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<LATEXEDITOR>

# OVERALL REPORT

VERSION <2.0>

**Ευτυχία Κιάφα AM:3003**

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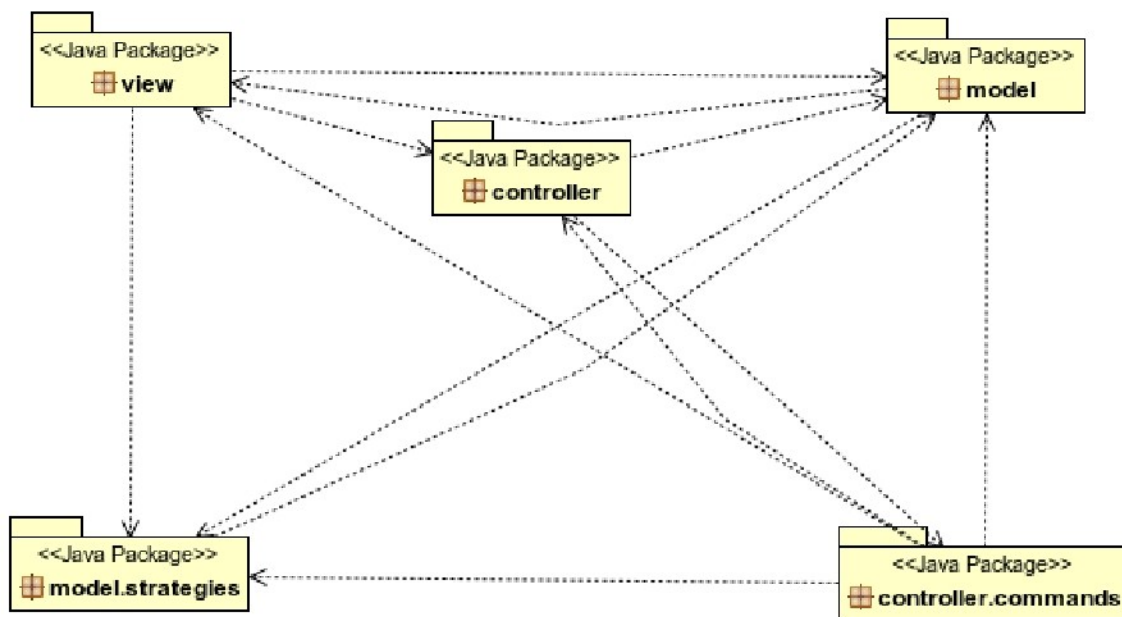
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## INTRODUCTION

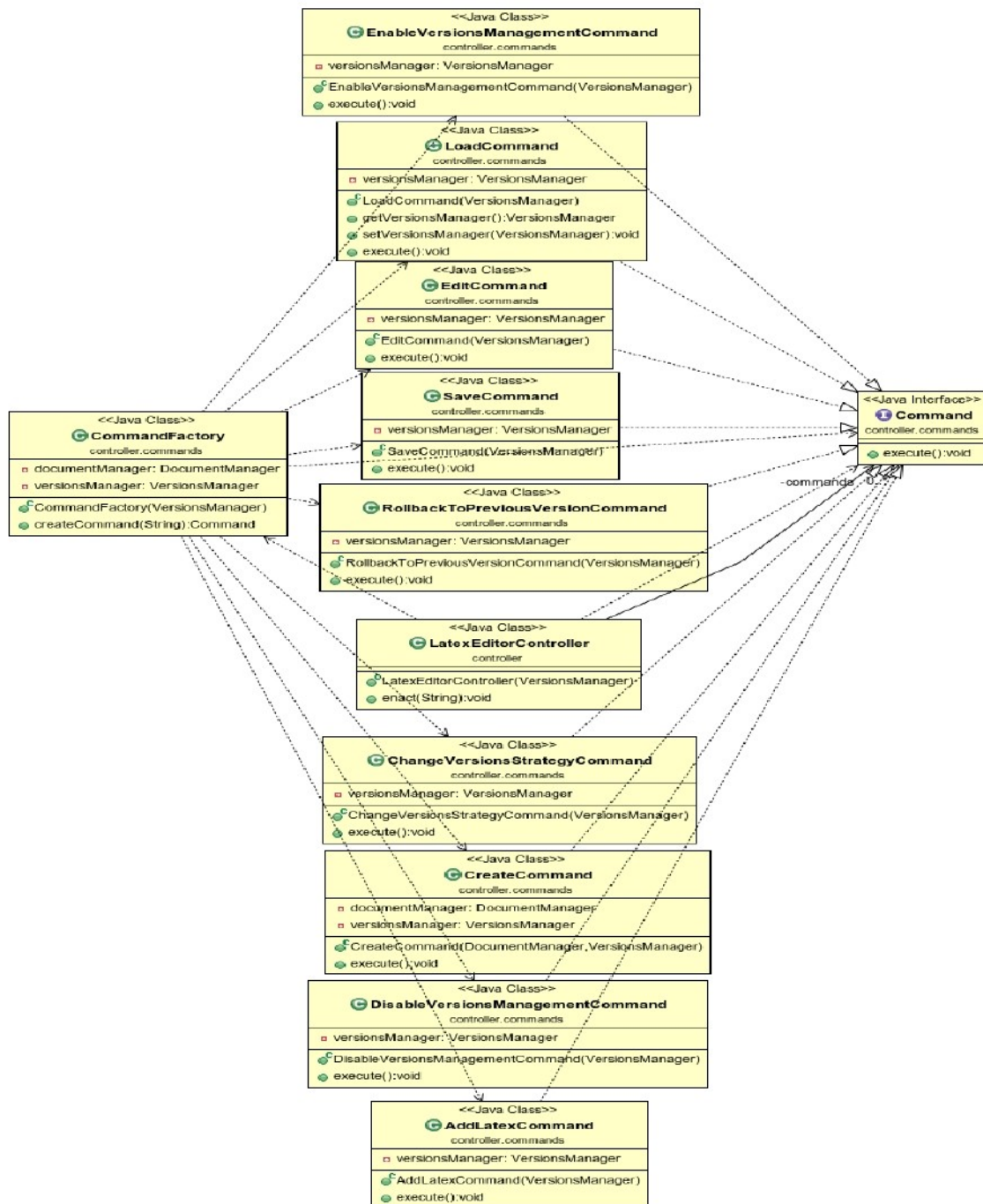
This document defines basic information for LatexEditor project. LatexEditor is an application for writing and editing of Latex documents. Includes UML package and class diagrams, that shows the architecture of the application, CRC cards for each class, observations for quality weaknesses or error dangers in application.

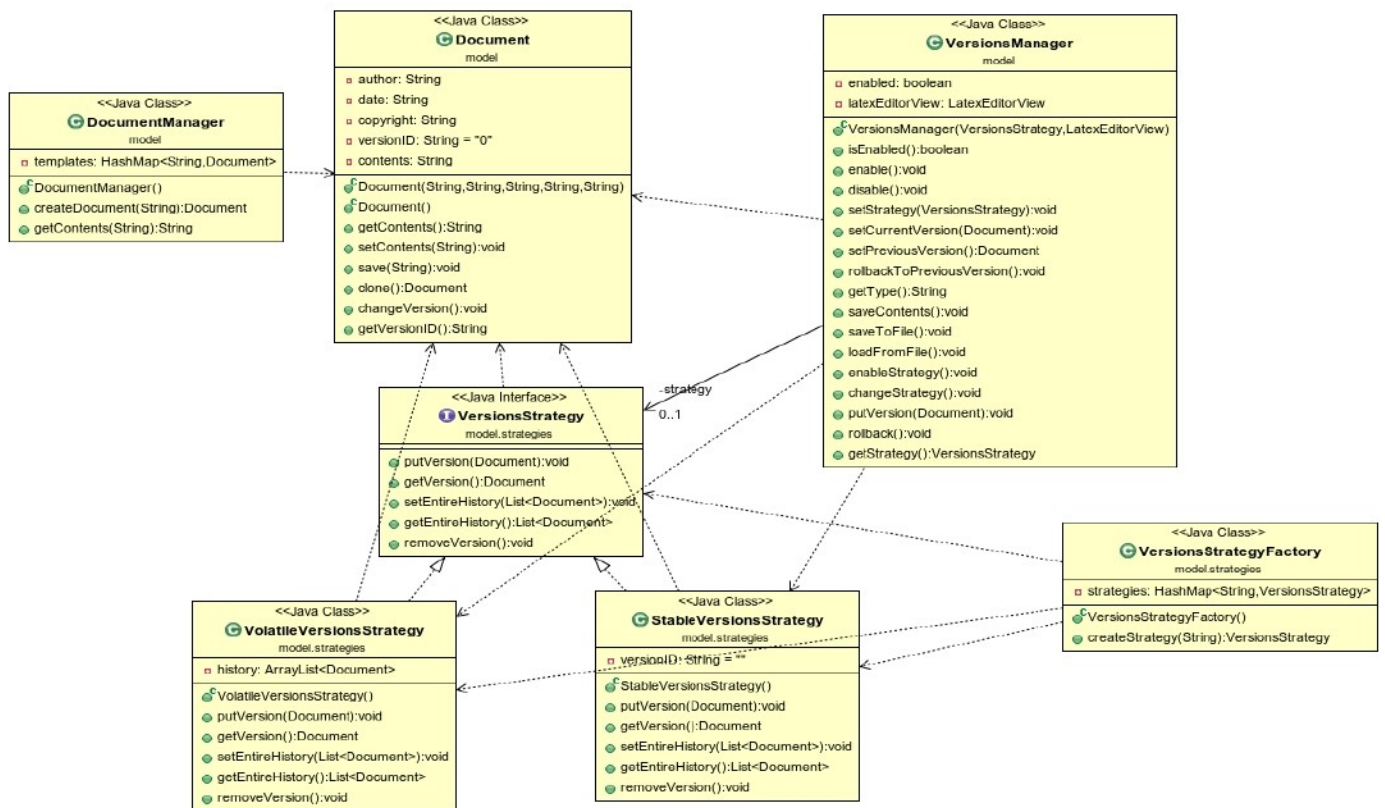
## DESIGN RECOVERY

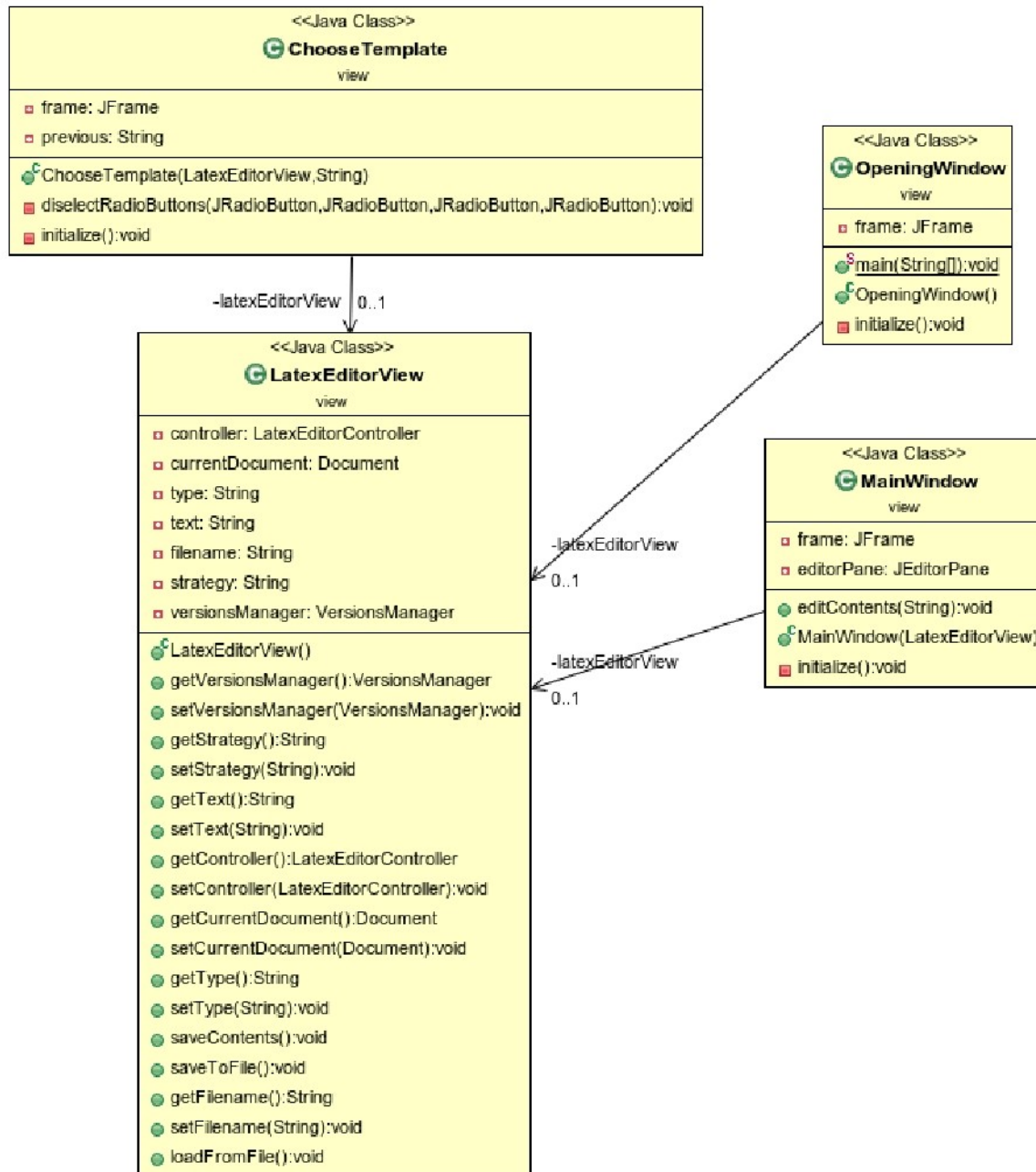
## ARCHITECTURE



## DETAILED DESIGN







## IMPLEMENTATION

Class Name:LatexEditorController	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Makes a hashmap of commands.</u></li> <li>▪ <u>Finds specific command and executes it.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> </ul>

Class Name:AddLatexCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Updates the version of the document and display it through the LatexEditorView</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>LatexEditorView</u></li> <li>▪ <u>VersionsManager</u></li> </ul>

Class Name:ChangeVersionsStrategyCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Changes strategy type from stable to volatile,or from volatile to stable and modifies the history.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> </ul>



	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>VersionsStrategy</u></li> </ul>
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<b>Class Name:Command</b>	
<b>Responsibilities</b>	<b>Collaborations</b>
<ul style="list-style-type: none"> <li>▪ <u>Includes execute method with no body for commands classes.</u></li> </ul>	

<b>Class Name:CommandsFactory</b>	
<b>Responsibilities</b>	<b>Collaborations</b>
<ul style="list-style-type: none"> <li>▪ <u>Creates the new commands objects and put it in the command map.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>All commands classes</u></li> </ul>

<b>Class Name:CreateCommand</b>	
<b>Responsibilities</b>	<b>Collaborations</b>
<ul style="list-style-type: none"> <li>▪ <u>Creates the new document and sets it as the current version.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> </ul>

	<ul style="list-style-type: none"> <li>▪ <u>Command</u></li> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>Document</u></li> </ul>
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Class Name:DisableVersionsManagementCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Disactivates the volatile/stable buttons</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>MainWIndow</u></li> <li>▪ <u>LatexEditorController</u></li> </ul>

Class Name:EditCommand	
Responsibilities	Collaborations

<ul style="list-style-type: none"> <li>▪ <u>Updates the version of the document and display it through the LatexEditorView</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>LatexEditorView</u></li> <li>▪ <u>LatexEditorController</u></li> </ul>
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Class Name:EnableVersionsManagementCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Activates the volatile/stable buttons</u></li> <li>▪ <u>Sets strategy</u></li> <li>▪ <u>Modifies history</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>VersionsManager</u></li> </ul>

Class Name:LoadCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Loads document history.If it is empty makes an new document with a template.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> </ul>

<ul style="list-style-type: none"> <li>▪ <u>Sets last version of document as current document</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>LatexEditorView</u></li> </ul>
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Class Name:RollbackToPreviousVersionCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Removes the latest version of a document</u></li> <li>▪ <u>Sets current document</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>LatexEditorView</u></li> </ul>

Class Name:SaveCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Changes document</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>LatexEditorView</u></li> </ul>

	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>Document</u></li> </ul>
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<b>Class Name:DocumentManager</b>	
<b>Responsibilities</b>	<b>Collaborations</b>
<ul style="list-style-type: none"> <li>▪ <u>Creates a map with documents with templates</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>Document</u></li> </ul>

<b>Class Name:VersionsManager</b>	
<b>Responsibilities</b>	<b>Collaborations</b>
<u>Enables/Disables tracking</u> <ul style="list-style-type: none"> <li>▪ <u>Updates versions' history</u></li> <li>▪ <u>Rolls back to previous versions</u></li> <li>▪ <u>Updates current version</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>Document</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>LatexEditorView</u></li> </ul>

Class Name:Document	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Contains the needed information for each document(versionID,date etc)</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>VersionsStrategy</u></li> </ul>

Class Name:StableVersionsStrategy	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Modifies document with index</u></li> <li>▪ <u>Modifies history</u></li> <li>▪ <u>Gets history</u></li> <li>▪ <u>Removes version</u></li> <li>▪ <u>Puts versions</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>Document</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>VersionsStrategyFactory</u></li> </ul>

Class Name:VersionsStrategy	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Interface for strategies methods</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsStrategyFactory</u></li> <li>▪ <u>StableVersiosnsStrategy</u></li> </ul>

	<ul style="list-style-type: none"> <li>▪ <u>VolatileVersionsStrategy</u></li> <li>▪ <u>Document</u></li> </ul>
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Class Name:VersionsStrategyFactory	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Makes a map that keeps strategies</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>StableVersionsStrategy</u></li> <li>▪ <u>VolatileVersionsStrategy</u></li> </ul>

Class Name:VolatileVersionsStrategy	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Modifies document with index</u></li> <li>▪ <u>Modifies history</u></li> <li>▪ <u>Gets history</u></li> <li>▪ <u>Removes version</u></li> <li>▪ <u>Puts versions</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>Document</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>VersionsStrategyFactory</u></li> </ul>

Class Name:ChooseTemplate	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>It's a part of gui for template selection</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ LatexEditorView</li> <li>▪ MainWindow</li> <li>▪ OpeningWindow</li> </ul>

Class Name:LatexEditorView	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Organises documents and their versions and display them.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>Document</u></li> </ul>

Class Name:MainWindow	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Buttons,menus and strategy organisation,similar to ChooseTemplate and LatexEditorView.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>LatexEditorView</u></li> </ul>



Class Name:OpeningWindow	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Makes the intro window of the application.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>LatexEditorView</u></li> <li>▪ <u>VolatileVersionStrategy</u></li> </ul>

## QUALITY ASSESSMENT

### General problems:

The most problems found at the package of controller.commands and view.

Almost all of the operations of commands use VersionsManager and none of them uses LatexEditorView or one of the gui classes for displaying the results.

There are classes with not specific use or calling in the application like VersionsStrategyFactory in model.strategies package.

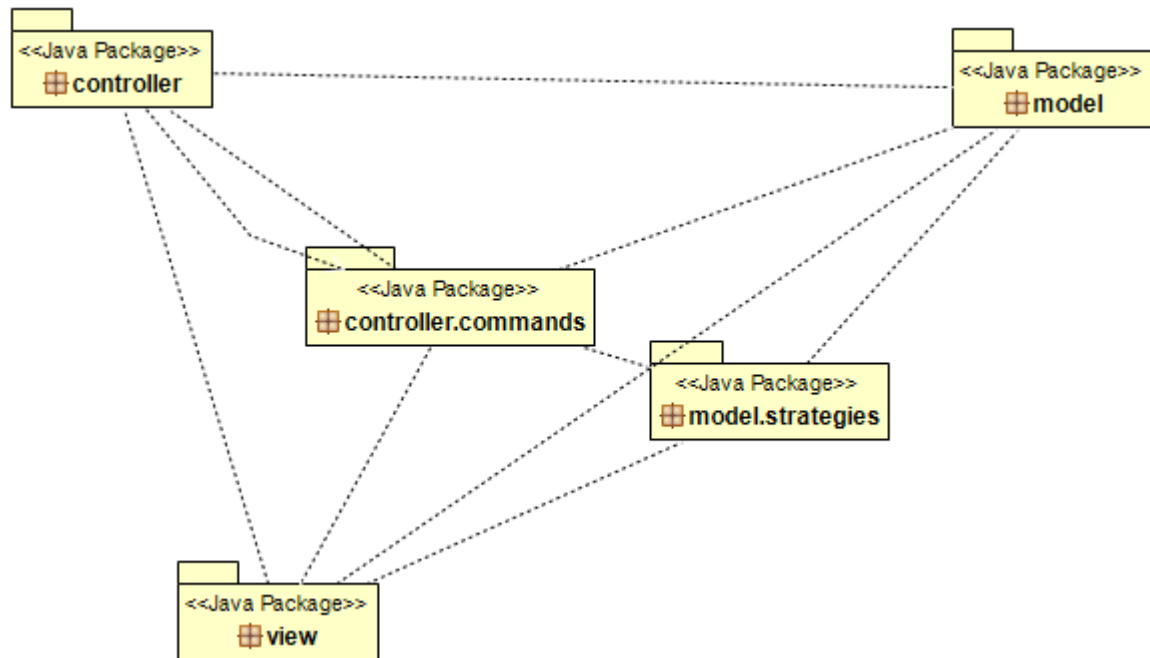
Furthermore,in view package,these four classes have many similarities in their use.There is no right implementation of serialization or deserialization,and hashmap of templates or map of history need changes.

### Quality problems:

- Not much meaningful names in view classes and VersionManager.
- Needs more clean code.
- Problems with patterns use in application.

## RE-ENGINEERED DESIGN

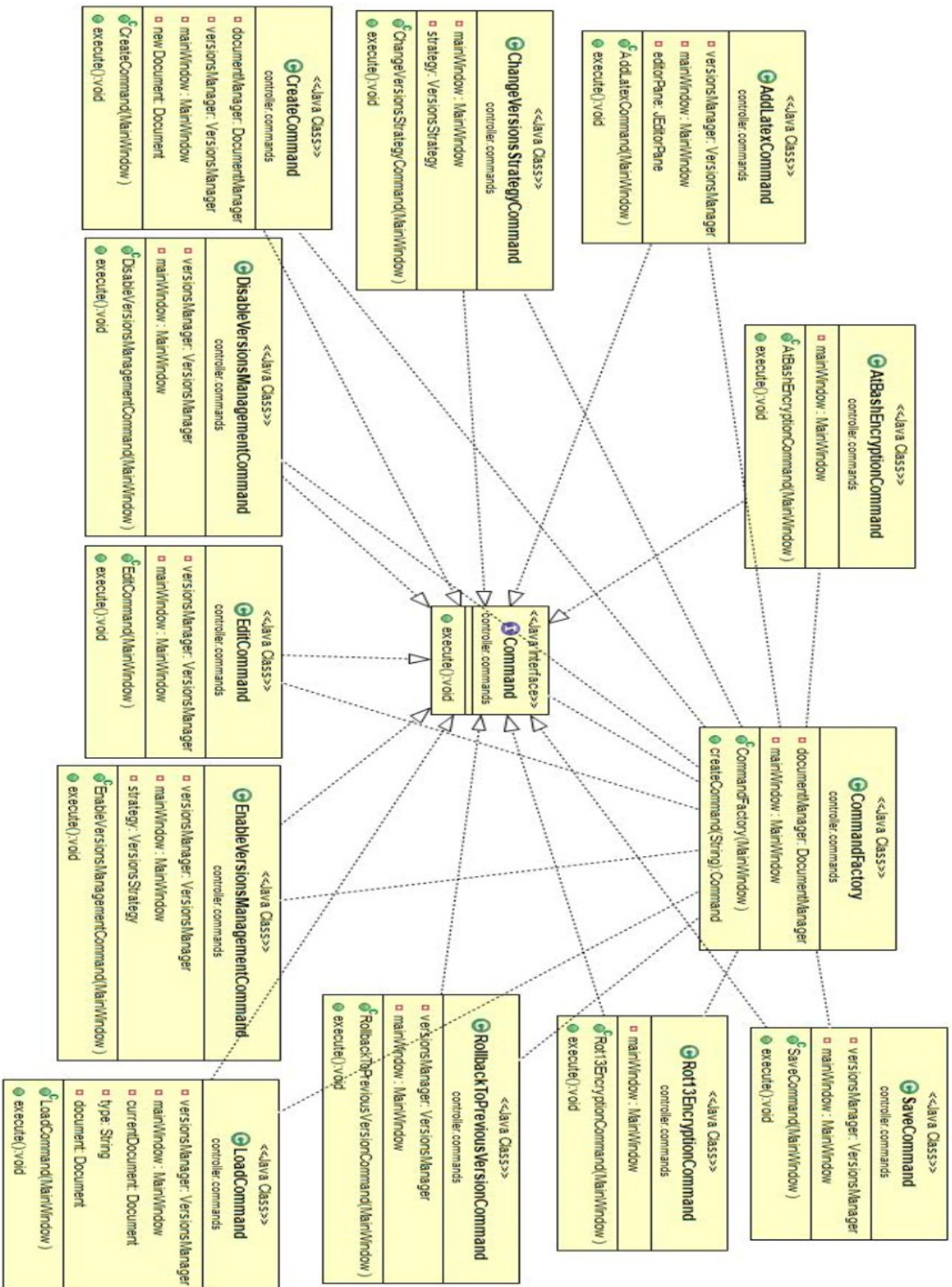
### ARCHITECTURE

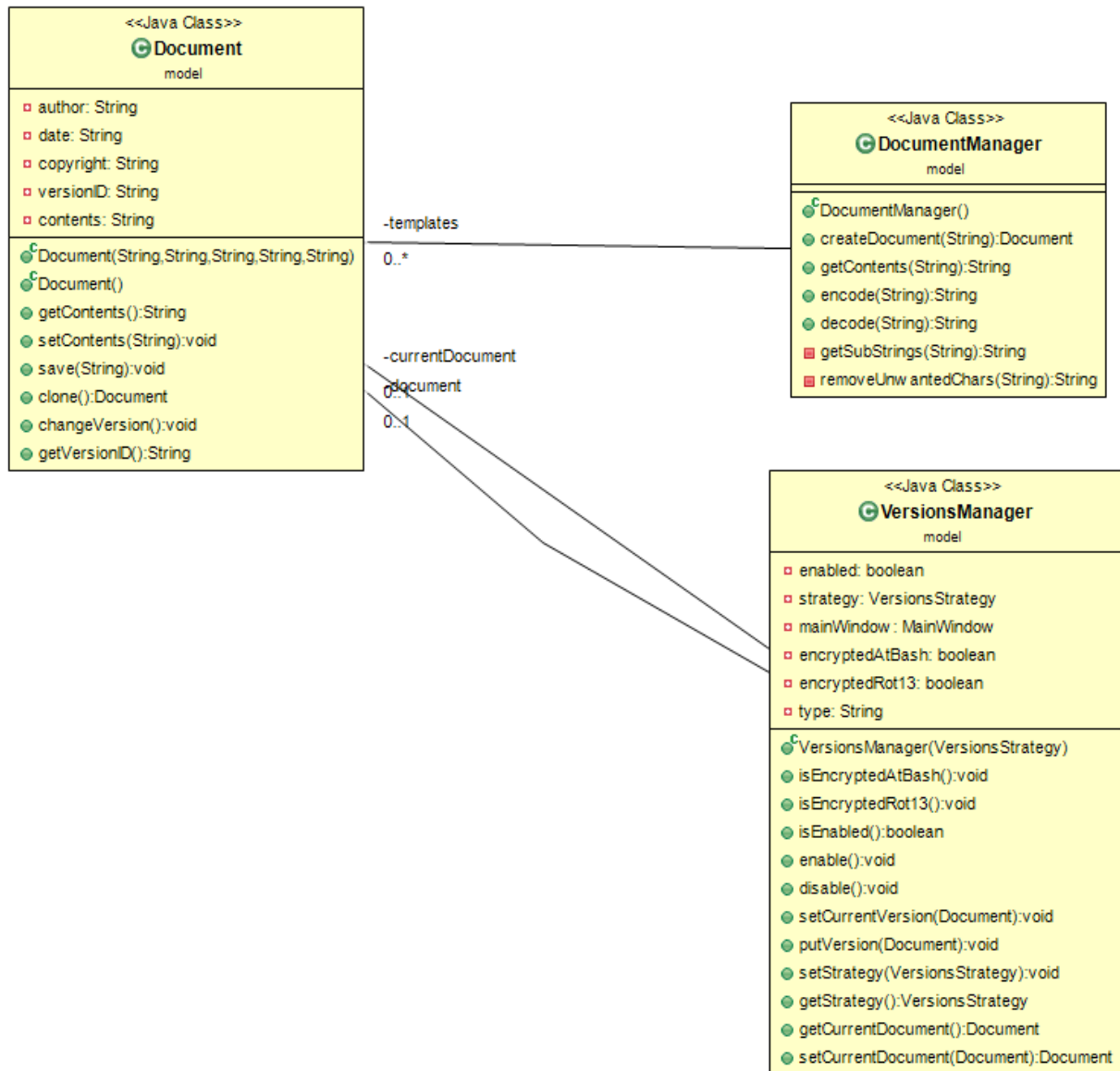


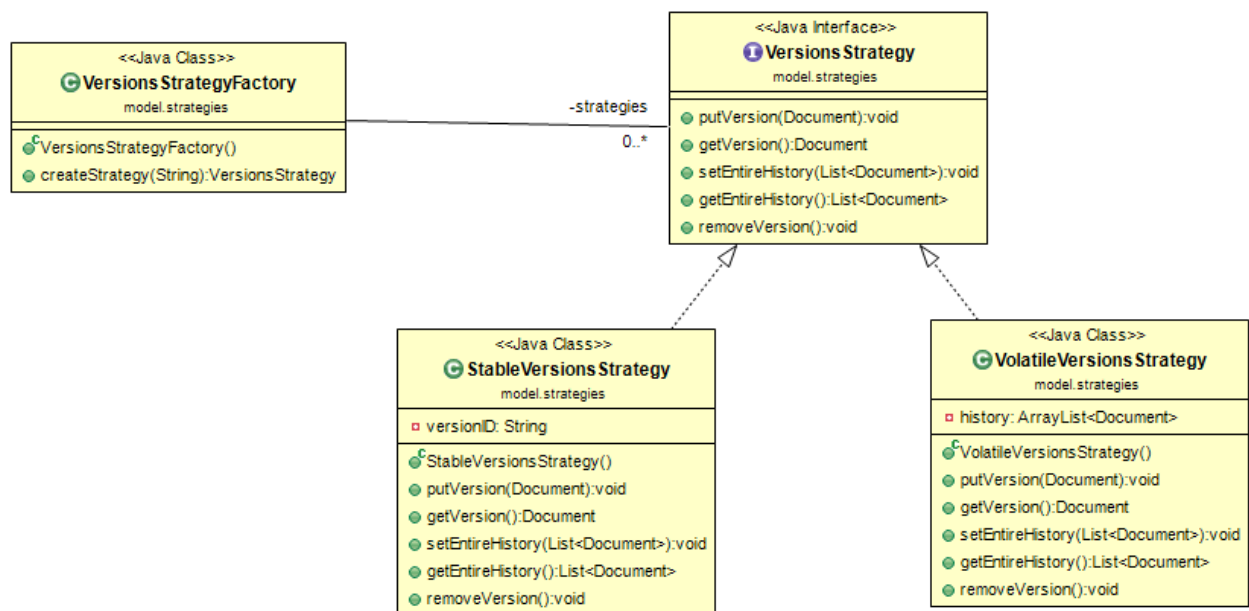
## \_DETAILED DESIGN

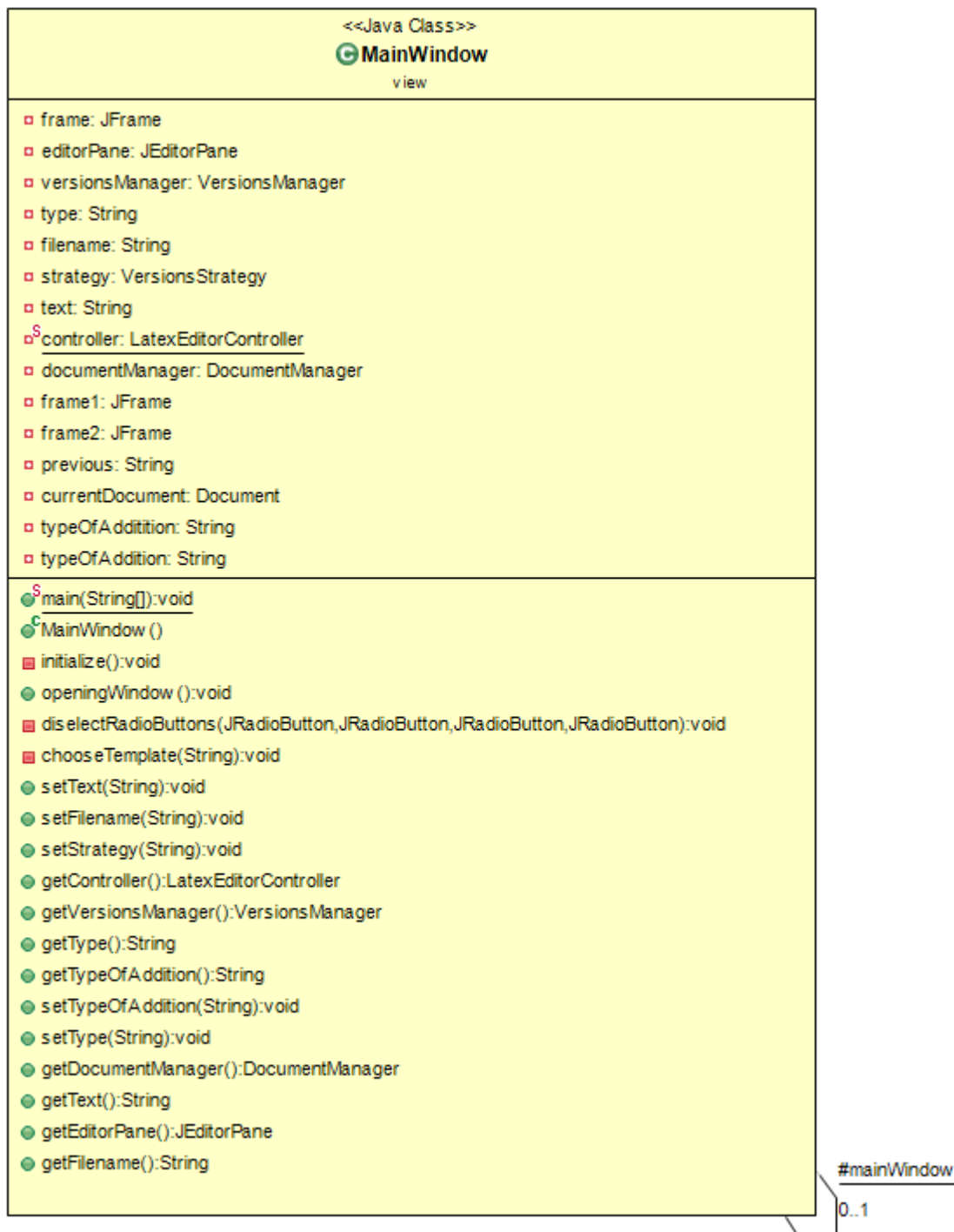
There are many changes about view package. **ChooseTemplate** and **OpeningWindow** classes don't exist anymore. **MainWindow** is main gui of application and contains previous classes as methods. **LatexEditorView** don't exist too. This is a result of refactoring. **Commands classes** have specific role with new execute() method implementation for each of them. **VersionsManager** has only methods that needs. Many problems of duplicate code or large methods or large classes have solved with refactoring and algorithms. There are some changes about encryption extensions. Two commands classes have added, callings in factory and controller and collaboration with MainWindow. Also **Document Manager** have some new functions for this reason.











Class Name:MainWindow	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Main gui class of project that contains OpeningnWindow class and ChooseTemplate class that don't exist anymore.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>Document</u></li> <li>▪ <u>Commands classes</u></li> <li>▪ <u>Strategy classes</u></li> </ul>

Class Name:CommandsFactory	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Creates the new commands objects and put it in the command map.</u></li> <li>▪ <u>Encryption calling have added</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>LatexEditorController</u></li> </ul>



	<ul style="list-style-type: none"> <li>▪ <u>All commands classes</u></li> </ul>
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Class Name:DocumentManager	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Creates a map with documents with templates</u></li> <li>▪ <u>Methods of encryption have added.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>Document</u></li> </ul>

Class Name:AddLatexCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Updates the version of the document and display it through the LatexEditorView</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>MainWindow</u></li> <li>▪ <u>VersionsManager</u></li> </ul>

Class Name:VersionsManager	
Responsibilities	Collaborations
<p><u>Enables/Disables tracking</u></p> <ul style="list-style-type: none"> <li>▪ <u>Updates versions' history</u></li> <li>▪ <u>Rolls back to previous versions</u></li> <li>▪ <u>Updates current version</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>Document</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>MainWindow</u></li> </ul>

Class Name:SaveCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Changes document.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>MainWindow</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>Document</u></li> </ul>

Class Name:LatexEditorController	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Makes a hashmap of commands.</u></li> <li>▪ <u>Finds specific command and executes it.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>MainWindow</u></li> </ul>

Class Name:AddLatexCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Updates the version of the document and display it through the LatexEditorView</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>MainWindow</u></li> <li>▪ <u>VersionsManager</u></li> </ul>

Class Name:ChangeVersionsStrategyCommand	
Responsibilities	Collaborations

<ul style="list-style-type: none"> <li>▪ <u>Changes strategy type from stable to volatile, or from volatile to stable and modifies the history.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>MainWindow</u></li> </ul>
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Class Name:CommandsFactory	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Creates the new commands objects and put it in the command map.</u></li> <li>▪ <u>Added encryption callings.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>LatexEditorController</u></li> <li>▪ <u>All commands classes</u></li> <li>▪ <u>MainWindow</u></li> </ul>

Class Name:CreateCommand	
Responsibilities	Collaborations

<ul style="list-style-type: none"> <li>▪ <u>Creates the new document and sets it as the current version.</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>Document</u></li> <li>▪ <u>MainWindow</u></li> </ul>
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Class Name:EditCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Updates the version of the document and display it through MainWindow</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>MainWindow</u></li> <li>▪ <u>LatexEditorController</u></li> </ul>

Class Name:EnableVersionsManagementCommand	
Responsibilities	Collaborations

<ul style="list-style-type: none"> <li>▪ <u>Activates the volatile/stable buttons</u></li> <li>▪ <u>Sets strategy</u></li> <li>▪ <u>Modifies history</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>MainWindow</u></li> </ul>
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Class Name:LoadCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Loads document history.If it is empty makes a new document with a template.</u></li> <li>▪ <u>Sets last version of document as current document</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>MainWindow</u></li> </ul>

Class Name:RollbackToPreviousVersionCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Removes the latest version of a document</u></li> <li>▪ <u>Sets current document</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> </ul>

	<ul style="list-style-type: none"> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>MainWindow</u></li> </ul>
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Class Name:AtBashEncryptionCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Encrypts document with atBash algorithm</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> <li>▪ <u>VersionsManager</u></li> <li>▪ <u>DocumentManager</u></li> <li>▪ <u>VersionsStrategy</u></li> <li>▪ <u>MainWindow</u></li> </ul>

Class Name:AtBashEncryptionCommand	
Responsibilities	Collaborations
<ul style="list-style-type: none"> <li>▪ <u>Encrypts document with Rot-13 algorithm</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ <u>CommandFactory</u></li> <li>▪ <u>Command</u></li> </ul>

	<ul style="list-style-type: none"><li>▪ <u>VersionsManager</u></li><li>▪ <u>DocumentManager</u></li><li>▪ <u>VersionsStrategy</u></li><li>▪ <u>MainWindow</u></li></ul>
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