (Iterable<AbstractPrimitive> primitives, *String* name)

Methods

getOperatorRegistryName

public *String* **getOperatorRegistryName** ()

RedirectingPrimitive

public class **RedirectingPrimitive** extends AbstractPrimitive

Constructors

RedirectingPrimitive

public **RedirectingPrimitive** (*String* name, AbstractPrimitive redirectTo)

Methods

call

public boolean **call** (*IContext* env, Strategy[] strategies, IStrategoTerm[] terms)

org.metaborg.spoofax.core.stratego.primitive.legacy

LegacyForeignCallPrimitive

public class **LegacyForeignCallPrimitive** extends *ASpoofaxContextPrimitive*

Constructors

LegacyForeignCallPrimitive

public **LegacyForeignCallPrimitive** (*ILanguageService* languageService, *IContextService* contextService, *IProjectService* projectService, *IStrategoCommon* common)

Methods

call

protected IStrategoTerm **call** (IStrategoTerm current, Strategy[] svars, IStrategoTerm[] tvars, ITermFactory factory, *IContext* currentContext)

LegacyLanguageIncludeFilesPrimitive

public class **LegacyLanguageIncludeFilesPrimitive** extends *RedirectingPrimitive*

Constructors

LegacyLanguageIncludeFilesPrimitive

public **LegacyLanguageIncludeFilesPrimitive** (*LanguageIncludeFilesPrimitive* prim)

LegacyLanguageIncludeLocationsPrimitive

public class **LegacyLanguageIncludeLocationsPrimitive** extends *RedirectingPrimitive*

Constructors

LegacyLanguageIncludeLocationsPrimitive

public **LegacyLanguageIncludeLocationsPrimitive** (*LanguageIncludeDirectoriesPrimitive prim*)

LegacyLanguageIncludeLocationsPrimitive2

public class **LegacyLanguageIncludeLocationsPrimitive2** extends *RedirectingPrimitive*

Constructors

LegacyLanguageIncludeLocationsPrimitive2

public **LegacyLanguageIncludeLocationsPrimitive2** (*LanguageIncludeDirectoriesPrimitive prim*)

LegacyLanguageSourceFilesPrimitive

public class **LegacyLanguageSourceFilesPrimitive** extends *RedirectingPrimitive*

Constructors

LegacyLanguageSourceFilesPrimitive

public **LegacyLanguageSourceFilesPrimitive** (*LanguageSourceFilesPrimitive prim*)

LegacyLanguageSourceLocationsPrimitive

public class **LegacyLanguageSourceLocationsPrimitive** extends *RedirectingPrimitive*

Constructors

LegacyLanguageSourceLocationsPrimitive

public **LegacyLanguageSourceLocationsPrimitive** (*LanguageSourceDirectoriesPrimitive prim*)

LegacyLanguageSourceLocationsPrimitive2

public class **LegacyLanguageSourceLocationsPrimitive2** extends *RedirectingPrimitive*

Constructors

LegacyLanguageSourceLocationsPrimitive2

public **LegacyLanguageSourceLocationsPrimitive2** (*LanguageSourceDirectoriesPrimitive prim*)

LegacyProjectPathPrimitive

public class **LegacyProjectPathPrimitive** extends *RedirectingPrimitive*

Constructors

LegacyProjectPathPrimitive

public **LegacyProjectPathPrimitive** (*ProjectPathPrimitive prim*)

LegacySpoofaxPrimitiveLibrary

public class **LegacySpoofaxPrimitiveLibrary** extends *GenericPrimitiveLibrary*

Fields

name

public static final *String* **name**

Constructors

LegacySpoofaxPrimitiveLibrary

public **LegacySpoofaxPrimitiveLibrary** (*Set<AbstractPrimitive> primitives*)

org.metaborg.spoofax.core.stratego.primitive.legacy.parse

LegacyParseFilePrimitive

public class **LegacyParseFilePrimitive** extends *AbstractPrimitive*

Constructors

LegacyParseFilePrimitive

public **LegacyParseFilePrimitive** (*IResourceService* resourceService, *ILanguageIdentifierService* languageIdentifierService, *ISpoofaxUnitService* unitService, *ISourceTextService* sourceTextService, *ISpoofaxSyntaxService* syntaxService)

LegacyParseFilePrimitive

protected **LegacyParseFilePrimitive** (*String* name, *IResourceService* resourceService, *ILanguageIdentifierService* languageIdentifierService, *ISpoofaxUnitService* unitService, *ISourceTextService* sourceTextService, *ISpoofaxSyntaxService* syntaxService)

Methods

call

public boolean **call** (*IContext* env, Strategy[] strategies, IStrategoTerm[] terms)

LegacyParseFilePtPrimitive

public class **LegacyParseFilePtPrimitive** extends *LegacyParseFilePrimitive*

Constructors

LegacyParseFilePtPrimitive

public **LegacyParseFilePtPrimitive** (*IResourceService* resourceService, *ILanguageIdentifierService* languageIdentifierService, *ISpoofaxUnitService* unitService, *ISourceTextService* sourceTextService, *SpoofaxSyntaxService* syntaxService)

LegacySpoofaxJSGLRLibrary

public class **LegacySpoofaxJSGLRLibrary** extends *GenericPrimitiveLibrary*

Fields

injectionName

public static final *String* **injectionName**

Constructors

LegacySpoofaxJSGLRLibrary

public **LegacySpoofaxJSGLRLibrary** (*Set*<AbstractPrimitive> primitives)

org.metaborg.spoofax.core.stratego.strategies

ParseFileStrategy

public class **ParseFileStrategy** extends Strategy

Constructors

ParseFileStrategy

public **ParseFileStrategy** (*IResourceService* resourceService, *ILanguageIdentifierService* languageIdentifierService, *ISpoofaxUnitService* unitService, *ISourceTextService* sourceTextService, *ISpoofaxSyntaxService* syntaxService)

Methods

invoke

public IStrategoTerm **invoke** (Context *context*, IStrategoTerm *current*)

ParseStrategoFileStrategy

public class **ParseStrategoFileStrategy** extends parse_stratego_file_0_0

Constructors

ParseStrategoFileStrategy

public **ParseStrategoFileStrategy** (*ParseFileStrategy* parseFileStrategy)

Methods

invoke

public IStrategoTerm **invoke** (Context *context*, IStrategoTerm *current*)

org.metaborg.spoofax.core.style

CategorizerService

public class **CategorizerService** implements *ISpoofaxCategorizerService*

Methods

categorize

```
public Iterable<IRegionCategory<IStrategoTerm>> categorize (ILanguageImpl language, ISpoofaxParseUnit parseResult)
```

categorize

```
public Iterable<IRegionCategory<IStrategoTerm>> categorize (ILanguageImpl language, ISpoofaxAnalyzeUnit analysisResult)
```

CategorizerValidator

```
public class CategorizerValidator
```

Methods

validate

```
public static <T> Iterable<IRegionCategory<T>> validate (Iterable<IRegionCategory<T>> categorization)
```

ConsCategory

```
public class ConsCategory implements ICategory
```

Fields

cons

```
public final String cons
```

Constructors

ConsCategory

```
public ConsCategory (String cons)
```

Methods

name

```
public String name ()
```

toString

```
public String toString ()
```

ISpoofaxCategorizerService

public interface **ISpoofaxCategorizerService** extends *ICategorizerService*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *IStrategoTerm*>
Typedef interface for *ICategorizerService* with Spoofox interfaces.

ISpoofaxStylerService

public interface **ISpoofaxStylerService** extends *IStylerService*<*IStrategoTerm*>
Typedef interface for *IStylerService* with Spoofox interfaces.

SortCategory

public class **SortCategory** implements *ICategory*

Fields

sort

```
public final String sort
```

Constructors

SortCategory

```
public SortCategory (String sort)
```

Methods

name

```
public String name ()
```

toString

```
public String toString ()
```

SortConsCategory

public class **SortConsCategory** implements *ICategory*

Fields

cons

public final *String* **cons**

sort

public final *String* **sort**

Constructors

SortConsCategory

public **SortConsCategory** (*String* sort, *String* cons)

Methods

name

public *String* **name** ()

toString

public *String* **toString** ()

StylerFacet

public class **StylerFacet** implements *IFacet*

Methods

consStyle

public *IStyle* **consStyle** (*String* cons)

hasConsStyle

public boolean **hasConsStyle** (*String* cons)

hasSortConsStyle

public boolean **hasSortConsStyle** (*String* sort, *String* cons)

hasSortStyle

public boolean **hasSortStyle** (*String sort*)

hasTokenStyle

public boolean **hasTokenStyle** (*String builtin*)

mapConsToStyle

public void **mapConsToStyle** (*String cons*, *IStyle style*)

mapSortConsToStyle

public void **mapSortConsToStyle** (*String sort*, *String cons*, *IStyle style*)

mapSortToStyle

public void **mapSortToStyle** (*String sort*, *IStyle style*)

mapTokenToStyle

public void **mapTokenToStyle** (*String builtin*, *IStyle style*)

sortConsStyle

public *IStyle* **sortConsStyle** (*String sort*, *String cons*)

sortStyle

public *IStyle* **sortStyle** (*String sort*)

tokenStyle

public *IStyle* **tokenStyle** (*String builtin*)

StylerFacetFromESV

public class **StylerFacetFromESV**

Methods

create

public static *StylarFacet* **create** (*IStrategoAppl* *esv*)

StylarService

public class **StylarService** implements *ISpoofaxStylarService*

Methods

styleAnalyzed

public *Iterable*<*IRegionStyle*<*IStrategoTerm*>> **styleAnalyzed** (*ILanguageImpl* *language*, *Iterable*<*IRegionCategory*<*IStrategoTerm*>> *categorization*)

styleParsed

public *Iterable*<*IRegionStyle*<*IStrategoTerm*>> **styleParsed** (*ILanguageImpl* *language*, *Iterable*<*IRegionCategory*<*IStrategoTerm*>> *categorization*)

TokenCategory

public class **TokenCategory** implements *ICategory*

Fields

token

public final *String* **token**

Constructors

TokenCategory

public **TokenCategory** (*String* *token*)

Methods

name

public *String* **name** ()

toString

public *String* **toString** ()

org.metaborg.spoofax.core.syntax

FileParseTableProvider

public class **FileParseTableProvider** implements *IParseTableProvider*

Constructors

FileParseTableProvider

public **FileParseTableProvider** (*FileObject* resource, *ITermFactory* termFactory)

Methods

parseTable

public *ParseTable* **parseTable** ()

IParseTableProvider

public interface **IParseTableProvider**

Methods

parseTable

ParseTable **parseTable** ()

IParserConfig

public interface **IParserConfig**

Methods

getParseTableProvider

IParseTableProvider **getParseTableProvider** ()

getStartSymbol

String **getStartSymbol** ()

ISpoofoxParser

public interface **ISpoofoxParser** extends *IParser*<*ISpoofoxInputUnit*, *ISpoofoxParseUnit*>
 Typedef interface for *IParser* with Spoofox interfaces.

ISpoofoxSyntaxService

public interface **ISpoofoxSyntaxService** extends *ISyntaxService*<*ISpoofoxInputUnit*, *ISpoofoxParseUnit*>
 Typedef interface for *ISyntaxService* with Spoofox interfaces.

JSGLRI

public class **JSGLRI**

Constructors

JSGLRI

public **JSGLRI** (*IParserConfig* config, *ITermFactory* termFactory, *ILanguageImpl* language, *ILanguageImpl* dialect, *FileObject* resource, *String* input)

Methods

actuallyParse

public *SGLRParseResult* **actuallyParse** (*String* text, *String* filename, *JSGLRParserConfiguration* parserConfig)

getConfig

public *IParserConfig* **getConfig** ()

getDialect

public *ILanguageImpl* **getDialect** ()

getInput

public *String* **getInput** ()

getLanguage

public *ILanguageImpl* **getLanguage** ()

getParser

protected SGLR **getParser** ()

getResource

public FileObject **getResource** ()

parse

public *ParseContrib* **parse** (*JSGLRParserConfiguration* parserConfig)

JSGLRParseErrorHandler

public class **JSGLRParseErrorHandler**

Constructors

JSGLRParseErrorHandler

public **JSGLRParseErrorHandler** (*JSGLRI* parser, FileObject resource, boolean hasRecoveryRules)

Methods

gatherNonFatalErrors

public void **gatherNonFatalErrors** (IStrategoTerm top)

messages

public Iterable<*IMessage*> **messages** ()

processFatalException

public void **processFatalException** (ITokenizer tokenizer, Exception exception)

setRecoveryFailed

public void **setRecoveryFailed** (boolean recoveryFailed)

JSGLRParseService

public class **JSGLRParseService** implements *ISpoofaxParser*, *ILanguageCache*

Fields

name

public static final [String](#) **name**

Constructors

JSGLRParseService

public **JSGLRParseService** (*ISpoofaxUnitService* unitService, *ITermFactoryService* termFactoryService, *JSGLRParserConfiguration* defaultParserConfig)

Methods

getCompletionParserConfig

public *IParserConfig* **getCompletionParserConfig** (*ILanguageImpl* lang, *ISpoofaxInputUnit* input)

getParserConfig

public *IParserConfig* **getParserConfig** (*ILanguageImpl* lang, *ISpoofaxInputUnit* input)

invalidateCache

public void **invalidateCache** (*ILanguageImpl* impl)

invalidateCache

public void **invalidateCache** (*ILanguageComponent* component)

parse

public *ISpoofaxParseUnit* **parse** (*ISpoofaxInputUnit* input, *IProgress* progress, *ICancel* cancel)

parseAll

public [Collection](#)<*ISpoofaxParseUnit*> **parseAll** ([Iterable](#)<*ISpoofaxInputUnit*> inputs, *IProgress* progress, *ICancel* cancel)

JSGLRParserConfiguration

public class **JSGLRParserConfiguration**

Fields

completion

public final boolean **completion**

cursorPosition

public final int **cursorPosition**

defaultCompletion

public static final boolean **defaultCompletion**

defaultCursorPosition

public static final int **defaultCursorPosition**

defaultImplode

public static final boolean **defaultImplode**

defaultOverridingStartSymbol

public static final [String](#) **defaultOverridingStartSymbol**

defaultRecovery

public static final boolean **defaultRecovery**

defaultTimeout

public static final int **defaultTimeout**

implode

public final boolean **implode**

overridingStartSymbol

public final [String](#) **overridingStartSymbol**

recovery

public final boolean **recovery**

timeout

public final int **timeout**

Constructors**JSGLRParserConfiguration**

public **JSGLRParserConfiguration** ()

JSGLRParserConfiguration

public **JSGLRParserConfiguration** (boolean *implode*, boolean *recovery*)

JSGLRParserConfiguration

public **JSGLRParserConfiguration** (boolean *implode*, boolean *recovery*, boolean *completion*, int *time-out*, int *cursorPosition*)

JSGLRParserConfiguration

public **JSGLRParserConfiguration** (*String* *startSymbol*)

JSGLRParserConfiguration

public **JSGLRParserConfiguration** (boolean *implode*, boolean *recovery*, boolean *completion*, int *time-out*, int *cursorPosition*, *String* *startSymbol*)

JSGLRSourceRegionFactory

public class **JSGLRSourceRegionFactory**

Methods**fromToken**

public static *ISourceRegion* **fromToken** (IToken *token*)

fromTokens

public static *ISourceRegion* **fromTokens** (IToken *left*, IToken *right*)

fromTokensLayout

public static *ISourceRegion* **fromTokensLayout** (IToken *left*, IToken *right*, boolean *isNullable*)

ParseFacetFromESV

public class **ParseFacetFromESV**

Methods

create

public static *ParseFacet* **create** (IStrategoAppl *esv*)

hasParser

public static boolean **hasParser** (IStrategoAppl *esv*)

ParserConfig

public class **ParserConfig** implements *IParserConfig*

Constructors

ParserConfig

public **ParserConfig** (String *startSymbol*, *IParseTableProvider* *provider*)

Methods

getParseTableProvider

public *IParseTableProvider* **getParseTableProvider** ()

getStartSymbol

public String **getStartSymbol** ()

SourceAttachment

public class **SourceAttachment** extends AbstractTermAttachment

A tree-wide source resource and parse controller attachment. Uses `ParentAttachment` to identify the root of a tree, where this attachment is stored.

Fields

TYPE

public static final TermAttachmentType<*SourceAttachment*> **TYPE**

Methods

getAttachmentType

public TermAttachmentType<*SourceAttachment*> **getAttachmentType** ()

getFile

public *FileObject* **getFile** ()

getResource

public static *FileObject* **getResource** (ISimpleTerm *term*, *IResourceService* *resourceService*)

putSource

public static void **putSource** (ISimpleTerm *term*, *FileObject* *resource*)
Sets the resource for a term tree. Should only be applied to the root of a tree.

SpoofoxSyntaxService

public class **SpoofoxSyntaxService** extends *SyntaxService*<*ISpoofaxInputUnit*, *ISpoofaxParseUnit*> implements *ISpoofaxSyntaxService*

Constructors

SpoofoxSyntaxService

public **SpoofoxSyntaxService** (Map<String, *ISpoofaxParser*> *parsers*)

Methods

fenceCharacters

public *Iterable*<*FenceCharacters*> **fenceCharacters** (*ILanguageImpl* *language*)

multiLineCommentCharacters

public *Iterable*<*MultiLineCommentCharacters*> **multiLineCommentCharacters** (*ILanguageImpl* *language*)

singleLineCommentPrefixes

public `Iterable<String>` **singleLineCommentPrefixes** (*ILanguageImpl* language)

SyntaxFacet

public class **SyntaxFacet** implements *IFacet*
 Represents the syntax (or parsing) facet of a language.

Fields

completionParseTable

public final `FileObject` **completionParseTable**

fenceCharacters

public final `Iterable<FenceCharacters>` **fenceCharacters**

multiLineCommentCharacters

public final `Iterable<MultiLineCommentCharacters>` **multiLineCommentCharacters**

parseTable

public final `FileObject` **parseTable**

singleLineCommentPrefixes

public final `Iterable<String>` **singleLineCommentPrefixes**

startSymbols

public final `Iterable<String>` **startSymbols**

Constructors

SyntaxFacet

public **SyntaxFacet** (`FileObject` parseTable, `FileObject` completionParseTable, `Iterable<String>` startSymbols)
 Creates a syntax facet from a parse table provider and start symbols.

Parameters

- **parseTable** – Parse table.
- **startSymbols** – Set of start symbols.

SyntaxFacet

```
public SyntaxFacet (FileObject parseTable, FileObject completionParseTable, Iterable<String>
                     startSymbols, Iterable<String> singleLineCommentPrefixes, Iter-
                     able<MultiLineCommentCharacters> multiLineCommentCharacters, Iter-
                     able<FenceCharacters> fenceCharacters)
```

Creates a syntax facet from syntax configuration.

Parameters

- **parseTable** – Parse table.
- **startSymbols** – Set of start symbols.
- **singleLineCommentPrefixes** – Single line comment prefixes.
- **multiLineCommentCharacters** – Multi line comment characters.
- **fenceCharacters** – Fence characters.

Methods

available

```
public Iterable<String> available ()
```

Checks if the parse table file exists, returns errors if not.

Throws

- **FileNotFoundException** – When an error occurs while checking if the parse table file exists.

Returns Errors, or empty if there are no errors.

SyntaxFacetFromESV

```
public class SyntaxFacetFromESV
```

Methods

create

```
public static SyntaxFacet create (IStrategoAppl esv, FileObject location)
```

org.metaborg.spoofox.core.terms

ITermFactoryService

```
public interface ITermFactoryService
```

Interface for retrieving term factories for languages and generic use.

Methods

get

ITermFactory **get** (*ILanguageImpl impl*, *IProject project*, boolean *supportsTypesmart*)

Return the term factory to be used when constructing new terms for given language implementation.

Parameters

- **impl** – Implementation to get the term factory for.
- **project** – The current project through which the user can require typesmart analysis.
- **supportsTypesmart** – Whether the caller supports typesmart analysis.

Returns Language-specific term factory.

get

ITermFactory **get** (*ILanguageComponent component*, *IProject project*, boolean *supportsTypesmart*)

Return the term factory to be used when constructing new terms for given language component.

Parameters

- **component** – Component to get the term factory for.
- **project** – The current project through which the user can require typesmart analysis.
- **supportsTypesmart** – Whether the caller supports typesmart analysis.

Returns Language-specific term factory.

getGeneric

ITermFactory **getGeneric** ()

Returns the generic term factory.

Returns Generic term factory.

TermFactoryService

public class **TermFactoryService** implements *ITermFactoryService*, *ILanguageCache*

Constructors

TermFactoryService

public **TermFactoryService** (*IDependencyService dependencyService*)

Methods

get

public ITermFactory **get** (*ILanguageImpl impl*, *IProject project*, boolean *supportsTypesmart*)

get

public ITermFactory **get** (*ILanguageComponent* component, *IProject* project, boolean supportsTypesmart)

getGeneric

public ITermFactory **getGeneric** ()

invalidateCache

public void **invalidateCache** (*ILanguageImpl* impl)

invalidateCache

public void **invalidateCache** (*ILanguageComponent* component)

org.metaborg.spoofox.core.tracing

HoverFacet

public class **HoverFacet** implements *IFacet*

Fields

strategyName

public final *String* **strategyName**

Constructors

HoverFacet

public **HoverFacet** (*String* strategyName)

HoverService

public class **HoverService** implements *ISpoofoxHoverService*

Constructors

HoverService

public **HoverService** (*IProjectService* projectService, *IContextService* contextService, *ITermFactoryService* termFactoryService, *IStrategoRuntimeService* strategoRuntimeService, *ISpoofox-TracingService* tracingService, *TracingCommon* common)

Methods

available

public boolean **available** (*ILanguageImpl language*)

hover

public *Hover* **hover** (int *offset*, *ISpoofaxParseUnit result*)

hover

public *Hover* **hover** (int *offset*, *ISpoofaxAnalyzeUnit result*)

ISpoofaxHoverService

public interface **ISpoofaxHoverService** extends *IHoverService<ISpoofaxParseUnit, ISpoofaxAnalyzeUnit>*
 Typedef interface for *IHoverService* with Spoofox interfaces.

ISpoofaxResolverService

public interface **ISpoofaxResolverService** extends *IResolverService<ISpoofaxParseUnit, ISpoofaxAnalyzeUnit>*
 Typedef interface for *IResolverService* with Spoofox interfaces.

ISpoofaxTracingService

public interface **ISpoofaxTracingService** extends *ITracingService<ISpoofaxParseUnit, ISpoofaxAnalyzeUnit, ISpoofaxTransform>*
 Typedef interface for *ITracingService* with Spoofox interfaces.

ResolverFacet

public class **ResolverFacet** implements *IFacet*

Fields

strategyName

public final *String* **strategyName**

Constructors

ResolverFacet

public **ResolverFacet** (*String strategyName*)

ResolverFacetFromESV

public class **ResolverFacetFromESV**

Methods

createHover

public static *HoverFacet* **createHover** (*IStrategoAppl* esv)

createResolver

public static *ResolverFacet* **createResolver** (*IStrategoAppl* esv)

ResolverService

public class **ResolverService** implements *ISpoofoxResolverService*

Constructors

ResolverService

public **ResolverService** (*IProjectService* projectService, *IContextService* contextService, *ITermFactoryService* termFactoryService, *IStrategoRuntimeService* strategoRuntimeService, *ISpoofoxTracingService* tracingService, *TracingCommon* common)

Methods

available

public boolean **available** (*ILanguageImpl* language)

resolve

public *Resolution* **resolve** (int offset, *ISpoofoxParseUnit* result)

resolve

public *Resolution* **resolve** (int offset, *ISpoofoxAnalyzeUnit* result)

TracingCommon

public class **TracingCommon**

Constructors

TracingCommon

```
public TracingCommon (ISpoofaxTracingService tracingService, IStrategoCommon common)
```

Methods

getTargetLocation

```
public ISourceLocation getTargetLocation (IStrategoTerm term)
```

outputs

```
public TermWithRegion outputs (ITermFactory termFactory, HybridInterpreter runtime, FileObject location,  
                                FileObject resource, IStrategoTerm result, Iterable<IStrategoTerm> inRe-  
                                gion, String strategy)
```

TracingCommon.TermWithRegion

```
public static class TermWithRegion
```

Data class representing a term with its corresponding region in the source text.

Fields

region

```
public final ISourceRegion region
```

term

```
public final IStrategoTerm term
```

Constructors

TermWithRegion

```
public TermWithRegion (IStrategoTerm term, ISourceRegion region)
```

TracingService

```
public class TracingService implements ISpoofaxTracingService
```

Constructors

TracingService

public **TracingService** (*IResourceService* resourceService)

Methods

fragments

public *Iterable*<*IStrategoTerm*> **fragments** (*ISpoofoxParseUnit* result, *ISourceRegion* region)

fragments

public *Iterable*<*IStrategoTerm*> **fragments** (*ISpoofoxAnalyzeUnit* result, *ISourceRegion* region)

fragments

public *Iterable*<*IStrategoTerm*> **fragments** (*ISpoofoxTransformUnit*<?> result, *ISourceRegion* region)

fragmentsWithin

public *Iterable*<*IStrategoTerm*> **fragmentsWithin** (*ISpoofoxParseUnit* result, *ISourceRegion* region)

fragmentsWithin

public *Iterable*<*IStrategoTerm*> **fragmentsWithin** (*ISpoofoxAnalyzeUnit* result, *ISourceRegion* region)

fragmentsWithin

public *Iterable*<*IStrategoTerm*> **fragmentsWithin** (*ISpoofoxTransformUnit*<?> result, *ISourceRegion* region)

location

public *ISourceLocation* **location** (*IStrategoTerm* fragment)

origin

public *IStrategoTerm* **origin** (*IStrategoTerm* fragment)

org.metaborg.spoofax.core.transform

ISpoofaxTransformService

public interface **ISpoofaxTransformService** extends *ITransformService*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxTransformUnit*>
 Typedef interface for *ITransformService* with Spoofox interfaces.

IStrategoTransformer

public interface **IStrategoTransformer** extends *ITransformer*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxTransformUnit*>
 Typedef interface for *ITransformer* with Spoofox interfaces.

SpoofaxTransformService

public class **SpoofaxTransformService** extends *TransformService*<*ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxTransformUnit*>
 Typedef class for *TransformService* with *IStrategoTerm*.

Constructors

SpoofaxTransformService

public **SpoofaxTransformService** (*IActionService* actionService, *IStrategoTransformer* transformer)

StrategoTransformer

public class **StrategoTransformer** implements *IStrategoTransformer*

Constructors

StrategoTransformer

public **StrategoTransformer** (*IResourceService* resourceService, *ISpoofaxUnitService* unitService, *IEditorRegistry* editorRegistry, *IStrategoRuntimeService* strategoRuntimeService, *IStrategoCommon* common)

Methods

transform

public *ISpoofaxTransformUnit*<*ISpoofaxParseUnit*> **transform** (*ISpoofaxParseUnit* input, *IContext* context, *TransformActionContrib* action, *ITransformConfig* config)

transform

```
public ISpoofaxTransformUnit<ISpoofaxAnalyzeUnit> transform(ISpoofaxAnalyzeUnit input, IContext context, TransformActionContrib action, ITransformConfig config)
```

transformAllAnalyzed

```
public Collection<ISpoofaxTransformUnit<ISpoofaxAnalyzeUnit>> transformAllAnalyzed(Iterable<ISpoofaxAnalyzeUnit> inputs, IContext context, TransformActionContrib action, ITransformConfig config)
```

transformAllParsed

```
public Collection<ISpoofaxTransformUnit<ISpoofaxParseUnit>> transformAllParsed(Iterable<ISpoofaxParseUnit> inputs, IContext context, TransformActionContrib action, ITransformConfig config)
```

org.metaborg.spoofox.core.unit

AnalyzeContrib

public class **AnalyzeContrib** implements *IUnitContrib*

Fields

ast

public final IStrategoTerm **ast**

duration

public final long **duration**

hasAst

public final boolean **hasAst**

messages

public final *Iterable*<*IMessage*> **messages**

success

public final boolean **success**

valid

public final boolean **valid**

Constructors

AnalyzeContrib

public **AnalyzeContrib**(boolean *valid*, boolean *success*, boolean *hasAst*, *IStrategoTerm* *ast*, *Iterable*<*IMessage*> *messages*, long *duration*)

AnalyzeContrib

public **AnalyzeContrib**()

Methods

id

public *String* **id**()

AnalyzeUnit

public class **AnalyzeUnit** extends *UnitWrapper* implements *ISpoofaxAnalyzeUnit*

Constructors

AnalyzeUnit

public **AnalyzeUnit**(*Unit* *unit*, *AnalyzeContrib* *contrib*, *ISpoofaxParseUnit* *parseUnit*, *IContext* *context*)

Methods

ast

public IStrategoTerm **ast** ()

context

public *IContext* **context** ()

duration

public long **duration** ()

hasAst

public boolean **hasAst** ()

input

public *ISpoofaxParseUnit* **input** ()

messages

public *Iterable*<*IMessage*> **messages** ()

success

public boolean **success** ()

valid

public boolean **valid** ()

AnalyzeUnitUpdate

public class **AnalyzeUnitUpdate** implements *ISpoofaxAnalyzeUnitUpdate*

Constructors

AnalyzeUnitUpdate

public **AnalyzeUnitUpdate** (*FileObject* source, *AnalyzeUpdateData* data)

Methods

messages

public [Iterable](#)<[IMessage](#)> **messages** ()

source

public [FileObject](#) **source** ()

AnalyzeUpdateData

public class **AnalyzeUpdateData**

Fields

messages

public final [Iterable](#)<[IMessage](#)> **messages**

Constructors

AnalyzeUpdateData

public **AnalyzeUpdateData** ([Iterable](#)<[IMessage](#)> messages)

AnalyzeUpdateData

public **AnalyzeUpdateData** ()

ISpoofaxAnalyzeUnit

public interface **ISpoofaxAnalyzeUnit** extends [IAnalyzeUnit](#)
Spoofax-specific extension of an [IAnalyzeUnit](#) that adds an [IStrategoTerm](#) AST.

Methods

ast

[IStrategoTerm](#) **ast** ()

Returns Analyzed AST, or null if [valid\(\)](#) or [hasAst\(\)](#) returns false. If [success\(\)](#) returns false, this AST may still represent an error recovered AST.

hasAst

boolean **hasAst** ()

Returns True if the analyzer that created this unit attempted to make an AST. False otherwise.

input

ISpoofaxParseUnit **input** ()
{ @inheritDoc }

ISpoofaxAnalyzeUnitUpdate

public interface **ISpoofaxAnalyzeUnitUpdate** extends *IAnalyzeUnitUpdate*
Spoofax-specific extension of an analyze unit update.

ISpoofaxInputUnit

public interface **ISpoofaxInputUnit** extends *IInputUnit*
Spoofax-specific extension of an input unit.

Methods

config

JSGLRParserConfiguration **config** ()

Returns Parser-specific configuration, or null when no configuration has been set.

ISpoofaxInputUnitService

public interface **ISpoofaxInputUnitService** extends *IInputUnitService*<*ISpoofaxInputUnit*>

Methods

inputUnit

ISpoofaxInputUnit **inputUnit** (*FileObject* source, *String* text, *ILanguageImpl* langImpl, *ILanguageImpl* dialect, *JSGLRParserConfiguration* config)

inputUnit

ISpoofaxInputUnit **inputUnit** (*String* text, *ILanguageImpl* langImpl, *ILanguageImpl* dialect, *JSGLRParserConfiguration* config)

ISpoofaxParseUnit

public interface **ISpoofaxParseUnit** extends *IParseUnit*

Spoofax-specific extension of a parse unit that adds an *IStrategoTerm* AST.

Methods

ast

IStrategoTerm **ast** ()

Returns Parsed AST, or null if *valid()* return false. If *success()* returns false, this AST may still represent an error recovered AST.

input

ISpoofaxInputUnit **input** ()
{@inheritDoc}

ISpoofaxTransformOutput

public interface **ISpoofaxTransformOutput** extends *ITransformOutput*

Methods

ast

IStrategoTerm **ast** ()

The output term of the transformation.

ISpoofaxTransformUnit

public interface **ISpoofaxTransformUnit**<*I* extends *IUnit*> extends *ITransformUnit*<*I*>

Spoofax-specific extension of an *ITransformUnit* that adds an *String* AST.

Parameters

- <*I*> – Type of input unit.

Methods

ast

IStrategoTerm **ast** ()

Returns Transformed AST, or null if *valid()* return false. If *success()* returns false, this AST may still represent an error recovered AST.

outputs

Iterable<? extends *ISpoofaxTransformOutput*> **outputs** ()

ISpoofaxUnitService

public interface **ISpoofaxUnitService** extends *IUnitService*<*ISpoofaxInputUnit*, *ISpoofaxParseUnit*, *ISpoofaxAnalyzeUnit*, *ISpoofaxTransformUnit*>
 Typedef interface for *IUnitService* with Spoofox interfaces, extended with methods to create new parse, analyze, and transform units.

Methods

analyzeUnit

ISpoofaxAnalyzeUnit **analyzeUnit** (*ISpoofaxParseUnit* input, *AnalyzeContrib* contrib, *IContext* context)

analyzeUnitUpdate

ISpoofaxAnalyzeUnitUpdate **analyzeUnitUpdate** (*FileObject* source, *AnalyzeUpdateData* contrib, *IContext* context)

parseUnit

ISpoofaxParseUnit **parseUnit** (*ISpoofaxInputUnit* input, *ParseContrib* contrib)

transformUnit

<I extends *IUnit*> *ISpoofaxTransformUnit*<I> **transformUnit** (I input, *TransformContrib* contrib, *IContext* context, *TransformActionContrib* action)

InputContrib

public class **InputContrib** implements *IUnitContrib*

Fields

config

public final *JSGLRParserConfiguration* **config**

dialect

public final *ILanguageImpl* **dialect**

langImpl

public final *ILanguageImpl* **langImpl**

text

public final *String* **text**

Constructors

InputContrib

public **InputContrib** (*String text, ILanguageImpl langImpl, ILanguageImpl dialect, JSGLRParserConfiguration config*)

InputContrib

public **InputContrib** (*String text, ILanguageImpl langImpl, ILanguageImpl dialect*)

InputContrib

public **InputContrib** (*ILanguageImpl langImpl, ILanguageImpl dialect*)

InputContrib

public **InputContrib** (*ILanguageImpl langImpl*)

Methods

id

public *String* **id** ()

InputUnit

public class **InputUnit** extends *UnitWrapper* implements *ISpoofaxInputUnit*
Wraps a *Unit* and *InputContrib* as *ISpoofaxInputUnit*.

Constructors

InputUnit

public **InputUnit** (*Unit unit, InputContrib contrib*)

Methods

config

public *JSGLRParserConfiguration* **config** ()

dialect

public *ILanguageImpl* **dialect** ()

langImpl

public *ILanguageImpl* **langImpl** ()

text

public *String* **text** ()

ParseContrib

public class **ParseContrib** implements *IUnitContrib*

Fields

ast

public final *IStrategoTerm* **ast**

duration

public final long **duration**

messages

public final *Iterable*<*IMessage*> **messages**

success

public final boolean **success**

valid

public final boolean **valid**

Constructors

ParseContrib

```
public ParseContrib (boolean valid, boolean success, IStrategoTerm ast, Iterable<IMessage> messages,  
                    long duration)
```

ParseContrib

```
public ParseContrib (IStrategoTerm emptyAst)
```

Methods

id

```
public String id ()
```

ParseUnit

```
public class ParseUnit extends UnitWrapper implements ISpoofaxParseUnit  
    Wraps a Unit and ParseContrib as ISpoofaxParseUnit.
```

Constructors

ParseUnit

```
public ParseUnit (Unit unit, ParseContrib contrib, ISpoofaxInputUnit inputUnit)
```

Methods

ast

```
public IStrategoTerm ast ()
```

duration

```
public long duration ()
```

input

```
public ISpoofaxInputUnit input ()
```

messages

```
public Iterable<IMessage> messages ()
```

success

public boolean **success** ()

valid

public boolean **valid** ()

TransformContrib

public class **TransformContrib** implements *IUnitContrib*

Fields

ast

public final IStrategoTerm **ast**

duration

public final long **duration**

messages

public final *Iterable<IMessage>* **messages**

outputs

public final *Iterable<TransformOutput>* **outputs**

success

public final boolean **success**

valid

public final boolean **valid**

Constructors

TransformContrib

public **TransformContrib** (boolean *valid*, boolean *success*, IStrategoTerm *ast*, *Iterable<TransformOutput>* *outputs*, *Iterable<IMessage>* *messages*, long *duration*)

TransformContrib

```
public TransformContrib ()
```

Methods

id

```
public String id ()
```

TransformOutput

```
public class TransformOutput implements ISpoofaxTransformOutput
```

Fields

ast

```
public final IStrategoTerm ast
```

name

```
public final String name
```

resource

```
public final FileObject resource
```

Constructors

TransformOutput

```
public TransformOutput (String name, FileObject output, IStrategoTerm ast)
```

Methods

ast

```
public IStrategoTerm ast ()
```

name

```
public String name ()
```

output

public *FileObject* **output** ()

TransformUnit

public class **TransformUnit**<I extends IUnit> extends *UnitWrapper* implements *ISpoofaxTransformUnit*<I>

Constructors

TransformUnit

public **TransformUnit** (*Unit* unit, *TransformContrib* contrib, I inputUnit, *IContext* context, *TransformActionContrib* action)

Methods

action

public *TransformActionContrib* **action** ()

ast

public *IStrategoTerm* **ast** ()

context

public *IContext* **context** ()

duration

public long **duration** ()

input

public I **input** ()

messages

public *Iterable*<*IMessage*> **messages** ()

outputs

public *Iterable*<*TransformOutput*> **outputs** ()

success

public boolean **success** ()

valid

public boolean **valid** ()

Unit

public class **Unit** implements *IUnit*

Constructors

Unit

public **Unit** (*FileObject source*, *Map<String, IUnitContrib> contribs*)

Unit

public **Unit** (*FileObject source*)

Unit

public **Unit** ()

Methods

addUnitContrib

public void **addUnitContrib** (*IUnitContrib contrib*)

detached

public boolean **detached** ()

source

public *FileObject* **source** ()

unitContrib

public *IUnitContrib* **unitContrib** (*String id*)

unitContribs

public *Iterable*<*IUnitContrib*> **unitContribs** ()

UnitService

public class **UnitService** implements *ISpoofaxUnitService*

Constructors

UnitService

public **UnitService** (*ITermFactoryService* termFactoryService)

Methods

analyzeUnit

public *ISpoofaxAnalyzeUnit* **analyzeUnit** (*ISpoofaxParseUnit* input, *AnalyzeContrib* contrib, *IContext* context)

analyzeUnitUpdate

public *ISpoofaxAnalyzeUnitUpdate* **analyzeUnitUpdate** (*FileObject* source, *AnalyzeUpdateData* contrib, *IContext* context)

emptyAnalyzeUnit

public *ISpoofaxAnalyzeUnit* **emptyAnalyzeUnit** (*ISpoofaxParseUnit* input, *IContext* context)

emptyAnalyzeUnitUpdate

public *ISpoofaxAnalyzeUnitUpdate* **emptyAnalyzeUnitUpdate** (*FileObject* source, *IContext* context)

emptyInputUnit

public *ISpoofaxInputUnit* **emptyInputUnit** (*FileObject* source, *ILanguageImpl* langImpl, *ILanguageImpl* dialect)

emptyInputUnit

public *ISpoofaxInputUnit* **emptyInputUnit** (*ILanguageImpl* langImpl, *ILanguageImpl* dialect)

emptyParseUnit

```
public ISpoofaxParseUnit emptyParseUnit (ISpoofaxInputUnit input)
```

emptyTransformUnit

```
public ISpoofaxTransformUnit<ISpoofaxParseUnit> emptyTransformUnit (ISpoofaxParseUnit input,
                                                                    IContext context, TransformActionContrib action)
```

emptyTransformUnit

```
public ISpoofaxTransformUnit<ISpoofaxAnalyzeUnit> emptyTransformUnit (ISpoofaxAnalyzeUnit input, IContext context,
                                                                    TransformActionContrib action)
```

inputUnit

```
public ISpoofaxInputUnit inputUnit (FileObject source, String text, ILanguageImpl langImpl, ILanguageImpl dialect, JSGLRParserConfiguration config)
```

inputUnit

```
public ISpoofaxInputUnit inputUnit (String text, ILanguageImpl langImpl, ILanguageImpl dialect, JSGLRParserConfiguration config)
```

inputUnit

```
public ISpoofaxInputUnit inputUnit (FileObject source, String text, ILanguageImpl langImpl, ILanguageImpl dialect)
```

inputUnit

```
public ISpoofaxInputUnit inputUnit (String text, ILanguageImpl langImpl, ILanguageImpl dialect)
```

parseUnit

```
public ISpoofaxParseUnit parseUnit (ISpoofaxInputUnit input, ParseContrib contrib)
```

transformUnit

```
public <I extends IUnit> ISpoofaxTransformUnit<I> transformUnit (I input, TransformContrib contrib, IContext context, TransformActionContrib action)
```


UnitWrapper

public class **UnitWrapper** implements *IUnit*

Fields

unit

public final *Unit* **unit**

Constructors

UnitWrapper

public **UnitWrapper** (*Unit* unit)

Methods

addUnitContrib

public void **addUnitContrib** (*IUnitContrib* contrib)

detached

public boolean **detached** ()

source

public *FileObject* **source** ()

unitContrib

public *IUnitContrib* **unitContrib** (String id)

unitContribs

public *Iterable*<*IUnitContrib*> **unitContribs** ()

org.metaborg.meta.core

Meta

public @interface **Meta**

MetaBorgMeta

public class **MetaBorgMeta** implements [AutoCloseable](#)
Facade for instantiating and accessing the MetaBorg meta API, as an extension of the *MetaBorg* API.

Fields

autoCloseables

public final [Set](#)<[AutoCloseable](#)> **autoCloseables**

injector

public final [Injector](#) **injector**

languageSpecConfigService

public final *ILanguageSpecConfigService* **languageSpecConfigService**

languageSpecService

public final *ILanguageSpecService* **languageSpecService**

parent

public final *MetaBorg* **parent**

Constructors

MetaBorgMeta

public **MetaBorgMeta** (*MetaBorg* *metaborg*, *IModulePluginLoader* *loader*, *MetaborgMetaModule* *module*,
Module... *additionalModules*)
 Instantiate the MetaBorg meta API.

Parameters

- **metaborg** – MetaBorg API to extend.
- **loader** – Meta-module plugin loader to use.
- **module** – MetaBorg meta-module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaBorgMeta

public **MetaBorgMeta** (*MetaBorg* *metaborg*, *MetaborgMetaModule* *module*, *Module...* *additionalModules*)
 Instantiate the MetaBorg meta API.

Parameters

- **metaborg** – MetaBorg API to extend.
- **module** – MetaBorg meta-module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaBorgMeta

public **MetaBorgMeta** (*MetaBorg* *metaborg*, *IModulePluginLoader* *loader*, *Module...* *additionalModules*)
 Instantiate the MetaBorg meta API.

Parameters

- **metaborg** – MetaBorg API to extend.
- **loader** – Meta-module plugin loader to use.

- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

MetaBorgMeta

public **MetaBorgMeta** (*MetaBorg* metaborg, *Module*... additionalModules)
 Instantiate the MetaBorg meta API.

Parameters

- **metaborg** – MetaBorg API to extend.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

Methods

close

public void **close** ()
 Closes the MetaBorg meta API, closing any resources and services created by the API. The parent MetaBorg (non-meta) API is NOT closed.

defaultModule

protected static *MetaborgMetaModule* **defaultModule** ()

defaultPluginLoader

protected static *IModulePluginLoader* **defaultPluginLoader** ()

MetaborgMetaModule

public class **MetaborgMetaModule** extends *AbstractModule*

Fields

autoClosableBinder

protected *Multibinder*<*AutoCloseable*> **autoClosableBinder**

Methods

bindLanguageSpec

protected void **bindLanguageSpec** ()

bindLanguageSpecConfig

protected void **bindLanguageSpecConfig** ()

configure

protected void **configure** ()

org.metaborg.meta.core.config

ILanguageSpecConfig

public interface **ILanguageSpecConfig** extends *ILanguageComponentConfig*

Configuration of a language specification at build time, an extension of the *ILanguageComponentConfig* runtime configuration. To create a new instance of this interface, use an *ILanguageSpecConfigBuilder* interface.

Methods

pardonedLanguages

Collection<String> **pardonedLanguages** ()

Gets a sequence of languages whose errors are ignored.

Returns The pardoned languages.

useBuildSystemSpec

boolean **useBuildSystemSpec** ()

Use the build system (Maven/Gradle) specification for building this language specification.

Returns True to use the build system specification, false otherwise.

ILanguageSpecConfigBuilder

public interface **ILanguageSpecConfigBuilder** extends *ILanguageComponentConfigBuilder*

Builder for *ILanguageSpecConfig* objects.

Methods

addCompileDeps

ILanguageSpecConfigBuilder **addCompileDeps** (Iterable<*LanguageIdentifier*> *deps*)
{ @inheritDoc }

addExports

ILanguageSpecConfigBuilder **addExports** (Iterable<*ExportConfig*> *exports*)
{ @inheritDoc }

addGenerates

ILanguageSpecConfigBuilder **addGenerates** (Iterable<*GenerateConfig*> *generates*)
{ @inheritDoc }

addJavaDeps

ILanguageSpecConfigBuilder **addJavaDeps** (Iterable<*LanguageIdentifier*> *deps*)
{ @inheritDoc }

addLangContribs

ILanguageSpecConfigBuilder **addLangContribs** (Iterable<*LanguageContributionIdentifier*> *contribs*)
{ @inheritDoc }

addPardonedLanguages

ILanguageSpecConfigBuilder **addPardonedLanguages** (Iterable<*String*> *languages*)
Adds pardoned languages.

Parameters

- **languages** – The pardoned languages.

Returns This builder.

addSourceDeps

ILanguageSpecConfigBuilder **addSourceDeps** (Iterable<*LanguageIdentifier*> *deps*)
{ @inheritDoc }

build

ILanguageSpecConfig **build** (FileObject *rootFolder*)
{ @inheritDoc }

copyFrom

ILanguageSpecConfigBuilder **copyFrom** (*ILanguageSpecConfig obj*)

Copies the values from the specified configuration.

Parameters

- **config** – The configuration to copy values from.

reset

ILanguageSpecConfigBuilder **reset** ()
{ @inheritDoc }

withCompileDeps

ILanguageSpecConfigBuilder **withCompileDeps** (*Iterable<LanguageIdentifier> deps*)
{ @inheritDoc }

withExports

ILanguageSpecConfigBuilder **withExports** (*Iterable<IExportConfig> exports*)
{ @inheritDoc }

withGenerates

ILanguageSpecConfigBuilder **withGenerates** (*Iterable<IGenerateConfig> generates*)
{ @inheritDoc }

withIdentifier

ILanguageSpecConfigBuilder **withIdentifier** (*LanguageIdentifier identifier*)
{ @inheritDoc }

withIncrementalConstraintSolver

ILanguageSpecConfigBuilder **withIncrementalConstraintSolver** (*boolean incremental*)
{ @inheritDoc }

withJavaDeps

ILanguageSpecConfigBuilder **withJavaDeps** (*Iterable<LanguageIdentifier> deps*)
{ @inheritDoc }

withLangContribs

ILanguageSpecConfigBuilder **withLangContribs** (*Iterable<LanguageContributionIdentifier> contribs*)
 { @inheritDoc }

withMetaborgVersion

ILanguageSpecConfigBuilder **withMetaborgVersion** (*String metaborgVersion*)
 { @inheritDoc }

withName

ILanguageSpecConfigBuilder **withName** (*String name*)
 { @inheritDoc }

withPardonedLanguages

ILanguageSpecConfigBuilder **withPardonedLanguages** (*Iterable<String> languages*)
 Sets the pardoned languages.

Parameters

- **languages** – The pardoned languages.

Returns This builder.

withSourceDeps

ILanguageSpecConfigBuilder **withSourceDeps** (*Iterable<LanguageIdentifier> deps*)
 { @inheritDoc }

withTypesmart

ILanguageSpecConfigBuilder **withTypesmart** (*boolean typesmart*)
 { @inheritDoc }

withUseBuildSystemSpec

ILanguageSpecConfigBuilder **withUseBuildSystemSpec** (*boolean useBuildSystemSpec*)
 Sets the flag to use the build system specification.

Parameters

- **useBuildSystemSpec** – True to use the build system specification, false otherwise.

Returns This builder.

ILanguageSpecConfigService

public interface **ILanguageSpecConfigService**
Stores and retrieves language specification configurations.

Methods

available

boolean **available** (*FileObject* rootFolder)
Checks if a configuration exists for the language specification at the given location.

Parameters

- **rootFolder** – The language specification root folder.

Returns True if a configuration exists, false otherwise.

get

ConfigRequest<? extends *ILanguageSpecConfig*> **get** (*FileObject* rootFolder)
Gets the configuration for the language specification at the given location.

Parameters

- **rootFolder** – The language specification root folder.

Returns Configuration request, either with a valid configuration, or a collection of error messages.

ILanguageSpecConfigWriter

public interface **ILanguageSpecConfigWriter**
Writes a configuration for the specified *ILanguageSpec*.

Methods

write

void **write** (*ILanguageSpec* languageSpec, *ILanguageSpecConfig* config, *IFileAccess* access)
Writes the specified configuration for the specified language specification.

Parameters

- **languageSpec** – The language specification.
- **config** – The configuration to write.
- **access** –

LanguageSpecConfig

public class **LanguageSpecConfig** extends *LanguageComponentConfig* implements *ILanguageSpecConfig*, *IConfig*
An implementation of the *ILanguageSpecConfig* interface that is backed by an *ImmutableConfiguration* object.

Constructors

LanguageSpecConfig

public **LanguageSpecConfig** (HierarchicalConfiguration<ImmutableNode> *config*)

LanguageSpecConfig

protected **LanguageSpecConfig** (HierarchicalConfiguration<ImmutableNode> *config*, *String* *metaborgVersion*, *LanguageIdentifier* *id*, *String* *name*, *Collection*<*LanguageIdentifier*> *compileDeps*, *Collection*<*LanguageIdentifier*> *sourceDeps*, *Collection*<*LanguageIdentifier*> *javaDeps*, *Boolean* *sdfEnabled*, *String* *parseTable*, *String* *completionParseTable*, *Boolean* *typesmart*, *Boolean* *incrementalConstraintSolver*, *Collection*<*LanguageContributionIdentifier*> *langContribs*, *Collection*<*IGenerateConfig*> *generates*, *Collection*<*IExportConfig*> *exports*, *Collection*<*String*> *pardonedLanguages*, *Boolean* *useBuildSystemSpec*)

Methods

pardonedLanguages

public *Collection*<*String*> **pardonedLanguages** ()

useBuildSystemSpec

public boolean **useBuildSystemSpec** ()

validate

public *Collection*<*IMessage*> **validate** (*MessageBuilder* *mb*)

LanguageSpecConfigBuilder

public class **LanguageSpecConfigBuilder** extends *LanguageComponentConfigBuilder* implements *ILanguageSpecConfigBuilder*
Configuration-based builder for *ILanguageSpecConfig* objects.

Fields

pardonedLanguages

protected *Set*<*String*> **pardonedLanguages**

useBuildSystemSpec

protected *Boolean* **useBuildSystemSpec**

Constructors

LanguageSpecConfigBuilder

public **LanguageSpecConfigBuilder** (*AConfigurationReaderWriter* configReaderWriter)

Methods

addCompileDeps

public *ILanguageSpecConfigBuilder* **addCompileDeps** (*Iterable<LanguageIdentifier>* dependencies)

addExports

public *ILanguageSpecConfigBuilder* **addExports** (*Iterable<IExportConfig>* exports)

addGenerates

public *ILanguageSpecConfigBuilder* **addGenerates** (*Iterable<IGenerateConfig>* generates)

addJavaDeps

public *ILanguageSpecConfigBuilder* **addJavaDeps** (*Iterable<LanguageIdentifier>* deps)

addLangContribs

public *ILanguageSpecConfigBuilder* **addLangContribs** (*Iterable<LanguageContributionIdentifier>* *con-*
tribs)

addPardonedLanguages

public *ILanguageSpecConfigBuilder* **addPardonedLanguages** (*Iterable<String>* languages)

addSourceDeps

public *ILanguageSpecConfigBuilder* **addSourceDeps** (*Iterable<LanguageIdentifier>* dependencies)

build

public *ILanguageSpecConfig* **build** (*FileObject* rootFolder)

copyFrom

public *ILanguageSpecConfigBuilder* **copyFrom** (*ILanguageSpecConfig* config)

reset

```
public ILanguageSpecConfigBuilder reset ()
```

withCompileDeps

```
public ILanguageSpecConfigBuilder withCompileDeps (Iterable<LanguageIdentifier> dependencies)
```

withExports

```
public ILanguageSpecConfigBuilder withExports (Iterable<IExportConfig> exports)
```

withGenerates

```
public ILanguageSpecConfigBuilder withGenerates (Iterable<IGenerateConfig> generates)
```

withIdentifier

```
public ILanguageSpecConfigBuilder withIdentifier (LanguageIdentifier identifier)
```

withIncrementalConstraintSolver

```
public ILanguageSpecConfigBuilder withIncrementalConstraintSolver (boolean incremental)
```

withJavaDeps

```
public ILanguageSpecConfigBuilder withJavaDeps (Iterable<LanguageIdentifier> deps)
```

withLangContribs

```
public ILanguageSpecConfigBuilder withLangContribs (Iterable<LanguageContributionIdentifier> contribs)
```

withMetaborgVersion

```
public ILanguageSpecConfigBuilder withMetaborgVersion (String metaborgVersion)
```

withName

```
public ILanguageSpecConfigBuilder withName (String name)
```

withPardonedLanguages

```
public ILanguageSpecConfigBuilder withPardonedLanguages (Iterable<String> languages)
```

withSourceDeps

public *ILanguageSpecConfigBuilder* **withSourceDeps** (*Iterable<LanguageIdentifier>* dependencies)

withTypesmart

public *ILanguageSpecConfigBuilder* **withTypesmart** (boolean typesmart)

withUseBuildSystemSpec

public *ILanguageSpecConfigBuilder* **withUseBuildSystemSpec** (boolean useBuildSystemSpec)

LanguageSpecConfigService

public class **LanguageSpecConfigService** extends *AConfigService<ILanguageSpec, ILanguageSpecConfig>* implements *ILanguageSpecConfigService*

Constructors

LanguageSpecConfigService

public **LanguageSpecConfigService** (*AConfigurationReaderWriter* configReaderWriter, *LanguageSpecConfigBuilder* configBuilder)

Methods

fromConfig

protected *HierarchicalConfiguration<ImmutableNode>* **fromConfig** (*ILanguageSpecConfig* config)

getConfigFile

protected *FileObject* **getConfigFile** (*FileObject* rootFolder)

getRootDirectory

protected *FileObject* **getRootDirectory** (*ILanguageSpec* languageSpec)

toConfig

protected *ConfigRequest<ILanguageSpecConfig>* **toConfig** (*HierarchicalConfiguration<ImmutableNode>* config, *FileObject* configFile)

org.metaborg.meta.core.plugin

IServiceMetaModulePlugin

public interface **IServiceMetaModulePlugin** extends *IServiceModulePlugin*

Plugin that creates *Modules* that are passed to MetaBorg meta's Guice *Injector* at startup.

Methods

modules

Iterable<*Module*> **modules** ()

Returns All meta modules provided by this plugin.

org.metaborg.meta.core.project

ILanguageSpec

public interface **ILanguageSpec** extends *IProject*

A language specification project. A language specification is compiled into a language implementation.

Methods

config

ILanguageSpecConfig **config** ()

Gets the configuration of the language specification. The configuration is read only once when this class is instantiated. To get a new configuration, get a new instance of this class.

Returns Configuration of the language specification.

ILanguageSpecService

public interface **ILanguageSpecService**

Service for getting a language specification.

Methods

available

boolean **available** (*IProject* project)

Checks if given project is a language specification.

Parameters

- **project** – Project to check.

Returns True if project is a language specification, false otherwise.

get

ILanguageSpec **get** (*IProject* project)

Gets a language specification from the specified project.

Parameters

- **project** – The project.

Throws

- *ConfigException* – When reading language specification configuration fails.

Returns The language specification, or `null` when the project is not a language specification.

LanguageSpec

public class **LanguageSpec** extends *Project* implements *ILanguageSpec*

Constructors

LanguageSpec

public **LanguageSpec** (*FileObject* location, *ILanguageSpecConfig* config)

Methods

config

public *ILanguageSpecConfig* **config** ()

org.metaborg.meta.core.wizard

CreateLanguageSpecWizard

public abstract class **CreateLanguageSpecWizard** extends *UpgradeLanguageSpecWizard*

Helps with the validation and UI of a ‘create language specification’ wizard.

Methods

distributeLanguageName

public void **distributeLanguageName** ()

distributeProjectName

public void **distributeProjectName** ()

extensions

public `Collection<String>` **extensions** ()

inputExtensions

protected abstract `String` **inputExtensions** ()

inputExtensionsModified

protected abstract boolean **inputExtensionsModified** ()

inputProjectName

protected abstract `String` **inputProjectName** ()

inputProjectNameModified

protected abstract boolean **inputProjectNameModified** ()

projectName

public `String` **projectName** ()

setExtensions

protected abstract void **setExtensions** (`String extensions`)

setId

protected abstract void **setId** (`String id`)

setName

protected abstract void **setName** (`String name`)

splitExtensions

public static `Collection<String>` **splitExtensions** (`String extensions`)

toExtension

public static *String* **toExtension** (*String* name)
Converts a language name to an extension.

Parameters

- **name** – Language name.

Returns Extension.

told

public static *String* **toId** (*String* name)
Converts a project name to a language identifier.

Parameters

- **name** – Project name.

Returns Language identifier.

toName

public static *String* **toName** (*String* name)
Converts a project name to a language name.

Parameters

- **name** – Project name.

Returns Language name.

validate

public *ValidationResult* **validate** ()

UpgradeLanguageSpecWizard

public abstract class **UpgradeLanguageSpecWizard**
Helps with the validation and UI of an ‘upgrade language specification’ wizard.

Methods

groupId

public *String* **groupId** ()

id

public *String* **id** ()

inputGroupId

protected abstract *String* **inputGroupId** ()

inputGroupIdModified

protected abstract boolean **inputGroupIdModified** ()

inputId

protected abstract *String* **inputId** ()

inputIdModified

protected abstract boolean **inputIdModified** ()

inputName

protected abstract *String* **inputName** ()

inputNameModified

protected abstract boolean **inputNameModified** ()

inputVersion

protected abstract *String* **inputVersion** ()

inputVersionModified

protected abstract boolean **inputVersionModified** ()

languageIdentifier

public *LanguageIdentifier* **languageIdentifier** ()

languageName

public *String* **languageName** ()

setDefault

public void **setDefault** ()

setGroupId

protected abstract void **setGroupId** (*String groupId*)

setVersion

protected abstract void **setVersion** (*String version*)

validate

public *ValidationResult* **validate** ()

version

public *String* **version** ()

UpgradeLanguageSpecWizard.ValidationResult

public static class **ValidationResult**

Fields

complete

public final boolean **complete**

errors

public final *List*<*String*> **errors**

Constructors

ValidationResult

public **ValidationResult** (boolean *complete*, *List*<*String*> *errors*)

org.metaborg.spoofox.meta.core

SpoofoxExtensionModule

public class **SpoofoxExtensionModule** extends [AbstractModule](#)
Module for extending *Spoofox*. Note that this module is loaded together with a *SpoofoxModule*, so only those bindings are available. Bindings from *SpoofoxMetaModule* are NOT available. To inject bindings from *SpoofoxMetaModule*, use static injection and request injection in the *SpoofoxMetaModule*.

Methods

configure

protected void **configure** ()

SpoofoxExtensionModulePlugin

public class **SpoofoxExtensionModulePlugin** implements *IServiceModulePlugin*
Module plugin service provider for *SpoofoxExtensionModule*.

Methods

modules

public [Iterable](#)<[Module](#)> **modules** ()

SpoofaxMeta

public class **SpoofaxMeta** extends *MetaBorgMeta*

Facade for instantiating and accessing the MetaBorg meta API, as an extension of the *MetaBorg* API, instantiated with the Spoofax implementation.

Fields

languageSpecConfigService

public final *ISpoofaxLanguageSpecConfigService* **languageSpecConfigService**

languageSpecService

public final *ISpoofaxLanguageSpecService* **languageSpecService**

metaBuilder

public final *LanguageSpecBuilder* **metaBuilder**

parent

public final *Spoofax* **parent**

Constructors

SpoofaxMeta

public **SpoofaxMeta** (*Spoofax* spoofax, *IModulePluginLoader* loader, *SpoofaxMetaModule* module, *Module... additionalModules*)

Instantiate the MetaBorg meta API, with a Spoofax implementation.

Parameters

- **spoofax** – MetaBorg API, implemented by Spoofax, to extend.
- **loader** – Meta-module plugin loader to use.
- **module** – Spoofax meta-module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

SpoofaxMeta

public **SpoofaxMeta** (*Spoofax* spoofax, *SpoofaxMetaModule* module, *Module... additionalModules*)

Instantiate the MetaBorg meta API, with a Spoofax implementation.

Parameters

- **spoofax** – MetaBorg API, implemented by Spoofax, to extend.
- **module** – Spoofax meta-module to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

SpoofaxMeta

public **SpoofaxMeta** (*Spoofax* spoofax, *IModulePluginLoader* loader, *Module...* additionalModules)
 Instantiate the MetaBorg meta API, with a Spoofax implementation.

Parameters

- **spoofax** – MetaBorg API, implemented by Spoofax, to extend.
- **loader** – Meta-module plugin loader to use.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

SpoofaxMeta

public **SpoofaxMeta** (*Spoofax* spoofax, *Module...* additionalModules)
 Instantiate the MetaBorg meta API, with a Spoofax implementation.

Parameters

- **spoofax** – MetaBorg API, implemented by Spoofax, to extend.
- **additionalModules** – Additional modules to use.

Throws

- **MetaborgException** – When loading plugins or dependency injection fails.

Methods

defaultModule

protected static *SpoofaxMetaModule* **defaultModule** ()

languageSpecConfigBuilder

public *ISpoofaxLanguageSpecConfigBuilder* **languageSpecConfigBuilder** ()

Returns Fresh language specification configuration builder.

SpoofaxMetaModule

public class **SpoofaxMetaModule** extends *MetaborgMetaModule*

Methods

bindAnt

protected void **bindAnt** ()

bindLanguageSpec

protected void **bindLanguageSpec** ()

Overrides *MetaborgMetaModule.bindLanguageSpec()* for Spoofax implementation of language specifications.

bindLanguageSpecConfig

protected void **bindLanguageSpecConfig** ()

Overrides *MetaborgMetaModule.bindLanguageSpecConfig()* for Spoofax implementation of language specification configuration.

configure

protected void **configure** ()

org.metaborg.spoofax.meta.core.ant

AntRunner

public class **AntRunner** implements *IAntRunner*

Constructors

AntRunner

public **AntRunner** (*IResourceService* resourceService, *FileObject* antFile, *FileObject* baseDir, *Map*<*String*, *String*> properties, *URL*[] classpaths, *BuildListener* listener)

Methods

execute

public void **execute** (*String* target, *ICancel* cancel)

AntRunnerService

public class **AntRunnerService** implements *IAntRunnerService*

Constructors

AntRunnerService

public **AntRunnerService** (*IResourceService* resourceService)

Methods

get

public *IAntRunner* **get** (*FileObject* antFile, *FileObject* baseDir, *Map*<*String*, *String*> properties, *URL*[] class-paths, *BuildListener* listener)

AntSLF4JLogger

public class **AntSLF4JLogger** implements *BuildListener*

Constructors

AntSLF4JLogger

public **AntSLF4JLogger** ()

AntSLF4JLogger

public **AntSLF4JLogger** (*Logger* log)

Methods

buildFinished

public void **buildFinished** (*BuildEvent* event)

buildStarted

public void **buildStarted** (*BuildEvent* event)

messageLogged

public void **messageLogged** (*BuildEvent* event)

targetFinished

public void **targetFinished** (*BuildEvent* event)

targetStarted

public void **targetStarted** (BuildEvent *event*)

taskFinished

public void **taskFinished** (BuildEvent *event*)

taskStarted

public void **taskStarted** (BuildEvent *event*)

IAntRunner

public interface **IAntRunner**

Methods

execute

void **execute** (*String* *target*, ICancel *cancel*)

IAntRunnerService

public interface **IAntRunnerService**

Methods

get

IAntRunner **get** (*FileObject* *antFile*, *FileObject* *baseDir*, Map<*String*, *String*> *properties*, URL[] *classpaths*, BuildListener *listener*)

org.metaborg.spoofax.meta.core.build

AConfigBuildStep

public abstract class **AConfigBuildStep**<*T*> implements *IBuildStep*

Constructors

AConfigBuildStep

public **AConfigBuildStep** (*Class*<*T*> *clazz*)

Methods

execute

public void **execute** (*LanguageSpecBuildPhase* phase, *LanguageSpecBuildInput* input)

execute

protected abstract void **execute** (T config, *LanguageSpecBuildPhase* phase, *LanguageSpecBuildInput* input)

AntBuildStep

public class **AntBuildStep** extends *AConfigBuildStep*<*AntBuildStepConfig*>

Constructors

AntBuildStep

public **AntBuildStep** (*IResourceService* resourceService, *IAntRunnerService* antRunnerService)

Methods

execute

protected void **execute** (*AntBuildStepConfig* config, *LanguageSpecBuildPhase* phase, *LanguageSpecBuild-Input* input)

toString

public *String* **toString** ()

IBuildStep

public interface **IBuildStep**

Methods

execute

void **execute** (*LanguageSpecBuildPhase* phase, *LanguageSpecBuildInput* input)
Executes the build step.

Parameters

- **phase** – Phase in which the build step is executed.
- **input** – Build input

LangSpecCommonPaths

public class **LangSpecCommonPaths** extends *CommonPaths*

Constructors

LangSpecCommonPaths

public **LangSpecCommonPaths** (*FileObject* root)

Methods

dsTargetClassesGenerateDir

public *FileObject* **dsTargetClassesGenerateDir** ()

Returns Target output directory for compiled generated DynSem interpreter classes.

dsTargetClassesManualDir

public *FileObject* **dsTargetClassesManualDir** ()

Returns Target output directory for compiled manual DynSem interpreter classes.

javaSrcDirs

public *Collection*<*FileObject*> **javaSrcDirs** (*String* languageId)

plutoBuildInfoDir

public *FileObject* **plutoBuildInfoDir** ()

Returns Target output directory for pluto build information.

strSrcGenJavaTransDir

public *FileObject* **strSrcGenJavaTransDir** (*String* languageId)

Returns Generated Stratego Java directory, generated from Stratego definition.

strTargetClassesJavaStratDir

public *FileObject* **strTargetClassesJavaStratDir** (*String* languageId)

Parameters

- **languageId** – Identifier of the language.

Returns Target output directory for compiled Stratego Java strategy classes.

strTargetClassesTransDir

public [FileObject](#) **strTargetClassesTransDir** ([String](#) *languageId*)

Returns Target output directory for compiled Stratego Java classes.

targetClassesDir

public [FileObject](#) **targetClassesDir** ()

Returns Target output directory for compiled Java classes.

targetTestClassesDir

public [FileObject](#) **targetTestClassesDir** ()

Returns Target output directory for compiled Java classes.

LanguageSpecBuildInput

public class **LanguageSpecBuildInput** extends [ProjectBuildInput](#)
Language specification build input arguments.

Constructors

LanguageSpecBuildInput

public **LanguageSpecBuildInput** ([ISpoofaxLanguageSpec](#) *languageSpec*)

Methods

languageSpec

public [ISpoofaxLanguageSpec](#) **languageSpec** ()

LanguageSpecBuilder

public class **LanguageSpecBuilder**

Constructors

LanguageSpecBuilder

public **LanguageSpecBuilder** ([Injector](#) *injector*, [IResourceService](#) *resourceService*, [ISourceTextService](#) *sourceTextService*, [IDependencyService](#) *dependencyService*, [ILanguagePathService](#) *languagePathService*, [ISpoofaxProcessorRunner](#) *runner*, [Set<IBuildStep>](#) *buildSteps*, [ILanguageComponentConfigBuilder](#) *componentConfigBuilder*, [ILanguageComponentConfigWriter](#) *componentConfigWriter*)

Methods

archive

public `FileObject` **archive** (*LanguageSpecBuildInput* input)

clean

public void **clean** (*LanguageSpecBuildInput* input)

compile

public void **compile** (*LanguageSpecBuildInput* input)

generateSources

public void **generateSources** (*LanguageSpecBuildInput* input, `IFileAccess` access)

initialize

public void **initialize** (*LanguageSpecBuildInput* input)

pkg

public void **pkg** (*LanguageSpecBuildInput* input)

ProjectBuildInput

public class **ProjectBuildInput**
Project build input arguments.

Constructors

ProjectBuildInput

public **ProjectBuildInput** (*IProject* project)

Methods

project

public *IProject* **project** ()

StrategoBuildStep

public class **StrategoBuildStep** extends *AConfigBuildStep*<*StrategoBuildStepConfig*>

Constructors

StrategoBuildStep

public **StrategoBuildStep** (*IResourceService* resourceService)

Methods

execute

protected void **execute** (*StrategoBuildStepConfig* config, *LanguageSpecBuildPhase* phase, *LanguageSpecBuildInput* input)

org.metaborg.spoofax.meta.core.config

AntBuildStepConfig

public class **AntBuildStepConfig** implements *IBuildStepConfig*

Fields

file

public final *String* **file**

phase

public final *LanguageSpecBuildPhase* **phase**

target

public final *String* **target**

Constructors

AntBuildStepConfig

public **AntBuildStepConfig** (*LanguageSpecBuildPhase* phase, *String* file, *String* target)

Methods

accept

public void **accept** (*IBuildStepVisitor* visitor)

accept

public void **accept** (*IBuildStepVisitor* visitor, *LanguageSpecBuildPhase* phase)

phase

public *LanguageSpecBuildPhase* **phase** ()

IBuildStepConfig

public interface **IBuildStepConfig** extends *Serializable*

Configuration for additional build steps. Use the visitor pattern access implementations.

Methods

accept

void **accept** (*IBuildStepVisitor* visitor)

Accepts a build step visitor.

Parameters

- **visitor** – Visitor to accept.

accept

void **accept** (*IBuildStepVisitor* visitor, *LanguageSpecBuildPhase* phase)

Accepts a build step visitor, only visiting configurations for given phase.

Parameters

- **visitor** – Visitor to accept.
- **phase** – Phase of build step configurations to visit.

phase

LanguageSpecBuildPhase **phase** ()

Returns The phase in which the build step is configured to run.

IBuildStepVisitor

public interface **IBuildStepVisitor**
 Visitor for *IBuildStepConfigs*.

Methods

visit

void **visit** (*StrategoBuildStepConfig* buildStep)
 Visit a Stratego build step configuration.

Parameters

- **buildStep** – Stratego build step configuration

visit

void **visit** (*AntBuildStepConfig* buildStep)
 Visit an Ant build step configuration.

Parameters

- **buildStep** – Ant build step configuration.

ISpoofoxLanguageSpecConfig

public interface **ISpoofoxLanguageSpecConfig** extends *ILanguageSpecConfig*
 Spoofox-specific configuration for a language specification. To create a new instance of this interface, use the *ILanguageSpecConfigBuilder* interface.

Methods

buildSteps

Collection<*IBuildStepConfig*> **buildSteps** ()
 Gets additional build step configurations.

Returns Additional build step configurations.

esvName

String **esvName** ()
 Gets the ESV name.

Returns The ESV name.

javaName

String **javaName** ()

Gets the Java name.

Returns The Java name.

metaSdfName

String **metaSdfName** ()

Gets the meta SDF name.

Returns The meta SDF name.

packageName

String **packageName** ()

Gets the package name.

Returns The package name.

placeholderChars

PlaceholderCharacters **placeholderChars** ()

Gets the Placeholder fences.

Returns Placeholder fences

prettyPrintLanguage

String **prettyPrintLanguage** ()

Gets the language to be pretty printed.

Returns Language to be pretty printed

sdf2tableVersion

Sdf2tableVersion **sdf2tableVersion** ()

Gets the sdf2table version to use.

Returns sdf2table version to use.

sdfArgs

Arguments **sdfArgs** ()

Gets SDF arguments.

Returns An iterable of SDF arguments.

sdfExternalDef

String **sdfExternalDef** ()
 Gets the external def.
Returns The external def.

sdfMainFile

String **sdfMainFile** ()
 Gets the (relative) path to the sdf main file.
Returns path to the parse table.

sdfName

String **sdfName** ()
 Gets the SDF name.
Returns The SDF name.

sdfVersion

SdfVersion **sdfVersion** ()
 Gets the SDF version to use.
Returns Sdf version to use.

strArgs

Arguments **strArgs** ()
 Gets the Stratego arguments.
Returns The Stratego arguments.

strExternalJar

String **strExternalJar** ()
 Gets the external JAR.
Returns The external JAR.

strExternalJarFlags

String **strExternalJarFlags** ()
 Gets the external JAR flags.
Returns The external JAR flags.

strFormat

StrategoFormat **strFormat** ()

Gets the project artifact format.

Returns A member of the *StrategoFormat* enumeration.

strategoName

String **strategoName** ()

Gets the Stratego name.

Returns The Stratego name.

ISpoofaxLanguageSpecConfigBuilder

public interface **ISpoofaxLanguageSpecConfigBuilder** extends *ILanguageSpecConfigBuilder*
 Builder for *ISpoofaxLanguageSpecConfig* objects.

Methods

addBuildSteps

ISpoofaxLanguageSpecConfigBuilder **addBuildSteps** (*Iterable*<*IBuildStepConfig*> *buildSteps*)

Adds build step configurations.

Parameters

- **buildSteps** – Build step configurations.

Returns This builder.

addCompileDeps

ISpoofaxLanguageSpecConfigBuilder **addCompileDeps** (*Iterable*<*LanguageIdentifier*> *dependencies*)
 { @inheritDoc }

addExports

ISpoofaxLanguageSpecConfigBuilder **addExports** (*Iterable*<*IExportConfig*> *exports*)
 { @inheritDoc }

addGenerates

ISpoofaxLanguageSpecConfigBuilder **addGenerates** (*Iterable*<*IGenerateConfig*> *generates*)
 { @inheritDoc }

addLangContribs

ISpoofaxLanguageSpecConfigBuilder **addLangContribs** (*Iterable<LanguageContributionIdentifier>* contribs)
 { @inheritDoc }

addPardonedLanguages

ISpoofaxLanguageSpecConfigBuilder **addPardonedLanguages** (*Iterable<String>* languages)
 { @inheritDoc }

addSourceDeps

ISpoofaxLanguageSpecConfigBuilder **addSourceDeps** (*Iterable<LanguageIdentifier>* dependencies)
 { @inheritDoc }

build

ISpoofaxLanguageSpecConfig **build** (*FileObject* rootFolder)
 Builds the object.

Parameters

- **rootFolder** – The root folder.

Throws

- **IllegalStateException** – The builder state is not valid, i.e. `isValid()` returned `false`.

Returns The built object.

copyFrom

ISpoofaxLanguageSpecConfigBuilder **copyFrom** (*ISpoofaxLanguageSpecConfig* obj)
 Copies the values from the specified object.

Parameters

- **obj** – The object to copy values from.

reset

ISpoofaxLanguageSpecConfigBuilder **reset** ()
 { @inheritDoc }

withBuildSteps

ISpoofaxLanguageSpecConfigBuilder **withBuildSteps** (*Iterable<IBuildStepConfig>* buildSteps)
 Sets the build step configurations.

Parameters

- **buildSteps** – Build step configurations.

Returns This builder.

withCompileDeps

ISpoofaxLanguageSpecConfigBuilder **withCompileDeps** (*Iterable<LanguageIdentifier> dependencies*)
{ @inheritDoc }

withExports

ISpoofaxLanguageSpecConfigBuilder **withExports** (*Iterable<IExportConfig> exports*)
{ @inheritDoc }

withGenerates

ISpoofaxLanguageSpecConfigBuilder **withGenerates** (*Iterable<IGenerateConfig> generates*)
{ @inheritDoc }

withIdentifier

ISpoofaxLanguageSpecConfigBuilder **withIdentifier** (*LanguageIdentifier identifier*)
{ @inheritDoc }

withIncrementalConstraintSolver

ISpoofaxLanguageSpecConfigBuilder **withIncrementalConstraintSolver** (*boolean incremental*)
{ @inheritDoc }

withLangContribs

ISpoofaxLanguageSpecConfigBuilder **withLangContribs** (*Iterable<LanguageContributionIdentifier> contribs*)
{ @inheritDoc }

withMetaborgVersion

ISpoofaxLanguageSpecConfigBuilder **withMetaborgVersion** (*String metaborgVersion*)
{ @inheritDoc }

withName

ISpoofaxLanguageSpecConfigBuilder **withName** (*String name*)
{ @inheritDoc }

withPardonedLanguages

ISpoofaxLanguageSpecConfigBuilder **withPardonedLanguages** (*Iterable<String> languages*)
 { @inheritDoc }

withPlaceholderPostfix

ISpoofaxLanguageSpecConfigBuilder **withPlaceholderPostfix** (*String placeholderPostfix*)
 Sets the placeholder postfix.

Parameters

- **placeholderPostfix** – The placeholder postfix.

Returns This builder.

withPlaceholderPrefix

ISpoofaxLanguageSpecConfigBuilder **withPlaceholderPrefix** (*String placeholderPrefix*)
 Sets the placeholder prefix.

Parameters

- **placeholderPrefix** – The placeholder prefix.

Returns This builder.

withPrettyPrintLanguage

ISpoofaxLanguageSpecConfigBuilder **withPrettyPrintLanguage** (*String prettyPrintLanguage*)
 Sets the language to be pretty printed.

Parameters

- **prettyPrintLanguage** – The language to be pretty printed.

Returns This builder.

withSdf2tableVersion

ISpoofaxLanguageSpecConfigBuilder **withSdf2tableVersion** (*Sdf2tableVersion sdf2tableVersion*)
 Sets the sdf2table version.

Parameters

- **sdf2tableVersion** – The sdf2table version.

Returns This builder.

withSdfArgs

ISpoofaxLanguageSpecConfigBuilder **withSdfArgs** (*Arguments args*)
 Sets the SDF arguments.

Parameters

- **args** – An iterable of SDF arguments.

Returns This builder.

withSdfExternalDef

ISpoofaxLanguageSpecConfigBuilder **withSdfExternalDef** (*String* def)

Sets the external def.

Parameters

- **def** – The external def.

Returns This builder.

withSdfMainFile

ISpoofaxLanguageSpecConfigBuilder **withSdfMainFile** (*String* sdfMainFile)

Sets the path to the main SDF file.

Parameters

- **sdfMainFile** – The path to the main SDF file.

Returns This builder.

withSdfVersion

ISpoofaxLanguageSpecConfigBuilder **withSdfVersion** (*SdfVersion* sdfversion)

Sets the SDF version.

Parameters

- **sdfVersion** – The SDF version.

Returns This builder.

withSourceDeps

ISpoofaxLanguageSpecConfigBuilder **withSourceDeps** (*Iterable*<*LanguageIdentifier*> dependencies)
{ @inheritDoc }

withStrArgs

ISpoofaxLanguageSpecConfigBuilder **withStrArgs** (*Arguments* args)

Sets the Stratego arguments.

Parameters

- **args** – The Stratego arguments.

Returns This builder.

withStrExternalJar

ISpoofaxLanguageSpecConfigBuilder **withStrExternalJar** (*String jar*)

Sets the external JAR.

Parameters

- **jar** – The external JAR.

Returns This builder.

withStrExternalJarFlags

ISpoofaxLanguageSpecConfigBuilder **withStrExternalJarFlags** (*String flags*)

Sets the external JAR flags.

Parameters

- **flags** – The external JAR flags.

Returns This builder.

withStrFormat

ISpoofaxLanguageSpecConfigBuilder **withStrFormat** (*StrategoFormat format*)

Sets the project artifact format.

Parameters

- **format** – A member of the *StrategoFormat* enumeration.

Returns This builder.

withStrTypesmart

ISpoofaxLanguageSpecConfigBuilder **withStrTypesmart** (boolean *typesmart*)

Sets the Stratego typesmart property.

Parameters

- **args** – The Stratego typesmart property.

Returns This builder.

withTypesmart

ISpoofaxLanguageSpecConfigBuilder **withTypesmart** (boolean *typesmart*)

{ @inheritDoc }

withUseBuildSystemSpec

ISpoofaxLanguageSpecConfigBuilder **withUseBuildSystemSpec** (boolean *useBuildSystemSpec*)

{ @inheritDoc }

ISpoofaxLanguageSpecConfigService

public interface **ISpoofaxLanguageSpecConfigService** extends *ILanguageSpecConfigService*
Stores and retrieves Spoofox language specification configurations.

Methods

available

boolean **available** (*FileObject* rootFolder)

Checks if a configuration exists for the Spoofox language specification at the given location.

Parameters

- **rootFolder** – The language specification root folder.

Throws

- **IOException** – When location the configuration fails.

Returns True if a configuration exists, false otherwise.

get

ConfigRequest<ISpoofaxLanguageSpecConfig> **get** (*FileObject* rootFolder)

Gets the configuration for the Spoofox language specification at the given location.

Parameters

- **rootFolder** – The language specification root folder.

Returns Configuration request, either with a valid configuration, or a collection of error messages.

ISpoofaxLanguageSpecConfigWriter

public interface **ISpoofaxLanguageSpecConfigWriter**
Writes a configuration for the specified *ILanguageSpec*.

Methods

exists

boolean **exists** (*ILanguageSpec* languageSpec)

Checks if a configuration file already exists for given language specification project.

Parameters

- **languageSpec** – Language specification project.

Returns True if configuration file exists, false otherwise.

write

void **write** (*ILanguageSpec* languageSpec, *ISpoofaxLanguageSpecConfig* config, *IFileAccess* access)
Writes the specified configuration for the specified language specification.

Parameters

- **languageSpec** – The language specification.
- **config** – The configuration to write.
- **access** –

LanguageSpecBuildPhase

public enum **LanguageSpecBuildPhase**

Enum Constants

clean

public static final *LanguageSpecBuildPhase* **clean**

compile

public static final *LanguageSpecBuildPhase* **compile**

generateSources

public static final *LanguageSpecBuildPhase* **generateSources**

initialize

public static final *LanguageSpecBuildPhase* **initialize**

pkg

public static final *LanguageSpecBuildPhase* **pkg**

PlaceholderCharacters

public class **PlaceholderCharacters**

Fields

prefix

public *String* **prefix**

suffix

public *String* **suffix**

Constructors

PlaceholderCharacters

public **PlaceholderCharacters** (*String prefix*, *String postfix*)

Methods

equals

public boolean **equals** (*Object obj*)

hashCode

public int **hashCode** ()

toString

public *String* **toString** ()

Sdf2tableVersion

public enum **Sdf2tableVersion**

Enum Constants

c

public static final *Sdf2tableVersion* **c**

java

public static final *Sdf2tableVersion* **java**

SdfVersion

public enum **SdfVersion**

Enum Constants

sdf2

public static final *SdfVersion* **sdf2**

sdf3

public static final *SdfVersion* **sdf3**

SpoofoxLanguageSpecConfig

public class **SpoofoxLanguageSpecConfig** extends *LanguageSpecConfig* implements *ISpoofoxLanguageSpecConfig*
 An implementation of the *ISpoofoxLanguageSpecConfig* interface that is backed by an
 ImmutableConfiguration object.

Constructors

SpoofoxLanguageSpecConfig

public **SpoofoxLanguageSpecConfig** (HierarchicalConfiguration<ImmutableNode> *config*)

SpoofoxLanguageSpecConfig

protected **SpoofoxLanguageSpecConfig** (HierarchicalConfiguration<ImmutableNode> *config*, *LanguageIdentifier* *id*, *String* *name*, *Collection*<*LanguageIdentifier*> *compileDeps*, *Collection*<*LanguageIdentifier*> *sourceDeps*, *Collection*<*LanguageIdentifier*> *javaDeps*, *Boolean* *type-smart*, *Boolean* *incrementalConstraintSolver*, *Collection*<*LanguageContributionIdentifier*> *langContribs*, *Collection*<*IGenerateConfig*> *generates*, *Collection*<*IExportConfig*> *exports*, *String* *metaborgVersion*, *Collection*<*String*> *pardonedLanguages*, *Boolean* *useBuildSystemSpec*, *SdfVersion* *sdfVersion*, *Boolean* *sdfEnabled*, *String* *parseTable*, *String* *completionsParseTable*, *String* *sdfMainFile*, *Sdf2tableVersion* *sdf2tableVersion*, *PlaceholderCharacters* *placeholderCharacters*, *String* *prettyPrint*, *String* *externalDef*, *Arguments* *sdfArgs*, *StrategoFormat* *format*, *String* *externalJar*, *String* *externalJarFlags*, *Arguments* *strategoArgs*, *Collection*<*IBuildStepConfig*> *buildSteps*)

Methods

buildSteps

public *Collection*<*IBuildStepConfig*> **buildSteps** ()

esvName

public *String* **esvName** ()

javaName

public *String* **javaName** ()

metaSdfName

public *String* **metaSdfName** ()

packageName

public *String* **packageName** ()

placeholderChars

public *PlaceholderCharacters* **placeholderChars** ()

prettyPrintLanguage

public *String* **prettyPrintLanguage** ()

sdf2tableVersion

public *Sdf2tableVersion* **sdf2tableVersion** ()

sdfArgs

public *Arguments* **sdfArgs** ()

sdfExternalDef

public *String* **sdfExternalDef** ()

sdfMainFile

public *String* **sdfMainFile** ()

sdfName

public *String* **sdfName** ()

sdfVersion

public *SdfVersion* **sdfVersion** ()

strArgs

public Arguments **strArgs** ()

strExternalJar

public *String* **strExternalJar** ()

strExternalJarFlags

public *String* **strExternalJarFlags** ()

strFormat

public *StrategoFormat* **strFormat** ()

strategoName

public *String* **strategoName** ()

validate

public *Collection*<*IMessage*> **validate** (*MessageBuilder* mb)

SpoofoxLanguageSpecConfigBuilder

public class **SpoofoxLanguageSpecConfigBuilder** extends *LanguageSpecConfigBuilder* implements *ISpoofoxLanguageSpecC*
 Configuration-based builder for *ILanguageSpecConfig* objects.

Fields

buildSteps

protected *Collection*<*IBuildStepConfig*> **buildSteps**

placeholderCharacters

protected *PlaceholderCharacters* **placeholderCharacters**

prettyPrint

protected *String* **prettyPrint**

sdf2tableVersion

protected *Sdf2tableVersion* **sdf2tableVersion**

sdfArgs

protected Arguments **sdfArgs**

sdfExternalDef

protected *String* **sdfExternalDef**

sdfMainFile

protected *String* **sdfMainFile**

sdfVersion

protected *SdfVersion* **sdfVersion**

strArgs

protected Arguments **strArgs**

strExternalJar

protected *String* **strExternalJar**

strExternalJarFlags

protected *String* **strExternalJarFlags**

strFormat

protected *StrategoFormat* **strFormat**

Constructors

SpoofoxLanguageSpecConfigBuilder

public **SpoofoxLanguageSpecConfigBuilder** (*AConfigurationReaderWriter* configReaderWriter)

Methods

addBuildSteps

public *ISpoofoxLanguageSpecConfigBuilder* **addBuildSteps** (*Iterable<IBuildStepConfig>* buildSteps)

addCompileDeps

public *ISpoofoxLanguageSpecConfigBuilder* **addCompileDeps** (*Iterable<LanguageIdentifier>* deps)

addExports

public *ISpoofoxLanguageSpecConfigBuilder* **addExports** (*Iterable<IExportConfig>* exports)

addGenerates

public *ISpoofoxLanguageSpecConfigBuilder* **addGenerates** (*Iterable<IGenerateConfig>* generates)

addJavaDeps

public *ISpoofoxLanguageSpecConfigBuilder* **addJavaDeps** (*Iterable<LanguageIdentifier>* deps)

addLangContribs

public *ISpoofoxLanguageSpecConfigBuilder* **addLangContribs** (*Iterable<LanguageContributionIdentifier>*
contribs)

addPardonedLanguages

public *ISpoofoxLanguageSpecConfigBuilder* **addPardonedLanguages** (*Iterable<String>* languages)

addSourceDeps

public *ISpoofoxLanguageSpecConfigBuilder* **addSourceDeps** (*Iterable<LanguageIdentifier>* deps)

build

public *ISpoofoxLanguageSpecConfig* **build** (*FileObject* rootFolder)

copyFrom

public *ISpoofaxLanguageSpecConfigBuilder* **copyFrom** (*ISpoofaxLanguageSpecConfig* config)

reset

public *ISpoofaxLanguageSpecConfigBuilder* **reset** ()

withBuildSteps

public *ISpoofaxLanguageSpecConfigBuilder* **withBuildSteps** (*Iterable*<*IBuildStepConfig*> buildSteps)

withCompileDeps

public *ISpoofaxLanguageSpecConfigBuilder* **withCompileDeps** (*Iterable*<*LanguageIdentifier*> deps)

withExports

public *ISpoofaxLanguageSpecConfigBuilder* **withExports** (*Iterable*<*IExportConfig*> exports)

withGenerates

public *ISpoofaxLanguageSpecConfigBuilder* **withGenerates** (*Iterable*<*IGenerateConfig*> generates)

withIdentifier

public *ISpoofaxLanguageSpecConfigBuilder* **withIdentifier** (*LanguageIdentifier* identifier)

withIncrementalConstraintSolver

public *ISpoofaxLanguageSpecConfigBuilder* **withIncrementalConstraintSolver** (boolean incremental)

withJavaDeps

public *ISpoofaxLanguageSpecConfigBuilder* **withJavaDeps** (*Iterable*<*LanguageIdentifier*> deps)

withLangContribs

public *ISpoofaxLanguageSpecConfigBuilder* **withLangContribs** (*Iterable*<*LanguageContributionIdentifier*> contribs)

withMetaborgVersion

```
public ISpoofaxLanguageSpecConfigBuilder withMetaborgVersion (String metaborgVersion)
```

withName

```
public ISpoofaxLanguageSpecConfigBuilder withName (String name)
```

withPardonedLanguages

```
public ISpoofaxLanguageSpecConfigBuilder withPardonedLanguages (Iterable<String> languages)
```

withPlaceholderPostfix

```
public ISpoofaxLanguageSpecConfigBuilder withPlaceholderPostfix (String placeholderPostfix)
```

withPlaceholderPrefix

```
public ISpoofaxLanguageSpecConfigBuilder withPlaceholderPrefix (String placeholderPrefix)
```

withPrettyPrintLanguage

```
public ISpoofaxLanguageSpecConfigBuilder withPrettyPrintLanguage (String prettyPrintLanguage)
```

withSdf2tableVersion

```
public ISpoofaxLanguageSpecConfigBuilder withSdf2tableVersion (Sdf2tableVersion  
sdf2tableVersion)
```

withSdfArgs

```
public ISpoofaxLanguageSpecConfigBuilder withSdfArgs (Arguments args)
```

withSdfExternalDef

```
public ISpoofaxLanguageSpecConfigBuilder withSdfExternalDef (String def)
```

withSdfMainFile

```
public ISpoofaxLanguageSpecConfigBuilder withSdfMainFile (String sdfMainFile)
```

withSdfVersion

```
public ISpoofaxLanguageSpecConfigBuilder withSdfVersion (SdfVersion sdfVersion)
```

withSourceDeps

public *ISpoofaxLanguageSpecConfigBuilder* **withSourceDeps** (*Iterable<LanguageIdentifier>* deps)

withStrArgs

public *ISpoofaxLanguageSpecConfigBuilder* **withStrArgs** (*Arguments* args)

withStrExternalJar

public *ISpoofaxLanguageSpecConfigBuilder* **withStrExternalJar** (*String* jar)

withStrExternalJarFlags

public *ISpoofaxLanguageSpecConfigBuilder* **withStrExternalJarFlags** (*String* flags)

withStrFormat

public *ISpoofaxLanguageSpecConfigBuilder* **withStrFormat** (*StrategoFormat* format)

withStrTypesmart

public *ISpoofaxLanguageSpecConfigBuilder* **withStrTypesmart** (boolean typesmart)

withTypesmart

public *ISpoofaxLanguageSpecConfigBuilder* **withTypesmart** (boolean typesmart)

withUseBuildSystemSpec

public *ISpoofaxLanguageSpecConfigBuilder* **withUseBuildSystemSpec** (boolean useBuildSystemSpec)

SpoofaxLanguageSpecConfigService

public class **SpoofaxLanguageSpecConfigService** extends *AConfigService<ILanguageSpec, ISpoofaxLanguageSpecConfig>* {

Constructors

SpoofaxLanguageSpecConfigService

public **SpoofaxLanguageSpecConfigService** (*AConfigurationReaderWriter* configReaderWriter,
SpoofaxLanguageSpecConfigBuilder configBuilder)

Methods

exists

public boolean **exists** (*ILanguageSpec languageSpec*)

fromConfig

protected HierarchicalConfiguration<ImmutableNode> **fromConfig** (*ISpoofaxLanguageSpecConfig config*)

getConfigFile

protected FileObject **getConfigFile** (*FileObject rootFolder*)

getRootDirectory

protected FileObject **getRootDirectory** (*ILanguageSpec languageSpec*)

toConfig

protected *ConfigRequest<ISpoofaxLanguageSpecConfig>* **toConfig** (HierarchicalConfiguration<ImmutableNode> *config*, FileObject *configFile*)

StrategoBuildStepConfig

public class **StrategoBuildStepConfig** implements *IBuildStepConfig*

Fields

args

public final Iterable<String> **args**

phase

public final *LanguageSpecBuildPhase* **phase**

strategy

public final String **strategy**

Constructors

StrategoBuildStepConfig

```
public StrategoBuildStepConfig (LanguageSpecBuildPhase phase, String strategy, Iterable<String>  
                                args)
```

Methods

accept

```
public void accept (IBuildStepVisitor visitor)
```

accept

```
public void accept (IBuildStepVisitor visitor, LanguageSpecBuildPhase phase)
```

arguments

```
public Arguments arguments ()
```

phase

```
public LanguageSpecBuildPhase phase ()
```

StrategoFormat

```
public enum StrategoFormat
```

Enum Constants

ctree

```
public static final StrategoFormat ctree
```

jar

```
public static final StrategoFormat jar
```

org.metaborg.spoofax.meta.core.generator

BaseGenerator

```
public abstract class BaseGenerator
```

Fields

writer

protected final *MustacheWriter* **writer**

Constructors

BaseGenerator

public **BaseGenerator** (*GeneratorSettings* scope, IFileAccess access)

BaseGenerator

public **BaseGenerator** (*GeneratorSettings* scope)

ClassResolver

public class **ClassResolver** implements MustacheResolver

Constructors

ClassResolver

public **ClassResolver** (*Class*<?> clazz)

Methods

getReader

public *Reader* **getReader** (*String* resourceName)

GeneratorSettings

public class **GeneratorSettings**

Provides the values that can be used in a generator template, e.g. a Mustache template.

Constructors

GeneratorSettings

public **GeneratorSettings** (*FileObject* location, *ISpoofaxLanguageSpecConfig* config)

Methods

eclipseMetaborgVersion

public *String* **eclipseMetaborgVersion** ()

eclipseVersion

public *String* **eclipseVersion** ()

format

public *StrategoFormat* **format** ()

fullIdentifier

public *String* **fullIdentifier** ()

generateGroupId

public boolean **generateGroupId** ()

generateVersion

public boolean **generateVersion** ()

groupId

public *String* **groupId** ()

id

public *String* **id** ()

javaName

public *String* **javaName** ()

location

public *FileObject* **location** ()

metaborgVersion

```
public String metaborgVersion ()
```

name

```
public String name ()
```

packageName

```
public String packageName ()
```

ppName

```
public String ppName ()
```

setMetaborgVersion

```
public void setMetaborgVersion (String metaborgVersion)
```

strategiesPackagePath

```
public String strategiesPackagePath ()
```

strategoName

```
public String strategoName ()
```

version

```
public String version ()
```

MustacheWriter

```
public class MustacheWriter
```

Constructors**MustacheWriter**

```
public MustacheWriter (FileObject root, Object[] objects, Class<?> clazz, IFileAccess access)
```

Methods

exists

public boolean **exists** (*String srcNameTemplate*)

write

public void **write** (*String nameTemplate*, boolean *overwrite*)

write

public void **write** (*String srcName*, *String dstNameTemplate*, boolean *overwrite*)

writeResolve

public void **writeResolve** (*String nameTemplate*, boolean *overwrite*)

writeResolve

public void **writeResolve** (*String srcNameTemplate*, *String dstNameTemplate*, boolean *overwrite*)

StrictMustacheFactory

public class **StrictMustacheFactory** extends *DefaultMustacheFactory*

Constructors

StrictMustacheFactory

public **StrictMustacheFactory** (*MustacheResolver mustacheResolver*)

Methods

createMustacheVisitor

public *MustacheVisitor* **createMustacheVisitor** ()

org.metaborg.spoofax.meta.core.generator.eclipse

EclipseFeatureGenerator

public class **EclipseFeatureGenerator** extends *BaseGenerator*

Constructors

EclipseFeatureGenerator

public **EclipseFeatureGenerator** (*GeneratorSettings* scope, IFileAccess access)

EclipseFeatureGenerator

public **EclipseFeatureGenerator** (*GeneratorSettings* scope)

Methods

generateAll

public void **generateAll** ()

generateBuildProperties

public void **generateBuildProperties** ()

generateFeatureXML

public void **generateFeatureXML** ()

generateIgnoreFile

public void **generateIgnoreFile** ()

generatePOM

public void **generatePOM** ()

siblingName

public static *String* **siblingName** (*String* id)

EclipseLangSpecGenerator

public class **EclipseLangSpecGenerator** extends *BaseGenerator*
 Generates Eclipse support files for language specification projects.

Constructors

EclipseLangSpecGenerator

public **EclipseLangSpecGenerator** (*GeneratorSettings settings*, IFileAccess *access*)

EclipseLangSpecGenerator

public **EclipseLangSpecGenerator** (*GeneratorSettings settings*)

Methods

generateAll

public void **generateAll** ()

generateClasspath

public void **generateClasspath** ()

EclipsePluginGenerator

public class **EclipsePluginGenerator** extends *BaseGenerator*

Generates a companion Eclipse plugin project for a language specification project, that lifts the language implementation built from the language specification project into an Eclipse plugin that can be installed into Eclipse.

Constructors

EclipsePluginGenerator

public **EclipsePluginGenerator** (*GeneratorSettings scope*, IFileAccess *access*)

EclipsePluginGenerator

public **EclipsePluginGenerator** (*GeneratorSettings scope*)

Methods

generateAll

public void **generateAll** ()

generateBuildProperties

public void **generateBuildProperties** ()

generateClasspath

public void **generateClasspath** ()

generateIgnoreFile

public void **generateIgnoreFile** ()

generateManifest

public void **generateManifest** ()

generatePOM

public void **generatePOM** ()

generatePluginXML

public void **generatePluginXML** ()

siblingName

public static *String* **siblingName** (*String id*)

EclipseSiteGenerator

public class **EclipseSiteGenerator** extends *BaseGenerator*

Constructors

EclipseSiteGenerator

public **EclipseSiteGenerator** (*GeneratorSettings scope*, *IFileAccess access*)

EclipseSiteGenerator

public **EclipseSiteGenerator** (*GeneratorSettings scope*)

Methods

generateAll

public void **generateAll** ()

generateIgnoreFile

public void **generateIgnoreFile**()

generatePOM

public void **generatePOM**()

generateUpdatesiteXML

public void **generateUpdatesiteXML**()

siblingName

public static *String* **siblingName**(*String id*)

org.metaborg.spoofax.meta.core.generator.general

AnalysisType

public enum **AnalysisType**

Enum Constants

NaBL2

public static final *AnalysisType* **NaBL2**

NaBL_TS

public static final *AnalysisType* **NaBL_TS**

None

public static final *AnalysisType* **None**

Stratego

public static final *AnalysisType* **Stratego**

ContinuousLanguageSpecGenerator

public class **ContinuousLanguageSpecGenerator** extends *BaseGenerator*

Generates project files which need to be generated after each build. Files are not specific to an IDE.

Constructors

ContinuousLanguageSpecGenerator

```
public ContinuousLanguageSpecGenerator (GeneratorSettings scope, IFileAccess access, SdfVersion
                                         version)
```

ContinuousLanguageSpecGenerator

```
public ContinuousLanguageSpecGenerator (GeneratorSettings scope, SdfVersion version)
```

Methods

generateAll

```
public void generateAll ()
```

generateCompletionStrategies

```
public void generateCompletionStrategies ()
```

LangProjectGenerator

```
public class LangProjectGenerator extends BaseGenerator
    Generates a language-specific project.
```

Constructors

LangProjectGenerator

```
public LangProjectGenerator (GeneratorSettings settings, IFileAccess access)
```

LangProjectGenerator

```
public LangProjectGenerator (GeneratorSettings settings)
```

Methods

generateAll

```
public void generateAll ()
```

generateConfig

```
public void generateConfig ()
```

generatePOM

```
public void generatePOM()
```

siblingName

```
public static String siblingName(String id)
```

LangSpecGenerator

```
public class LangSpecGenerator extends BaseGenerator
```

Generates language project files that are only generated once when a new language project is created. Files are not specific to an IDE.

Constructors

LangSpecGenerator

```
public LangSpecGenerator(LangSpecGeneratorSettings config)
```

Methods

analysisEnabled

```
public boolean analysisEnabled()
```

analysisNabl2

```
public boolean analysisNabl2()
```

analysisNablTs

```
public boolean analysisNablTs()
```

analysisType

```
public String analysisType()
```

fileExtension

```
public String fileExtension()
```

fileExtensions

```
public String fileExtensions()
```


generateAll

public void **generateAll** ()

generateAllMaven

public void **generateAllMaven** ()

generateAllSpoofox

public void **generateAllSpoofox** ()

generateConfig

public void **generateConfig** ()

generateDotMvn

public void **generateDotMvn** ()

generateEditorServices

public void **generateEditorServices** ()

generateGrammar

public void **generateGrammar** ()

generateIgnoreFile

public void **generateIgnoreFile** ()

generateJavaStrategy

public void **generateJavaStrategy** ()

generatePOM

public void **generatePOM** ()

generateTrans

public void **generateTrans** ()

signaturesModule

public [String](#) **signaturesModule** ()

startSymbol

public [String](#) **startSymbol** ()

syntaxEnabled

public boolean **syntaxEnabled** ()

syntaxOrAnalysisEnabled

public boolean **syntaxOrAnalysisEnabled** ()

syntaxSdf2

public boolean **syntaxSdf2** ()

syntaxSdf3

public boolean **syntaxSdf3** ()

syntaxType

public [String](#) **syntaxType** ()

LangSpecGeneratorSettings

public class **LangSpecGeneratorSettings**

Fields

analysisType

public final [AnalysisType](#) **analysisType**

extensions

public final [Collection](#)<[String](#)> **extensions**

generatorSettings

public final *GeneratorSettings* **generatorSettings**

syntaxType

public final *SyntaxType* **syntaxType**

Constructors

LangSpecGeneratorSettings

public **LangSpecGeneratorSettings** (*GeneratorSettings* generatorSettings, *Collection*<*String*> extensions, *SyntaxType* syntaxType, *AnalysisType* analysisType)

LangSpecGeneratorSettingsBuilder

public class **LangSpecGeneratorSettingsBuilder**

Fields

standardAnalysisType

public static final *AnalysisType* **standardAnalysisType**

standardGroupId

public static final *String* **standardGroupId**

standardMetaborgVersion

public static final *String* **standardMetaborgVersion**

standardSyntaxType

public static final *SyntaxType* **standardSyntaxType**

standardVersionString

public static final *String* **standardVersionString**

Methods

build

```
public LangSpecGeneratorSettings build (FileObject projectLocation, ISpoofaxLanguageSpecConfigBuilder
                                         languageSpecConfigBuilder)
```

canBuild

```
public boolean canBuild ()
```

configureFromPrompt

```
public LangSpecGeneratorSettingsBuilder configureFromPrompt (Prompter prompter)
```

isComplete

```
public boolean isComplete ()
```

stillMissing

```
public Iterable<String> stillMissing ()
```

stillRequired

```
public Iterable<String> stillRequired ()
```

withAnalysisType

```
public LangSpecGeneratorSettingsBuilder withAnalysisType (AnalysisType analysisType)
```

withConfig

```
public LangSpecGeneratorSettingsBuilder withConfig (ISpoofaxLanguageSpecConfig config)
```

withDefaultAnalysisType

```
public LangSpecGeneratorSettingsBuilder withDefaultAnalysisType (AnalysisType defaultAnaly-
                                                                sisType)
```

withDefaultGroupId

```
public LangSpecGeneratorSettingsBuilder withDefaultGroupId (String defaultGroupId)
```

withDefaultMetaborgVersion

public *LangSpecGeneratorSettingsBuilder* **withDefaultMetaborgVersion** (*String* defaultMetaborgVersion)

withDefaultSyntaxType

public *LangSpecGeneratorSettingsBuilder* **withDefaultSyntaxType** (*SyntaxType* defaultSyntaxType)

withDefaultVersion

public *LangSpecGeneratorSettingsBuilder* **withDefaultVersion** (*String* defaultVersionString)

withExtensions

public *LangSpecGeneratorSettingsBuilder* **withExtensions** (*Collection*<*String*> extensions)

withGroupId

public *LangSpecGeneratorSettingsBuilder* **withGroupId** (*String* groupId)

withId

public *LangSpecGeneratorSettingsBuilder* **withId** (*String* id)

withMetaborgVersion

public *LangSpecGeneratorSettingsBuilder* **withMetaborgVersion** (*String* metaborgVersion)

withName

public *LangSpecGeneratorSettingsBuilder* **withName** (*String* name)

withSyntaxType

public *LangSpecGeneratorSettingsBuilder* **withSyntaxType** (*SyntaxType* syntaxType)

withVersion

public *LangSpecGeneratorSettingsBuilder* **withVersion** (*LanguageVersion* version)

withoutExtensions

public *LangSpecGeneratorSettingsBuilder* **withoutExtensions** ()

LangTestGenerator

public class **LangTestGenerator** extends *BaseGenerator*
Generates a language-specific project.

Constructors

LangTestGenerator

public **LangTestGenerator** (*GeneratorSettings settings*, IFileAccess *access*)

LangTestGenerator

public **LangTestGenerator** (*GeneratorSettings settings*)

Methods

generateAll

public void **generateAll** ()

generateConfig

public void **generateConfig** ()

generatePOM

public void **generatePOM** ()

generateTest

public void **generateTest** ()

siblingName

public static *String* **siblingName** (*String id*)

SyntaxType

public enum **SyntaxType**

Enum Constants

None

public static final *SyntaxType* **None**

SDF2

public static final *SyntaxType* **SDF2**

SDF3

public static final *SyntaxType* **SDF3**

org.metaborg.spoofax.meta.core.pluto

SpoofaxBuilder

public abstract class **SpoofaxBuilder**<In extends SpoofaxInput, Out extends Output> extends *Builder*<In, Out> implements IFileA

Fields

context

protected final *SpoofaxContext* **context**

paths

protected transient *LangSpecCommonPaths* **paths**

Constructors

SpoofaxBuilder

public **SpoofaxBuilder** (In *input*)

Methods

defaultStamper

protected Stamper **defaultStamper** ()

newResourceTracker

protected *ResourceAgentTracker* **newResourceTracker** (String... *excludePatterns*)

read

public void **read** ([FileObject](#) *file*)

toFile

protected [File](#) **toFile** ([FileObject](#) *fileObject*)

toFileReplicate

protected [File](#) **toFileReplicate** ([FileObject](#) *fileObject*)

write

public void **write** ([FileObject](#) *file*)

SpoofaxBuilderFactory

public interface **SpoofaxBuilderFactory**<In extends [SpoofaxInput](#), Out extends [Output](#), B extends [Builder](#)<In, Out>> extends [Builder](#)<In, Out>

SpoofaxBuilderFactoryFactory

public class **SpoofaxBuilderFactoryFactory**

Methods

of

public static <In extends [SpoofaxInput](#), Out extends [Output](#), B extends [Builder](#)<In, Out>> [SpoofaxBuilderFactory](#)<In, Out, B> **of** ([Class](#)<[Builder](#)<In, Out>> *builderFactoryClass*, [Class](#)<In> *inputClass*, [Class](#)<Out> *outputClass*)

SpoofaxBuilderFactoryFactory.GeneratedSpoofaxBuilderFactory

class **GeneratedSpoofaxBuilderFactory** implements [SpoofaxBuilderFactory](#)<In, Out, B>

Methods

equals

public boolean **equals** ([Object](#) *obj*)

hashCode

```
public int hashCode ()
```

inputParser

```
public InputParser<In> inputParser ()
```

isOverlappingGeneratedFileCompatible

```
public boolean isOverlappingGeneratedFileCompatible (File overlap, Serializable input, Builder-
Factory<?, ?, ?> otherFactory, Serializ-
able otherInput)
```

makeBuilder

```
public B makeBuilder (In input)
```

toString

```
public String toString ()
```

SpooifaxContext

```
public class SpooifaxContext implements Serializable
```

Fields

BETTER_STAMPERS

```
public static final boolean BETTER_STAMPERS
```

base

```
public transient FileObject base
```

baseDir

```
public final File baseDir
```

baseURI

```
public final URI baseURI
```

depDir

public final [File](#) **depDir**

languageSpec

public transient [ILanguageSpec](#) **languageSpec**

Constructors

SpoofaxContext

public **SpoofaxContext** ([FileObject](#) *baseDir*, [FileObject](#) *depDir*)

Methods

basePath

public [File](#) **basePath** ([String](#) *relative*)

depPath

public [File](#) **depPath** ([String](#) *relative*)

init

public static void **init** ([Injector](#) *newInjector*)

init

public void **init** ()

languageIdentifierService

public [ILanguageIdentifierService](#) **languageIdentifierService** ()

languagePathService

public [ILanguagePathService](#) **languagePathService** ()

languageService

public [ILanguageService](#) **languageService** ()

newResourceTracker

public *ResourceAgentTracker* **newResourceTracker** (*String... excludePatterns*)

parse

public *IStrategoTerm* **parse** (*File file*)

resourceService

public *IResourceService* **resourceService** ()

sourceTextService

public *ISourceTextService* **sourceTextService** ()

syntaxService

public *ISpoofaxSyntaxService* **syntaxService** ()

termFactory

public *ITermFactory* **termFactory** ()

termFactoryService

public *ITermFactoryService* **termFactoryService** ()

toFile

public *File* **toFile** (*FileObject fileObject*)

toFileReplicate

public *File* **toFileReplicate** (*FileObject fileObject*)

unitService

public *ISpoofaxUnitService* **unitService** ()

SpoofaxInput

public class **SpoofaxInput** implements *Serializable*

Fields

context

public final *SpoofaxContext* **context**

Constructors

SpoofaxInput

public **SpoofaxInput** (*SpoofaxContext* context)

SpoofaxReporting

public class **SpoofaxReporting** implements IReporting

Methods

buildRequirement

public <O extends Output> void **buildRequirement** (BuildRequest<?, O, ?, ?> req)

canceledBuilderCycle

public <O extends Output> void **canceledBuilderCycle** (BuildRequest<?, O, ?, ?> req, BuildUnit<O> unit, BuildCycleException t)

canceledBuilderException

public <O extends Output> void **canceledBuilderException** (BuildRequest<?, O, ?, ?> req, BuildUnit<O> unit, Throwable t)

canceledBuilderFailure

public <O extends Output> void **canceledBuilderFailure** (BuildRequest<?, O, ?, ?> req, BuildUnit<O> unit)

canceledBuilderInterrupt

public <O extends Output> void **canceledBuilderInterrupt** (BuildRequest<?, O, ?, ?> req, BuildUnit<O> unit)

cancelBuilderRequiredBuilderFailed

```
public <O extends Output> void cancelBuilderRequiredBuilderFailed (BuildRequest<?, O, ?,  
    ?> req, BuildUnit<O>  
    unit, RequiredBuilder-  
    Failed e)
```

cancelledBuildCycleException

```
public void cancelledBuildCycleException (BuildCycle cycle, CycleHandler cycleSupport, Throw-  
    able t)
```

finishedBuildCycle

```
public void finishedBuildCycle (BuildCycle cycle, CycleHandler cycleSupport, Set<BuildUnit<?>>  
    units)
```

finishedBuildRequirement

```
public <O extends Output> void finishedBuildRequirement (BuildRequest<?, O, ?, ?> req)
```

finishedBuilder

```
public <O extends Output> void finishedBuilder (BuildRequest<?, O, ?, ?> req, BuildUnit<O> unit)
```

inconsistentRequirement

```
public void inconsistentRequirement (Requirement req)
```

messageFromBuilder

```
public void messageFromBuilder (String message, boolean isError, Builder<?, ?> from)
```

messageFromSystem

```
public void messageFromSystem (String message, boolean isError, int verbosity)
```

skippedBuilder

```
public <O extends Output> void skippedBuilder (BuildRequest<?, O, ?, ?> req, BuildUnit<O> unit)
```

startBuildCycle

```
public void startBuildCycle (BuildCycle cycle, CycleHandler cycleSupport)
```

startedBuilder

```
public <O extends Output> void startedBuilder (BuildRequest<?, O, ?, ?> req, Builder<?, ?> b, BuildUnit<O> oldUnit, Set<BuildReason> reasons)
```

org.metaborg.spoofax.meta.core.pluto.build

MakePermissive

```
public class MakePermissive extends SpoofaxBuilder<MakePermissive.Input, OutputPersisted<File>>
```

Fields

factory

```
public static SpoofaxBuilderFactory<Input, OutputPersisted<File>, MakePermissive> factory
```

Constructors

MakePermissive

```
public MakePermissive (Input input)
```

Methods

build

```
public OutputPersisted<File> build (Input input)
```

description

```
protected String description (Input input)
```

origin

```
public static Origin origin (Input input)
```

persistentPath

```
public File persistentPath (Input input)
```

request

public static BuildRequest<*Input*, OutputPersisted<File>, *MakePermissive*, *SpoofoxBuilderFactory*<*Input*, OutputPersisted<File>, *MakePermissive*>>

MakePermissive.Input

public static class **Input** extends *SpoofoxInput*

Fields

inputFile

public final File **inputFile**

module

public final String **module**

origin

public final Origin **origin**

outputFile

public final File **outputFile**

Constructors

Input

public **Input** (*SpoofoxContext* context, File *inputFile*, File *outputFile*, String *module*, Origin *origin*)

PackSdf

public class **PackSdf** extends *SpoofoxBuilder*<*PackSdf*.*Input*, OutputPersisted<File>>

Fields

factory

public static *SpoofoxBuilderFactory*<*Input*, OutputPersisted<File>, *PackSdf*> **factory**

Constructors

PackSdf

public **PackSdf** (*Input input*)

Methods

build

public OutputPersisted<File> **build** (*Input input*)

description

protected String **description** (*Input input*)

origin

public static Origin **origin** (*Input input*)

persistentPath

public File **persistentPath** (*Input input*)

request

public static BuildRequest<*Input*, OutputPersisted<File>, *PackSdf*, *SpoofaxBuilderFactory*<*Input*, OutputPersisted<File>, *PackSdf*>> **request** (*Input input*)

PackSdf.Input

public static class **Input** extends *SpoofaxInput*

Fields

extraArgs

public final Arguments **extraArgs**

includePaths

public final List<File> **includePaths**

inputFile

public final `File` **inputFile**

module

public final `String` **module**

origin

public final `Origin` **origin**

outputFile

public final `File` **outputFile**

Constructors

Input

public **Input** (*SpoofaxContext* context, *String* module, *File* inputFile, *File* outputFile, *List<File>* includePaths, *Arguments* extraArgs, *Origin* origin)

Rtg2Sig

public class **Rtg2Sig** extends *SpoofaxBuilder<Rtg2Sig.Input, OutputPersisted<File>>*

Fields

factory

public static *SpoofaxBuilderFactory<Input, OutputPersisted<File>, Rtg2Sig>* **factory**

Constructors

Rtg2Sig

public **Rtg2Sig** (*Input* input)

Methods

build

public *OutputPersisted<File>* **build** (*Input* input)

description

protected `String description` (*Input input*)

origin

public static Origin **origin** (*Input input*)

persistentPath

public `File persistentPath` (*Input input*)

request

public static BuildRequest<*Input*, OutputPersisted<File>, *Rtg2Sig*, *SpoofaxBuilderFactory*<*Input*, OutputPersisted<File>, *Rtg2Sig*>> **request**

Rtg2Sig.Input

public static class **Input** extends *SpoofaxInput*

Fields

inputFile

public final `File inputFile`

module

public final `String module`

origin

public final Origin **origin**

outputFile

public final `File outputFile`

Constructors

Input

public **Input** (*SpoofaxContext context*, `File inputFile`, `File outputFile`, `String module`, Origin *origin*)

Sdf2Parenthesize

public class **Sdf2Parenthesize** extends *SpoofoxBuilder<Sdf2Parenthesize.Input, None>*

Fields

factory

public static *SpoofoxBuilderFactory<Input, None, Sdf2Parenthesize>* **factory**

Constructors

Sdf2Parenthesize

public **Sdf2Parenthesize** (*Input input*)

Methods

build

public *None* **build** (*Input input*)

description

protected *String* **description** (*Input input*)

origin

public static *Origin* **origin** (*Input input*)

persistentPath

public *File* **persistentPath** (*Input input*)

request

public static *BuildRequest<Input, None, Sdf2Parenthesize, SpoofoxBuilderFactory<Input, None, Sdf2Parenthesize>>* **request** (*Input input*)

Sdf2Parenthesize.Input

public static class **Input** extends *SpoofoxInput*

Fields

inputFile

public final `File` **inputFile**

inputModule

public final `String` **inputModule**

origin

public final `Origin` **origin**

outputFile

public final `File` **outputFile**

outputModule

public final `String` **outputModule**

Constructors

Input

public **Input** (*SpoofaxContext* context, `File` inputFile, `File` outputFile, `String` inputModule, `String` outputModule, `Origin` origin)

Sdf2Rtg

public class **Sdf2Rtg** extends *SpoofaxBuilder*<*Sdf2Rtg.Input*, `OutputPersisted`<`File`>>

Fields

factory

public static *SpoofaxBuilderFactory*<*Input*, `OutputPersisted`<`File`>, *Sdf2Rtg*> **factory**

Constructors

Sdf2Rtg

public **Sdf2Rtg** (*Input* input)

Methods

build

public OutputPersisted<File> **build** (*Input input*)

description

protected String **description** (*Input input*)

origin

public static Origin **origin** (*Input input*)

persistentPath

public File **persistentPath** (*Input input*)

request

public static BuildRequest<*Input*, OutputPersisted<File>, Sdf2Rtg, SpoofoxBuilderFactory<*Input*, OutputPersisted<File>, Sdf2Rtg>> **request** (*Input input*)

Sdf2Rtg.Input

public static class **Input** extends *SpoofoxInput*

Fields

inputFile

public final File **inputFile**

module

public final String **module**

origin

public final Origin **origin**

outputFile

public final File **outputFile**

Constructors

Input

public **Input** (*SpoofaxContext* context, *File* inputFile, *File* outputFile, *String* module, *Origin* origin)

Sdf2Table

public class **Sdf2Table** extends *SpoofaxBuilder*<*Sdf2Table.Input*, *OutputPersisted*<*File*>>

Fields

factory

public static *SpoofaxBuilderFactory*<*Input*, *OutputPersisted*<*File*>, *Sdf2Table*> **factory**

Constructors

Sdf2Table

public **Sdf2Table** (*Input* input)

Methods

build

public *OutputPersisted*<*File*> **build** (*Input* input)

description

protected *String* **description** (*Input* input)

origin

public static *Origin* **origin** (*Input* input)

persistentPath

public *File* **persistentPath** (*Input* input)

request

public static *BuildRequest*<*Input*, *OutputPersisted*<*File*>, *Sdf2Table*, *SpoofaxBuilderFactory*<*Input*, *OutputPersisted*<*File*>, *Sdf2Table*>

Sdf2Table.Input

public static class **Input** extends *SpoofoxInput*

Fields

inputFile

public final *File* **inputFile**

module

public final *String* **module**

origin

public final *Origin* **origin**

outputFile

public final *File* **outputFile**

Constructors

Input

public **Input** (*SpoofoxContext* context, *File* inputFile, *File* outputFile, *String* module, *Origin* origin)

Sdf2TableNew

public class **Sdf2TableNew** extends *SpoofoxBuilder*<*Sdf2TableNew.Input*, *OutputPersisted*<*File*>>

Fields

factory

public static *SpoofoxBuilderFactory*<*Input*, *OutputPersisted*<*File*>, *Sdf2TableNew*> **factory**

Constructors

Sdf2TableNew

public **Sdf2TableNew** (*Input* input)

Methods

build

public OutputPersisted<File> **build** (*Input input*)

description

protected String **description** (*Input input*)

origin

public static Origin **origin** (*Input input*)

persistentPath

public File **persistentPath** (*Input input*)

request

public static BuildRequest<*Input*, OutputPersisted<File>, Sdf2TableNew, SpoofaxBuilderFactory<*Input*, OutputPersisted<File>, Sdf2Ta

Sdf2TableNew.Input

public static class **Input** extends *SpoofaxInput*

Fields

inputFile

public final File **inputFile**

outputFile

public final File **outputFile**

parenthesize

public final boolean **parenthesize**

paths

public final List<String> **paths**

Constructors

Input

public **Input** (*SpoofoxContext* context, *File* inputFile, *File* outputFile, *List<String>* paths, boolean parenthesis)

Strj

public class **Strj** extends *SpoofoxBuilder<Strj.Input, None>*

Fields

factory

public static *SpoofoxBuilderFactory<Input, None, Strj>* **factory**

Constructors

Strj

public **Strj** (*Input* input)

Methods

build

public *None* **build** (*Input* input)

description

protected *String* **description** (*Input* input)

origin

public static *Origin* **origin** (*Input* input)

persistentPath

public *File* **persistentPath** (*Input* input)

request

public static *BuildRequest<Input, None, Strj, SpoofoxBuilderFactory<Input, None, Strj>>* **request** (*Input* input)

Strj.Input

public static class **Input** extends *SpoofaxInput*

Fields

cacheDir

public final *File* **cacheDir**

clean

public final boolean **clean**

depPath

public final *File* **depPath**

extraArgs

public final Arguments **extraArgs**

includeDirs

public final *List*<*File*> **includeDirs**

includeLibs

public final *List*<*String*> **includeLibs**

inputFile

public final *File* **inputFile**

library

public final boolean **library**

origin

public final Origin **origin**

outputPath

public final `File` **outputPath**

packageName

public final `String` **packageName**

Constructors

Input

public **Input** (*SpoofaxContext* context, `File` inputPath, `File` outputPath, `File` depPath, `String` packageName, boolean library, boolean clean, `List`<`File`> includeDirs, `List`<`String`> includeLibs, `File` cacheDir, Arguments extraArgs, Origin origin)

Typesmart

public class **Typesmart** extends *SpoofaxBuilder*<*Input*, *None*>

Fields

factory

public static final *SpoofaxBuilderFactory*<*Input*, *None*, *Typesmart*> **factory**

Constructors

Typesmart

public **Typesmart** (*Input* input)

Methods

build

public *None* **build** (*Input* input)

description

protected `String` **description** (*Input* input)

origin

public static Origin **origin** (*Input* input)

persistentPath

public File **persistentPath** (*Input input*)

request

public static BuildRequest<*Input, None, Typesmart, SpoofaxBuilderFactory<Input, None, Typesmart>>* **request** (*Input in-put*)

Typesmart.Input

public static class **Input** extends *SpoofaxInput*

Fields

origin

public final Origin **origin**

strFile

public final File **strFile**

strjIncludeDirs

public final List<File> **strjIncludeDirs**

typesmartExportedFile

public final File **typesmartExportedFile**

Constructors

Input

public **Input** (*SpoofaxContext context*, File *strFile*, List<File> *strjIncludeDirs*, File *typesmartExportedFile*, Origin *origin*)

org.metaborg.spoofax.meta.core.pluto.build.main

ArchiveBuilder

public class **ArchiveBuilder** extends *SpoofaxBuilder<ArchiveBuilder.Input, OutputTransient<File>>*

Fields

factory

public static *SpoofaxBuilderFactory*<*Input*, *OutputTransient*<*File*>, *ArchiveBuilder*> **factory**

Constructors

ArchiveBuilder

public **ArchiveBuilder** (*Input* input)

Methods

build

protected *OutputTransient*<*File*> **build** (*Input* input)

description

protected *String* **description** (*Input* input)

origin

public static *Origin* **origin** (*Input* input)

persistentPath

public *File* **persistentPath** (*Input* input)

request

public static *BuildRequest*<*Input*, *OutputTransient*<*File*>, *ArchiveBuilder*, *SpoofaxBuilderFactory*<*Input*, *OutputTransient*<*File*>, *Arch*

ArchiveBuilder.Input

public static class **Input** extends *SpoofaxInput*

Fields

exports

public final *Iterable*<*IExportConfig*> **exports**

languageIdentifier

public final *LanguageIdentifier* **languageIdentifier**

origin

public final Origin **origin**

Constructors

Input

public **Input** (*SpoofaxContext* context, Origin origin, Iterable<*IExportConfig*> exports, *LanguageIdentifier* languageIdentifier)

GenerateSourcesBuilder

public class **GenerateSourcesBuilder** extends *SpoofaxBuilder*<*GenerateSourcesBuilder.Input*, *None*>

Fields

factory

public static *SpoofaxBuilderFactory*<*Input*, *None*, *GenerateSourcesBuilder*> **factory**

Constructors

GenerateSourcesBuilder

public **GenerateSourcesBuilder** (*Input* input)

Methods

build

public *None* **build** (*GenerateSourcesBuilder.Input* input)

description

protected String **description** (*Input* input)

origin

public static Origin **origin** (*Input* input)

persistentPath

```
public File persistentPath (Input input)
```

request

```
public static BuildRequest<Input, None, GenerateSourcesBuilder, SpoofaxBuilderFactory<Input, None, GenerateSourcesBuilder>> re
```

GenerateSourcesBuilder.Input

```
public static class Input extends SpoofaxInput
```

Fields

languageId

```
public final String languageId
```

packSdfArgs

```
public final Arguments packSdfArgs
```

packSdfIncludePaths

```
public final List<File> packSdfIncludePaths
```

sdf2tableVersion

```
public final Sdf2tableVersion sdf2tableVersion
```

sdfCompletionFile

```
public final File sdfCompletionFile
```

sdfCompletionModule

```
public final String sdfCompletionModule
```

sdfEnabled

```
public final Boolean sdfEnabled
```

sdfExternalDef

public final [File](#) **sdfExternalDef**

sdfFile

public final [File](#) **sdfFile**

sdfMetaFile

public final [File](#) **sdfMetaFile**

sdfMetaModule

public final [String](#) **sdfMetaModule**

sdfModule

public final [String](#) **sdfModule**

sdfVersion

public final [SdfVersion](#) **sdfVersion**

sourceDeps

public final [Collection](#)<[LanguageIdentifier](#)> **sourceDeps**

strExternalJar

public final [File](#) **strExternalJar**

strExternalJarFlags

public final [String](#) **strExternalJarFlags**

strFile

public final [File](#) **strFile**

strFormat

public final [StrategoFormat](#) **strFormat**

strJavaPackage

public final *String* **strJavaPackage**

strJavaStratFile

public final *File* **strJavaStratFile**

strJavaStratPackage

public final *String* **strJavaStratPackage**

strjArgs

public final *Arguments* **strjArgs**

strjIncludeDirs

public final *List<File>* **strjIncludeDirs**

Constructors

Input

public **Input** (*SpoofaxContext* context, *String* languageId, *Collection<LanguageIdentifier>* sourceDeps, *Boolean* sdfEnabled, *String* sdfModule, *File* sdfFile, *SdfVersion* sdfVersion, *Sdf2tableVersion* sdf2tableVersion, *File* sdfExternalDef, *List<File>* packSdfIncludePaths, *Arguments* packSdfArgs, *String* sdfCompletionModule, *File* sdfCompletionFile, *String* sdfMetaModule, *File* sdfMetaFile, *File* strFile, *String* strJavaPackage, *String* strJavaStratPackage, *File* strJavaStratFile, *StrategoFormat* strFormat, *File* strExternalJar, *String* strExternalJarFlags, *List<File>* strjIncludeDirs, *Arguments* strjArgs)

PackageBuilder

public class **PackageBuilder** extends *SpoofaxBuilder<PackageBuilder.Input, None>*

Fields

factory

public static *SpoofaxBuilderFactory<Input, None, PackageBuilder>* **factory**

Constructors

PackageBuilder

public **PackageBuilder** (*Input input*)

Methods

build

protected *None* **build** (*Input input*)

description

protected *String* **description** (*Input input*)

jar

public *Origin* **jar** (*File jarFile*, *File baseDir*, *Origin origin*, *File depPath*, *File... paths*)

jar

public *Origin* **jar** (*File jarFile*, *File baseDir*, *Origin origin*, *File depPath*, *Iterable<File> paths*)

origin

public static *Origin* **origin** (*Input input*)

persistentPath

public *File* **persistentPath** (*Input input*)

request

public static *BuildRequest<Input, None, PackageBuilder, SpoofoxBuilderFactory<Input, None, PackageBuilder>>* **request** (*Input in-put*)

PackageBuilder.Input

public static class **Input** extends *SpoofoxInput*

Fields

languageId

public final [String](#) **languageId**

origin

public final [Origin](#) **origin**

strFormat

public final [StrategoFormat](#) **strFormat**

strJavaStratFile

public final [File](#) **strJavaStratFile**

strJavaStratIncludeDirs

public final [Iterable](#)<[File](#)> **strJavaStratIncludeDirs**

Constructors

Input

public **Input** ([SpoofaxContext](#) context, [String](#) languageId, [Origin](#) origin, [StrategoFormat](#) strFormat, [File](#) strJavaStratFile, [Iterable](#)<[File](#)> strJavaStratIncludeDirs)

org.metaborg.spoofox.meta.core.pluto.build.misc

Copy

public class **Copy** extends [Builder](#)<[Copy](#).[Input](#), [None](#)>

Fields

factory

public static [BuilderFactory](#)<[Input](#), [None](#), [Copy](#)> **factory**

Constructors

Copy

public **Copy** (*Input input*)

Methods

build

public *None* **build** (*Input input*)

description

protected *String* **description** (*Input input*)

origin

public static *Origin* **origin** (*Input input*)

persistentPath

public *File* **persistentPath** (*Input input*)

request

public static *BuildRequest*<*Input*, *None*, *Copy*, *BuilderFactory*<*Input*, *None*, *Copy*>> **request** (*Input input*)

Copy.Input

public static class **Input** implements *Serializable*

Fields

baseDir

public final *File* **baseDir**

depDir

public final *File* **depDir**

destination

public final *File* **destination**

origin

public final Origin **origin**

source

public final File **source**

Constructors

Input

public **Input** (File *source*, File *destination*, Origin *origin*, File *baseDir*, File *depDir*)

Input

public **Input** (File *source*, File *destination*, Origin *origin*)

CopyPattern

public class **CopyPattern** extends *Builder<CopyPattern.Input, None>*

Fields

factory

public static BuilderFactory<*Input, None, CopyPattern*> **factory**

Constructors

CopyPattern

public **CopyPattern** (*Input input*)

Methods

build

public *None* **build** (*Input input*)

description

protected String **description** (*Input input*)

origin

public static Origin **origin** (*Input input*)

persistentPath

public File **persistentPath** (*Input input*)

request

public static BuildRequest<*Input, None, CopyPattern*, BuilderFactory<*Input, None, CopyPattern*>> **request** (*Input in-put*)

CopyPattern.Input

public static class **Input** implements Serializable

Fields

baseDir

public final File **baseDir**

depDir

public final File **depDir**

dstDir

public final File **dstDir**

origin

public final Origin **origin**

pattern

public final String **pattern**

srcDir

public final File **srcDir**

Constructors

Input

public **Input** (*File srcDir*, *File dstDir*, *String pattern*, *Origin origin*, *File baseDir*, *File depDir*)

Input

public **Input** (*File srcDir*, *File dstDir*, *String pattern*, *Origin origin*)

ParseFile

public class **ParseFile** extends *SpoofoxBuilder*<*ParseFile.Input*, Out<IStrategoTerm>>

Fields

factory

public static final *SpoofoxBuilderFactory*<*Input*, Out<IStrategoTerm>, *ParseFile*> **factory**

Constructors

ParseFile

public **ParseFile** (*Input input*)

Methods

build

protected Out<IStrategoTerm> **build** (*Input input*)

defaultStamper

protected Stamper **defaultStamper** ()

description

protected *String* **description** (*Input input*)

origin

public static Origin **origin** (*Input input*)

persistentPath

public **File** **persistentPath** (*Input* input)

request

public static BuildRequest<*Input*, Out<IStrategoTerm>, *ParseFile*, *SpoofaxBuilderFactory*<*Input*, Out<IStrategoTerm>, *ParseFile*>> **request**

ParseFile.Input

public static class **Input** extends *SpoofaxInput*

Fields

file

public final **File** **file**

persistResult

public final boolean **persistResult**

requiredUnits

public final Origin **requiredUnits**

silent

public final boolean **silent**

Constructors

Input

public **Input** (*SpoofaxContext* context, **File** file, boolean *persistResult*, Origin *requiredUnits*)

Input

public **Input** (*SpoofaxContext* context, **File** file, boolean *persistResult*, boolean *silent*, Origin *requiredUnits*)

PrepareNativeBundle

public class **PrepareNativeBundle** extends *SpoofaxBuilder*<*PrepareNativeBundle.Input*, OutputTransient<*PrepareNativeBundle*.

Fields

factory

public static *SpoofoxBuilderFactory*<*Input*, *OutputTransient*<*PrepareNativeBundle.Output*>, *PrepareNativeBundle*> **factory**

Constructors

PrepareNativeBundle

public **PrepareNativeBundle** (*Input* input)

Methods

build

public *OutputTransient*<*Output*> **build** (*Input* input)

description

protected *String* **description** (*Input* input)

persistentPath

public *File* **persistentPath** (*Input* input)

PrepareNativeBundle.Input

public static class **Input** extends *SpoofoxInput*

Empty input class to ensure that a new input instance is always created, which is always exactly the same, such that this builder is only executed once.

Constructors

Input

public **Input** (*SpoofoxContext* context)

PrepareNativeBundle.Output

public static class **Output** implements *Serializable*

Fields

implodePT

public final transient *ExecutableCommandStrategy* **implodePT**

sdf2table

public final transient *ExecutableCommandStrategy* **sdf2table**

Constructors

Output

public **Output** (*ExecutableCommandStrategy* sdf2table, *ExecutableCommandStrategy* implodePT)

org.metaborg.spoofax.meta.core.pluto.stamp

DirectoryModifiedStamper

public class **DirectoryModifiedStamper** implements Stamper

Constructors

DirectoryModifiedStamper

public **DirectoryModifiedStamper** (IOFileFilter filter, Stamper fileStamper)

DirectoryModifiedStamper

public **DirectoryModifiedStamper** ()

Methods

stampOf

public Stamp **stampOf** (*File* directory)

Sdf2ParenthesizeStamper

public class **Sdf2ParenthesizeStamper** implements Stamper

Constructors

Sdf2ParenthesizeStamper

public **Sdf2ParenthesizeStamper** (*SpoofaxContext context*)

Methods

stampOf

public Stamp **stampOf** (*File file*)

Sdf2RtgStamper

public class **Sdf2RtgStamper** implements Stamper

Constructors

Sdf2RtgStamper

public **Sdf2RtgStamper** (*SpoofaxContext context*)

Methods

stampOf

public Stamp **stampOf** (*File file*)

org.metaborg.spoofax.meta.core.pluto.util

ExecutableCommandStrategy

public class **ExecutableCommandStrategy** extends xtc_command_1_0

Constructors

ExecutableCommandStrategy

public **ExecutableCommandStrategy** (*String command*, *File executable*)

Methods

invoke

public IStrategoTerm **invoke** (*Context context*, *IStrategoTerm current*, *Strategy commandStrat*)

run

public *ExecutionResult* **run** (IStrategoTerm... *args*)

run

public *ExecutionResult* **run** (String... *args*)

LoggingFilteringIOAgent

public class **LoggingFilteringIOAgent** extends *IOAgent*

Constructors

LoggingFilteringIOAgent

public **LoggingFilteringIOAgent** (String... *regexs*)

Methods

getErrLog

public String **getErrLog** ()

getErrStream

public *OutputStream* **getErrStream** ()

getOutLog

public String **getOutLog** ()

getOutStream

public *OutputStream* **getOutStream** ()

getWriter

public *Writer* **getWriter** (int *fd*)

LoggingFilteringIOAgent.LoggingWriter

public class **LoggingWriter** extends *Writer*

Constructors

LoggingWriter

public **LoggingWriter** (*Writer writer*)

Methods

close

public void **close** ()

flush

public void **flush** ()

getLog

public *String* **getLog** ()

getStream

public *OutputStream* **getStream** ()

write

public void **write** (*char[] cbuf*, *int off*, *int len*)

ResourceAgentTracker

public class **ResourceAgentTracker**

Constructors

ResourceAgentTracker

public **ResourceAgentTracker** (*IResourceService resourceService*, *FileObject initialDir*, *String... excludePatterns*)

ResourceAgentTracker

public **ResourceAgentTracker** (*IResourceService resourceService*, *FileObject initialDir*, *OutputStream stdoutStream*, *OutputStream stderrStream*)

Methods

agent

public *ResourceAgent* **agent** ()

stderr

public *String* **stderr** ()

stdout

public *String* **stdout** ()

StrategoExecutor

public class **StrategoExecutor**

Methods

executeCLI

public *ExecutionResult* **executeCLI** (Arguments *arguments*)

setSilent

public *StrategoExecutor* **setSilent** (boolean *silent*)

withContext

public *StrategoExecutor* **withContext** (Context *context*)

withName

public *StrategoExecutor* **withName** (*String* *name*)

withPermissiveGrammarsContext

public *StrategoExecutor* **withPermissiveGrammarsContext** ()

withSdfContext

public *StrategoExecutor* **withSdfContext** ()

withStrategy

public *StrategoExecutor* **withStrategy** (*Strategy strategy*)

withStrategyName

public *StrategoExecutor* **withStrategyName** (*String strategyName*)

withStrjContext

public *StrategoExecutor* **withStrjContext** ()

withToolsContext

public *StrategoExecutor* **withToolsContext** ()

withTracker

public *StrategoExecutor* **withTracker** (*ResourceAgentTracker tracker*)

StrategoExecutor.ExecutionResult

public static class **ExecutionResult**

Fields

errLog

public final *String* **errLog**

outLog

public final *String* **outLog**

result

public final *IStrategoTerm* **result**

success

public final boolean **success**

Constructors

ExecutionResult

public **ExecutionResult** (boolean *success*, *String* *outLog*, *String* *errLog*)

ExecutionResult

public **ExecutionResult** (IStrategoTerm *result*, *String* *outLog*, *String* *errLog*)

org.metaborg.spoofax.meta.core.project

ISpoofaxLanguageSpec

public interface **ISpoofaxLanguageSpec** extends *ILanguageSpec*
Spoofax specialized version of a language specification project.

Methods

config

ISpoofaxLanguageSpecConfig **config** ()
{ @inheritDoc }

ISpoofaxLanguageSpecService

public interface **ISpoofaxLanguageSpecService** extends *ILanguageSpecService*
Service for getting a Spoofax language specification.

Methods

available

boolean **available** (*IProject* *project*)
Checks if given project is a Spoofax language specification.

Parameters

- **project** – Project to check.

Returns True if project is a language specification, false otherwise.

get

ISpoofaxLanguageSpec **get** (*IProject* *project*)
Gets a Spoofax language specification from the specified project.

Parameters

- **project** – The project.

Throws

- ***ConfigException*** – When reading Spoofax language specification configuration fails.

Returns The Spoofax language specification, or `null` when the project is not a Spoofax language specification.

SpoofaxLanguageSpecService

public class **SpoofaxLanguageSpecService** implements *ISpoofaxLanguageSpecService*

Constructors

SpoofaxLanguageSpecService

public **SpoofaxLanguageSpecService** (*ISourceTextService* sourceTextService, *ISpoofaxLanguageSpecConfigService* configService)

Methods

available

public boolean **available** (*IProject* project)

get

public *ISpoofaxLanguageSpec* **get** (*IProject* project)

SpoofaxLanguageSpecWrapper

public class **SpoofaxLanguageSpecWrapper** implements *IProject*, *ISpoofaxLanguageSpec*
Wraps an *IProject* to use it as an *ILanguageSpec*

Constructors

SpoofaxLanguageSpecWrapper

public **SpoofaxLanguageSpecWrapper** (*ISpoofaxLanguageSpecConfig* config, *IProject* project)

Methods

config

public *ISpoofaxLanguageSpecConfig* **config** ()

location

```
public FileObject location ()
```

toString

```
public String toString ()
```

org.metaborg.spoofax.meta.core.stratego.primitive

CheckSdf2TablePrimitive

```
public class CheckSdf2TablePrimitive extends AbstractPrimitive
```

Constructors

CheckSdf2TablePrimitive

```
public CheckSdf2TablePrimitive (IProjectService projectService)
```

Methods

call

```
public boolean call (IContext env, Strategy[] svars, IStrategoTerm[] tvars)
```

GetSortNamePrimitive

```
public class GetSortNamePrimitive extends AbstractPrimitive
```

Constructors

GetSortNamePrimitive

```
public GetSortNamePrimitive ()
```

Methods

call

```
public boolean call (IContext env, Strategy[] svars, IStrategoTerm[] tvars)
```

LanguageSpecPpNamePrimitive

```
public class LanguageSpecPpNamePrimitive extends ASpoofaxContextPrimitive
```

Constructors

LanguageSpecPpNamePrimitive

public **LanguageSpecPpNamePrimitive** (*IProjectService* projectService)

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* context)

LanguageSpecificationPrimitive

public class **LanguageSpecificationPrimitive** extends *ASpoofoxContextPrimitive*

Constructors

LanguageSpecificationPrimitive

public **LanguageSpecificationPrimitive** ()

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* context)

LegacyLanguageSpecNamePrimitive

public class **LegacyLanguageSpecNamePrimitive** extends *ASpoofoxContextPrimitive*

Constructors

LegacyLanguageSpecNamePrimitive

public **LegacyLanguageSpecNamePrimitive** (*IProjectService* projectService)

Methods

call

protected IStrategoTerm **call** (IStrategoTerm *current*, Strategy[] *svars*, IStrategoTerm[] *tvars*, ITermFactory *factory*, *IContext* context)

PlaceholderCharsPrimitive

public class **PlaceholderCharsPrimitive** extends AbstractPrimitive

Constructors

PlaceholderCharsPrimitive

public **PlaceholderCharsPrimitive** (*IProjectService* projectService)

Methods

call

public boolean **call** (*IContext* env, Strategy[] svars, IStrategoTerm[] tvars)

org.metaborg.spoofax.meta.core.wizard

CreateSpoofaxLanguageSpecWizard

public abstract class **CreateSpoofaxLanguageSpecWizard** extends *CreateLanguageSpecWizard*
Spoofax specialization of the 'create language specification' wizard helper.

Methods

analysisType

public *AnalysisType* **analysisType** ()

generateEclipseFeatureProject

public abstract boolean **generateEclipseFeatureProject** ()

generateEclipsePluginProject

public abstract boolean **generateEclipsePluginProject** ()

generateEclipseUpdatesiteProject

public abstract boolean **generateEclipseUpdatesiteProject** ()

generateExampleProject

public abstract boolean **generateExampleProject** ()

generateTestProject

public abstract boolean **generateTestProject** ()

inputAnalysisTypeModified

protected abstract boolean **inputAnalysisTypeModified** ()

inputAnalysisTypeString

protected abstract [String](#) **inputAnalysisTypeString** ()

inputSyntaxTypeModified

protected abstract boolean **inputSyntaxTypeModified** ()

inputSyntaxTypeString

protected abstract [String](#) **inputSyntaxTypeString** ()

setAnalysisType

protected abstract void **setAnalysisType** ([String](#) *analysisTypeString*)

setDefaults

public void **setDefaults** ()

setGenerateEclipseFeatureProject

protected abstract void **setGenerateEclipseFeatureProject** (boolean *generate*)

setGenerateEclipsePluginProject

protected abstract void **setGenerateEclipsePluginProject** (boolean *generate*)

setGenerateEclipseUpdatesiteProject

protected abstract void **setGenerateEclipseUpdatesiteProject** (boolean *generate*)

setGenerateExampleProject

protected abstract void **setGenerateExampleProject** (boolean *generate*)

setGenerateTestProject

protected abstract void **setGenerateTestProject** (boolean *generate*)

setSyntaxType

protected abstract void **setSyntaxType** (*String* *syntaxTypeString*)

syntaxType

public *SyntaxType* **syntaxType** ()

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