Assignment Cover Sheet

Unit: KIT206

Assignment 1 – OO Design Document

Student Names:

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Scenario Template

Use Case #: UC8_User_views_ResearcherList

Requirement:

Upon application start up, the user shall be presented with an interactive list of researchers (consisting of both staff and research students), known hereafter as the Researcher List view.

Overview:

The user can see the list of the researchers which is form by staff and research student when they start the application.

Preconditions:

1. Researcher database exists and is populated with data.

Scenario:

Action	Software Reaction
1. User starts software	1. System creates the Researcher List view 2. Researchers are taken from the database and are given family name, given name, title 3. Menu displays employment levels A to E 4. System shows names in ResearcherListView
2. User selects “all” in drop down menu then selects level of employment/student status from the list	1. System sorts the ResearcherListView based on employment status 2 System refreshes the ResearcherListView with the filtered list 3. System creates temporary list for that category
3. User selects a student only category from a dropdown list of categories 4. User selects a researcher	1. System displays an updated list of researchers containing students only See UC16_ect.

Scenario Notes:

Action 1 is independent. Action 2 and 3 require action 1 to occur first so that researcher list view is visible and filter dropdown are accessible.

Post Conditions

ResearcherListView displays a list, or a subset list of staff/student researcher names.

Required Views: (GUIs)

MenuView

ResearcherListView.

Exceptions:

If the MySQL database fails to load and, as a result, display no names. The system should display an error message of some type indicating to the user the probable cause of the solution and recommending a restart of the software. If this does not solve the problem, the user should refer to a help function of MySQL.

Use Cases utilised

UC16_ User_selects_Researcher

Scenario Template

Use Case #16: User_selects_Researcher

Requirement:

User can select a name in the list of researchers to display the details of the researcher.

Overview:

When the user selects a researcher the details of that researcher will be displayed. The details for the researcher will include Name, Title, School/Unit, Campus, Email, Photo, Current Job Title, commenced with institution, Commenced current position, Tenure, and Publications. Student and staff will have some different details displayed. Staff will also have a 3-year average displayed along with Performance, and Supervisions. Students will have Degree and Supervisor.

Additional speciation on details in data base:

1. Photo is store as URL. Must display as an image.

2. Current Job Title is a label derived from their current position's level.

3. Commenced with institution is the start date of their earliest position.

4. Commenced current position is the start date of their current position.

5. Tenure is the time in (fractional) years since the researcher commenced with the institution.

6. 3-year Average is the total number of publications in the previous three whole calendar years, divided by three.

7. Supervisions is the number of students the staff member is currently or has previously supervised.

8. Supervisions is the number of students the staff member is currently or has previously supervised. students, and the values for Degree and Supervisor left blank for staff.

9. When displaying details for a staff member, the Researcher Details view will show that staff member’s performance, which is their three-year average for publications divided by the expected number of publications given their employment level, expressed as a percentage with one decimal place shown.

10. The expected number of publications per year for each level is as follows: A, 0.5; B, 1; C, 2; D, 3.2; E, 4.

It would enhance the application if the Researcher Details view also includes a table of a staff member’s previous positions and those positions' start and end dates (not required for students).

Preconditions:

RAP database exists and is populated with data.

ResearcherListView is visible.

Scenario:

Action	Software Reaction
1. User selects name in ResearcherListView	1. System retrieves additional information from database 2. System performs calculations for required data 3. If staff is selected and have more the 0 supervisions a ‘Show Names’ button will be visible and display all supervisions. Also a small table will be displayed with details previous positions. 4. If student is selected then system loads supervisor's name. 5. If window is too small to display ResearcherDetailsView then the system will enlarge the application 6. UC34_User_views_Publications is triggered.
2. User clicks ‘Show Names’ button next to number of supervision	See UC29_User_expands_Supervisions
3. User clicks ‘Cumulative Count’ button	See UC32_User_views_CumulativeCount

Scenario Notes:

Action 1 must occur first. Action 2 is only if researcher is staff. Action 3 is independent.

Post Conditions

ResearcherDetailsView displays details of selected researcher and

PublicationsListView displays that researcher's publication.

Required Views: (GUIs)

ResearcherListView

ResearcherDetailsView

CumulativePublicationsView

PublicationsListView

Exceptions:

System will display an error message is data cannot be retrieved.

System will display N/A if calculations for appropriate cannot be done.

Use Cases utilised

UC8_User_views_ResearcherList

(precondition)

UC29_User_expands_Supervisions

UC32_User_views_CumulativeCount

UC34_User_views_Publications

Scenario Template

Use Case #: User_Expands_Supervisions

Requirement:

Allow the user to expand the number of supervisions displayed to show a list of those students' names.

Overview:

The system could allow the user to expand the number of supervisions displayed to show a list of those students' names.

Preconditions:

RAP database exists and is populated with data.

ResearcherListView is visible.

Scenario:

Action	Software Reaction
1. User clicks supervisions icon in tool bar	1. Displays number list of staff and students that have been supervised. 2. System opens list
2. User clicks + icon on list	1. Display's list of student's names 2. System expands list to shows students names from data by adding a column to the right.
3. User clicks - icon	1. Return to list of numbers without students' names 2. System return to list default
4. User clicks x icon	1. Close list display 2. System will close list

Scenario Notes:

The typical path is actions 1 then 2. Action 4 exits the use case. If there are any errors loading and displaying the list, then the use action 4. After Action 1 the user can perform either 2 or 4. If 2 is used then the user can perform 3 or 4.

Post Conditions

Supervisions are expanded.

Required Views: (GUIs)

TabbedView

ResearcherListView

Exceptions:

If the MySQL database fails to load and, as a result, display no names. The system should display an error message of some type indicating to the user the probable cause of the solution and recommending a restart of the software. If this does not solve the problem, the user should refer to a help function of MySQL.

Use Cases utilised

UC16_ User_selects_Researcher

UC8_User_views_Researcher

Scenario Template

Use Case #: UC32_User_views_CumulativeCount

Requirement:

It would enhance the application if the user could display a tabular view of a researcher's cumulative number of publications by year, starting with their earliest year of employment.

Overview:

Selecting the publications filter in the menu will make the system respond by refreshing the researcher details, then displaying a list sorted by their cumulative publications. The 'year published' sort by button is then selected, and the list is updated to show researcher publications by year published, beginning with their earliest year of employment.

Preconditions:

1. RAP database exists and is populated with data.
2. Researcher details view is visible.

Scenario:

Action	Software Reaction
1. User selects publications filter from a dropdown list within menu view	1. Menu refreshes ResearcherDetailsView 2. System displays a TabbedView researcher details list sorted by each of their cumulative number of publications
2. User then selects sort by button in menu, then selects 'year published'	1. System sorts publications by year published, beginning with their earliest year of employment 2. System displays updated list in TabbedView

Scenario Notes:

Action 2 relies on action 1 being performed first so that “year published” filter is available.

Post Conditions

The user is presented with a list of researcher’s cumulative publications, sorted by the year published.

Required Views: (GUIs)

ResearcherDetailsView

TabbedView

Exceptions:

If the MySQL database does not contain the correct researcher information, the user’s experience may be negatively affected. Display an error message of some type indicating to the user the probable cause of the solution and recommending a restart of the software.

Use Cases utilised

UC16_ User_selects_Researcher

UC8_User_views_Researcher

Scenario Template

Use Case #: UC34_User_views_Publications

Requirement:

As part of the Researcher Details view, located below the researcher's primary details, the system shall show an interactive list of that researcher's publications.

Overview:

User should be able to view/hide the name and publication years of a researcher's publications through control which displayed number of publications. The year should be able to view by ascending or descending in sorted list.

Preconditions:

1. RAP database exists and is populated with data.
2. PublicationsView loaded from UC32_User_views_CumulativeCount

Scenario:

Action	Software Reaction
1. User clicks "+" tab on the PublicationsView header.	1. System displays the list of publications for Researchers. 2.TabbedView expands and displays information. 3. PublicationsView displays result from database
2. User click "-" tab on the PublicationsView header.	1. PublicationsView header section tab un expands 2. PublicationsView header changes to "+"
3. User selects "sort by" button of tab view	1. TabbedView drops down the list of "sort by" catergories including year.
4. User selects to revert the sort order by year.	1. TabbedView sorts the existing list and display entries in order of year.

Scenario Notes:

Action 1 independent trigger PublicationView Panel.

Action 2 – 4 requires A1 to occur so that requisite elements are visible.

Post Conditions

A list of the publications is displayed and can be navigated given by the user.

Required Views: (GUIs)

TabbedView, ResearcherListView, PublicationsView

Exceptions:

User selects nothing in both click and drops down button - > does not change or displays the contents in any way.

Use Cases utilised

UC16_User_selects_Researcher is a required for all actions above.

Scenario Template

Use Case #: UC40_User_selects_Publication

Requirement:

The user should view the publication details on selected publication.

Overview:

When the user selects a publication in the list the Publication Details view will be displayed

Preconditions:

RAP database exists and is populated with data.

Details on publication exist on the database. User has selected a name in the list.

Scenario:

Action	Software Reaction
1. User selects a publication from the list	1. Systems displays a view of details of the selected publication in PublicationDetailsView
2. User click return icon on publication details	1. Returns to list

Scenario Notes:

The only path is actions 1 then 2. 1 views details, 2 returns to the list.

Post Conditions

The user can return to the list view.

Required Views: (GUIs)

TabbedView

PublicationDetailsView

Exceptions:

1. No publication details in database; Display “No data”

Use Cases utilised

none

Scenario Template

Use Case #: UC43_User_generates_Report

Requirement:

it would enhance the system if the user could generate report based on researcher's performance with the publication performance metric.

Overview:

When the user selects to “Generate Report” via the Menu options four performance reports are created in a new view window. The reports should be calculated from the publication performance metric. These reports do not have to support printing. All reports must follow the same formatting. The formatting will be in list form, with researcher's performance in the left column, and their name in the right column.

The Poor and Below Expectations reports should be sorted by increasing order of performance, while the other two reports should be sorted by

decreasing order of performance

The four reports should be as follows:

1. Poor, those whose performance is at or below 70%

2. Below expectations minimum, those whose performance is above 70% and below 110%

3. Meeting minimum, those whose performance is at or above 110% and below 200%

4. Star performers, those whose performance is at or above 200%

5. The expected number of publications per year for each level is as follows: A, 0.5; B, 1; C, 2; D, 3.2; E, 4.

Preconditions:

RAP database exists and is populated with data.

MenuView must be visible.

Scenario:

Action	Software Reaction
1. User selects generate report in MenuView	1.System retrieves additional information for database 2.System performs calculations for required data 3.System formats required data 4.Four windows are open with each displaying one report
2. User clicks 'Copy Emails' button above report list	See UC#51_User_copies_ReportEmails

Scenario Notes:

Action 1 must occur first. Action 2 may or may not be used.

Post Conditions

Four new windows are created with reports generated in lists.

Required Views: (GUIs)

MenuView

ReportWindow

Exceptions:

System will display an error message is data cannot be retrieved.

System will display N/A if calculations for appropriate cannot be done.

Use Cases utilised

UC51_User_copies_ReportEmails

Scenario Template

Use Case #51: User_copies_ReportEmails

Requirement:

User can copy the email addresses or the researchers in the report to the clipboard.

Overview:

When the user selects 'Copy Emails' all email address of the researchers in the ReportWindow will be copied to the clipboard.

Preconditions:

RAP database exists and is populated with data.

ReportWindow must be visible.

Scenario:

Action	Software Reaction
1. User selects 'Copy Emails'	1. System retrieves email address from database 2. System copies emails to clipboard

Scenario Notes:

Only action 1 is available.

Post Conditions

Email addresses are copied to clipboard.

Required Views: (GUIs)

ReportWindow

Exceptions:

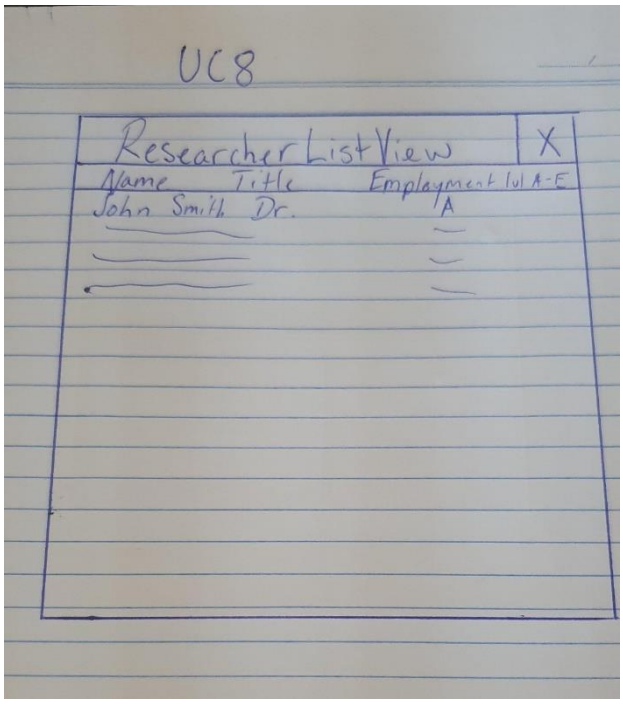
System will display an error message is data cannot be retrieved.

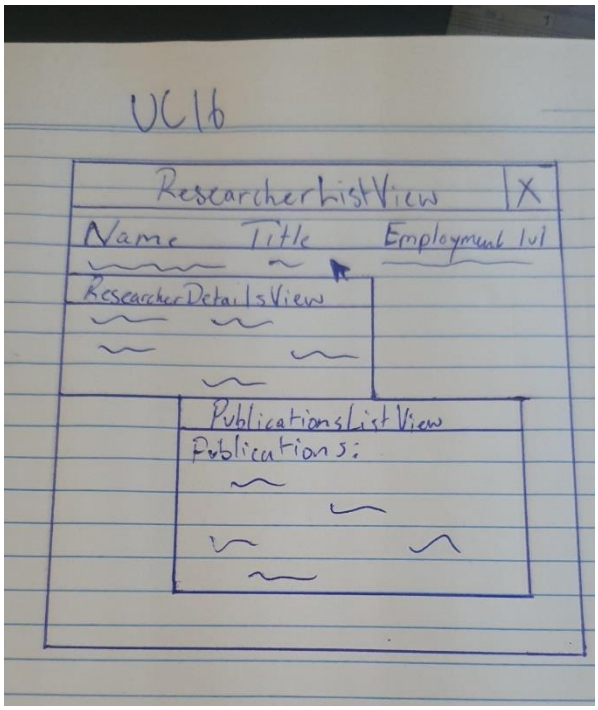
System will display N/A if calculations for appropriate cannot be done.

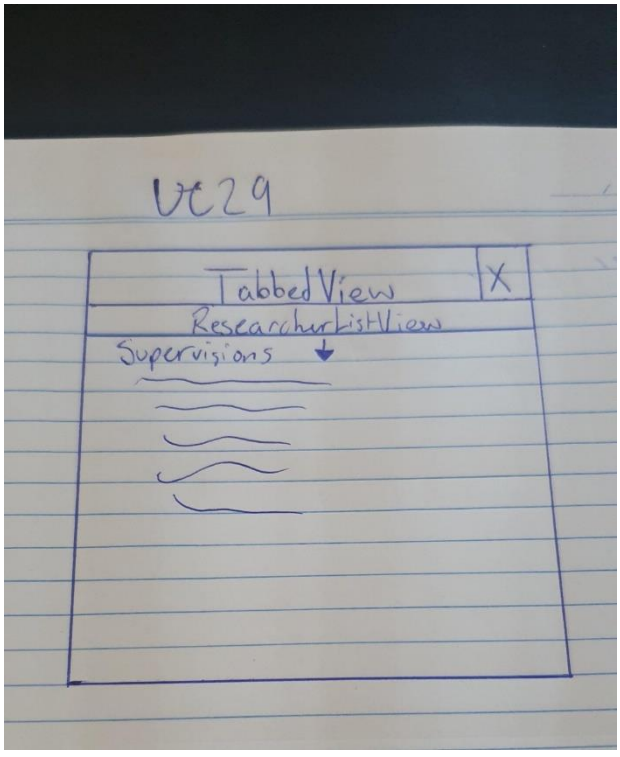
Use Cases utilised

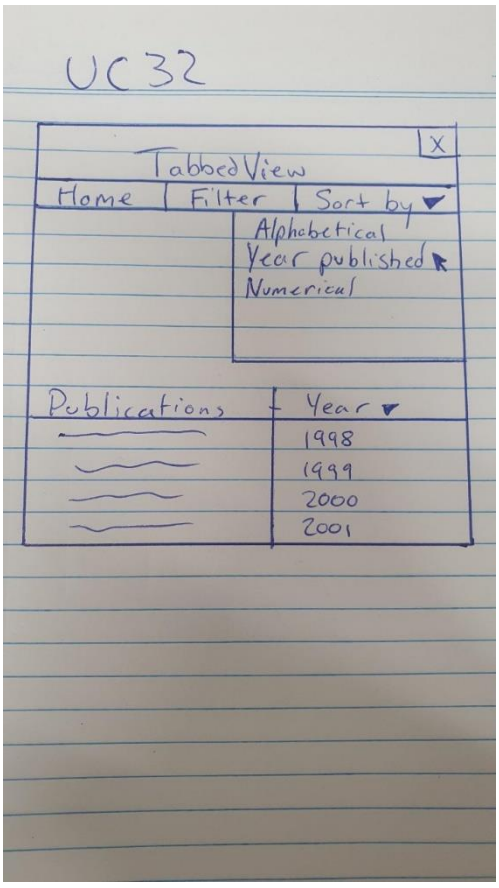
UC43_User_generates_Report

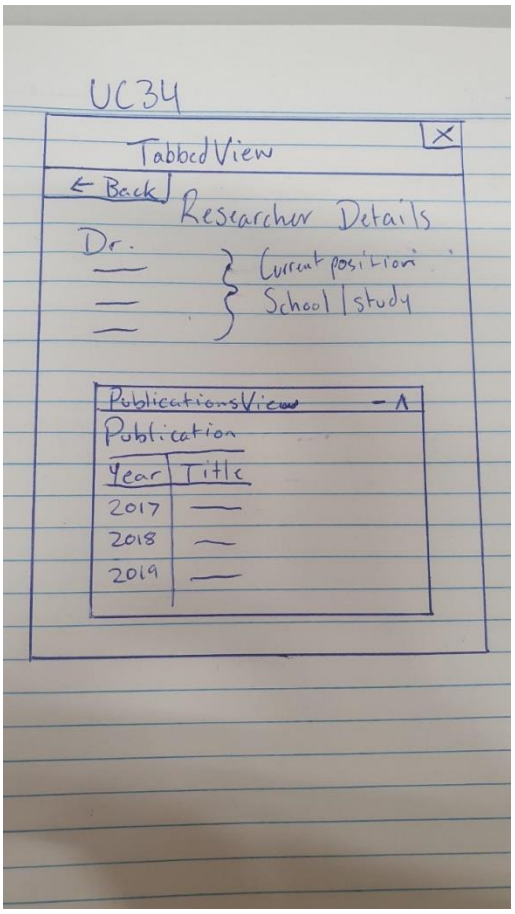
GUI:

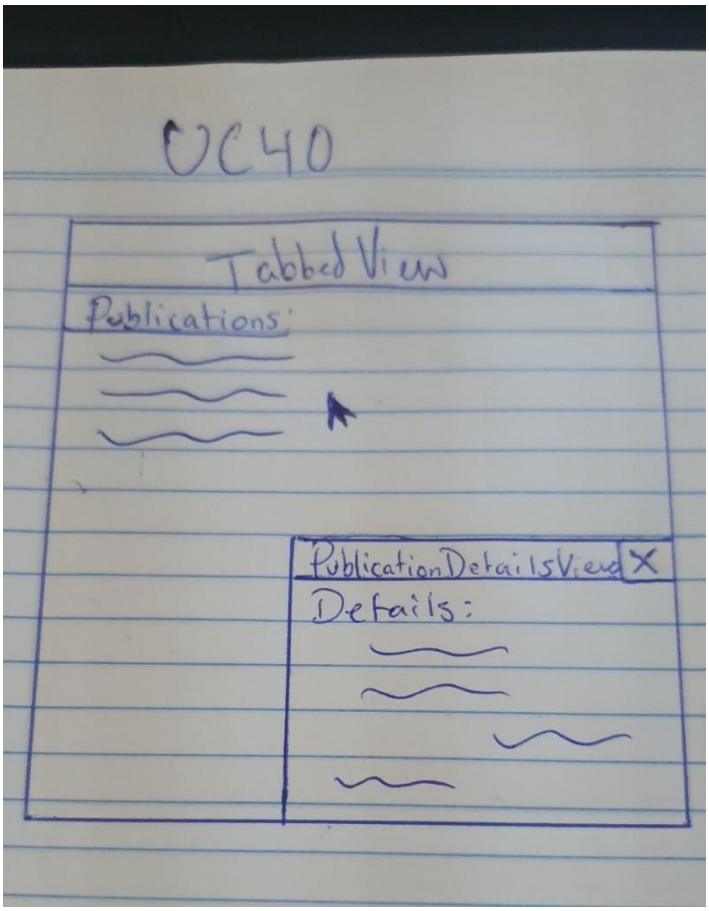

UC8
ResearcherListView
X
Name
Title
Employment lvl A-E
John Smith
Dr.
A

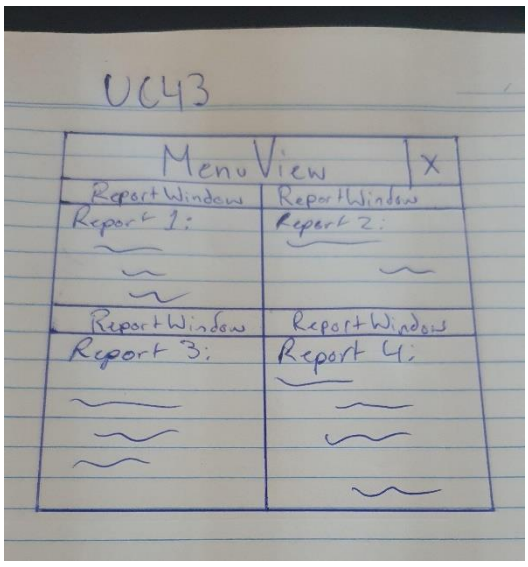

UC16
ResearcherListView
X
Name
Title
Employment lvl
ResearcherDetailsView
PublicationsListView
Publications:

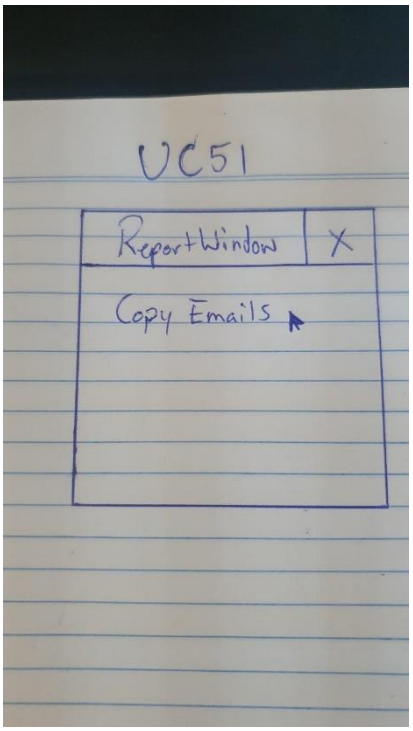

UC29
TabbedView
X
ResearcherListView
Supervisions


UC32
TabbedView
X
Home
Filter
Sort by
Alphabetical
Year published
Numerical
Publications
Year
1998
1999
2000
2001

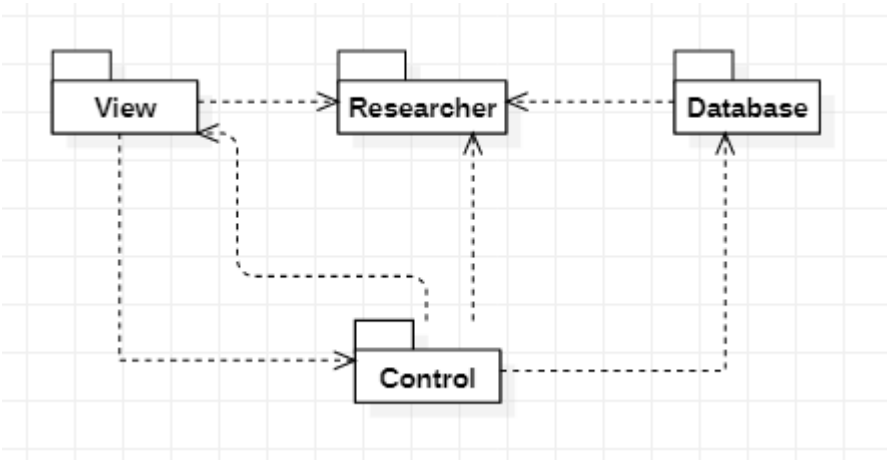

UC34
Tabbed View
← Back
Researcher Details
Dr.
Current position
School | study
Publications View
Publication
Year
Title
2017
2018
2019


UC40
Tabbed View
Publications:
Publication Details View
Details:

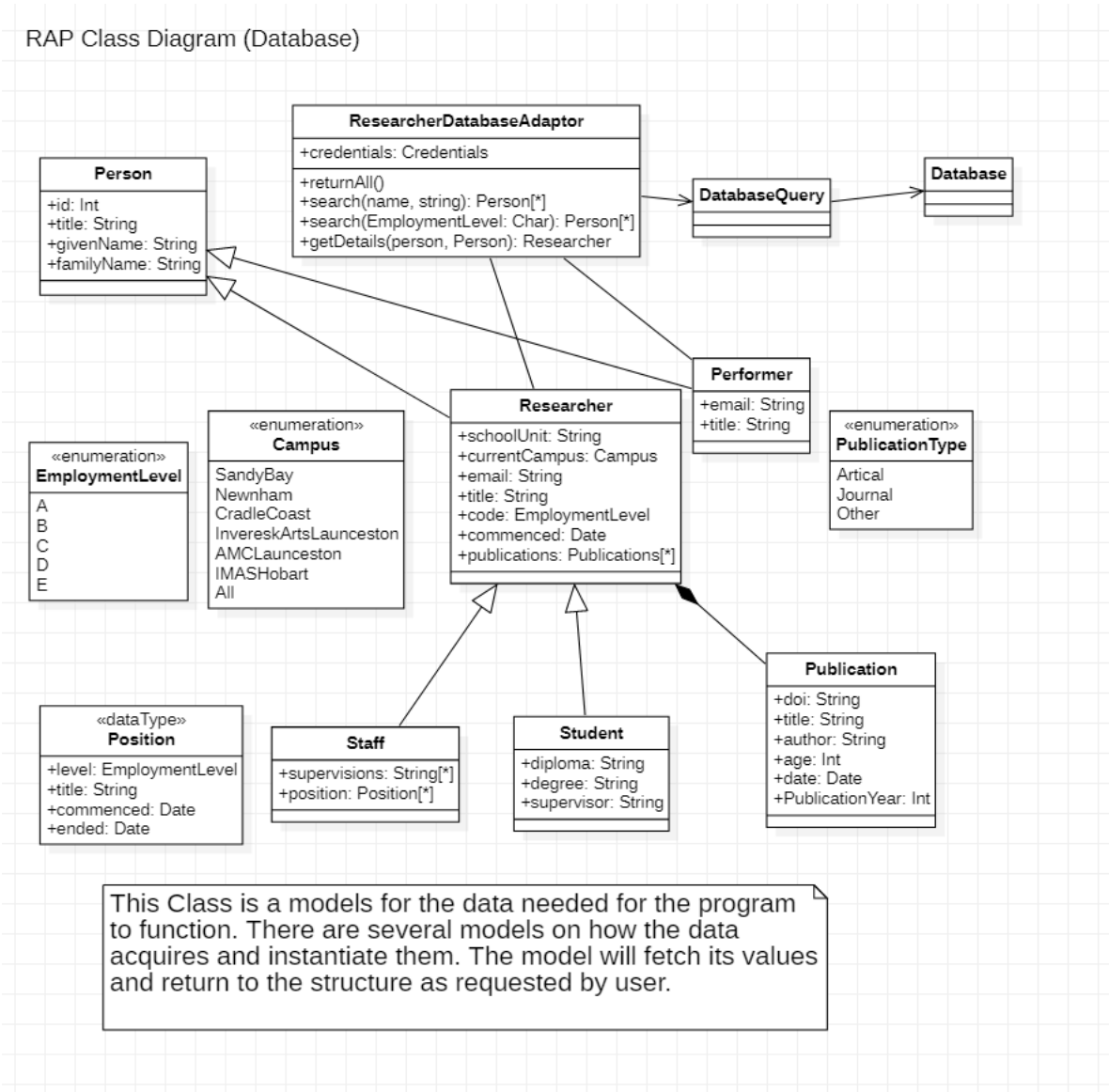

UC43
Menu View
Report Window
Report 1:
Report Window
Report 2:
Report Window
Report 3:
Report Window
Report 4:


UC51
Report Window
Copy Emails

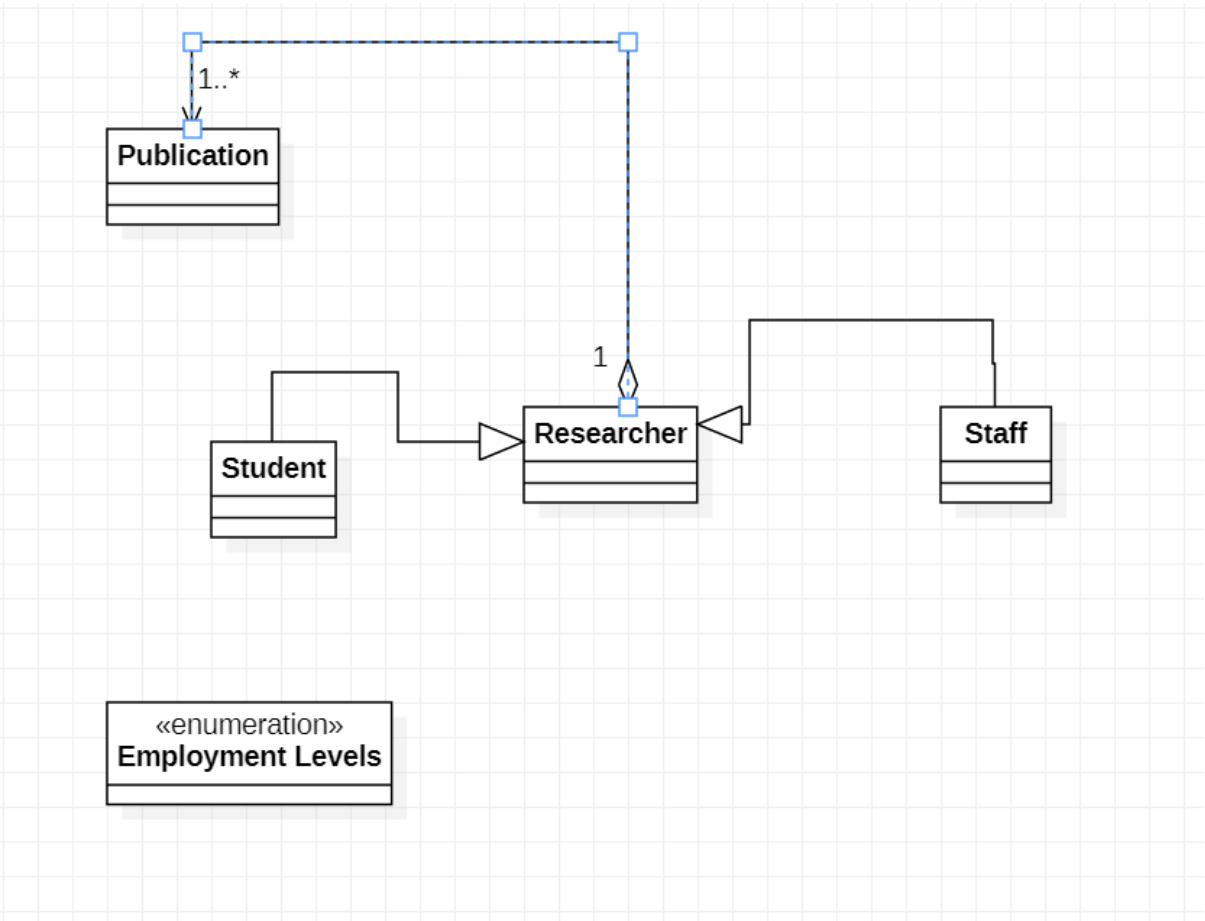
Package Diagram:



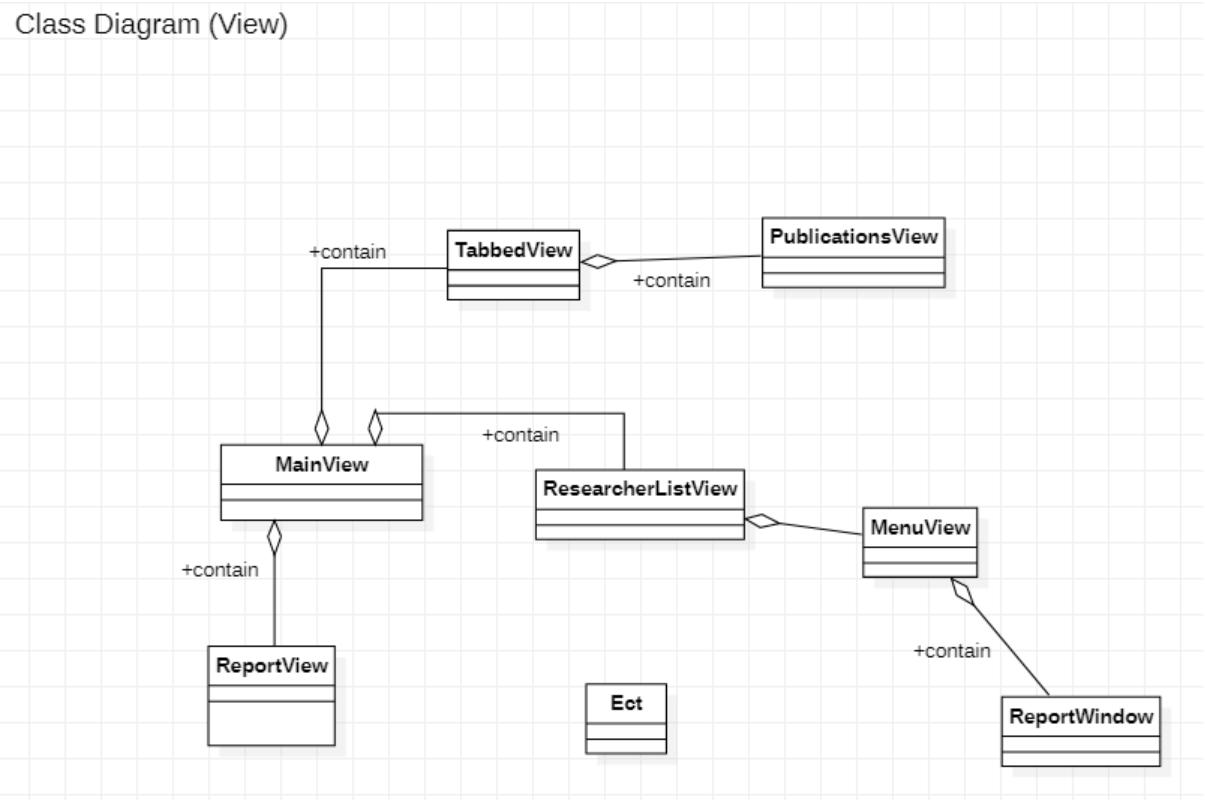
Class Diagram Database:



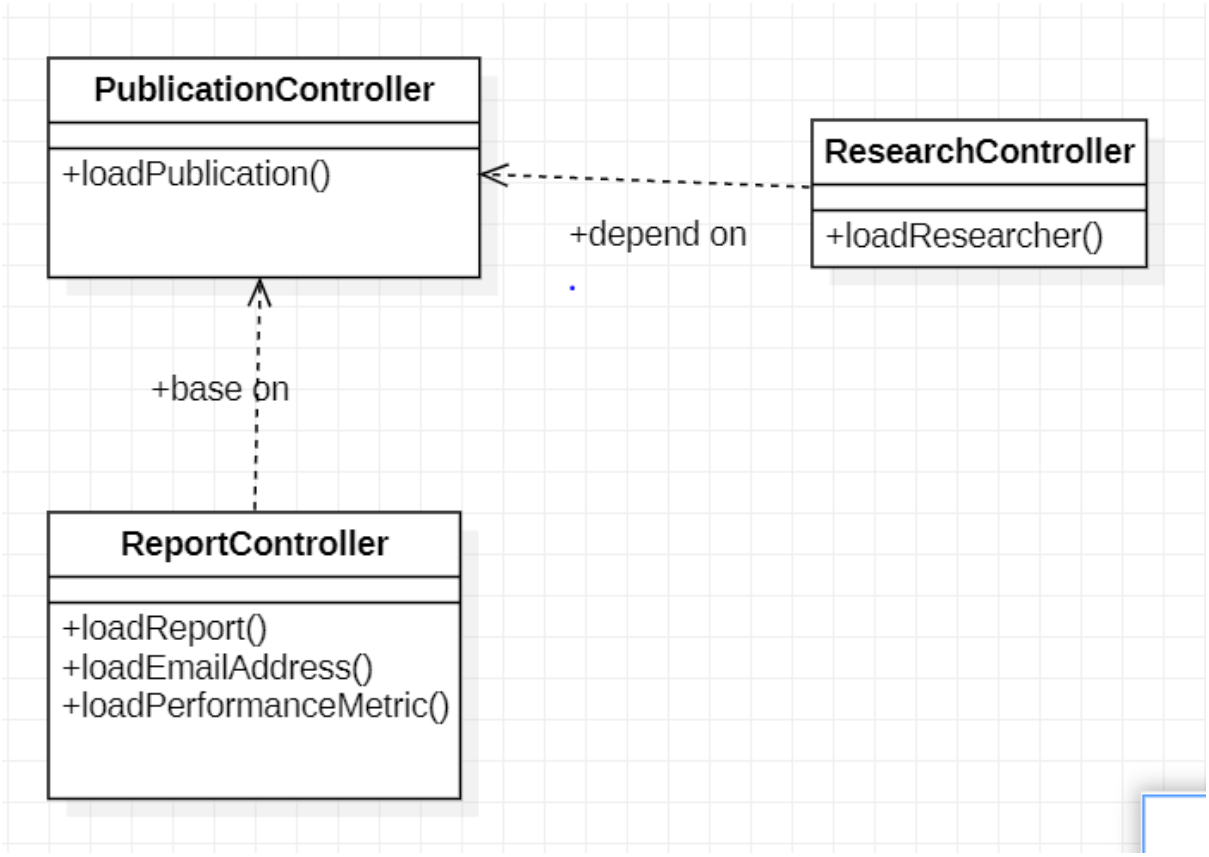
Class Diagram Researcher:



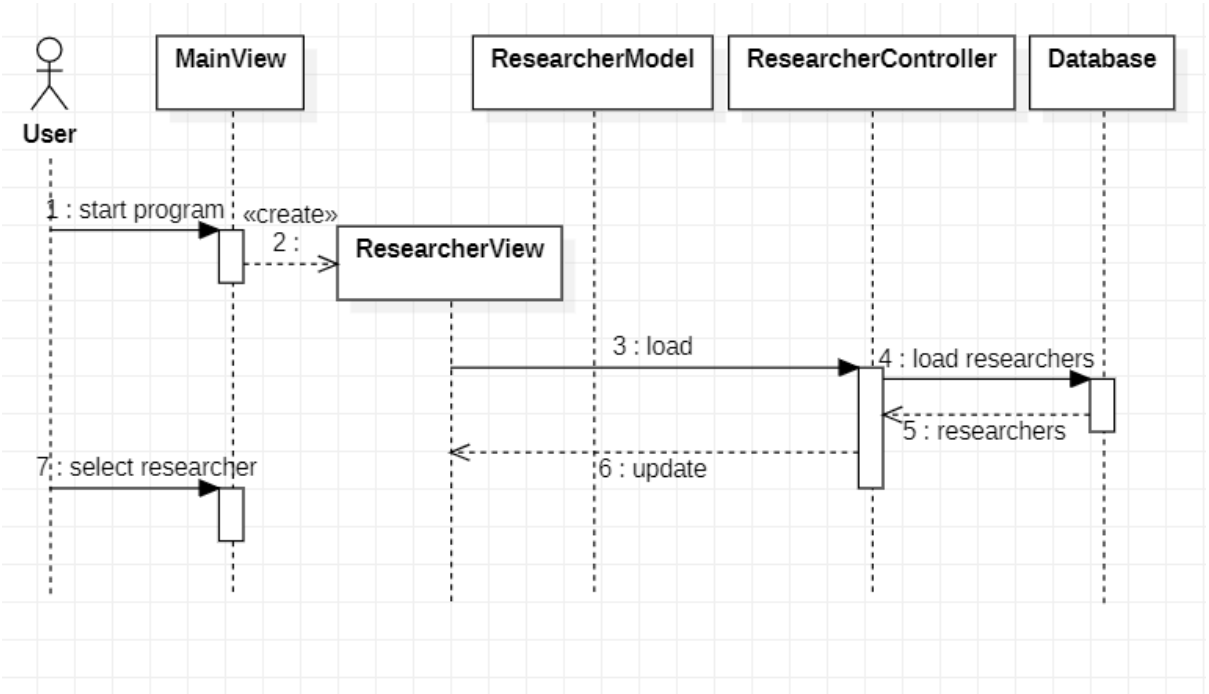
Class Diagram View:



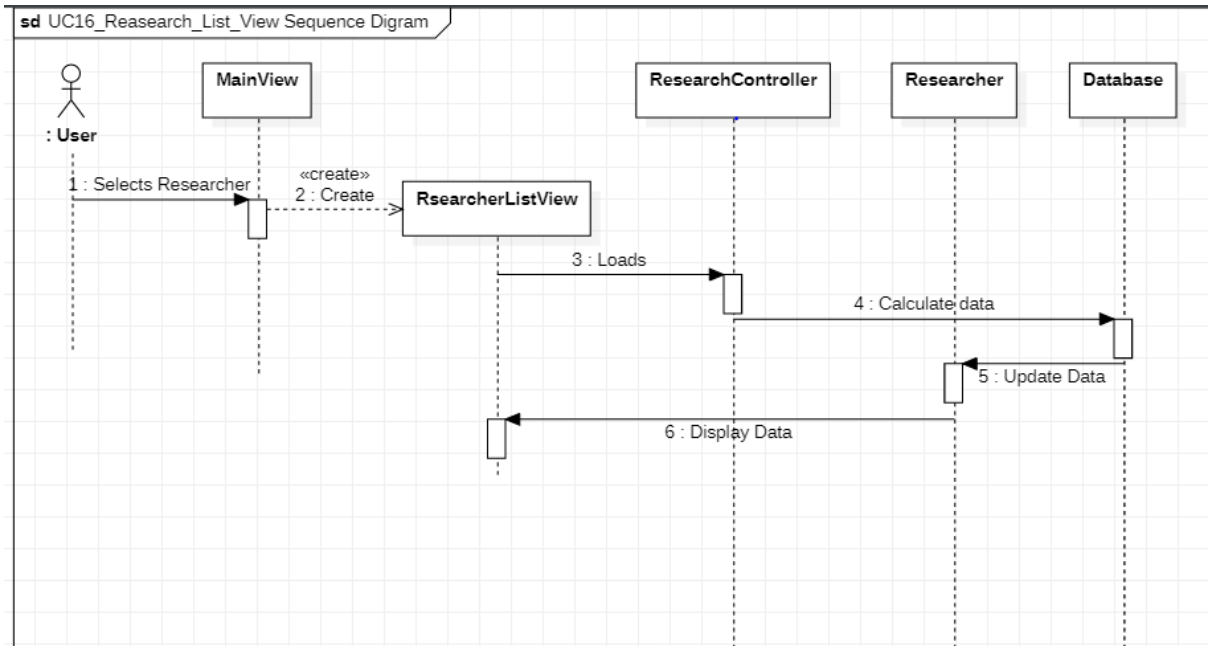
Class Diagram Controller:



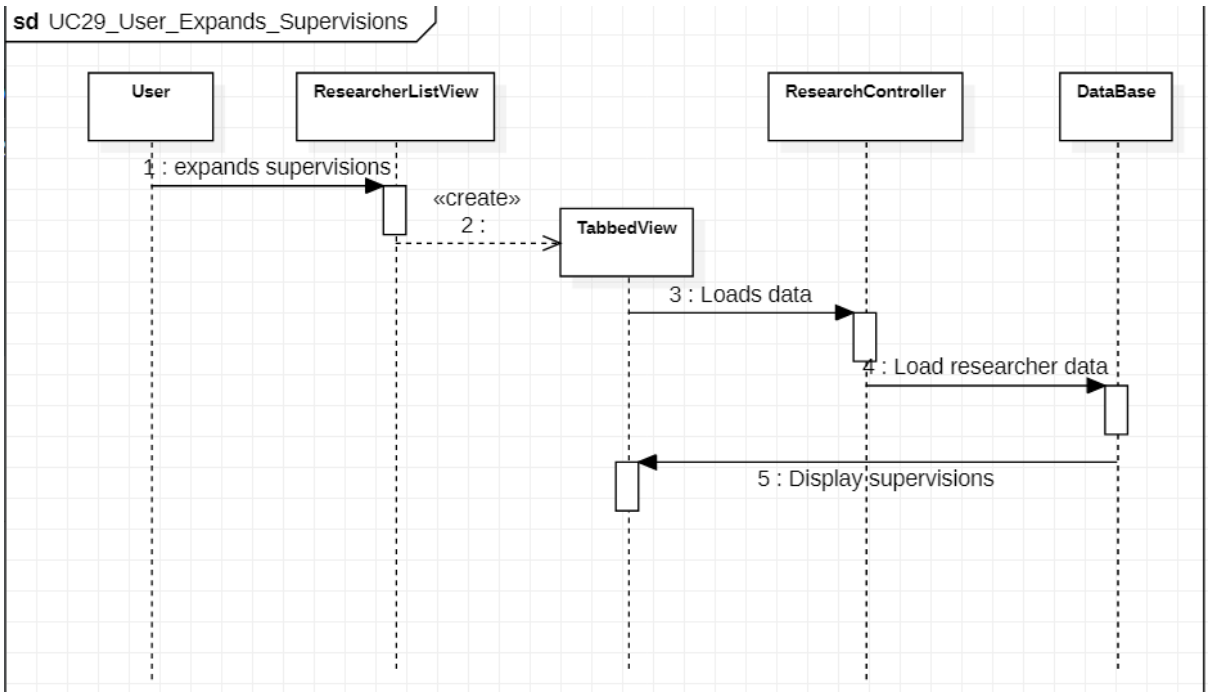
Sequence Diagram UC8:



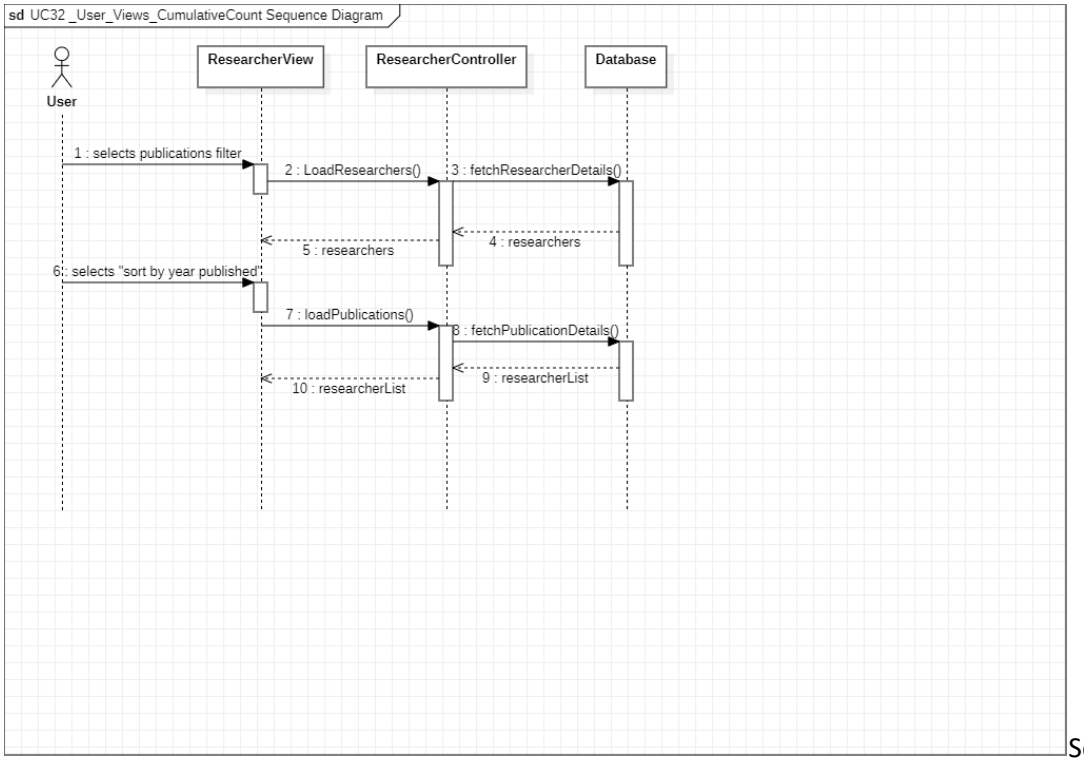
Sequence Diagram UC16:



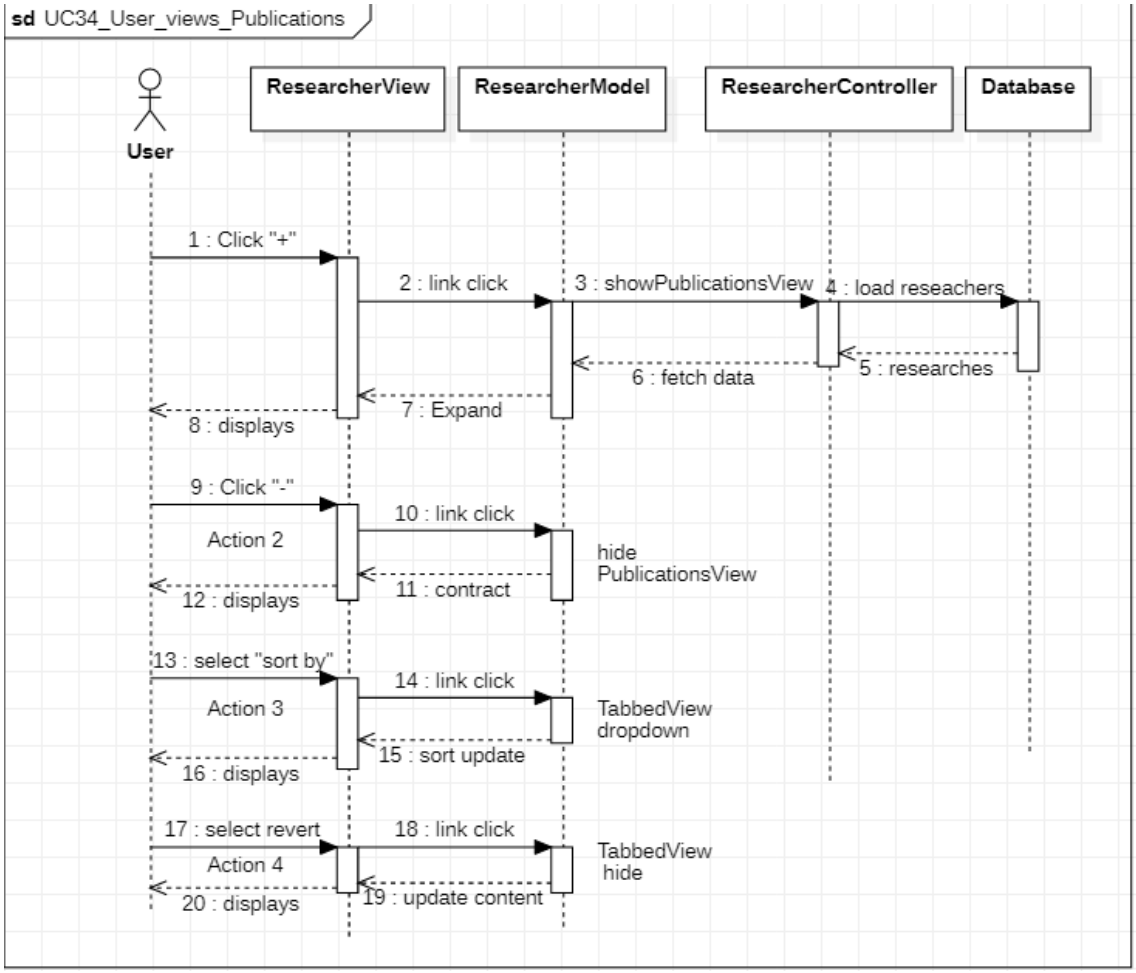
Sequence Diagram UC29:



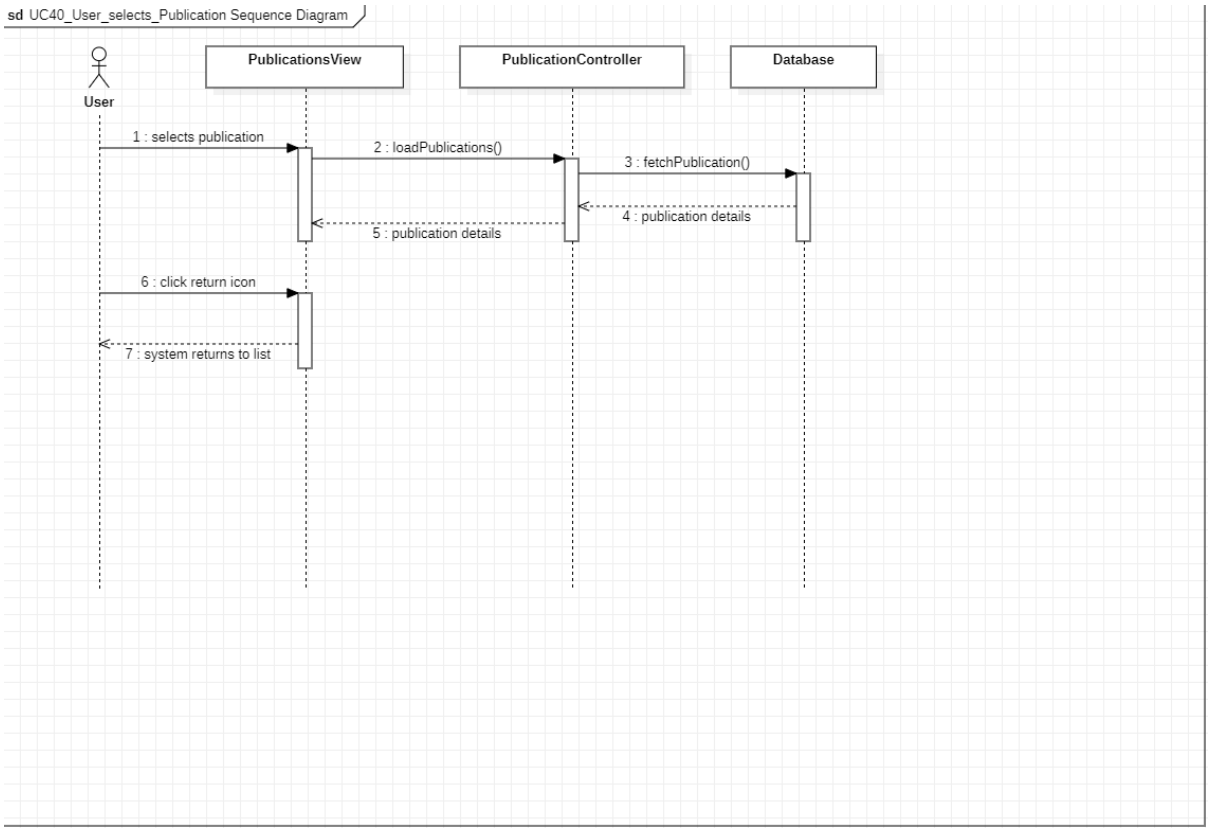
Sequence Diagram UC32:



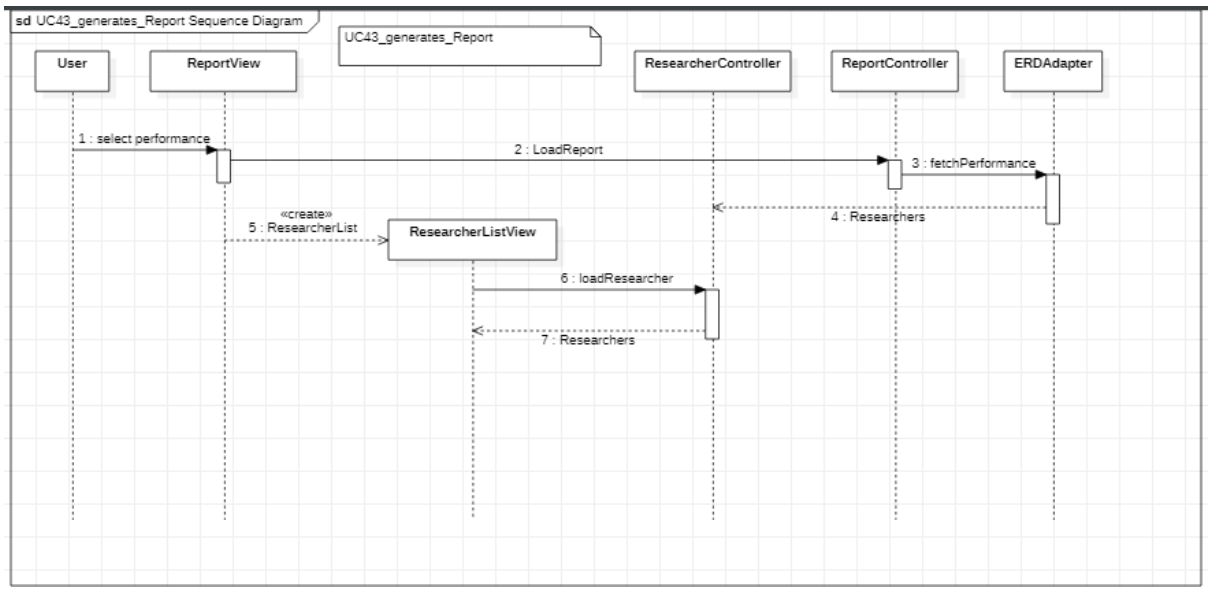
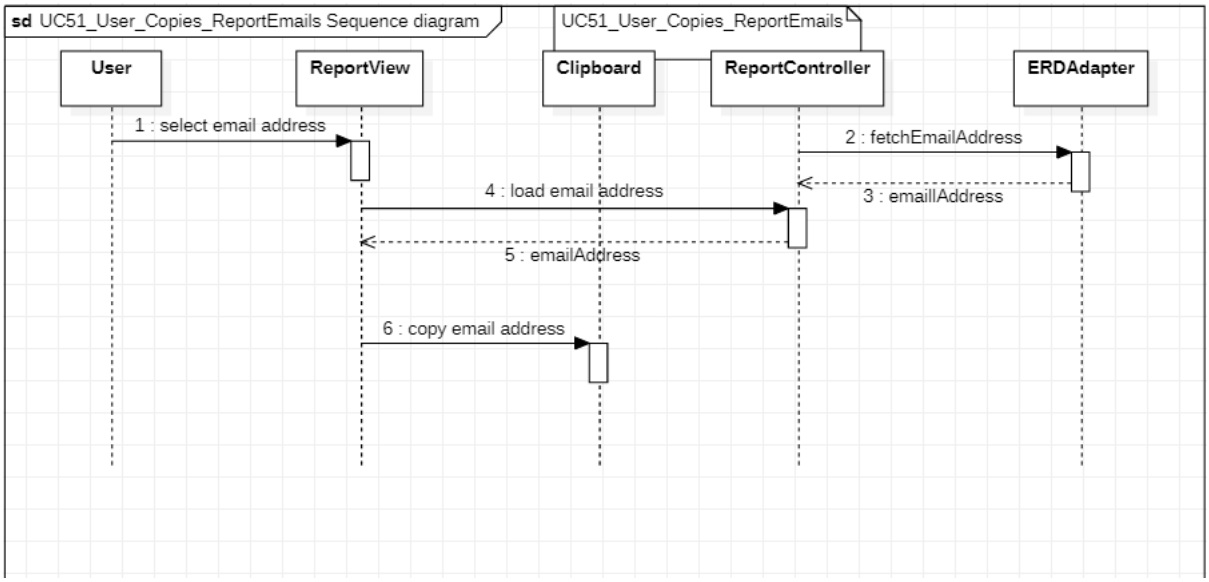
Sequence Diagram UC34:



Sequence Diagram UC40:



Sequence Diagram UC43:



Sequence Diagram UC51: