

# AAMS

(Automatic Assignment Management System)

## Group 21

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# Design document

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## 5. Design details

### 5.1. Class Responsibility Collaborator (CRC) Cards

#### Student communication component

##### Class mailbox

Responsibilities	Collaborators
Download and save new assignments	pop3Transport
Compose and send feedback	smtpTransport
Compose and send confirmation e-mails	mail
Send previously stored messages	validator
Store messages that could not be sent	(CourseDataStorage)
Validate e-mails	(UnsentEmailStorage)

##### Class pop3Transport

Responsibilities	Collaborators
Download message headers from pop3 server	mail
Download messages from pop3 server	mail

##### Class smtpTransport

Responsibilities	Collaborators
Send messages to smtp server	mail

##### Class mail

Responsibilities	Collaborators
Store e-mail data for use by other components	attachment

##### Class attachment

Responsibilities	Collaborators
Store e-mail attachments for use by other components	

##### Class validator

Responsibilities	Collaborators
validate e-mail headers	

## External communication and RES communication components

### Class externalCom

<b>Responsibilities</b>	<b>Collaborators</b>
Create grades exchange files from AAMS courses	CourseDataStorage
Import lists of students from exchange files to AAMS	External system communication modules

### Class RESCom

<b>Responsibilities</b>	<b>Collaborators</b>
Create students exchange files from RES system courses	RES system
Import grades from exchange files to RES system	externalCom

## GUI/Event handler component

### Class AAMSGUI

<b>Responsibilities</b>	<b>Collaborators</b>
Manage the AAMS GUI	wxWidgets

### Class GUIcreator

<b>Responsibilities</b>	<b>Collaborators</b>
Define and show GUI	wxWidgets
Define event table	GUI controller

### Class GUIcontroller

<b>Responsibilities</b>	<b>Collaborators</b>
Manage GUI events	wxWidgets ErrorManager WindowManager FileManager

### Class ErrorManager

<b>Responsibilities</b>	<b>Collaborators</b>
Manage AAMS errors	WindowManager

### Class WindowManager

<b>Responsibilities</b>	<b>Collaborators</b>
Coordinate the display of different windows	wxWidgets

### Class FileManager

<b>Responsibilities</b>	<b>Collaborators</b>
Show files by calling the proper external application	wxWidgets

## Data storage component

### Class CourseDataStorage

Responsibilities	Collaborators
Load the data for a specified course	CourseData
Save data for the course	EmailAccountPOP3Data
Add new data for a course	EmailAccountSMTPData
Edit data for a course	XMLCourseDataRead
Remove data for a course	XMLCourseDataWrite

### Class CourseData

Responsibilities	Collaborators
Hold data for a course	StudentData FileInfoData AssignmentInfoData

### Class StudentData

Responsibilities	Collaborators
Hold data for a student in the course	AssignmentData

### Class AssignmentData

Responsibilities	Collaborators
Hold the assignment data for a student	FileData

### Class FileData

Responsibilities	Collaborators
Hold the file data for an assignment	

### Class FileInfoData

Responsibilities	Collaborators
Hold information about files in assignments	

### Class AssignmentInfoData

Responsibilities	Collaborators
Hold information about assignments in a course	

### Class EmailAccountPOP3Data

Responsibilities	Collaborators
Hold information about the POP3 server settings with login information	

### Class EmailAccountSMTPData

Responsibilities	Collaborators
Hold information about the SMTP server settings with login information	

### Class XMLCourseDataRead

Responsibilities	Collaborators
Read the XML file containing the course data	CryptUtil

### Class XMLCourseDataWrite

Responsibilities	Collaborators
Write the course data to the XML file containing the course data	CryptUtil

### Class UnsentEmailsStorage

Responsibilities	Collaborators
Load data for unsent emails from file	UnsentEmailsData
Save data for unsent emails from file	XMLUnsentEmailsDataRead XMLUnsentEmailsDataWrite

### Class UnsentEmailsData

Responsibilities	Collaborators
Hold data for unsent emails	

### Class XMLUnsentEmailsDataRead

Responsibilities	Collaborators
Read the XML file containing the unsent emails data	CryptUtil

### Class XMLUnsentEmailsDataWrite

Responsibilities	Collaborators
Read the XML file containing the unsent emails data	CryptUtil

### Class CryptUtil

Responsibilities	Collaborators
Encrypt	
Decrypt	

## Report generator component

### Class CreatePdf

<b>Responsibilities</b>	<b>Collaborators</b>
Generate a pdf file based on received data	CourseData GenerateType

### Class GenerateType

<b>Responsibilities</b>	<b>Collaborators</b>
Defines which type of report to generate	AAMSGUI



## 5.2. Class diagrams

### Student communication component

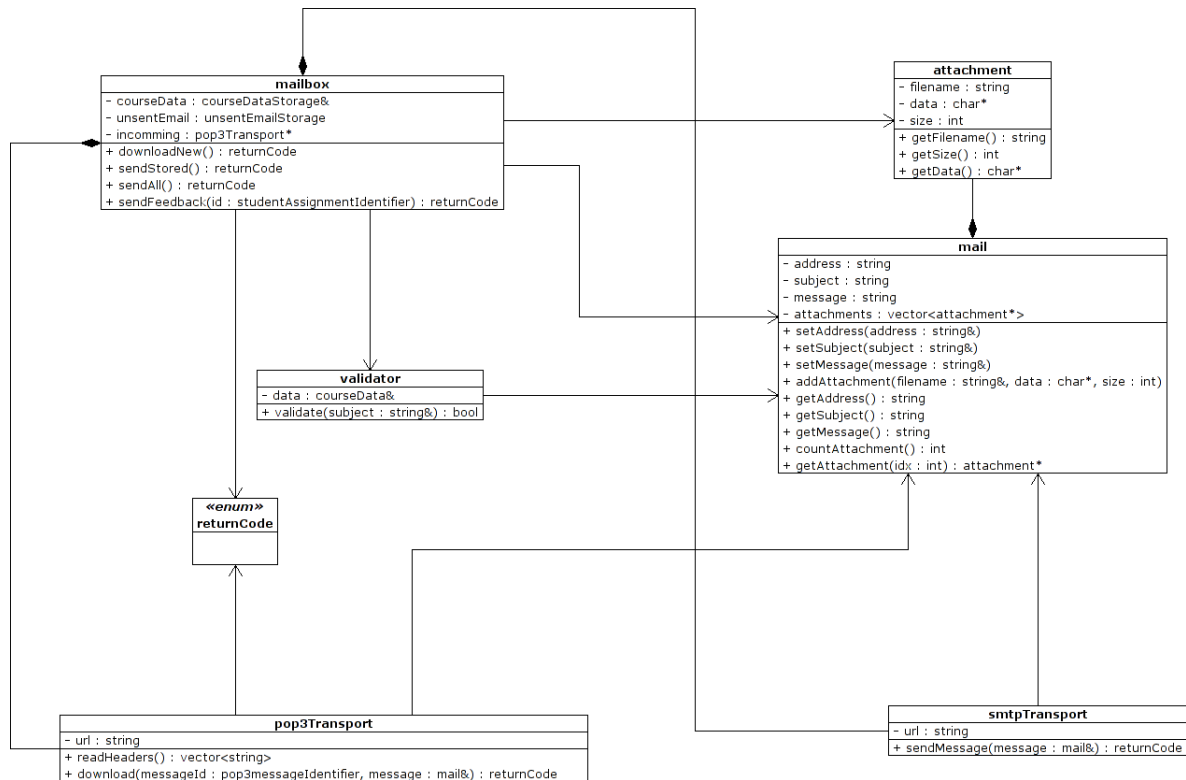


Figure 1: Class diagram for the student communication component

**External communication and RES communication components**

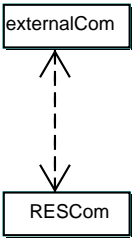


Figure 2: Class diagram for the external communication and RES communication components

**GUI/Event handler component**

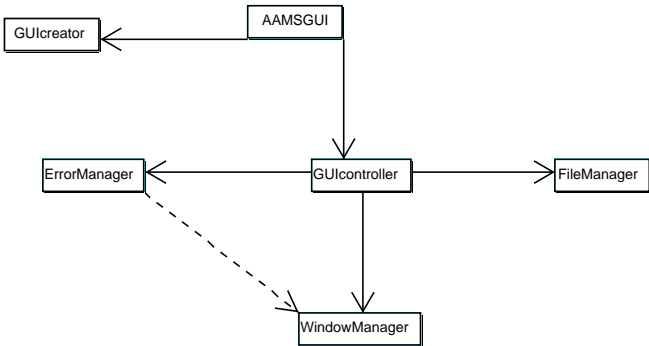


Figure 3: Class diagram for the GUI/Event handler component

## Data storage component

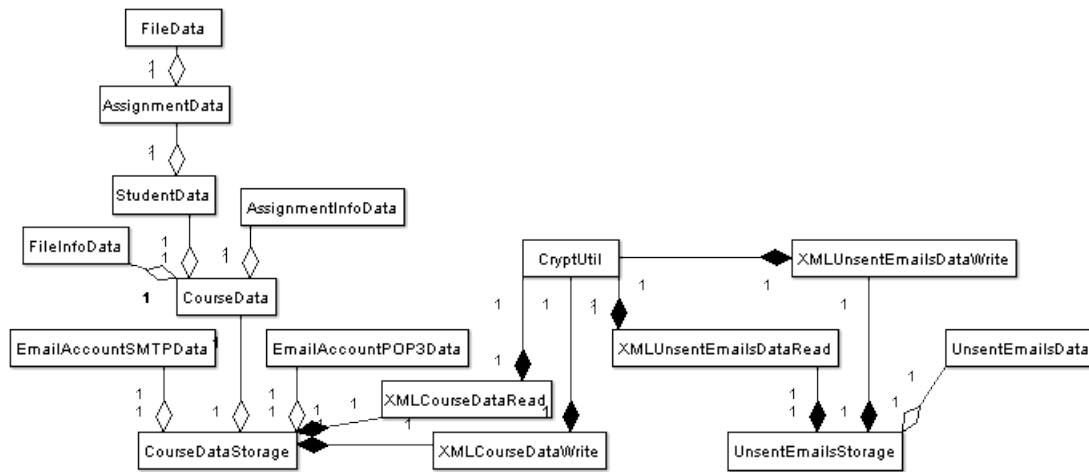


Figure 4: Class diagram for the data storage component

## Report generator component

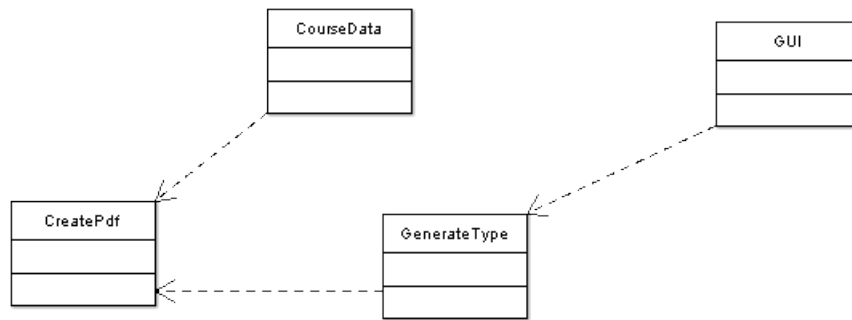


Figure 5: Class diagram for the report generator component

### 5.3. Interaction diagrams

#### Student communication component

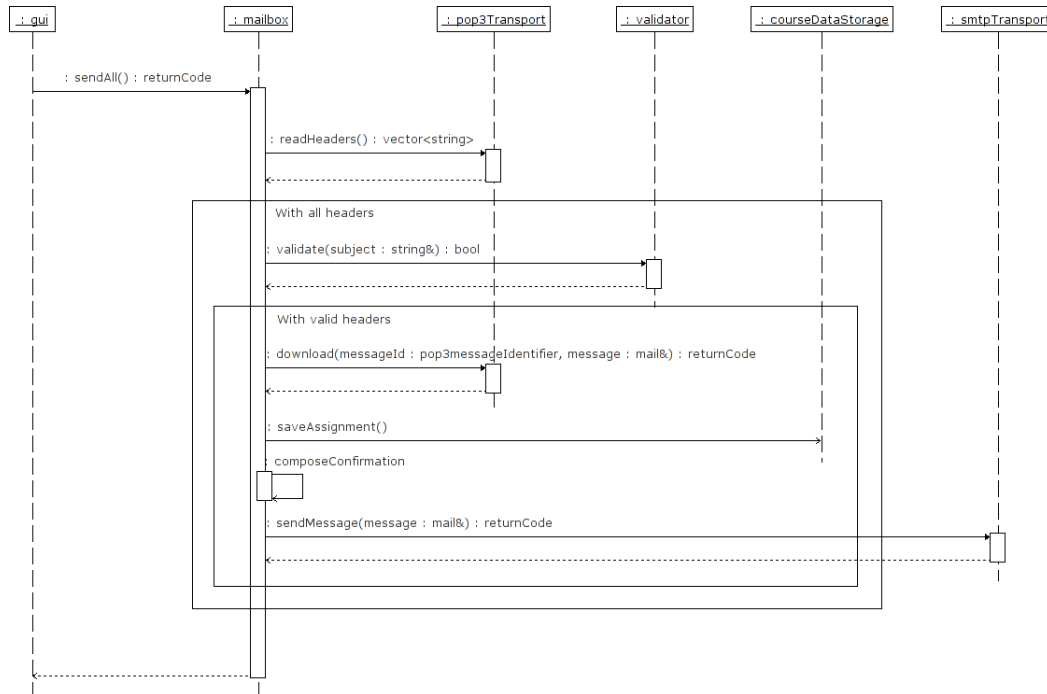


Figure 6: Interaction diagram for the download of an assignment

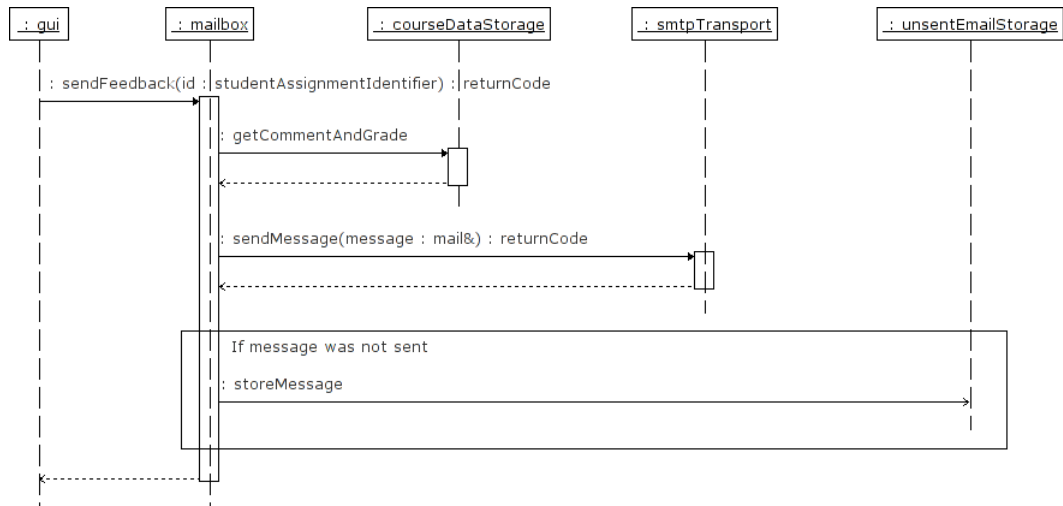


Figure 7: Interaction diagram for the sending of feedback

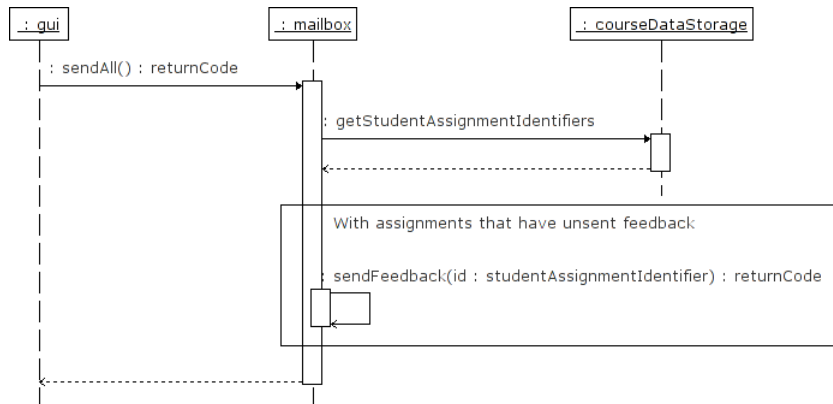


Figure 8: Interaction diagram for the sending of all unsent feedback

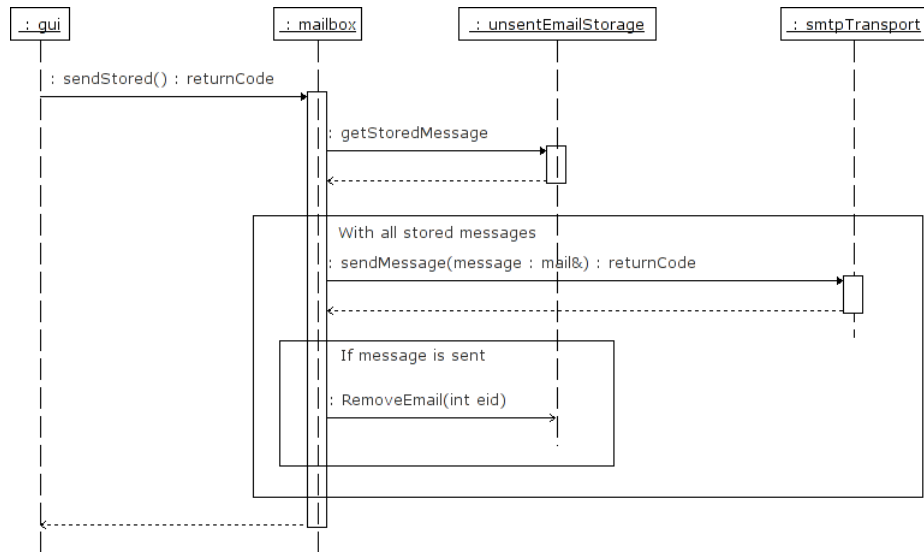


Figure 9: Interaction diagram for the sending of all stored messages

### External communication and RES communication components

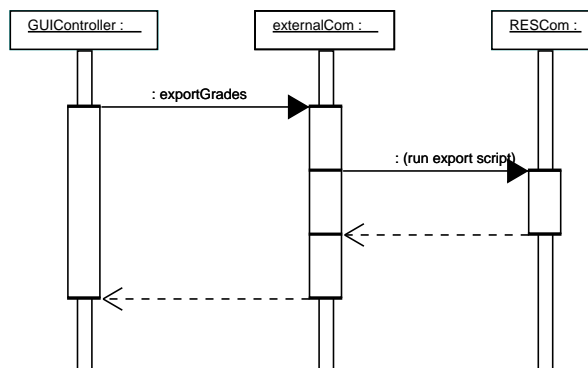


Figure 10: Interaction diagram for the exporting of grades



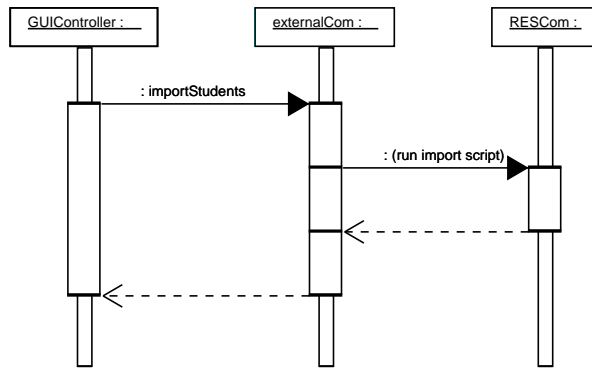


Figure 11: Interaction diagram for the importing of grades

**GUI/Event handler component**

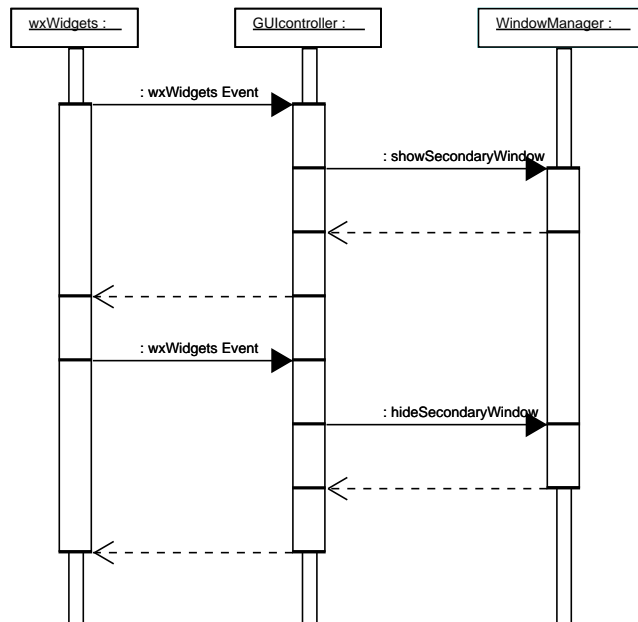


Figure 12: Interaction diagram for the opening and closing of a secondary window as a result of user events

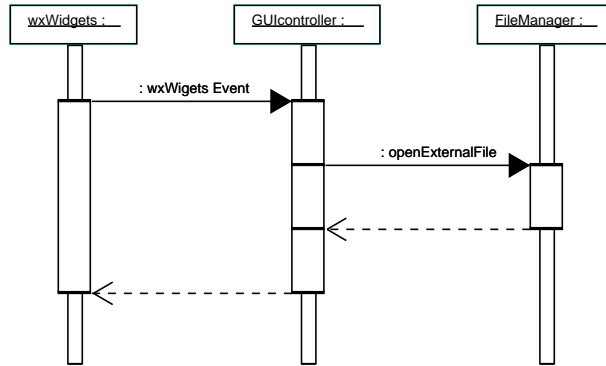


Figure 13: Interaction diagram for the opening of a file with an external application as a result of a user event

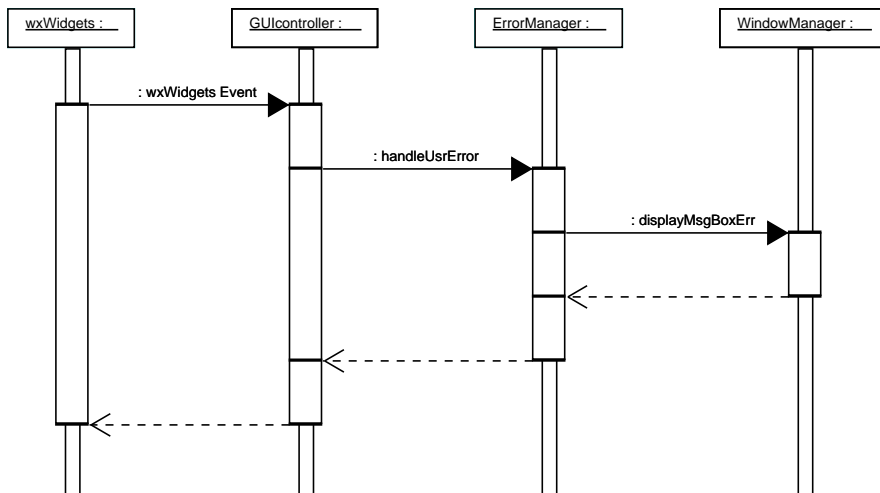


Figure 14: Interaction diagram for the handling of a user error

## Data storage component

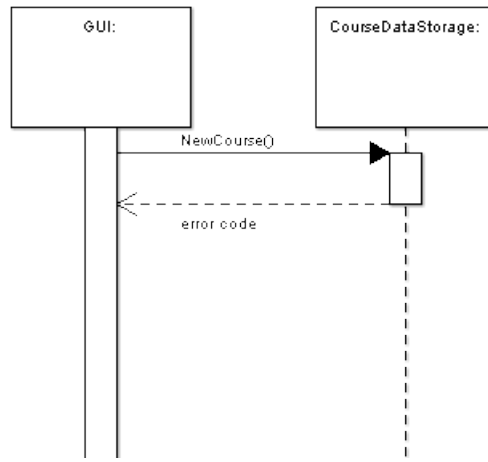


Figure 15: Interaction diagram for the creation of a new course

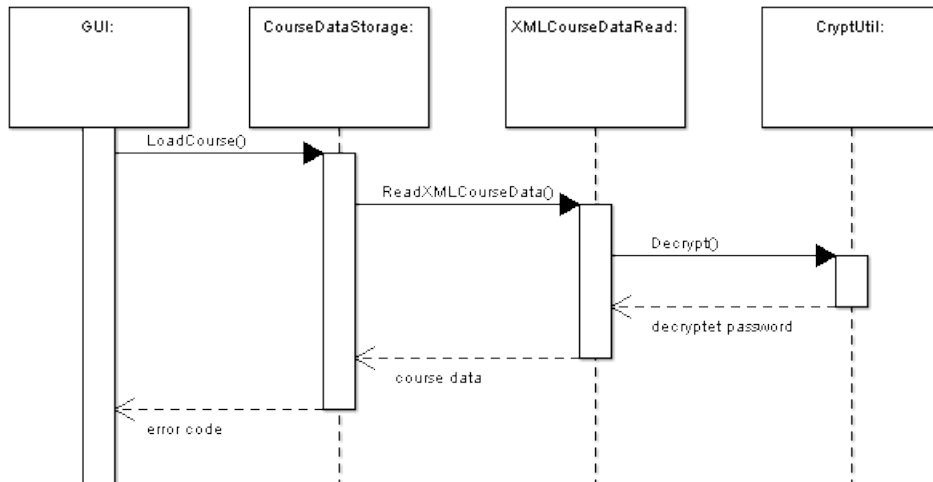


Figure 16: Interaction diagram for the opening of a course

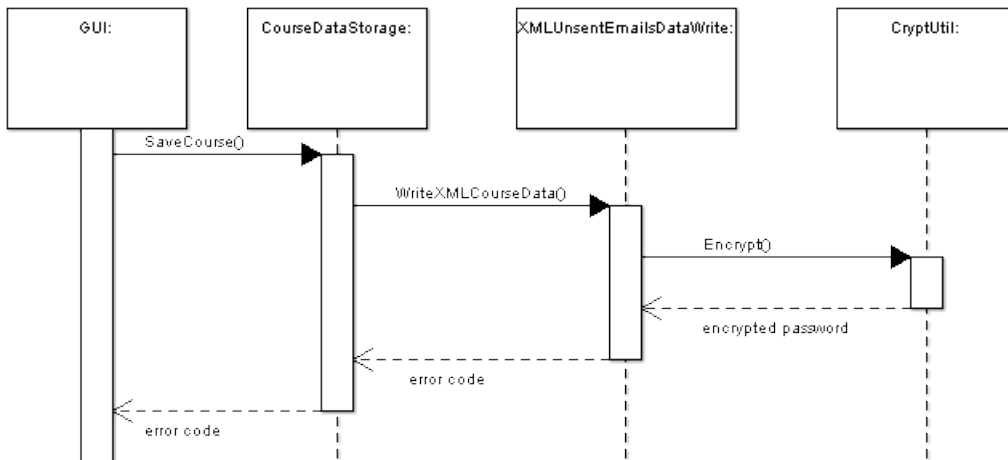


Figure 17: Interaction diagram for the saving of a course

### Report generator component

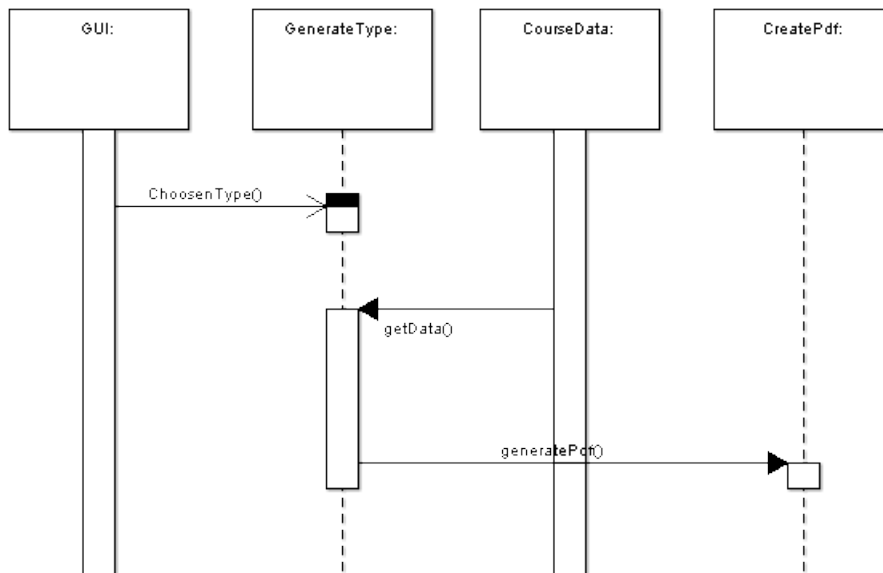


Figure 18: Interaction diagram for the generation of a report in PDF format

## References

- [1] Sommerville, I., *Software Engineering*, Addison-Wesley. Eighth edition (2007)