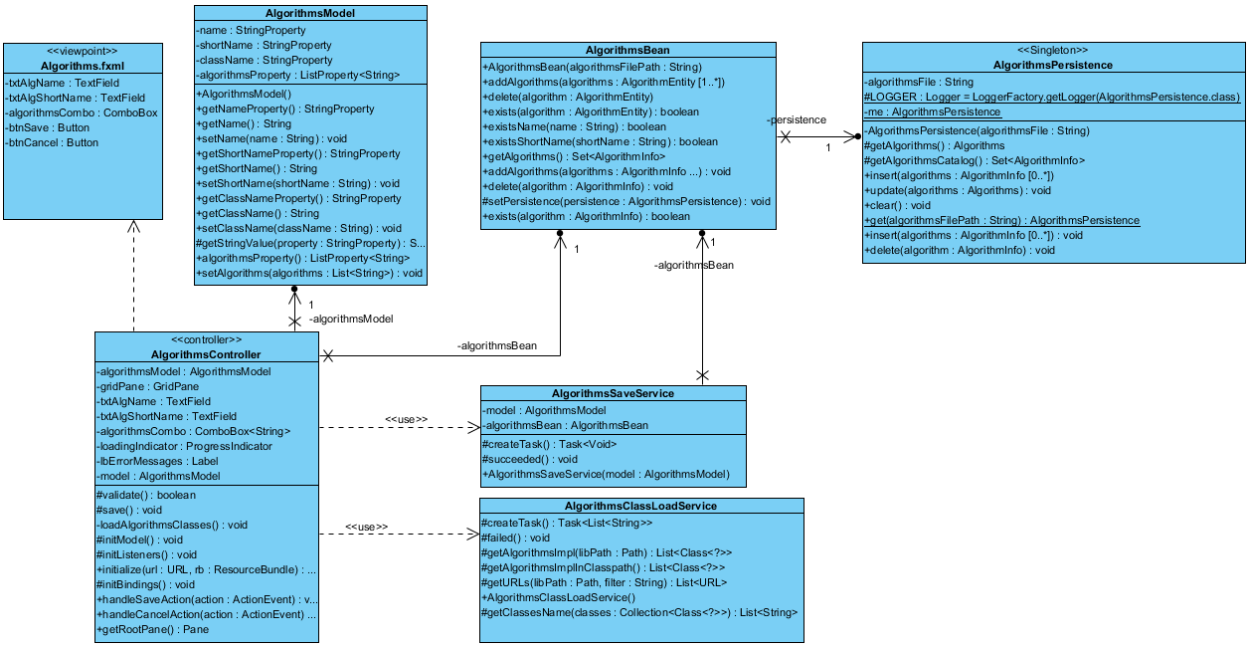

Summary

Name	Description
AlgorithmsModel	Model of Algorithms view.
AlgorithmsBean	Business logic for insert, modify and delete algorithms.
AlgorithmsPersistence	Persists the algorithms into an XML file entities using JAXB.
Algorithms.fxml	Algorithms View.
AlgorithmsController	Algorithms FXML Controller class.
AlgorithmsSaveService	Service which saves the algorithms changes.
AlgorithmsClassLoadService	Service which loads the classes' name of algorithm implementations found in the workspace classpath.

Description

Class Diagram which presents the relation between involved classes in the algorithms registry.

Details

Algorithms.fxml

Name	Value
Description	Algorithms View.
Visibility	public
Stereotypes	viewpoint

Attributes

private txtAlgName : Javafx.scene.control.TextField			
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		

private txtAlgShortName : javafx.scene.control.TextField			
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		

private algorithmsCombo : javafx.scene.control.ComboBox			
Type	javafx.scene.control.ComboBox		
Getter	false	Setter	false
Multiplicity	1		

private btnSave : Javafx.scene.control.Button			
Type	Javafx.scene.control.Button		
Getter	false	Setter	false
Multiplicity	1		

private btnCancel : javafx.scene.control.Button			
Type	javafx.scene.control.Button		
Getter	false	Setter	false
Multiplicity	1		

AlgorithmsController

Name	Value
Description	Algorithms FXML Controller class.
Visibility	public
Stereotypes	controller

Attributes

private algorithmsModel : AlgorithmsModel			
Description	Algorithms view model.		
Type	AlgorithmsModel		
Getter	false	Setter	false
Multiplicity	1		

private algorithmsBean : AlgorithmsBean			
Description	Algorithms business logic.		
Type	AlgorithmsBean		
Getter	false	Setter	false
Multiplicity	1		

private gridPane : javafx.scene.layout.GridPane			
Description	Root pane.		
Type	javafx.scene.layout.GridPane		
Getter	false	Setter	false
Multiplicity	1		

private txtAlgName : javafx.scene.control.TextField			
Description	Algorithm name field.		
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private txtAlgShortName : javafx.scene.control.TextField			
Description	Short name field.		
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private algorithmsCombo : javafx.scene.control.ComboBox			
Description	Algorithms in the classpath dropdown.		
Type	javafx.scene.control.ComboBox		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private loadingIndicator : javafx.scene.control.ProgressIndicator			
Description	Indicator of algorithms loading.		
Type	javafx.scene.control.ProgressIndicator		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private lbErrorMessages : javafx.scene.control.Label			
Description	Label wich contains error messages.		
Type	javafx.scene.control.Label		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private model : AlgorithmsModel			
Description	Model.		
Type	AlgorithmsModel		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

Operations

public initialize (url : java.net.URL, rb : java.util.ResourceBundle) : void		
Parameters	**url**	
	Description	URL of the view.
	Multiplicity	1
	Type	java.net.URL
	Direction	inout
	rb	
	Description	Resource bundle.
	Multiplicity	1
	Type	java.util.ResourceBundle
	Direction	inout
Description	Initializes the controller class.	

protected initModel () : void	
Description	Initializes the model.

protected initListeners () : void	
Description	Ver initListeners(): void. Initializes a text change listener for the algorithms combo. This listener only executes once time.

protected initBindings () : void	
Description	Initializes the bindings between view components and model.

protected validate () : boolean	
Description	Perform form validations.
Return Type Description	`true` if validation is succeeded, `true` otherwise.

protected save () : void	
Description	Validates the changes and if are ok, these are saved.

private loadAlgorithmsClasses () : void	
Description	Searchs the algorithms implementations in the classpath, and loads it into the model.

public getRootPane () : javafx.scene.layout.Pane	
Description	Returns the root pane.

public handleSaveAction (action : javafx.event.ActionEvent) : void		
Parameters	**action**	
	Description	Event.
	Multiplicity	1
	Type	javafx.event.ActionEvent
	Direction	inout
Description	Handles the event thrown when the *Save* Button is pressed. Saves the changes.	
Stereotypes	FXML	

public handleCancelAction (action : javafx.event.ActionEvent) : void		
Parameters	**action**	
	Description	Event.
	Multiplicity	1
	Type	javafx.event.ActionEvent
	Direction	inout
Description	Handles the event thrown when *Cancel* button is pressed. Ignores the changes and closes the window.	
Stereotypes	FXML	

AlgorithmsModel

Name	Value
Description	Model of Algorithms view.
Visibility	public

Attributes

private name : javafx.beans.property.StringProperty			
Description	Name binding property.		
Type	javafx.beans.property.StringProperty		
Getter	false	Setter	false
Multiplicity	1		

private shortName : javafx.beans.property.StringProperty			
Description	Short name binding property.		
Type	javafx.beans.property.StringProperty		
Getter	false	Setter	false
Multiplicity	1		

private className : javafx.beans.property.StringProperty			
Description	Full qualified name of algorithm implementation binding property.		
Type	javafx.beans.property.StringProperty		
Getter	false	Setter	false
Multiplicity	1		

private algorithmsProperty : javafx.beans.property.ListProperty			
Description	Class algorithms list binding property.		
Type	javafx.beans.property.ListProperty		
Getter	false	Setter	false
Multiplicity	1		

Operations

public AlgorithmsModel ()	
Description	Constructor.

public getNameProperty () : javafx.beans.property.StringProperty	
Description	Returns the name binding property.
Return Type Description	StringProperty.

public getName () : String	
Description	Returns the algorithm name.
Return Type Description	The algorithm name.

public setName (name : String) : void		
Parameters	name	
	Description	The name to set.
	Multiplicity	1
	Type	String
	Direction	inout
Description	Sets the algorithm name.	

public getShortNameProperty () : javafx.beans.property.StringProperty	
Description	Returns the short name binding property.
Return Type Description	StringProperty.

public getShortName () : String	
Description	Returns the algorithm short name.
Return Type Description	The shortName binding property.

public setShortName (shortName : String) : void		
Parameters	shortName	
	Description	The short name to set.
	Multiplicity	1
	Type	String
	Direction	inout
Description	Sets the algorithm short name.	

public getClassNameProperty () : javafx.beans.property.StringProperty	
Description	Returns the class name property.
Return Type Description	StringProperty.

public getClassName () : String	
Description	Returns the full qualified name of algorithm implementation.
Return Type Description	The implementation class name.

public setClassName (className : String) : void		
Parameters	className	
	Description	The class name to set.
	Multiplicity	1
	Type	String
	Direction	inout
Description	Sets the full qualified name of algorithm implementation.	

public algorithmsProperty () : javafx.beans.property.ListProperty	
Description	Algorithms types list binding.
Return Type Description	Algorithms types list binding.

public setAlgorithms (algorithms : java.util.List<String>) : void		
Parameters	**algorithms**	
	Description	The types name of algorithms to set.
	Multiplicity	0..*
	Type	java.util.List
	Direction	inout
Description	Sets the algorithms implementation types list.	

protected getStringValue (property : javafx.beans.property.StringProperty) : String		
Parameters	**property**	
	Description	Property.
	Multiplicity	1
	Type	javafx.beans.property.StringProperty
	Direction	inout
Description	Gets the value of a StringProperty.	
Return Type Description	Value of the StringProperty. null if property or its value is null.	

AlgorithmsSaveService

Name	Value
Description	Service which saves the algorithms changes.
Visibility	public

Attributes

private model : AlgorithmsModel			
Description	Model.		
Type	AlgorithmsModel		
Getter	false	Setter	false
Multiplicity	1		

private algorithmsBean : AlgorithmsBean			
Description	Algorithms bean.		
Type	AlgorithmsBean		
Getter	false	Setter	false
Multiplicity	1		

Operations

protected createTask () : javafx.concurrent.Task	
Description	Creates the background task which saves the changes.

protected succeeded () : void	
Description	This method is executed when the background task is completed succesfully. Publishes an AlgorithmChangeEvent by Eventbus.

public AlgorithmsSaveService (model : AlgorithmsModel)		
Parameters	model	
	Description	Model.
	Multiplicity	1
	Type	AlgorithmsModel
	Direction	inout
Description	Constructor.	

AlgorithmsClassLoadService

Name	Value
Description	Service which loads the classes' name of algorithms implementations found in the workspace classpath.
Visibility	public

Operations

public AlgorithmsClassLoadService ()	
Description	Constructor.

protected createTask () : javafx.concurrent.Task	
Description	Create the background task which searches the implementations of Algorithm interface and returns its names.
Return Type Description	List of classes names.

protected failed () : void	
Description	This method is executed when the background task is completed with errors.

protected getAlgorithmsImplInClasspath () : java.util.List<Class>	
Description	Searches the algorithms implementations in the application classpath.
Return Type Description	List of algorithm classes.
Exceptions	java.io.IOException

protected getAlgorithmsImpl (libPath : java.nio.file.Path) : java.util.List<Class>		
Parameters	**libPath**	
	Description	Directory that contains libraries.
	Multiplicity	1
	Type	java.nio.file.Path
	Direction	inout
Description	Searches the algorithms implementations that contains the jars into current workspace lib folder.	
Return Type Description	List of algorithm classes.	
Exceptions	• java.io.IOException • java.lang.IllegalArgumentException when libsPath parameter is null or empty.	

protected getURLs (libPath : java.nio.file.Path, filter : String) : java.util.List		
Parameters	**libPath**	
	Description	Path.
	Multiplicity	1
	Type	java.nio.file.Path
	Direction	inout
	filter	
	Description	Filter.
	Multiplicity	1
	Type	String
	Direction	inout
Description	Returns the URLS of files of libPath that matches the filter.	
Return Type Description	List of URLs.	
Exceptions	java.io.IOException	

protected getClassesName (classes : java.util.Collection) : java.util.List<String>		
Parameters	**classes**	
	Description	Classes.
	Multiplicity	0..*
	Type	java.util.Collection
	Direction	inout
Description	Returns the names of the classes' collection.	
Return Type Description	List of classes' name.	

AlgorithmsBean

Name	Value
Description	Business logic for insert, modify and delete algorithms.
Visibility	public

Attributes

private persistence : AlgorithmsPersistence			
Description	Class for algorithms persistence.		
Type	AlgorithmsPersistence		
Getter	false	Setter	false
Multiplicity	1		

Operations

public AlgorithmsBean (algorithmsFilePath : String)		
Parameters	algorithmsFilePath	
	Description	Algorithms file path.
	Multiplicity	1
	Type	String
	Direction	inout
Description	Constructor.	

protected setPersistence (persistence : AlgorithmsPersistence) : void		
Parameters	persistence	
	Multiplicity	1
	Type	AlgorithmsPersistence
	Direction	inout
Description	For testing usage.	

public getAlgorithms () : java.util.Set	
Description	Returns the algorithms defined in the algorithms file.
Return Type Description	Algorithm Entities list.

public addAlgorithms (algorithms : AlgorithmInfo)		
Parameters	**algorithms**	
	Description	Algorithms to add.
	Multiplicity	0..*
	Type Modifier	…
	Type	AlgorithmInfo
	Direction	inout
Description	Updates the algorithms file adding new algorithms. If any algorithms exists, this is overridden.	

public delete (algorithm : AlgorithmInfo)		
Parameters	**algorithm**	
	Description	Algorithm
	Multiplicity	1
	Type	AlgorithmInfo
	Direction	inout
Description	Removes an algorithm from algorithms file.	

public exists (algorithm : AlgorithmInfo) : boolean		
Parameters	**algorithm**	
	Description	Algorithm
	Multiplicity	1
	Type	AlgorithmInfo
	Direction	inout
Description	If an algorithm exists in algorithms file.	

public existsName (name : String) : boolean		
Parameters	**name**	
	Description	Name.
	Multiplicity	1
	Type	String
	Direction	inout
Description	If exists an algorithm with the name argument.	
Return Type Description	`true` if exists an algorithm with the name argument exists in algorithms file, `true` otherwise.	

public existsShortName (shortName : String) : boolean		
Parameters	**shortName**	
	Description	Short name.
	Multiplicity	1
	Type	String
	Direction	inout
Description	If exists an algorithm with the shortName argument as short name.	
Return Type Description	`true` if exists an algorithm with the shortName argument as short name exists in algorithms file, `true` otherwise.	

AlgorithmsPersistence

Name	Value
Description	Persists the algorithms into an XML file entities using JAXB.
Visibility	public
Stereotypes	Singleton

Attributes

private algorithmsFile : String			
Description	Target file.		
Type	String		
Getter	false	Setter	false
Multiplicity	1		

protected LOGGER : org.slf4j.Logger			
Initial Value	LoggerFactory.getLogger(AlgorithmsPersistence.class)		
Type	org.slf4j.Logger		
Getter	false	Setter	false
Multiplicity	1		

private me : AlgorithmsPersistence			
Description	Single instance.		
Type	AlgorithmsPersistence		
Getter	false	Setter	false
Multiplicity	1		

Operations

protected getAlgorithms () : Algorithms	
Description	Gets an Algorithms object from a file path.
Return Type Description	Algorithms.

private AlgorithmsPersistence (algorithmsFile : String)		
Parameters	algorithmsFile	
	Multiplicity	1
	Type	String
	Direction	inout
Description	Constructor.	

protected getAlgorithmsCatalog () : java.util.Set	
Description	Returns the registered algorithms.
Return Type Description	Algorithms catalogue.

public insert (algorithms : AlgorithmInfo)		
Parameters	algorithms	
	Description	Algorithms to add.
	Multiplicity	0..*
	Type Modifier	…
	Type	AlgorithmInfo
	Direction	inout
Description	Adds the algorithms of algorithms}param to algorithms file.	

public update (algorithms : Algorithms) : void		
Parameters	algorithms	
	Description	Algorithms.
	Multiplicity	1
	Type	Algorithms
	Direction	inout
Description	Updates the registered algorithms file.	

public clear () : void	
Description	Clears the algorithms file.

public get (algorithmsFilePath : String) : AlgorithmsPersistence		
Parameters	algorithmsFilePath	
	Multiplicity	1
	Type	String
	Direction	inout
Description	Gets a single instance of AlgorithmsPersistence.	
Return Type Description	AlgorithmsPersistence.	

public insert (algorithms : AlgorithmInfo) : void		
Parameters	**algorithms**	
	Description	Algorithms to add.
	Multiplicity	0..*
	Type Modifier	…
	Type	AlgorithmInfo
	Direction	inout
Description	Add the algorithms of algorithms parameter to algorithms file.	

public delete (algorithm : AlgorithmInfo) : void		
Parameters	**algorithm**	
	Description	Algorithm to delete.
	Multiplicity	1
	Type	AlgorithmInfo
	Direction	inout
Description	Deletes an algorithm from algorithms file.	