Summary

Name	Description
implications.fxml	Implications generator main view.
ImplicationsController	Implications generator view's controller.
ImplicationsModel	Class which represents the features of implicational system to generate.
fr.kbertet.lattice.ImplicationalSystem	This class gives a representation for an implicational system (fr.kbertet.lattice.ImplicationalSystem), a set of rules. It belongs to the java-lattice library.
ImplicationsFactory	Implicational systems factory.
GeneratorImplicationalSystemIO	Implements the methods to save implicational systems in files.

Details

implications.fxml

Name	Value
Description	Implications generator main view.
Visibility	public
Stereotypes	viewpoint

Attributes

private txtNodes : TextField		
Description	System nodes number field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	

private txtImplications : javafx.scene.control.TextField		
Description	Implications number field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	

private txtMinLongPremisse : javafx.scene.control.TextField		
Description	Premises min length field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	

private txtMinLongConclusion : javafx.scene.control.TextField		
Description	Conclusions min length field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	

private txtMaxLongPremisse : javafx.scene.control.TextField		
Description	Premises max length field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	

private txtMaxLongConclusion : javafx.scene.control.TextField		
Description	Conclusions max length field.	
Type	javafx.scene.control.TextField	

Getter	false	Setter	false
Multiplicity	1		

private btnSave : javafx.scene.control.Button

Description	Save button.		
Type	javafx.scene.control.Button		
Getter	false	Setter	false
Multiplicity	1		

private btnGenerate : javafx.scene.control.Button

Description	Generate button.		
Type	javafx.scene.control.Button		
Getter	false	Setter	false
Multiplicity	1		

private cbNodeType : javafx.scene.control.ComboBox

Description	Dropdown with the node types: numerics (0, 1,, 2, ...), alphabeticals (a, b, c, ...) or alphanumerics (a0, a1, a2, ...).		
Type	javafx.scene.control.ComboBox		
Getter	false	Setter	false
Multiplicity	1		

private txtSystemsNumber : javafx.scene.control.TextField

Description	Systems number field.		
Initial Value	1		
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		

private textViewer : javafx.scene.control.TextArea

Description	Viewer.		
Type	javafx.scene.controlTextArea		
Getter	false	Setter	false
Multiplicity	1		

private txtOutput : javafx.scene.control.TextField			
Description	Path output file field.		
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		

ImplicationsController

Name	Value
Description	Implications generator view's controller.
Visibility	public

Attributes

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

private validationSupport : org.controlsfx.validation.ValidationSupport			
Description	Validation support.		
Type	org.controlsfx.validation.ValidationSupport		
Getter	false	Setter	false
Multiplicity	1		

private logger : java.util.logging.Logger			
Initial Value	Logger.getLogger(ImplicationsController.class.getName())		
Type	java.util.logging.Logger		
Getter	false	Setter	false
Multiplicity	1		

private txtNodes : javafx.scene.control.TextField		
Description	Nodes number field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	
Stereotypes	FXML	

private txtImplications : javafx.scene.control.TextField		
Description	Implications number field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	

private txtMinLongPremisse : javafx.scene.control.TextField		
Description	Min length premise field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	
Stereotypes	FXML	

private txtMaxLongPremisse : javafx.scene.control.TextField		
Description	Max length premise field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	

private txtMinLongConclusion : javafx.scene.control.TextField		
Description	Min length conclusion field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Multiplicity	1	
Stereotypes	FXML	

private txtMaxLongConclusion : javafx.scene.control.TextField			
Description	Max length conclusion field.		
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private btnSave : javafx.scene.control.javafx.scene.control.Button			
Description	Save button.		
Type	javafx.scene.control.javafx.scene.control.Button		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private btnGenerate : javafx.scene.control.javafx.scene.control.Button			
Description	Generate button.		
Type	javafx.scene.control.javafx.scene.control.Button		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private cbNodeType : javafx.scene.control.ComboBox			
Description	Node types dropdown.		
Type	javafx.scene.control.ComboBox		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private txtSystemsNumber : javafx.scene.control.TextField			
Description	Number systems to generate field.		
Type	javafx.scene.control.TextField		
Getter	false	Setter	false
Multiplicity	1		
Stereotypes	FXML		

private textViewer : javafx.scene.control.TextArea		
Description	Generated systems viewer.	
Type	javafx.scene.control.TextArea	
Getter	false	Setter	false
Multiplicity	1	
Stereotypes	FXML	

private txtOutput : javafx.scene.control.TextField		
Description	Output file path field.	
Type	javafx.scene.control.TextField	
Getter	false	Setter	false
Stereotypes	FXML	

private implicationsPane : javafx.scene.layout.AnchorPane		
Description	Root pane.	
Type	javafx.scene.layout.AnchorPane	
Getter	false	Setter	false
Multiplicity	1	
Stereotypes	FXML	

private generationProgressInd : javafx.scene.control.ProgressIndicator		
Description	System generation progress indicator.	
Type	javafx.scene.control.ProgressIndicator	
Getter	false	Setter	false
Multiplicity	1	
Stereotypes	FXML	

private nodeType : AttributeType		
Description	Selected node type.	
Type	AttributeType	
Getter	false	Setter	false
Multiplicity	1	

private implicationSystems : java.util.List<fr.kbertet.lattice.ImplicationalSystem>			
Description	Generated system.		
Type	java.util.List<fr.kbertet.lattice.ImplicationalSystem>		
Getter	false	Setter	false
Derived	false		
Multiplicity	0..*		

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 initView () : void	
Description	Initializes the view.

protected initModel () : void	
Description	Creates an instance of ImplicationsModel.

protected viewToModel () : void	
Description	Reads the view values and saves them into the model.

protected initBindingjav() : void	
Description	Initializes the bindings.

protected initValidation () : void	
Description	Initializes the validation support.

protected initListeners () : void	
Description	Initializes the listeners.

public setOutput (outputPath : String) : void		
Parameters	**outputPath**	
	Description	Output file path.
	Multiplicity	1
	Type	● String
	Direction	inout
Description	Sets the output file path into the output field.	

public handlePremisseSizeChange () : void	
Description	Cleans the max and min premise length fields decorators. This method is invoked by the max and min premise fields listeners.

public handleConclusionSizeChange () : void	
Description	Cleans the max and min conclusion length fields' decorators. This method is invoked by the max and min conclusion fields listeners.

public handleNodeTypeSelection (event : javafx.event.ActionEvent) : void		
Parameters	**event**	
	Description	Event.
	Multiplicity	1
	Type	javafx.event.ActionEvent
	Direction	inout
Description	When a node type is selected from the node types dropdown, the node type field is updated.	
Stereotypes	FXML	

public handleOutputAction (event : javafx.event.ActionEvent) : void		
Parameters	**event**	
	Description	Event thrown when de *Search* (…) button is pressed.
	Multiplicity	1
	Type	javafx.event.ActionEvent
	Direction	inout
Description	When the *Search* (…) button is pressed, opens the dialog box to select an output file, and copy the selected file path into Output field.	
Stereotypes	FXML	

public clean (event : javafx.event.ActionEvent) : void		
Parameters	**event**	
	Description	Event thrown when *Clean* button is pressed.
	Multiplicity	1
	Type	javafx.event.ActionEvent
	Direction	inout
Description	Handles the event thrown when the Clean button is pressed and cleans the form fields.	
Stereotypes	FXML	

public handleGenerateButton (event : javafx.event.ActionEvent) : void		
Parameters	**event**	
	Description	Event.
	Multiplicity	1
	Type	javafx.event.ActionEvent
	Direction	inout
Description	Handles the event thrown when the *Generate* button is pressed and generates the implications with the inserted values.	
Stereotypes	FXML	

public handleSaveButton (event : javafx.event.ActionEvent) : void		
Parameters	**event**	
	Description	Even thrown when the *Save* button is pressed.
	Multiplicity	1
	Type	javafx.event.ActionEvent
	Direction	inout
Description	Saves the implicational system in the path inserted into Output filed.	
Stereotypes	FXML	

protected cleanView () : void	
Description	Cleans the view fields.

protected cleanModel () : void	
Description	Cleans the model values.

protected validate () : void	
Description	Performs the model validation.
Exceptions	RuntimeException If validation error exists.

protected save () : void	
Description	Saves the generated implicational systems with the GeneratorImplicationalSystemIO class.

protected showSaveDialog () : java.io.File	
Description	Shows the *Save* dialog box and returns the selected file.
Return Type Description	Selected file.

protected showText (system : fr.kbertet.lattice.ImplicationalSystem) : void		
Parameters	**system**	
	Description	Implicational system.
	Multiplicity	1
	Type	fr.kbertet.lattice.ImplicationalSystem
	Direction	inout
Description	Shows in the viewer an implicational system.	

protected showText (implicationsFile : java.io.File) : void		
Parameters	**implicationsFile**	
	Description	Implicational system.
	Multiplicity	1
	Type	java.io.File
	Direction	inout
Description	Shows in the viewer a saved system.	

public implicationsGenerated (systems : java.util.List<Implications>) : void		
Parameters	**systems**	
	Description	Generated implications.
	Multiplicity	1
	Type	java.util.List<Implications>
	Direction	inout
Description	Shows the generated system in the viewer, if was generated only one. If was generated several, shows the *Save* dialog box.	

protected publicSystemsGenerated (selectedFile : String) : void		
Parameters	**selectedFile**	
	Description	Output file path.
	Multiplicity	1
	Type	🟢 String
	Direction	inout
Description	Publishes a SystemSaved event by Eventbus.	

📄 ImplicationsModel

Name	Value
Description	Class which represents the features of implicational system to generate.
Visibility	public

Attributes

private nodes : Integer				
Description	Nodes number.			
Stereotypes	Property			
Type	Integer			
Getter	true	Setter	true	
Multiplicity	1			

private implications : Integer				
Description	Implications number.			
Stereotypes	Property			
Type	Integer			
Getter	true	Setter	true	
Multiplicity	1			

private maxPremiseLength : Integer			
Description	Premise attributes max length.		
Stereotypes	Property		
Type	Integer		
Getter	true	Setter	true
Multiplicity	1		

private minPremiseLength : Integer			
Description	Premise attributes min length.		
Stereotypes	Property		
Type	Integer		
Getter	true	Setter	true
Multiplicity	1		

private maxConclusionLength : Integer			
Description	Conclusion attributes max length.		
Stereotypes	Property		
Type	Integer		
Getter	true	Setter	true
Multiplicity	1		

private minConclusionLength : Integer			
Description	Conclusion attributes min length.		
Stereotypes	Property		
Type	Integer		
Getter	true	Setter	true
Multiplicity	1		

private showImage : Boolean			
Description	If the graph will be painted.		
Stereotypes	Property		
Type	Boolean		
Getter	true	Setter	true
Multiplicity	1		

private num : Integer			
Description	Number of systems to generate.		
Stereotypes	Property		
Type	Integer		
Getter	true	Setter	true
Multiplicity	1		

private systemCreated : javafx.beans.property.BooleanProperty			
Description	System created flag binding property.		
Type	javafx.beans.property.BooleanProperty		
Getter	false	Setter	false
Multiplicity	1		

private output : javafx.beans.property.StringProperty			
Description	Output file path binding property.		
Type	javafx.beans.property.StringProperty		
Getter	false	Setter	false
Multiplicity	1		

private nodeType : AttributeType			
Description	Node types. It can be numeric, alphabetical or alphanumeric.		
Stereotypes	Property		
Type	AttributeType		
Getter	true	Setter	true
Multiplicity	1		

Operations

public ImplicationsModel ()	
Description	Constructor.

public ImplicationsModel (nodes : Integer, implications : Integer)		
Parameters	**nodes**	
	Description	Nodes number
	Multiplicity	1
	Type	Integer
	Direction	inout
	implications	
	Description	Implications number.
	Multiplicity	1
	Type	Integer
	Direction	inout
Description	Constructor.	

public outputProperty () : javafx.beans.property.StringProperty	
Description	Returns the output file path binding property.
Return Type Description	The output file path binding property.

public getOutput () : String	
Description	Gets the output file path from the outputProperty property.
Return Type Description	Ouptut file path.

public systemCreatedProperty () : javafx.beans.property.BooleanProperty	
Description	Returns the system created flag binding property.
Return Type Description	The system created flag binding property.

public isSystemCreated () : Boolean	
Description	Gets if the system has been created from the systemCreatedProperty property.
Return Type Description	`true` if the system has been created, `false` otherwise.

public validate () : ResultModelValidation	
Description	Checks if the model is correct for the implicational system generation.
Return Type Description	Object with the validation results.

public clean () : void	
Description	Cleans the properties values.

ImplicationsFactory

Name	Value
Description	Random implicational systems factory.
Visibility	public

Operations

public initialize () : void	
Description	Initializes the factory.

public getImplicationalSystems (implicationsModel : ImplicationsModel) : java.util.List		
Parameters	**implicationsModel**	
	Description	Restrictions of the systems to generate.
	Multiplicity	1
	Type	ImplicationsModel
	Direction	inout
Description	Returns n implicational systems fulfilling the established restrictions in the implicationsModel parameter.	
Return Type Description	Implicational systems list.	

public getImplicationalSystem (nodesNumber : int, rulesNumber : int) : fr.kbertet.lattice.ImplicationalSystem		
Parameters	**nodesNumber**	
	Description	Nodes number.
	Multiplicity	1
	Type	🟢 int
	Direction	inout
	rulesNumber	
	Description	Implications number.
	Multiplicity	1
	Type	🟢 int
	Direction	inout
Description	Generates a random system with the nodes and implications number passed by parameter.	
Return Type Description	Generated implicational system.	

public getImplicationalSystem (implicationsModel : ImplicationsModel) : fr.kbertet.lattice.ImplicationalSystem		
Parameters	**implicationsModel**	
	Description	Restrictions of the systems to generate.
	Multiplicity	1
	Type	📘 ImplicationsModel
	Direction	inout
Description	Returns an implicational systems fulfilling the established restrictions in the implicationsModel parameter.	
Return Type Description	Random implicational system.	

protected getRandomInt (maxValue : int) : int		
Parameters	**maxValue**	
	Description	Max value.
	Multiplicity	1
	Type	🟢 int
	Direction	inout
Description	Returns a random integer, between 0 and maxValue parameter value.	

protected getRandomInt (minValue : int, maxValue : int) : int		
Parameters	**minValue**	
	Description	Min value.
	Multiplicity	1
	Type	🟢 int
	Direction	inout
	maxValue	
	Description	Max value.
	Multiplicity	1
	Type	🟢 int
	Direction	inout
Description	Returns a random integer, between a min and max value passed as parameters.	
Return Type Description	Random integer value.	

protected getConclusion (system : fr.kbertet.lattice.ImplicationalSystem, minLength : Integer, maxLength : Integer) : ComparableSet		
Parameters	**system**	
	Description	Implicational system.
	Multiplicity	1
	Type	fr.kbertet.lattice.ImplicationalSystem
	Direction	inout
	minLength	
	Description	Min nodes number.
	Multiplicity	1
	Type	Integer
	Direction	inout
	maxLength	
	Description	Max nodes number.
	Multiplicity	1
	Type	Integer
	Direction	inout
Description	Returns a conclusion with a max nodes number. If maxLength parameter is null or less than 0, the max nodes number is the system nodes number.	
Return Type Description	Conclusion with a max nodes number.	
Exceptions	RuntimeException if the maxLength parameter is greater than attributes number.	

protected getPremise (system : fr.kbertet.lattice.ImplicationalSystem, minLength : Integer, maxLength : Integer) : ComparableSet		
Parameters	**system**	
	Description	Implicational system.
	Multiplicity	1
	Type	fr.kbertet.lattice.ImplicationalSystem
	Direction	inout
	minLength	
	Description	Min nodes number.
	Multiplicity	1
	Type	Integer
	Direction	inout
	maxLength	
	Description	Max nodes number.
	Multiplicity	1
	Type	Integer
	Direction	inout
Description	Returns a premise with a max nodes number. If the maxLength parameter is null or less than 0, the max nodes number is the system nodes number.	
Return Type Description	Premise with a max nodes number.	
Return Type Description	Random integer value.	

GeneratorImplicationalSystemIO

Name	Value
Description	Implements the methods to save implicational systems in files.
Visibility	public

Operations

public save (systems : java.util.List< fr.kbertet.lattice.ImplicationalSystem>, fileName : String) : void		
Parameters	**systems**	
	Description	Implicational systems.
	Multiplicity	1
	Type	java.util.List < fr.kbertet.lattice.ImplicationalSystem>
	Direction	inout
	fileName	
	Description	File names prefix.
	Multiplicity	Unspecified
	Type	🟢 String
	Direction	inout
	Java Detail	N/A
Description	Saves n systems in n files with the names filename_1, filename_2, ..., filename_n. If the list only contains one element, this is saved in the file with the name fileName.	
Exceptions	java.io.IOException if read / write error occur.	

protected checkFile (fileName : String) : void		
Parameters	**fileName**	
	Description	File name.
	Multiplicity	1
	Type	🟢 String
	Direction	inout
Description	Checks if the file with name fileName parameter value exists. If no exists, this will be created.	
Exceptions	java.io.IOException if read / write error occur.	