COMSATS Institute of Information Technology,
Park Road, Chak Shahzad, Islamabad Pakistan

FYP Repository

By

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Supervisor

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Bachelor of Science in Computer Science (2012-2016)

The candidate confirms that the work submitted is their own and appropriate credit has been given where reference has been made to the work of others.

COMSATS Institute of Information Technology,
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FYP Repository

A project presented to
COMSATS Institute of Information Technology, Islamabad

In partial fulfillment
of the requirement for the degree of

Bachelors of Science in Computer Science (2012-2016)

By

Adil Rasheed Khan	**CIIT/SP12-BCS-016/ISB**
Ahmad Ehsan	**CIIT/SP12-BCS-027/ISB**

DECLARATION

We hereby declare that this software, neither whole nor as a part has been copied out from any source. It is further declared that we have developed this software and accompanied report entirely on the basis of our personal efforts. If any part of this project is proved to be copied out from any source or found to be reproduction of some other. We will stand by the consequences. No Portion of the work presented has been submitted of any application for any other degree or qualification of this or any other university or institute of learning.

Adil Rasheed Khan

Ahmad Ehsan

CERTIFICATE OF APPROVAL

It is to certify that the final year project of BS (CS) “Project title” was developed by “**Adil Rasheed Khan (CIIT/Sp12-BCS-016)**” and “**Ahmad Ehsan (CIIT/SP12-BCS-027**)” under the supervision of “Dr. Munam Ali Shah” and that in his opinion; it is fully adequate, in scope and quality for the degree of Bachelors of Science in Computer Sciences.

Supervisor

External Examiner

Head of Department

(Department of Computer Science)

Executive Summary

FYP Portal project focuses on automated system. The system is a portal used for the Automation of the processes associated with the management of final year projects. The system will provide a platform to students, supervisors and project committee (PC) to communicate easily during all the vital processes of final year project, commencing from the allocation of project by supervisors to students and evaluation of students from project committee (PC) down to the final clearance of the student after the project defense.

Currently FYPs are being managed through Dropbox & Google site. FYP portal exists but student does not cover many use cases. There is no history of previous projects and no instantly evaluation of projects by FYP committee. Student are unable to check their remarks regarding their projects after their presentation. Students have difficulty to share their personal ideas on FYP portal where a member of PC can supervise them. FYP portal doesn’t interact PC to students where students get feedback regarding their queries. Students also have difficulty to see the announcement of any project allocation, scheduling and student have no information about seminars of FYP’s that are conducting for final year students. . In the existing system supervisor can’t upload milestone and have no access to grade the students of FYPs.

A web based and mobile application shall be developed where PC evaluate the students during their presentation and students can get their remarks from PC instantly after their presentation. Students can also get feedback after putting their queries in the portal. Students will also updated with a calendar that will notify the students to schedule their time. Supervisor will be able to upload milestone, to grade the students and view the remarks of students that are given by project committee (PC). Users will be able to communicate with each other via sending messages.

Acknowledgement

All praise is to Almighty Allah who bestowed upon us a minute portion of His boundless knowledge by virtue of which we were able to accomplish this challenging task.

We are greatly indebted to our project supervisor “Dr. Munam Ali Shah”. Without his personal supervision, advice and valuable guidance, completion of this project would have been doubtful. We are deeply indebted to him for his encouragement and continual help during this work.

And we are also thankful to our parents and family who have been a constant source of encouragement for us and brought us the values of honesty & hard work.

Adil Rasheed Khan   Ahmad Ehsan

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Abbreviations

SRS	Software Require Specification
PCM	Project Committee Member
PCS	Project Committee Secretary
PC	Project Committee
CIIT	COMSATS Institute of Information Technology
LMS	Learning Management System
FYP	Final Year Project
VPL	Visual Programing Language

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Chapter 1: Introduction

1.1. Brief

The system is existed that is developed by FYP students last year. So it’s an upgrade existed system. Proposed system is extracted from this existing system however some optimizations, improvements and enhancements are required by the relevant stakeholders. In this system; students will be able to submit their documents, Supervisor and Project Committee will be able to keep track of progress of FYP’s students, PC will be able to evaluate the students instantly and communicate with the students. This system will be developed using ASP.NET Framework with backend C# as the server side language with MS SQL Server for the database. HTML and JavaScript will be used on client side.

1.2. Relevance to Course Modules

1.2.1 Introduction to Computer Programming

This course is appropriate to our project because it provides a basis for programming like Program control if and else statements; For, while and do while loops; Switch statements; Compound statements; Functions and Parameters; Arrays declaration; Array passing to functions; String; Strings manipulating; pointers; Recursion; Introduction to abstract data type; Structure declaration and initialization; Accessing members of Structure; File processing reading, writing, randomly accessing data structures.

1.2.2 Object Oriented Programming

All the main concepts of Object Oriented Programming were used in this System like Inheritance, Constructors, and Objects etc. We try to make our code in professional and systematic way. All the Coding is done in “Classes” also we make different Packages according to functionality of Classes.

1.2.3 Database Management System

Database works as a backbone for any type of applications where information storage is involved. Almost every application now a days use databases in which data mining, web applications are on top. We will use MS SQL Server for the database of our application. The core concepts of this course like writing SQL Quires, store procedures, creating views writing triggers, relations ships between tables etc… we will be implementing in our system.

1.2.4 Software Engineering I & II

“Software Engineering-I” and “Software Engineering-II” courses have helped us in understanding the functionality and design of software systems. The core concepts of this course are to make documents like Scope, SRS and SDS for final year project.

1.2.5 Web Engineering

All the web concepts and languages we studied in this course will be implemented in this project. For example Server side and client side validations, data insertion to database, data retrieval from the database etc…to generate reports. HTML, CSS, JavaScript will be used for client side validations and the advance concepts we studied in this course will be helpful to make our system more interactive and user friendly.

1.2.6 Visual Programming

A visual programming language is any programming language that lets users create programs by manipulating program elements graphically rather than by specifying them textually. A VPL allows programming with visual expressions, spatial arrangements of text and graphic symbols used either as elements of syntax or secondary notation. We are developing a system based upon the above mentioned things which we learnt in this course.

1.2.6 Human Computer Interaction

Interface is the basic requirement of every system which helps the user to communicate with the system effectively. In our course Human Communication Interface (HCI) we learnt the basic things regarding interface and affordance of the user before designing the interface for a specific system. These concepts proved really helpful for us.

1.3. Project Background

The system is existed but some optimizations, improvements and enhancements are required by the relevant stakeholders. According to the requirements of the relevant stakeholders we planned to upgrade the portal that aggregates information from multiple sources and makes that information available to various users by enhancing department's efficiency and productivity. The system will provide a platform to students and supervisors to communicate easily during all the vital processes of final year project. Students will be able to submit their documents. Supervisor and Project Committee will be able to keep track of progress of FYP's students work online, PC will be able to evaluate the students instantly and students will be able to view their remarks after evaluation of their projects. In the existed system external evaluator have no access to the system therefor the Convener of PC will nominate the external to evaluate final presentation of the projects.

1.4. Literature Review

Current trend that is the students submit hardcopies of Scope/SRS/SDS documents which are checked by PC Members and remarks are given on portal as to correct or change that content and resubmit it again. Hence there is a need of improvement in marking of the documents and their evaluation. Currently there is no mean of communication between students and project supervisors however communication and evaluation in an education portal environment involves students, supervisors and PC members.

1.5. Analysis from Literature Review

The system will be able to minimize the work load of the users. Students will able to communicate with their supervisors, PC members and vice versa. Student will be able to upload their milestones and the PC members will able to evaluate the related milestones of students and student will be able to view remarks of regarding document.

1.6. Methodology and Software Lifecycle for This Projects

We are going to adopt Water fall incremental model approach for our project.

1.6.1. Rationale behind Selected Methodology

In this system we will use object oriented methodology and Waterfall incremental software development life cycle because in this system there are many entities and objects that inter relate with each other. We will use incremental software development life cycle to develop this project because many changes may can occur during any development phase of the project therefor this methodology will be beneficial for this project.

Chapter 2: Problem Definition

2.1. Problem Statement

Currently FYPs are being managed through Dropbox, Facebook groups & Google site. FYP portal exists but a student does not cover many use cases. There is no history of previous projects and no instantly evaluation of projects by FYP committee. Student are unable to check their remarks regarding their projects after their presentation. Students have difficulty to share their personal ideas on FYP portal where a member of PC can supervise them. FYP portal doesn't interact PC to students where students get feedback regarding their queries. Students have difficulty to see the announcement of any project allocation, scheduling and student also have no information about seminars of FYP's that are conducting for final year students.

2.2. Deliverables and Development Requirements

2.2.1 Deliverables

2.2.1.1 Project Management Schedule
A complete Project Management Schedule of all the activities that we have performed in the development of this project.

2.2.1.2 Project Report
A complete Project Report that includes Software Requirements Specification, Software Design Specification, GUI Mockups, Test Cases.

2.2.1.3 Source Code
A CD package including the source code, documentation and presentations.

2.2.1.4 Product Manual (Optional)
A complete product Manual that includes the configurations of this project, it also includes the user guide that tells how to use this system.

2.2.2 Development Requirements

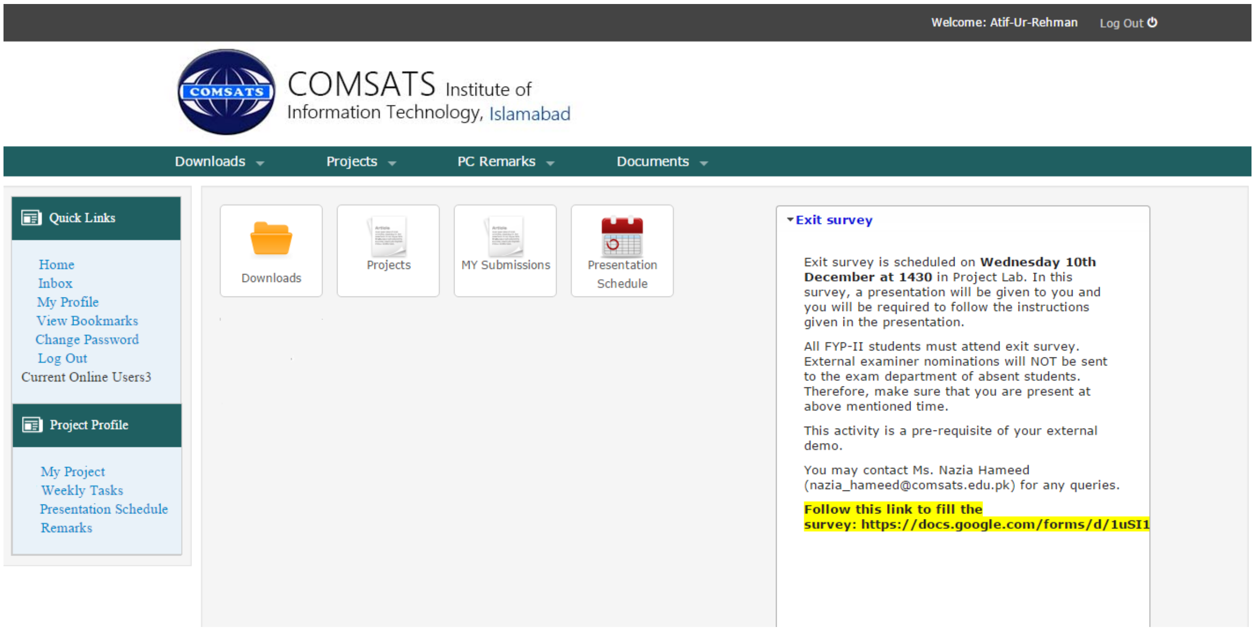
Following are the requirements that are pre-requisite for running this system.

2.2.2.1 OS Requirements
Windows XP with SP3, Windows Vista, Windows 7, Windows 8 or Updated version of Windows.

2.2.2.2 Application Requirements
Minimum requirement of system to run is Microsoft Visual Studio 2013 or Updated version of Microsoft Visual Studio.

2.3. Current System

The existing system is a CIITFYP Portal with different users like Students, Supervisor, PC members, Convener and Admin. Users can operate or use the system by logging in the system. An Admin can add and delete the users, students can view project's lists, download and upload milestones. Supervisor and Pc members can also view the project's list and download milestones. Figure 2.1 is the figure of Current system.



Exit survey

Exit survey is scheduled on **Wednesday 10th December at 1430** in Project Lab. In this survey, a presentation will be given to you and you will be required to follow the instructions given in the presentation.

All FYP-II students must attend exit survey. External examiner nominations will NOT be sent to the exam department of absent students. Therefore, make sure that you are present at above mentioned time.

This activity is a pre-requisite of your external demo.

You may contact Ms. Nazia Hameed (nazia_hameed@comsats.edu.pk) for any queries.

Follow this link to fill the survey: https://docs.google.com/forms/d/1uSI1

Figure 2.1: CIITFYP Portal

Chapter 3: Requirement Analysis

3.1. Functional Requirements

3.1.1 Functional Requirement 1

Identifier	FR1
Title	Login
Requirement	Users give registration number and password to log into the system.
Source	Project Committee
Rationale	Users will have privacy.
Restrictions and Risk	Users must be registered.
Dependencies	All
Priority	High

3.1.2 Functional Requirement 2

Identifier	FR2
Title	Forget Password
Requirement	System will allow the users to reset the forget password. User will click on “Forget Password” link in login tab.
Source	Project Committee
Rationale	If users have multiple accounts on different websites they may forget password.
Restrictions and Risk	No
Dependencies	FR3
Priority	High

3.1.3 Functional Requirement 3

Identifier	FR3
Title	Enter Email
Requirement	When the user forgets the password. User will enter email address and the system will send password to the given email address which is to be entered by the user at the time of creating new password.
Source	Project Committee
Rationale	Privacy policies of our system must be fulfilled that one user can’t access data of other user.
Restrictions and Risk	A valid Email id generated by the system should be entered by the user to access the functionality of creating new password.
Dependencies	FR4

Priority	High

3.1.4 Functional Requirement 4

Identifier	FR4
Title	Reset Password
Requirement	When user enter the code system will navigate the user to a new page where user will enter new password and also re-enter the new password.
Source	Project Committee
Rationale	Due to some security reasons (for example user may suspect that someone uses his/her account) user may reset the password.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.5 Functional Requirement 5

Identifier	FR5
Title	Assign Projects
Requirement	Supervisor will assign the project to students.
Source	Project Supervisor
Rationale	Projects are mandatory for completion of Bachelor degree programs for students.
Restrictions and Risk	One project can assign to one particular group of students.
Dependencies	FR7
Priority	High

3.1.6 Functional Requirement 6

Identifier	FR6
Title	Acquire project from supervisor
Requirement	When the student selects a project from an uploaded list then the system will get information about group members of the project and will send the request to supervisor for project supervision meanwhile the system will automatically set a time period of 30 minutes for project reservation.
Source	Project Committee
Rationale	Student is interested in doing a particular project from a specific supervisor.
Restrictions and Risk	In case if student fails to meet the supervisor within the given time constraint (30 mints.) then the system will cancel the reservation of project.

Dependencies	FR5
Priority	High

3.1.7 Functional Requirement 7

Identifier	FR7
Title	De-assign Projects
Requirement	System will de-assign the project if supervisor click on ‘De-assign’ button.
Source	Project Committee
Rationale	Student may want to choose another project
Restrictions and Risk	No
Dependencies	No
Priority	Medium

3.1.8 Functional Requirement 8

Identifier	FR8
Title	Search Project by Title
Requirement	Users can search a particular project by giving title of project in search field.
Source	Project Committee
Rationale	Easily find a particular project.
Restrictions and Risk	Title should be define properly to search a particular project.
Dependencies	No
Priority	High

3.1.9 Functional Requirement 9

Identifier	FR9
Title	Search Project by Batch code
Requirement	When users want to search previous projects, they will enter batch code in the search field and system will display a list of projects which were assigned in that batch.
Source	Portal users
Rationale	Users want to know about previous projects.
Restrictions and Risk	No
Dependencies	No
Priority	Medium

3.1.10 Functional Requirement 10

Identifier	FR10
Title	Upload Projects
Requirement	Supervisor will upload the project for the students.
Source	Project Supervisor
Rationale	Supervisors want students to do projects proposed by him.

Restrictions and Risk	No
Dependencies	FR5,FR6,FR7,FR8, FR9,FR11
Priority	High

3.1.11 Functional Requirement 11

Identifier	FR11
Title	View assigned Project list
Requirement	Users view assigned project list by clicking on “view assigned projects” button. When on project is assigned and the project will be listed in list of project.
Source	Project Committee
Rationale	User wants to see the list of assigned projects.
Restrictions and Risk	There will not information of unassigned projects.
Dependencies	No
Priority	High

3.1.12 Functional Requirement 12

Identifier	FR12
Title	Create Group
Requirement	The purpose of this use case is that supervisor will upload project and a project will assign a particular group that is created by supervisor.
Source	Project Committee
Rationale	During evaluation PC will select group# not individual registration# of student.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.13 Functional Requirement 13

Identifier	FR13
Title	Add Notifications
Requirement	Administrator will add notifications.
Source	Project Committee
Rationale	Notifications keep users up-to-date.
Restrictions and Risk	Notifications must be approved by Administrator.
Dependencies	FR14,FR15,FR16
Priority	High

3.1.14 Functional Requirement 14

Identifier	FR14
Title	Update Notifications
Requirement	Administrator can modify the notifications.

Source	Project Committee
Rationale	Valid Information should display.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.15 Functional Requirement 15

Identifier	FR15
Title	Delete Notification
Requirement	Administrator can delete notifications.
Source	Project Committee
Rationale	No duplication of notifications.
Restrictions and Risk	Two same notifications can be entered.
Dependencies	No
Priority	High

3.1.16 Functional Requirement 16

Identifier	FR16
Title	View Notification
Requirement	Users (Administrator, Students, PC, and Supervisors) can view notifications.
Source	Project Committee
Rationale	Users want to get updates by notifications
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.17 Functional Requirement 17

Identifier	FR17
Title	Upload Milestones for Evaluation
Requirement	Students will upload their documents (e.g. Scope document/SRS/SDS/Presentation) in PDF format by entering in upload section of FYP Repository Portal. These documents will be automatically converted in word format after uploading and will open in evaluation section and PC will comment on it.
Source	Project Committee
Rationale	To evaluate student there is need of document for evaluation form students.
Restrictions and Risk	No
Dependencies	FR20
Priority	High

3.1.18 Functional Requirement 18

Identifier	FR18
Title	Set time to upload milestone
Requirement	Administrator will set time to upload the document (e.g. Scope/SRS/SDS).
Source	Project Committee
Rationale	Each document have a deadline to submit.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.19 Functional Requirement 19

Identifier	FR19
Title	Update time to upload milestone
Requirement	Administrator will update time to upload the document (e.g. Scope/SRS/SDS).
Source	Project Committee
Rationale	Each document have a deadline to submit.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.20 Functional Requirement 20

Identifier	FR20
Title	Evaluate Student
Requirement	PC will evaluate the student of his/her project on the portal.
Source	Project Committee
Rationale	Evaluate the students on the portal.
Restrictions and Risk	User login
Dependencies	FR21,FR22,FR23, FR24, FR25, FR26, FR27, FR28, FR29, FR30
Priority	High

3.1.21 Functional Requirement 21

Identifier	FR21
Title	Select Title
Requirement	PC will select Title of project before evaluation
Source	Project Committee
Rationale	PC will evaluate the students
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.22 Functional Requirement 22

Identifier	FR22
Title	Manage External
Requirement	Administrator will manage the external to evaluate the final presentation of students. Admin will add the external in a List
Source	Project Committee
Rationale	Assign external to specific group of student for final evaluation.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.23 Functional Requirement 23

Identifier	FR23
Title	Select Group
Requirement	PC will select group# to evaluate the student.
Source	Project Committee
Rationale	PC selects group of students for evaluation
Restrictions and Risk	User have selected Title of project.
Dependencies	No
Priority	High

3.1.24 Functional Requirement 24

Identifier	FR24
Title	Select Type of Document
Requirement	PC will select the type of the document (e.g. Scope/SRS/SDS) to evaluate the student.
Source	Project Committee
Rationale	PC selects Type of document for evaluation
Restrictions and Risk	User have selected Title and group#.
Dependencies	No
Priority	High

3.1.25 Functional Requirement 25

Identifier	FR25
Title	Open Document for evaluation
Requirement	PC will open the uploaded document for evaluation (Document will be opened in word format) and will write comments on it.
Source	Project Committee
Rationale	.No
Restrictions and Risk	No

Dependencies	FR14
Priority	High

3.1.26 Functional Requirement 26

Identifier	FR26
Title	Add Evaluation Remarks
Requirement	Project Committee members log into the system and evaluate the students instantly. For example students are giving presentation for scope document meanwhile PC will be evaluating the students by adding evaluation remarks (e.g. major revision, minor change, ok with minor changing, and ok to proceed) and also PC can comment on uploaded milestone.
Source	Project Committee
Rationale	.Instant Evaluation
Restrictions and Risk	No
Dependencies	FR15
Priority	High

3.1.27 Functional Requirement 27

Identifier	FR27
Title	Select Verdict
Requirement	PC will evaluate the student by selection verdict options (pass, pass with minor changes, major changes, fail).
Source	Project Committee
Rationale	PC will evaluate the students
Restrictions and Risk	User have opened the document.
Dependencies	No
Priority	High

3.1.28 Functional Requirement 28

Identifier	FR28
Title	Save Evaluation Remarks
Requirement	After adding evaluation remarks PC will save the remarks and commented document. Document will automatically save in PDF format.
Source	Project Committee
Rationale	.No
Restrictions and Risk	No
Dependencies	FR16,FR17,FR18
Priority	High

3.1.29 Functional Requirement 29

Identifier	FR29
Title	Update Evaluation Remarks
Requirement	PC will reopen the document and will edit the remarks/comments on document.
Source	Project Committee
Rationale	.No
Restrictions and Risk	Document must be saved before updating.
Dependencies	No
Priority	High

3.1.30 Functional Requirement 30

Identifier	FR30
Title	View Evaluation Remarks
Requirement	Users will view the remarks when PC save the review document.
Source	Project Committee
Rationale	.Users wants to see the result of a document.
Restrictions and Risk	Document must be saved.
Dependencies	No
Priority	High

3.1.31 Functional Requirement 31

Identifier	FR31
Title	Delete Evaluation Remarks
Requirement	PC will delete the saved document in case of wrong evaluation remarks.
Source	Project Committee
Rationale	.Valid Evaluation Remarks.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.32 Functional Requirement 32

Identifier	FR32
Title	Create Schedule
Requirement	User can schedule their activities by using calendar on the portal.
Source	Project Committee
Rationale	User will be scheduled to do project.
Restrictions and Risk	No
Dependencies	No
Priority	Medium

3.1.33 Functional Requirement 33

Identifier	FR33
Title	Update Schedule
Requirement	User update schedule using calendar on the portal.
Source	Project Committee
Rationale	User will be scheduled to do project.
Restrictions and Risk	No
Dependencies	No
Priority	Medium

3.1.34 Functional Requirement 34

Identifier	FR34
Title	View Schedule
Requirement	User can view schedule on the portal and will perform tasks according to the schedule.
Source	Project Committee
Rationale	User will schedule to do project.
Restrictions and Risk	No
Dependencies	No
Priority	Medium

3.1.35 Functional Requirement 35

Identifier	FR35
Title	Set reminder
Requirement	User set reminder on specific date that reminds the user to perform particular task.
Source	Project Committee
Rationale	User will be informed about his/her schedule.
Restrictions and Risk	User have created a schedule.
Dependencies	No
Priority	High

3.1.36 Functional Requirement 36

Identifier	FR36
Title	View reminder
Requirement	User have set reminder on specific date that reminds the user to perform particular task and user will be able to view the reminder.
Source	Project Committee
Rationale	User will be informed about his/her schedule.
Restrictions and Risk	User have created a schedule.
Dependencies	No
Priority	Medium

3.1.37 Functional Requirement 37

Identifier	FR37
Title	Send Message
Requirement	This requirement is used as a mode of communication between student, PC and supervisor.
Source	Project Committee
Rationale	User will be informed about any queries.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.38 Functional Requirement 38

Identifier	FR38
Title	Send Email
Requirement	This requirement is used as a mode of communication between PC and supervisor.
Source	Project Committee
Rationale	User will be informed about any queries.
Restrictions and Risk	User have an Email ID.
Dependencies	No
Priority	High

3.1.39 Functional Requirement 39

Identifier	FR39
Title	View Comment
Requirement	This requirement is used to view the comments given by the PC members.
Source	Project Committee
Rationale	User will be informed about any queries.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.40 Functional Requirement 40

Identifier	FR40
Title	Give Feedback
Requirement	This requirement is used to give feedback from the PC members.
Source	Project Committee
Rationale	User will be informed about any queries.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.1.41 Functional Requirement 41

Identifier	FR41
Title	Track Progress of Projects
Requirement	System will show the result and student, supervisor and PC can view the evaluation result.
Source	Project Committee
Rationale	Student and supervisor wants to check the evaluation of their projects.
Restrictions and Risk	Every user can keep track progress of projects by using their own user id on portal.
Dependencies	No
Priority	High

3.1.42 Functional Requirement 42

Identifier	FR42
Title	Select External
Requirement	Admin will select external and assign projects to evaluate final presentation.
Source	Project Committee
Rationale	Final evaluation of project evaluates from External member.
Restrictions and Risk	Every user can keep track progress of projects by using their own user id on portal.
Dependencies	No
Priority	High

3.2. Non-Functional Requirements

3.2.1 Usability

3.2.1.1 Non-Functional Requirement 1

Identifier	NFR1
Title	Understandability
Requirement	Interface elements should be easy to understand since we are following standard Windows element in our interface.
Source	Project Committee
Rationale	User uses interface which is understandable.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.2.1.2 Non-Functional Requirement 2

Identifier	NFR2
Title	Learn Ability
Requirement	The system is basically for the students, faculty, supervisors and project committee who will be using different modules of the system.
Source	Project Committee
Rationale	No
Restrictions and Risk	No
Dependencies	No
Priority	Medium

3.2.1.3 Non-Functional Requirement 3

Identifier	NFR3
Title	Operability
Requirement	The interface will show the login option which will decide the mode for the user.
Source	Project Committee
Rationale	Each user have different account.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.2.2 Reliability

3.2.2.1 Non-Functional Requirement 4

Identifier	NFR4
Title	Accuracy
Requirement	Accuracy of the system will be specified with the type of user has given its input.
Source	Project Committee
Rationale	User will give right input to get specific output.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.2.2.2 Non-Functional Requirement 5

Identifier	NFR5
Title	Bugs
Requirement	Critical bug can be categorized as a complete loss of data which can be possible if any system file is corrupted. System cannot operate until file is repaired or system is reinstalled.

Source	Project Committee
Rationale	In case of corrupt file uploaded system generates bugs.
Restrictions and Risk	No
Dependencies	No
Priority	High

3.2.3 Performance

3.2.3.1 Non-Functional Requirement 6

Identifier	NFR6
Title	Response Time
Requirement	The response time of the system depends on the internet connection and underlying hardware.
Source	Project Committee
Rationale	System will give response to user when user inputs to system.
Restrictions and Risk	System will be able to response after 3 seconds when an action is performed.
Dependencies	No
Priority	High

3.2.3.2 Non-Functional Requirement 7

Identifier	NFR7
Title	Resource Utilization
Requirement	As the system will be an online application so it will not be consuming much memory and processing.
Source	Project Committee
Rationale	No
Restrictions and Risk	No
Dependencies	No
Priority	High

3.2.4 Supportability

3.2.4.1 Non-Functional Requirement 8

Identifier	NFR8
Title	Naming Conventions
Requirement	Standard naming conventions of C# will be used in the development of this project.
Source	Project Committee

Rationale	No
Restrictions and Risk	No
Dependencies	No
Priority	High

3.2.5 Design Constraints

3.2.5.1 Non-Functional Requirement 9

Identifier	NFR9
Title	Programming Language.
Requirement	The project will be developed using C# language.
Source	Project Committee
Rationale	No
Restrictions and Risk	User will familiar about programming language.
Dependencies	No
Priority	High

3.2.5.2 Non-Functional Requirement 10

Identifier	NFR10
Title	Development Tools
Requirement	Visual Studio 2013 will be used as development tools.
Source	Project Committee
Rationale	No
Restrictions and Risk	User will familiar about visual studio.
Dependencies	No
Priority	High

3.2.5.3 Non-Functional Requirement 11

Identifier	NFR11
Title	Standard
Requirement	The application program shall be able to function on all Windows based system.
Source	Project Committee
Rationale	No
Restrictions and Risk	No
Dependencies	No
Priority	High

3.3. Use Case Model

3.3.1 Use Case Diagram

Administrator

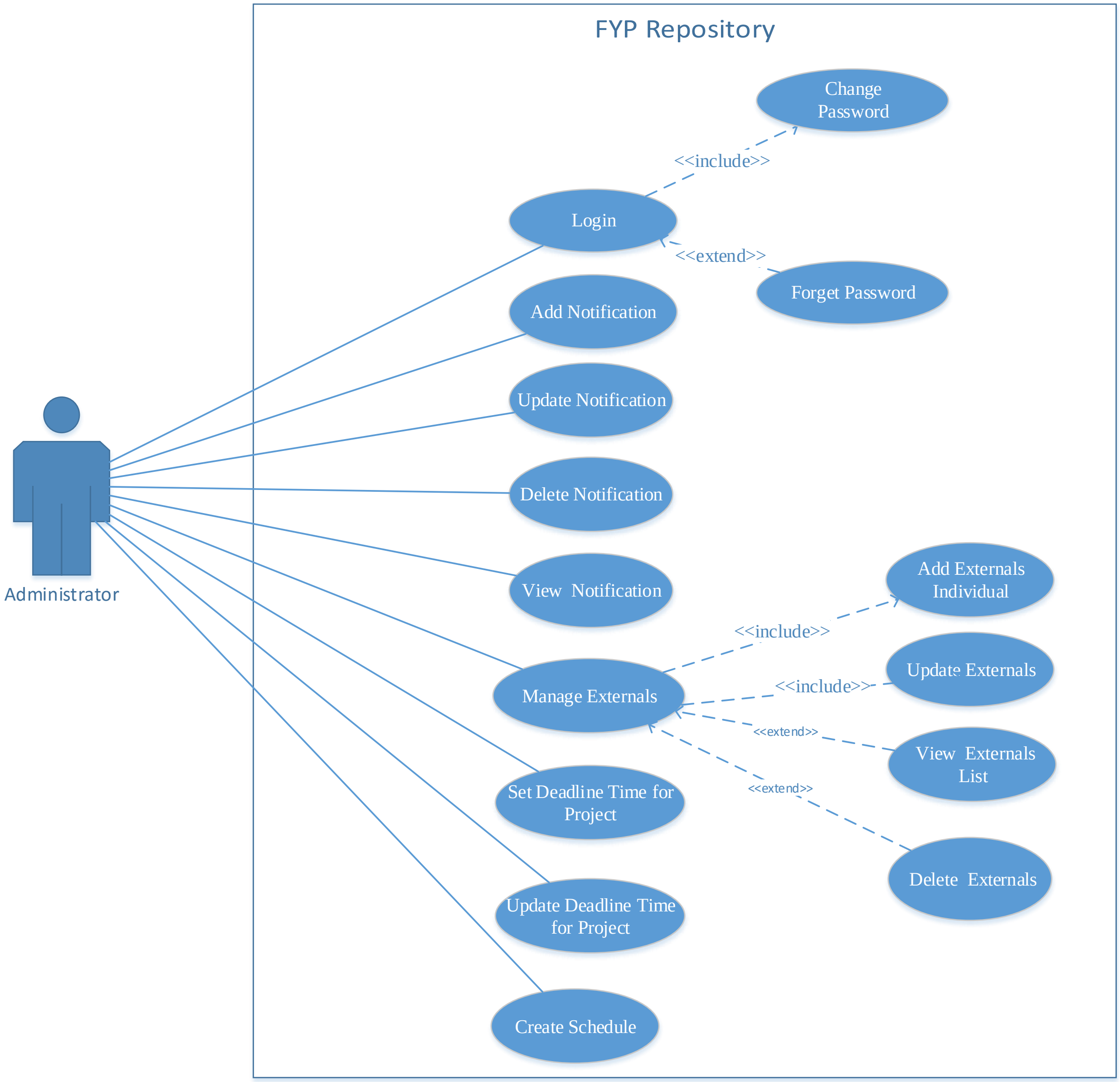


Figure 3.3.1: Use Case for Admin

Student

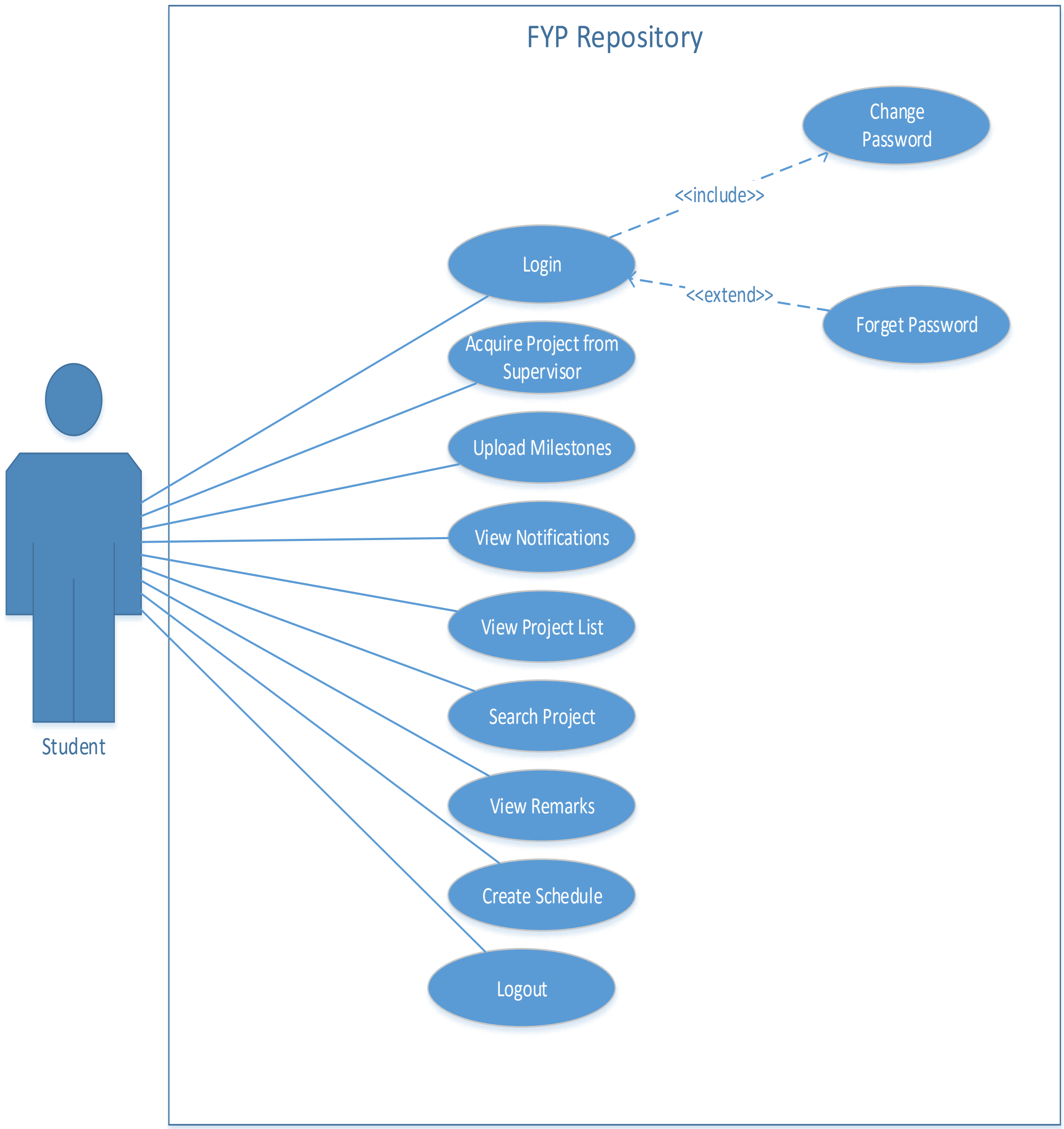


Figure 3.3.2: Use Case for Student

PC Member

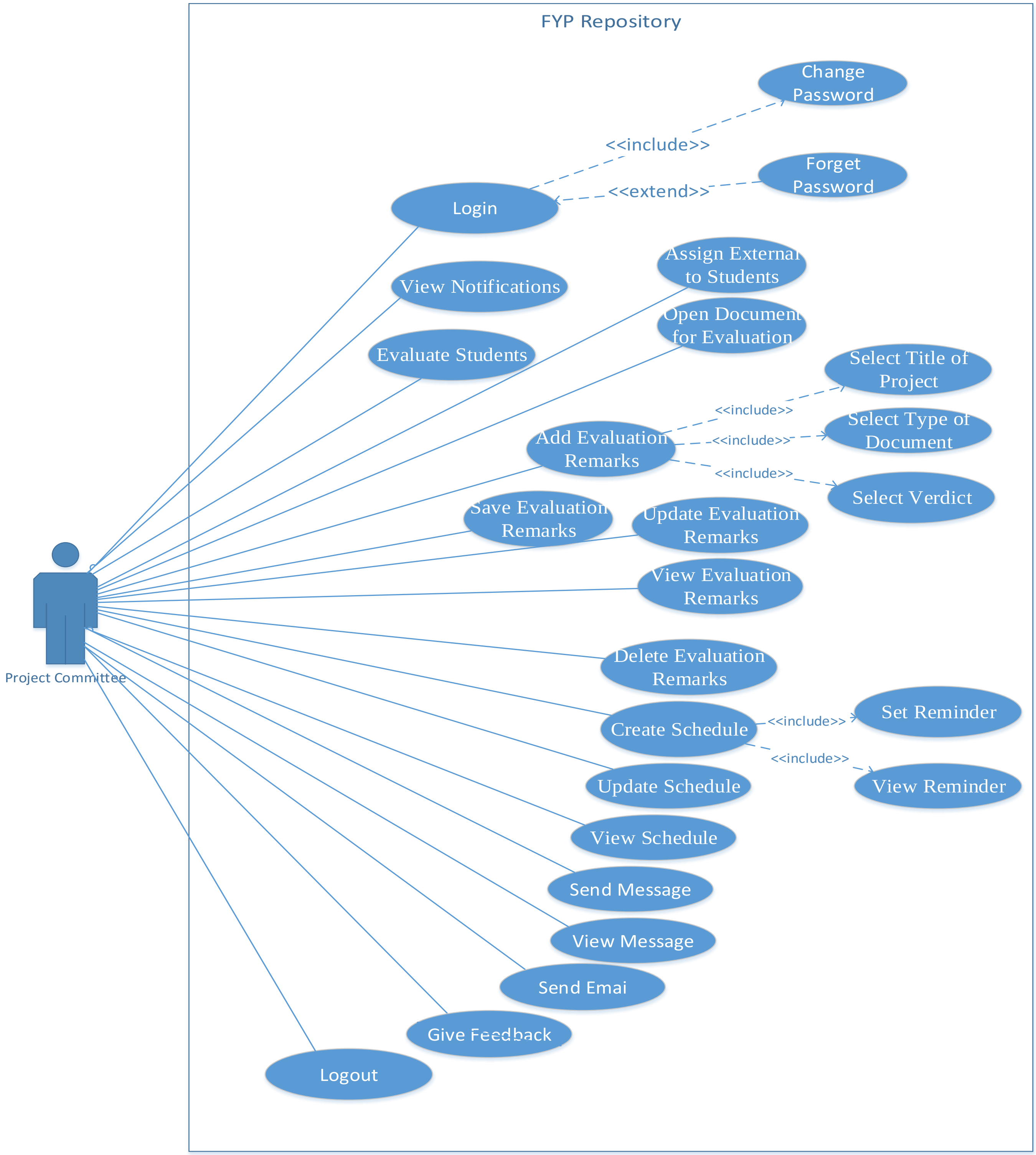


Figure 3.3.3: Use Case for PC

Supervisor & External Examiner

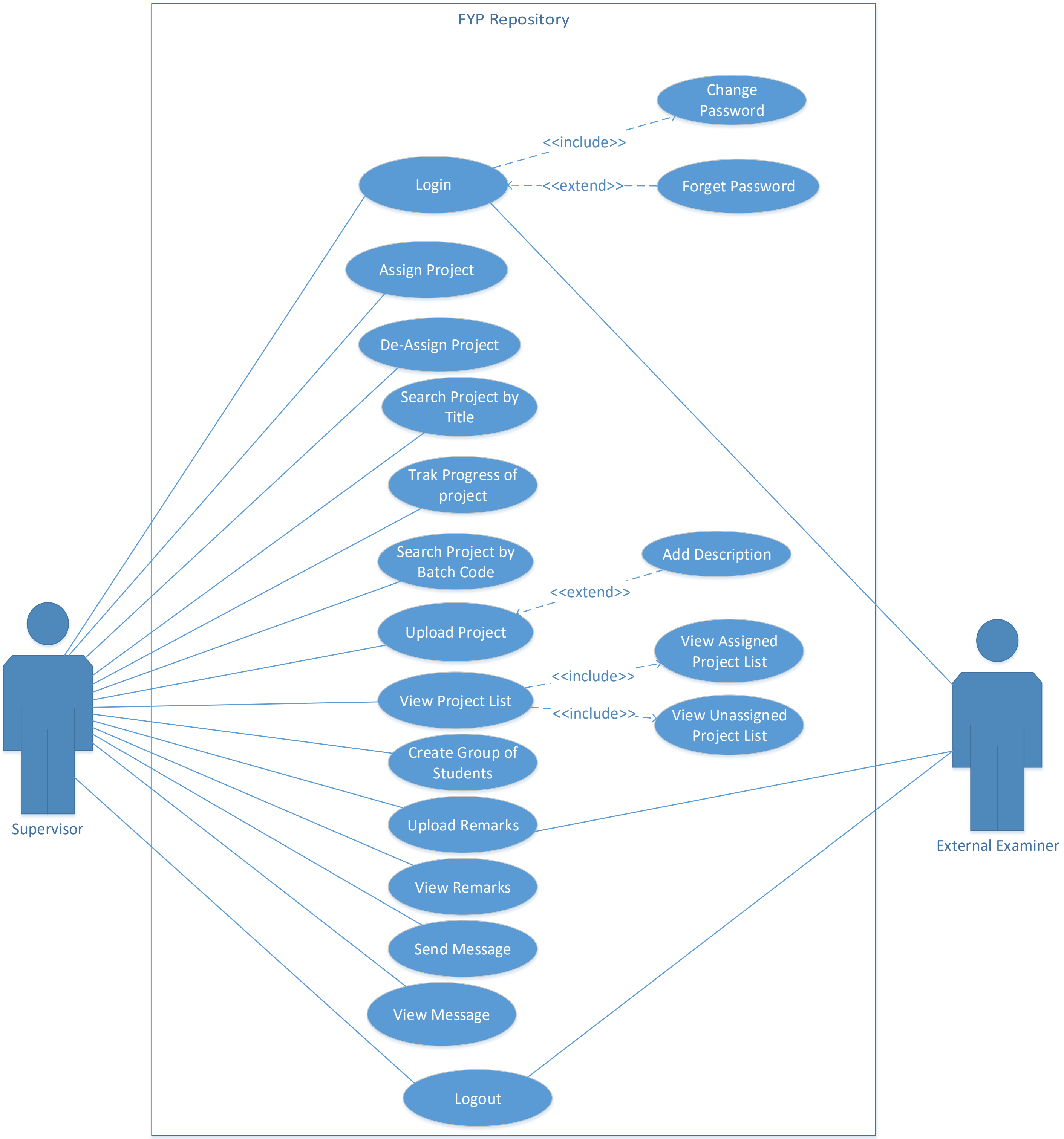


Figure 3.3.4: Use Case for Supervisor & External Examiner

3.3.2 Actors Description

User: This is the primary actor for the system. This is the person who is using the web application. He / She may be administrator, student, supervisor, PC member and external examiner.

Administrator: This is the primary actor for the system. This is the person who will manage all other actors.

Student: This is the primary actor for the system. This is the person who will only upload milestone, view remarks, get feedback and view status of project, view projects history and notifications.

Supervisor: This is the primary actor for the system. This is person who will upload projects proposal with description, send messages, email and upload grade marking of students.

PC Member: This is the primary actor for the system. This is the person who will evaluate the FYP's projects, upload templets, upload grade marking of documents and presentations.

External Examiner: This is the primary actor for the system. This is the person who will only evaluate final presentation of students and upload remarks regarding FYPs.

3.3.3 Use Case Description

Use Case ID:	UC-1
Use Case Name:	Login
Actors:	Administrator, Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that users have privacy to login on portal. User can b login by entering user id and password.
Trigger:	The user clicks on "Login" button to login.
Preconditions:	User will be registered and have user id and password to login the portal.
Post conditions:	User will login.
Normal Flow:	1. Enter URL (e.g. www.fyp.cm) 2. Login screen appears. 3. User enters user id. 4. User enter password. 5. User clicks on Login button. 6. User's home page will display.
Alternative Flows:	N/A
Exceptions:	User id or password will not match.

Includes:	Forget password Use case.
Special Requirements:	N/A
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-2
Use Case Name:	Forget Password
Actors:	Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that users can change password in case of forget password.
Trigger:	The user clicks on “Forget password” button to change password.
Preconditions:	User will be registered and have user id and password to login the portal. If password will not match then click on forget password button.
Post conditions:	User will have changed the password.
Normal Flow:	Login screen appears. 1. User enters user id. 2. User enter password. 3. Password not match. 4. User clicks on forget password button. 5. A forget password screen will display. 6. Enter email address. 7. Enter code here from email that user have received. 8. Password will be changed.
Alternative Flows:	N/A
Exceptions:	Password will not match.
Includes:	Enter Code Use Case
Special Requirements:	N/A
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-3
Use Case Name:	Enter Email
Actors:	Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that when the user forgets the password the user will enter email id at the time of creating new password.
Trigger:	The user clicks on “Enter Email” button.

Preconditions:	User have clicked forget password.
Post conditions:	User will have entered email and verified.
Normal Flow:	Forget password screen appears. 1. User enters email address. 2. Get Password from Email. 3. User click Reset button to change password.
Alternative Flows:	N/A
Exceptions:	Entered code is not match.
Includes:	Forget password Use case.
Special Requirements:	N/A
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-4
Use Case Name:	Reset Password
Actors:	Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that when the user forgets the password user can reset the password after entering the code. A new reset password window will open.
Trigger:	The user clicks on “Reset password” button.
Preconditions:	User have clicked forget password and entered the given code.
Post conditions:	User will have reset the password.
Normal Flow:	Forget password screen appears. 1. User get code in his/her email address. 2. User enters code in text field. 3. User click Next button to change password. 4. Reset password screen will appear. 5. User enters new password 6. User re-enters new password 7. User clicks Ok button the password will change.
Alternative Flows:	N/A
Exceptions:	Reentered password not match.
Includes:	Login Use case.

Special Requirements:	Minimum password length will be eight characters.
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-5
Use Case Name:	Assign Projects to Students
Actors:	Supervisor, Student
Description:	The purpose of this use case is that student request to a supervisor for project and supervisor assign the projects to particular student.
Trigger:	Then supervisor assign the project by clicking on "Assign" button.
Preconditions:	1. Student should be registered on portal.
Post conditions:	1. Project is assigned to student.
Normal Flow:	1. Student selects the project from uploaded list. 2. Student give information about his/her group that contain number of students. 3. Student send request to supervisor. 4. Supervisor assign project to student.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Get project form supervisor and Login Use case.
Special Requirements:	N/A
Assumptions:	N/A
Notes and Issues:	There will be three students in a group for doing project or depend on project scope.

Use Case ID:	UC-6
Use Case Name:	Acquire Project form Supervisor.
Actors:	Student (primary) Supervisor (secondary)
Description:	The purpose of this use case is that student request to a supervisor for project and supervisor assign the projects to particular student.
Trigger:	Student selects particular project by using "Request" button and the request goes to supervisor.

Preconditions:	Student should be registered on portal.
Post conditions:	Project is assigned to student.
Normal Flow:	1. Student selects the project from uploaded list. 2. Student give information about his/her group that contain number of students. 3. Student send request to supervisor. 4. Supervisor assign project to student.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Assign projects to students and Login Use case.
Special Requirements:	N/A
Assumptions:	N/A
Notes and Issues:	There will be three students in a group for doing project or depend on project scope.

Use Case ID:	UC-7
Use Case Name:	DE Assign Projects to Students
Actors:	Supervisor (primary) Student (secondary)
Description:	The purpose of this use case is supervisor de assign the projects to student.
Trigger:	Then supervisor de assigns the project by clicking on “DE assign” button.
Preconditions:	Student should be registered on portal.
Post conditions:	Project is de assigned to student.
Normal Flow:	1 Supervisor selects the particular project that has been assigned. 2 Clicks the de assign button. 3 Project will de assign to the student.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Login Use case.
Special Requirements:	N/A
Assumptions:	N/A

Notes and Issues:	The same project will assign to other student.

Use Case ID:	UC-8
Use Case Name:	Search Project by Title
Actors:	Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that students, supervisor and PC can search projects by title of the projects.
Trigger:	The users write title in search field and click search button.
Preconditions:	User will be registered and login to the portal.
Post conditions:	User searched project by title and get associate information about project.
Normal Flow:	1. User will login. 2. User clicks on projects in menu bar. Projects page is opened. 3. User searches project by title and get associate project.
Alternative Flows:	N/A
Exceptions:	There is no project related to this title.
Includes:	Upload projects Use case.
Special Requirements:	To insure that the title is searched by a user will lie in the list of projects.
Assumptions:	Project is uploaded on the portal.
Notes and Issues:	N/A

Use Case ID:	UC-9
Use Case Name:	Search Project by Batch Code
Actors:	Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that students, supervisor and PC can search projects by batch code of the projects.
Trigger:	The users write batch code in search field and click search button.
Preconditions:	User will be registered and login to the portal.
Post conditions:	User searched project by batch code and get associate information about project.
Normal Flow:	1. User will login. 2. User clicks on projects in menu bar. Projects page is opened. 3. User searches project by batch code and get associate project.

Alternative Flows:	N/A
Exceptions:	There is no project related to this batch code.
Includes:	Upload projects Use case.
Special Requirements:	To insure that the batch code is searched by a user will lie in the list of projects.
Assumptions:	Project is uploaded on the portal.
Notes and Issues:	N/A

Use Case ID:	UC-10
Use Case Name:	Upload Project
Actors:	Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that supervisor will upload project and project can be searched by date and title.
Trigger:	The user will click on upload button to upload the project.
Preconditions:	User will be registered and login to the portal.
Post conditions:	Project will upload on the portal.
Normal Flow:	1. User will login. 2. User clicks on projects in menu bar. Projects page is opened. 3. User add description in upload field and then clicks upload button. 4. Project will upload.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	N/A
Special Requirements:	N/A
Assumptions:	Project is not uploaded on the portal.
Notes and Issues:	N/A

Use Case ID:	UC-11
Use Case Name:	View Assigned Project List
Actors:	Supervisor, Student ,Project Committee
Description:	The purpose of this use case is that supervisor will upload project and a project will assign to number of students or a group that is created by supervisor.

Trigger:	The user will click on view project list button to view the assigned list of project.
Preconditions:	User will be registered and login to the portal and project list is maintained by user.
Post conditions:	User have viewed the assigned project list.
Normal Flow:	1. User will login. 2. User clicks on view assigned list of project. 3. List will display to user.
Alternative Flows:	N/A
Exceptions:	Project list is not maintained by user.
Includes:	Assign Project
Special Requirements:	N/A
Assumptions:	Project list is maintained.
Notes and Issues:	N/A

Use Case ID:	UC-12
Use Case Name:	Create Group
Actors:	Supervisor
Description:	The purpose of this use case is that supervisor will upload project and a project will assign a particular group that is created by supervisor.
Trigger:	The user will click on Create Group button to Create group of student's in one project.
Preconditions:	User will be registered and login to the portal.
Post conditions:	User have created the group successfully.
Normal Flow:	1. User will login. 2. User clicks on create group button. 3. User Adds students by their names and registration no#. 4. User assigns a group# to each group. 5. User will assign the project to the group. 6. Group will be created.
Alternative Flows:	N/A
Exceptions:	
Includes:	N/A
Special Requirements:	N/A

Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-13
Use Case Name:	Add Notification
Actors:	Administrator
Description:	The purpose of this use case is that Administrator will add notifications related to FYP's when to submit the document or presentation declared by PC.
Trigger:	User will be required to click on "add notification" option to proceed.
Preconditions:	User will be registered and login to the portal to perform this action.
Post conditions:	User successfully adds notification.
Normal Flow:	1. Admin logged in. 2. User clicks on add notification option 3. User select option of all student to whom notifications should be sent 4. User click on send button 5. System sends notification 6. Notification can be seen by only those users whose registration is done.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	N/A
Special Requirements:	User must be logged in as Administrator.
Assumptions:	No notifications are available.
Notes and Issues:	N/A

Use Case ID:	UC-14
Use Case Name:	Update Notification
Actors:	Administrator
Description:	The purpose of this use case is that Administrator will update notifications related to FYP's when to submit the document or presentation declared by PC.
Trigger:	User will be required to click on "update notification" option to proceed.
Preconditions:	User will be registered and login to the portal to perform this action.

Post conditions:	User successfully updates notification.
Normal Flow:	1. User accesses the update option. 2. User selects the required milestone. 3. User updates notifications on the portal.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	N/A
Special Requirements:	User must be logged in as Administrator.
Assumptions:	Notifications are available.
Notes and Issues:	N/A

Use Case ID:	UC-15
Use Case Name:	Delete Notification
Actors:	Administrator
Description:	The purpose of this use case is that Administrator will delete notifications related to FYP's when to submit the document or presentation declared by PC.
Trigger:	User will be required to click on "delete notification" option to proceed.
Preconditions:	User will be registered and login to the portal to perform this action.
Post conditions:	User successfully deletes notification.
Normal Flow:	1. User accesses the delete option. 2. User selects the required milestone. 3. User deletes notifications on the portal.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	N/A
Special Requirements:	User must be logged in as Administrator.
Assumptions:	Notifications are available.
Notes and Issues:	N/A

Use Case ID:	UC-16
Use Case Name:	View Notification
Actors:	Administrator, PC, Student, Supervisor
Description:	The purpose of this use case is to view notifications related to FYP's when to submit the document or presentation declared by PC.
Trigger:	User will be required to click on "view notification" option to proceed.
Preconditions:	User will be registered and login to the portal to perform this action.
Post conditions:	User successfully views notification.
Normal Flow:	1. User accesses the view notification option. 2. User views notifications on the portal.
Alternative Flows:	N/A
Exceptions:	No notifications are available.
Includes:	N/A
Special Requirements:	User must be logged in.
Assumptions:	Notifications are available.
Notes and Issues:	N/A

Use Case ID:	UC-17
Use Case Name:	Upload Milestones for Evaluation
Actors:	Student
Description:	Students will upload their documents (e.g. Scope document/SRS/SDS/Presentation) in PDF format by entering in upload section of FYP Repository Portal. These documents will be automatically converted in word format after uploading and will open in evaluation section and PC will comment on it. Upload document will have Title, category (DB, Game, AI, mobile app, web app), skills used and format (.pdf, word). A time constraint for uploading document will automatically generate in which document should upload in given time otherwise portal will close for upload document.
Trigger:	User will be required to click on "upload" option to proceed.
Preconditions:	1. Internet is connected. 2. User must login to perform this function.
Post conditions:	User have uploaded document successfully.
Normal Flow:	1. User access the Documents section of the system.

	2. The system displays all the options related to that section. 3. Submit your project document appears on screen. 4. User specifically upload the particular document. 5. The system validates the information and determines that validation is passed. 6. The system displays a dialog box to notify user about submission. 7. Success message will be shown and the milestone will be added for evaluation.
Alternative Flows:	N/A
Exceptions:	• Internet connectivity error may occur. • All the required field for uploading a document must be filled, else the error message will be displayed. • File is already uploaded.
Includes:	Login Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-18
Use Case Name:	Set Time to Upload Milestone
Actors:	Administrator
Description:	Administrator will set time to upload the document (e.g. Scope/SRS/SDS).
Trigger:	User will be required to click on Set Time option to proceed.
Preconditions:	User have logged in.
Post conditions:	User have set time successfully.
Normal Flow:	1. User access the set time section of the system. 2. The system displays all the options related to that section. 3. User selects set time to upload document. 4. A new screen will open where user can set time (e.g. start time is 20/05/2015 to end time that will be 29/05/2015). 5. User clicks save button to set time.
Alternative Flows:	N/A
Exceptions:	N/A

Includes:	Login Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-19
Use Case Name:	Update Time to Upload Milestone
Actors:	Administrator
Description:	Administrator will update time to upload the document (e.g. Scope/SRS/SDS).
Trigger:	User will be required to click on update Time option to proceed.
Preconditions:	User have logged in.
Post conditions:	User have updated time successfully.
Normal Flow:	1. User access the update time section of the system. 2. The system displays all the options related to that section. 3. User selects update time to upload document. 4. A new screen will open where user can update time (e.g. start time is 20/05/2015 to end time that will be 10/06/2015). 5. User clicks save button to set time.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Login Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-20
Use Case Name:	Evaluate Student
Actors:	PC, Supervisor, External
Description:	PC will evaluate the student by checking document (e.g. Scope/SRS/SDS).
Trigger:	User will be required to click on Evaluate student option to proceed.
Preconditions:	User have logged in.

Post conditions:	Student is evaluated successfully.
Normal Flow:	1. User access the Evaluation section of the system. 2. The system displays all the options related to that section. 3. User selects type of document. 4. User will open the document. 5. Select group# and then evaluation page will open.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Select Group, Open document and select type document Use cases.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-21
Use Case Name:	Select Title
Actors:	PC
Description:	PC will select the title of the document (e.g. Scope/SRS/SDS) to evaluate the student.
Trigger:	User will be required to click on select option to proceed.
Preconditions:	User will be logged in.
Post conditions:	Title is selected.
Normal Flow:	1. User access the Evaluation section of the system. 2. The system displays all the options related to that section. 3. User selects title of document.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Evaluate Student Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-22

Use Case Name:	Manage External
Actors:	Admin
Description:	Administrator will manage the external to evaluate the final presentation of students. Admin will add the external in a List.
Trigger:	User will be required to click on “Manage External” option to proceed.
Preconditions:	User will be logged in.
Post conditions:	
Normal Flow:	1. User accesses the Manage External button of the system. 2. The system displays all the options related to that section. 3. User adds External’s info to maintain the list.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Admin Login Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-23
Use Case Name:	Select Group
Actors:	PC, Supervisor, External
Description:	PC will select the group of student that doing FYPs.
Trigger:	User will be required to click on select Group option to proceed.
Preconditions:	User have selected the option of Evaluation.
Post conditions:	Student group is selected.
Normal Flow:	1. User accesses the Evaluation section of the system. 2. The system displays all the options related to that section. 3. User selects group of students.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Evaluate Student Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.

Notes and Issues:	N/A

Use Case ID:	UC-24
Use Case Name:	Select Type of Document
Actors:	PC, Supervisor, External
Description:	PC will select the type of the document (e.g. Scope/SRS/SDS) to evaluate the student.
Trigger:	User will be required to click on select option to proceed.
Preconditions:	User have selected the group# of students.
Post conditions:	Document type is selected.
Normal Flow:	1. User access the Evaluation section of the system. 2. The system displays all the options related to that section. 3. User selects type of document.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Evaluate Student Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-25
Use Case Name:	Open Document for Evaluation
Actors:	PC, Supervisor, External
Description:	PC will open the uploaded document for evaluation (Document will be opened in word format) and will write comments on it.
Trigger:	User will be required to click on 'open" option to proceed.
Preconditions:	User have uploaded document successfully.
Post conditions:	Document will open.
Normal Flow:	1. User access the Documents section of the system. 2. The system displays all the options related to that section. 3. User open document appears on screen. 4. User makes correction online on the document. 5. User gives feedback where correction requires.

Alternative Flows:	N/A
Exceptions:	• Internet connectivity error may occur. • All the required field for uploading a document must be filled, else the error message will be displayed.
Includes:	Login and Upload milestone Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-26
Use Case Name:	Add Evaluation Remarks
Actors:	PC, Supervisor, External
Description:	PC will open the uploaded document for evaluation (Document will be opened in word format) and will write comments on it and PC verdicts the document by giving remarks as: • Pass • Pass with minor changes • Major changes or • Fail
Trigger:	User will be required to click on ‘open document” option to proceed.
Preconditions:	User have uploaded document on the portal.
Post conditions:	Document will open for evaluation and PC can add evaluation remarks on the portal.
Normal Flow:	1. User access the Documents section of the system. 2. The system displays all the options related to that section. 3. User open document appears on screen. 4. User makes correction online on the document. 5. User gives feedback where correction requires. 6. User verdicts the document by giving remarks as: • Pass (then make presentation) • Pass with minor changes (correct changes and then make presentation) • Major changes (resubmit document with correction of major changes within 7-days) • Fail (then choose another project)
Alternative Flows:	N/A

Exceptions:	• Internet connectivity error may occur. • All the required field for uploading a document must be filled, else the error message will be displayed. • Document is not opened.
Includes:	Evaluate student Use case.
Special Requirements:	Users must be logged in and document should be uploaded within time.
Assumptions:	Type of Document is selected and document is checked by user.
Notes and Issues:	N/A

Use Case ID:	UC-27
Use Case Name:	Select Verdict
Actors:	PC, Supervisor, External
Description:	PC will evaluate the student by selection verdict options (pass, pass with minor changes, major changes, fail).
Trigger:	User will be required to click on select radio option to proceed.
Preconditions:	User have selected the group# of students.
Post conditions:	User have selected verdict.
Normal Flow:	1. User access the Evaluation section of the system. 2. The system displays all the options related to that section. 3. User selects type of document. 4. User selects group#. 5. User opens the document. 6. User verdicts the document by giving remarks as: • Pass (then make presentation) • Pass with minor changes (correct changes and then make presentation) • Major changes (resubmit document with correction of major changes within 7-days) Fail (then choose another project)
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Evaluate Student Use case.
Special Requirements:	User must be logged in.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Use Case ID:	UC-28
Use Case Name:	Save Evaluation Remarks
Actors:	PC, Supervisor, External
Description:	After adding evaluation remarks PC will save the remarks and commented document. Document will automatically save in PDF format.
Trigger:	User will be required to click on ‘save remarks” button to proceed.
Preconditions:	User have add evaluation remarks of document on the portal.
Post conditions:	PC will add evaluation remarks on the portal and result will be saved in DB.
Normal Flow:	1. User verdicts the document by giving remarks as: • Pass (then make presentation) • Pass with minor changes (correct changes and then make presentation) • Major changes (resubmit document with correction of major changes within 7-days) • Fail (then choose another project) 2. User clicks save button the result will save in DB.
Alternative Flows:	N/A
Exceptions:	• Document is not saved.
Includes:	Login and Add Evaluation Remarks Use case.
Special Requirements:	Users must be logged in and document should be uploaded within time. PC will evaluate the document successfully.
Assumptions:	PC have evaluated the document successfully.
Notes and Issues:	N/A

Use Case ID:	UC-29
Use Case Name:	Update Evaluation Remarks
Actors:	PC, Supervisor
Description:	User will reopen the document and will edit the remarks/comments on document.
Trigger:	User will be required to click on ‘update remarks” button to proceed.
Preconditions:	User have added evaluation remarks of document on the portal.
Post conditions:	User will update evaluation remarks on the portal and result will be update in DB.

Normal Flow:	1. User access the Documents section of the system. 2. The system displays all the options related to that section. 3. User open document appears on screen. 4. User makes correction online on the document. 5. User gives feedback where correction requires. 6. User verdicts the document by giving remarks as: • Pass (then make presentation) • Pass with minor changes (correct changes and then make presentation) • Major changes (resubmit document with correction of major changes within 7-days) • Fail (then choose another project) 7. User clicks update button the result will update in DB.
Alternative Flows:	N/A
Exceptions:	• Document is not save and will not update.
Includes:	Login, Add Evaluation Remarks, Save Evaluation Remarks Use case.
Special Requirements:	Users must be logged in and document should be uploaded within time. PC will evaluate the document successfully.
Assumptions:	PC have evaluated the document successfully.
Notes and Issues:	N/A

Use Case ID:	UC-30
Use Case Name:	View Evaluation Remarks
Actors:	PC, Supervisor
Description:	PC will add evaluation remarks and save the remarks. User can view instantly evaluation by login their accounts.
Trigger:	User will be required to click on ‘view remarks” button to proceed.
Preconditions:	User have saved evaluation remarks of document in DB.
Post conditions:	User will view evaluation remarks on the portal.
Normal Flow:	1. User access the Documents section of the system. 2. The system displays all the options related to that section. 3. User select view remarks button and result will appears on screen. 4. User can get more feedback about his/her project after checking the evaluation result.
Alternative Flows:	N/A
Exceptions:	• Evaluation result is not upload.

Includes:	Login Use case.
Special Requirements:	N/A
Assumptions:	PC have evaluated the document successfully.
Notes and Issues:	N/A

Use Case ID:	UC-31
Use Case Name:	Delete Evaluation Remarks
Actors:	PC, Supervisor
Description:	PC will delete the saved document in case of wrong evaluation remarks.
Trigger:	User will be required to click on ‘delete remarks” button to proceed.
Preconditions:	User have added evaluation remarks of document on the portal.
Post conditions:	User will delete evaluation remarks on the portal and result will be delete in DB.
Normal Flow:	1. User access the Documents section of the system. 2. The system displays all the options related to that section. 3. User open document appears on screen. 4. User clicks delete button the result will delete in DB.
Alternative Flows:	N/A
Exceptions:	Document is not delete from DB.
Includes:	Login Use case.
Special Requirements:	Users must be logged in and document should be uploaded within time. PC will evaluate the document successfully.
Assumptions:	PC have evaluated the document successfully.
Notes and Issues:	N/A

Use Case ID:	UC-32
Use Case Name:	Create Schedule
Actors:	Student, supervisor, PC
Description:	User can schedule their activities by using calendar on the portal. User set reminder on specific date that reminds the user to perform particular task on same date or time.
Trigger:	User will be required to click on ‘Create New Schedule” button to proceed.

Preconditions:	User have logged in and have got a notification regarding his/her project.
Post conditions:	User have created schedule.
Normal Flow:	1. User logged in to his/her account. 2. Select schedule option in the home page. 3. User clicks save button then user’s schedule will create.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Login, Set Reminder Use case.
Special Requirements:	Users must be logged in and get notification to schedule it.
Assumptions:	User have got notification.
Notes and Issues:	N/A

Use Case ID:	UC-33
Use Case Name:	Update Schedule
Actors:	Student, supervisor, PC
Description:	User set reminder on specific date that reminds the user to perform particular task. User will update the schedule when a new notification will come.
Trigger:	User will be required to click on ‘Update Schedule” button to proceed.
Preconditions:	User have logged in and have got a notification regarding his/her project.
Post conditions:	User have updated schedule.
Normal Flow:	1. User logged in to his/her account. 2. Select schedule option in the home page. 3. User clicks update button then user’s schedule will update.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Login, Set Reminder Use case.
Special Requirements:	Users must be logged in and get notification to schedule it.
Assumptions:	User have got notification.
Notes and Issues:	N/A

Use Case ID:	UC-34
Use Case Name:	View Schedule
Actors:	Student, supervisor, PC
Description:	User can view the schedule that have been created by user.
Trigger:	User will be required to click on ‘view Schedule” button to proceed.
Preconditions:	User have logged in.
Post conditions:	User have viewed schedule.
Normal Flow:	1. User logged in to his/her account. 2. Select schedule option in the home page. 3. User clicks view button then user’s schedule will appear.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	Login Use case.
Special Requirements:	N/A
Assumptions:	User have created schedule.
Notes and Issues:	N/A

Use Case ID:	UC-35
Use Case Name:	Set Reminder
Actors:	Student, supervisor, PC
Description:	User set reminder on specific date that reminds the user to perform particular task.
Trigger:	User will be required to click on “Set” button to proceed.
Preconditions:	User have logged in and have created a schedule.
Post conditions:	User have set schedule.
Normal Flow:	1. User logged in to his/her account. 2. Select schedule option in the home page. 3. Select date from calendar to set reminder that user wants to perform particular activity. 4. A window will appear when user clicks on date. User will write description about project in the same window that will open. 5. User clicks save button then user’s schedule will update.

Alternative Flows:	N/A
Exceptions:	N/A
Includes:	N/A
Special Requirements:	N/A
Assumptions:	User have not set reminder.
Notes and Issues:	N/A

Use Case ID:	UC-36
Use Case Name:	View Reminder
Actors:	Student, supervisor, PC
Description:	User set reminder on specific date that reminds the user to perform particular task and user will be able to view the reminder that has been set before.
Trigger:	User will be required to click on "View" button to proceed.
Preconditions:	User have logged in and have created a schedule and have set a reminder.
Post conditions:	User have viewed reminder.
Normal Flow:	1. User logged in to his/her account. 2. Select schedule option in the home page. 3. User clicks on particular date then a reminder window will open.
Alternative Flows:	N/A
Exceptions:	There is no reminder has set on particular date in calendar.
Includes:	N/A
Special Requirements:	N/A
Assumptions:	User have set reminder.
Notes and Issues:	N/A

Use Case ID:	UC-37
Use Case Name:	Send Message
Actors:	Student, PC, Supervisor
Description:	This requirement is used as a mode of communication between student, PC and supervisor.
Trigger:	User will be required to click on send button to proceed.

Preconditions:	User have logged in to perform this action.
Post conditions:	Message is sent successfully.
Normal Flow:	1. User clicks on inbox. 2. User selects send message option next to supervisor’s name 3. User types in the message and sends it.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	N/A
Special Requirements:	N/A
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-38
Use Case Name:	Send Email
Actors:	PC, supervisor
Description:	This requirement is used as a mode of communication between PC and supervisor.
Trigger:	User will be required to click on send button to proceed.
Preconditions:	User have logged in to perform this action.
Post conditions:	Email is sent successfully.
Normal Flow:	1. User clicks on inbox. 2. User write email address of other user and write his/her email id in the text field. 3. User types in the message field and click send email button. 4. Email will send successfully.
Alternative Flows:	N/A
Exceptions:	Unavailability of Email ID
Includes:	N/A
Special Requirements:	Availability of Email ID
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-39
Use Case Name:	View Comment
Actors:	Student
Description:	This requirement is used to view the comments given by the PC members.
Trigger:	User will be required to click on “Remarks” option to proceed.
Preconditions:	User have logged in to perform this action.
Post conditions:	User have successfully viewed the comments
Normal Flow:	1. User accesses the Remarks option. 2. User selects the required milestone. 3. User clicks on view comments option next to the project name to view.
Alternative Flows:	N/A
Exceptions:	No comments are available
Includes:	N/A
Special Requirements:	User must be logged in as student.
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-40
Use Case Name:	Give Feedback
Actors:	PC, Supervisor
Description:	This requirement is used to give feedback from the PC members.
Trigger:	User will be required to click on “Give Feedback” option to proceed.
Preconditions:	User have logged in to perform this action.
Post conditions:	User have successfully gave feedback
Normal Flow:	1. User accesses the Feedback option. 2. User selects the required milestone. 3. User clicks on give feedback option and the user will be able to view comment.
Alternative Flows:	N/A

Exceptions:	N/A
Includes:	N/A
Special Requirements:	User must be logged in.
Assumptions:	N/A
Notes and Issues:	N/A

Use Case ID:	UC-41
Use Case Name:	Track Progress of Projects
Actors:	Supervisor
Description:	This requirement is used to keep track progress of the projects that were assigned to students.
Trigger:	User will be required to click on “View result” option to proceed.
Preconditions:	User have logged in to perform this action.
Post conditions:	User have kept track progress of project.
Normal Flow:	1. User accesses the view result option. 2. User selects the required milestone. 3. Result will be displayed on screen.
Alternative Flows:	N/A
Exceptions:	Result not found
Includes:	N/A
Special Requirements:	User must be logged in.
Assumptions:	Evaluation result has been declared.
Notes and Issues:	N/A

Use Case ID:	UC-42
Use Case Name:	Select External
Actors:	Convener, PC member
Description:	This requirement is used to select externals randomly for final project presentation.
Trigger:	User is required to Click on “External Selection” option to proceed.
Preconditions:	• Internet is connected. • User must login to perform this function.
Post conditions:	Externals assigned successfully

Normal Flow:	1. User access the “External” section of the system. 2. The system displays all the options related to that section. 3. User views the option that appears on screen. 4. User selects the option of assigning externals to the list of projects. 5. Success message will be shown “Externals assigned successfully”.
Alternative Flows:	N/A
Exceptions:	N/A
Includes:	N/A
Special Requirements:	User must be logged.
Assumptions:	The user must have the related knowledge to operate this task.
Notes and Issues:	N/A

Chapter 4: Design and Architecture

4.1. System Architecture

We basically have used three- tier system architecture. The architecture consists of three layers in which top-most layer is presentation tier. The main function of the presentation is to translate tasks results to something the user can understand. The second is logic tier that involves coordination of the application, processes commands, makes logical decisions and evaluation, and performs calculations. It also moves and processes data between the two surrounding layers. Third and the last layer is Data tier where information is stored and retrieved from database of file system. The information is passed back to the logic tier for processing, and then eventually back to the user.

4.1.1 Architecture Design of System

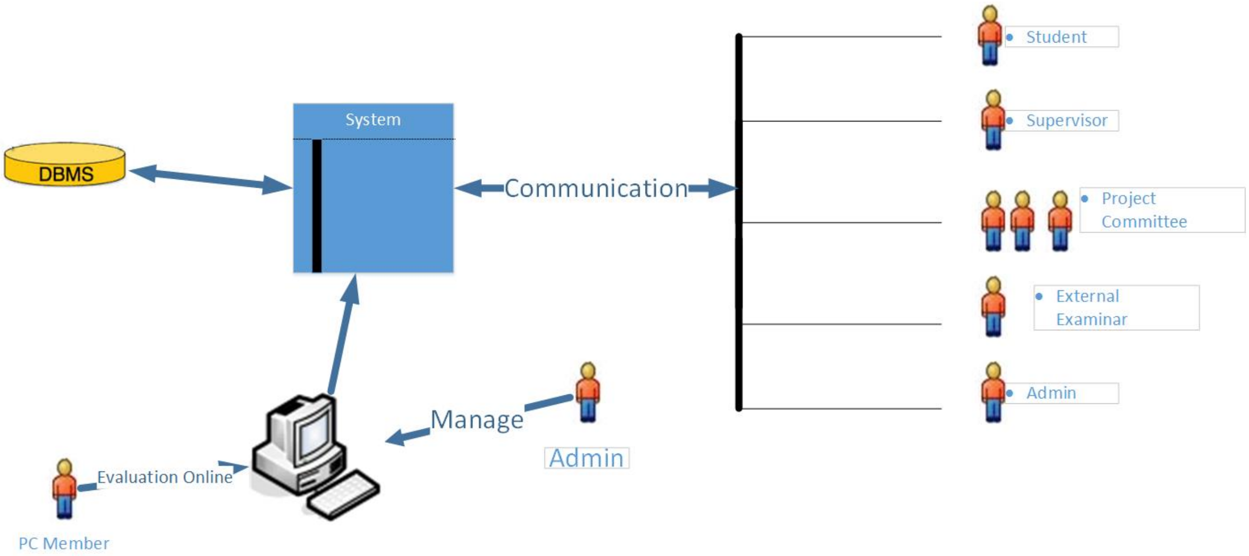


Figure 4.1: Three-Tier System Architecture

4.2. UML Structural Diagram

4.2.1 Class Diagram

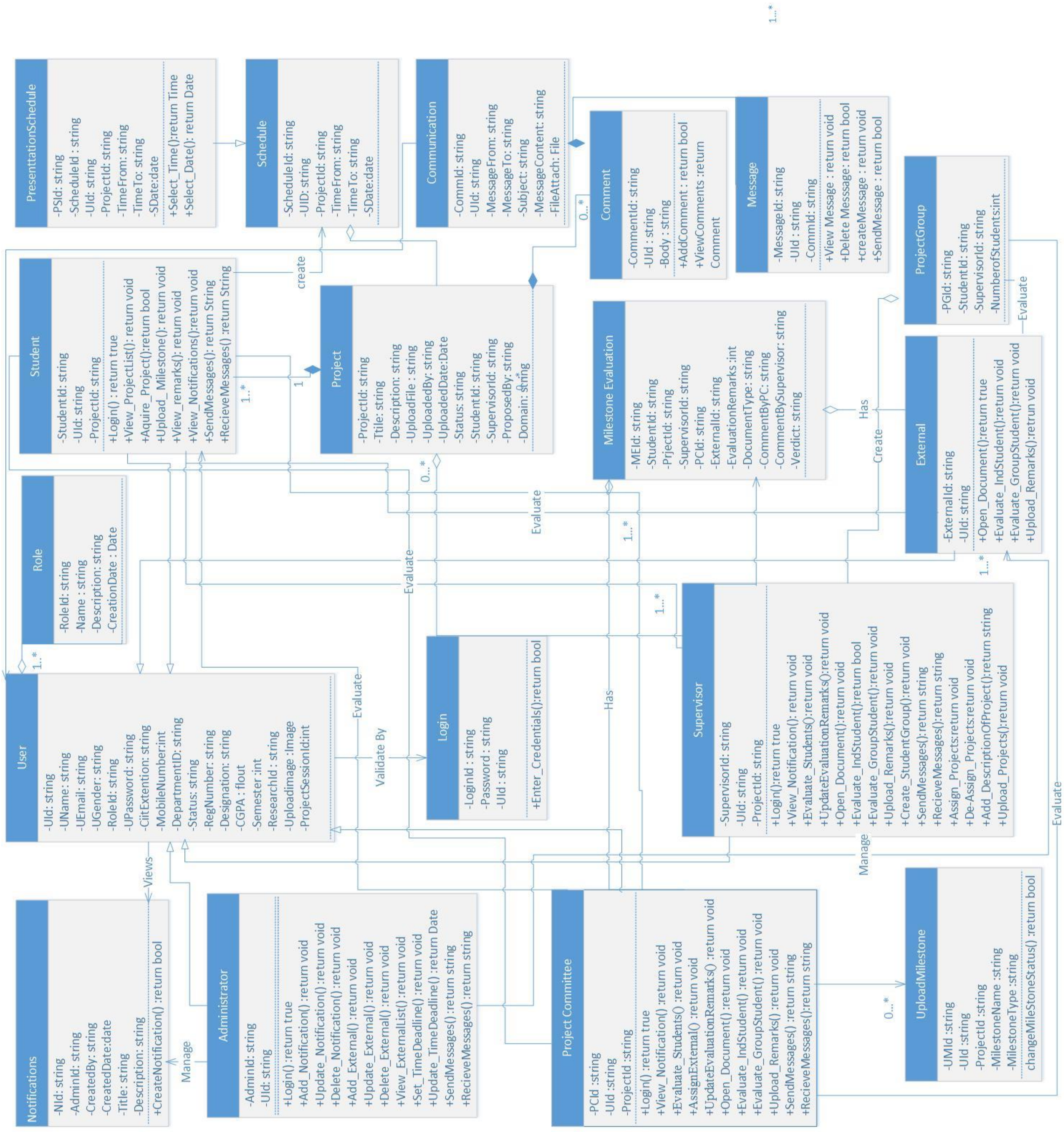
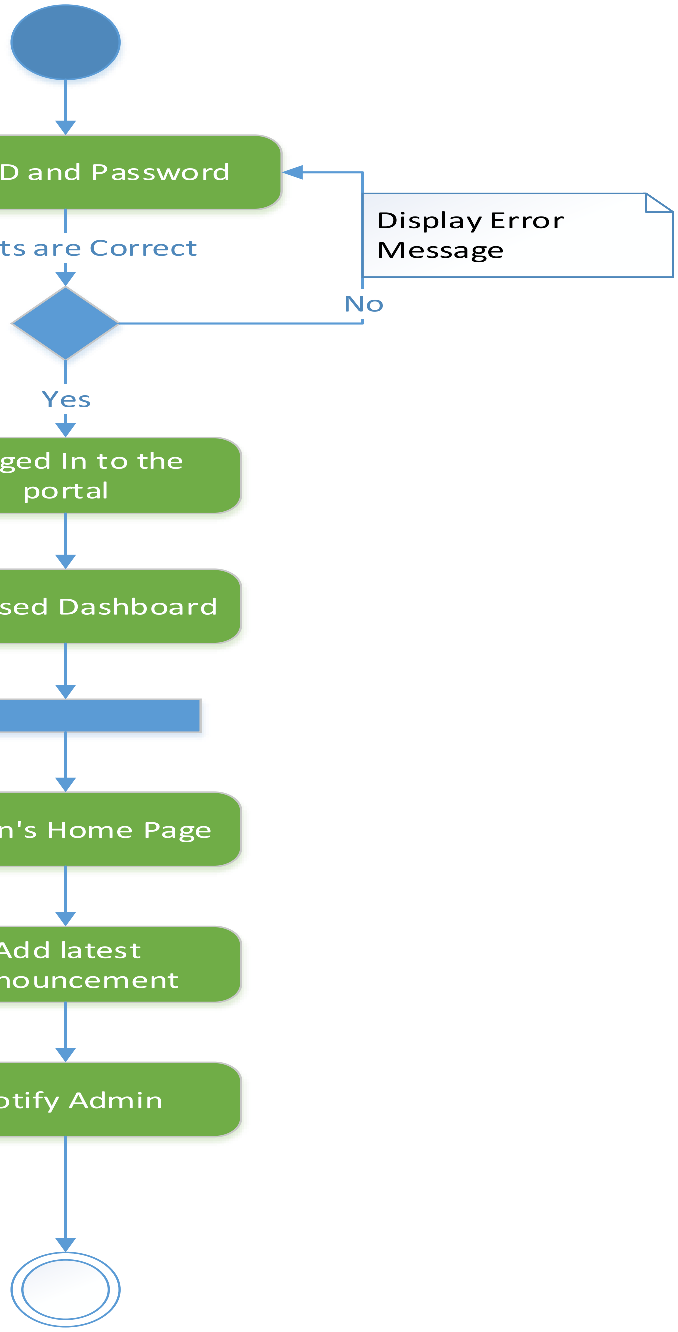


Figure 4.2.1:Class Diagram

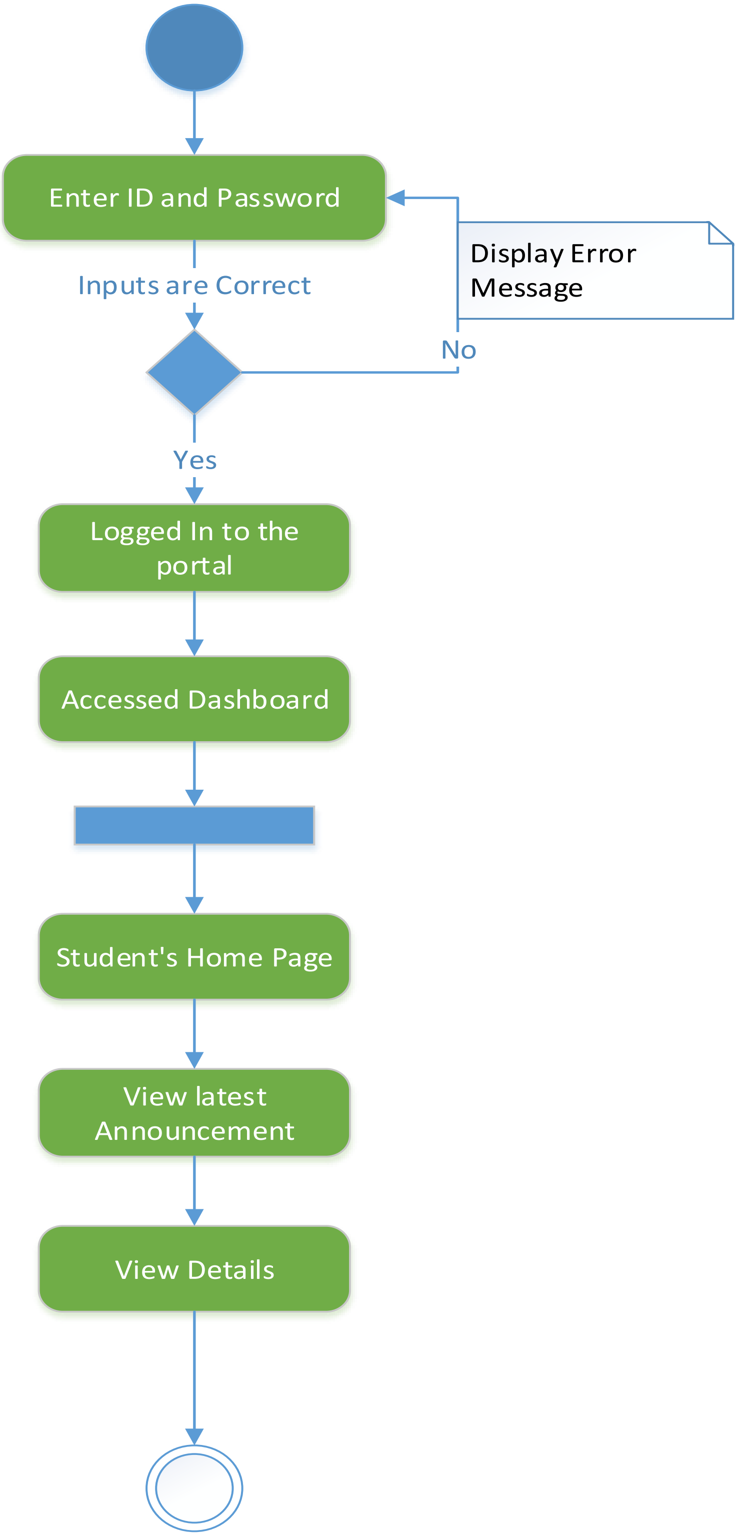
4.3. UML Behavioral Diagrams

4.3.1 Activity Diagrams

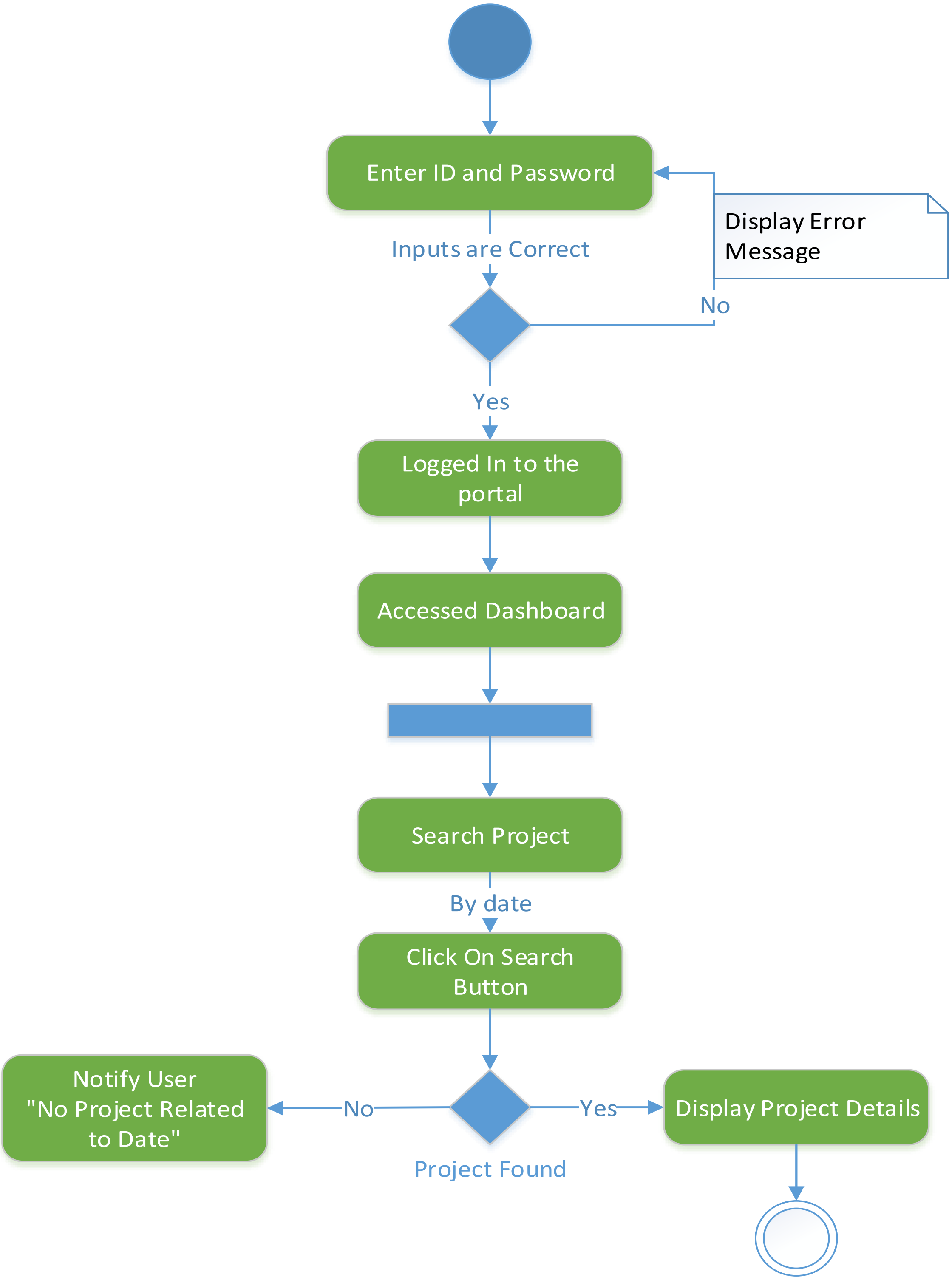
4.3.1.1 Add Notification



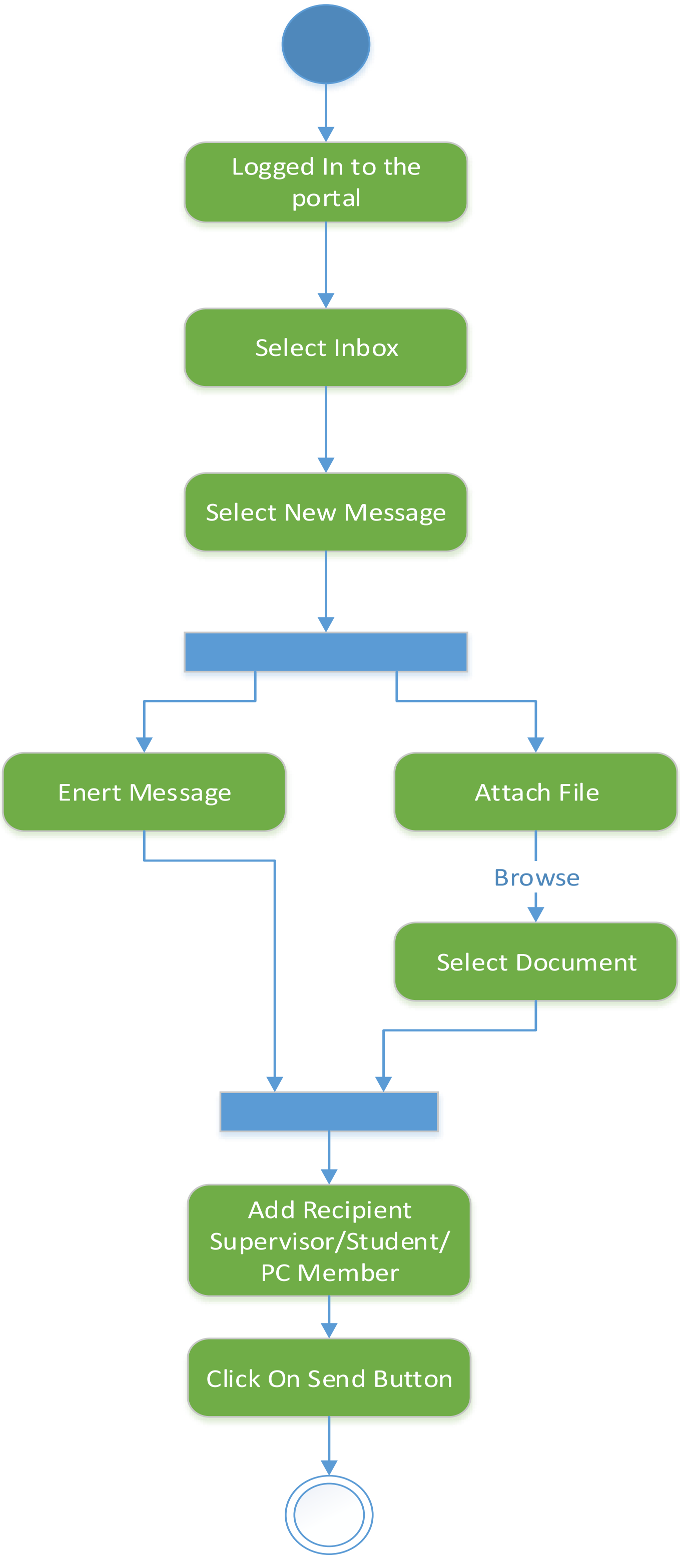
4.3.1.2 View Notification



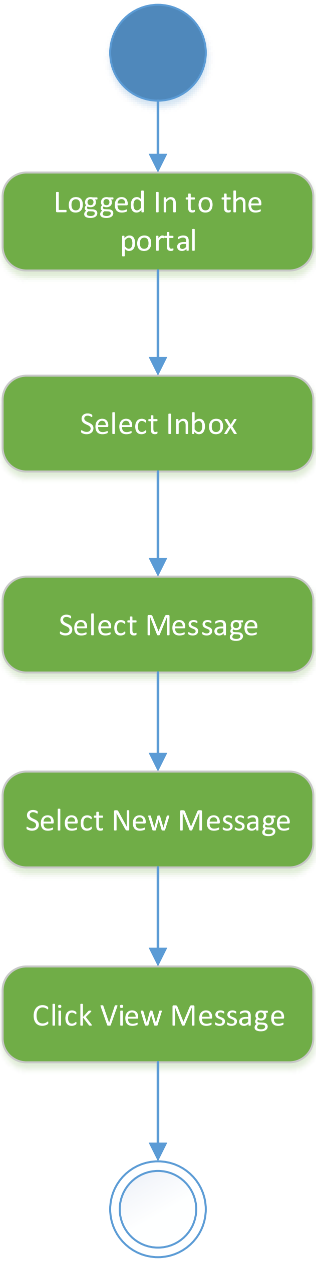
4.3.1.3 Search Project by Date



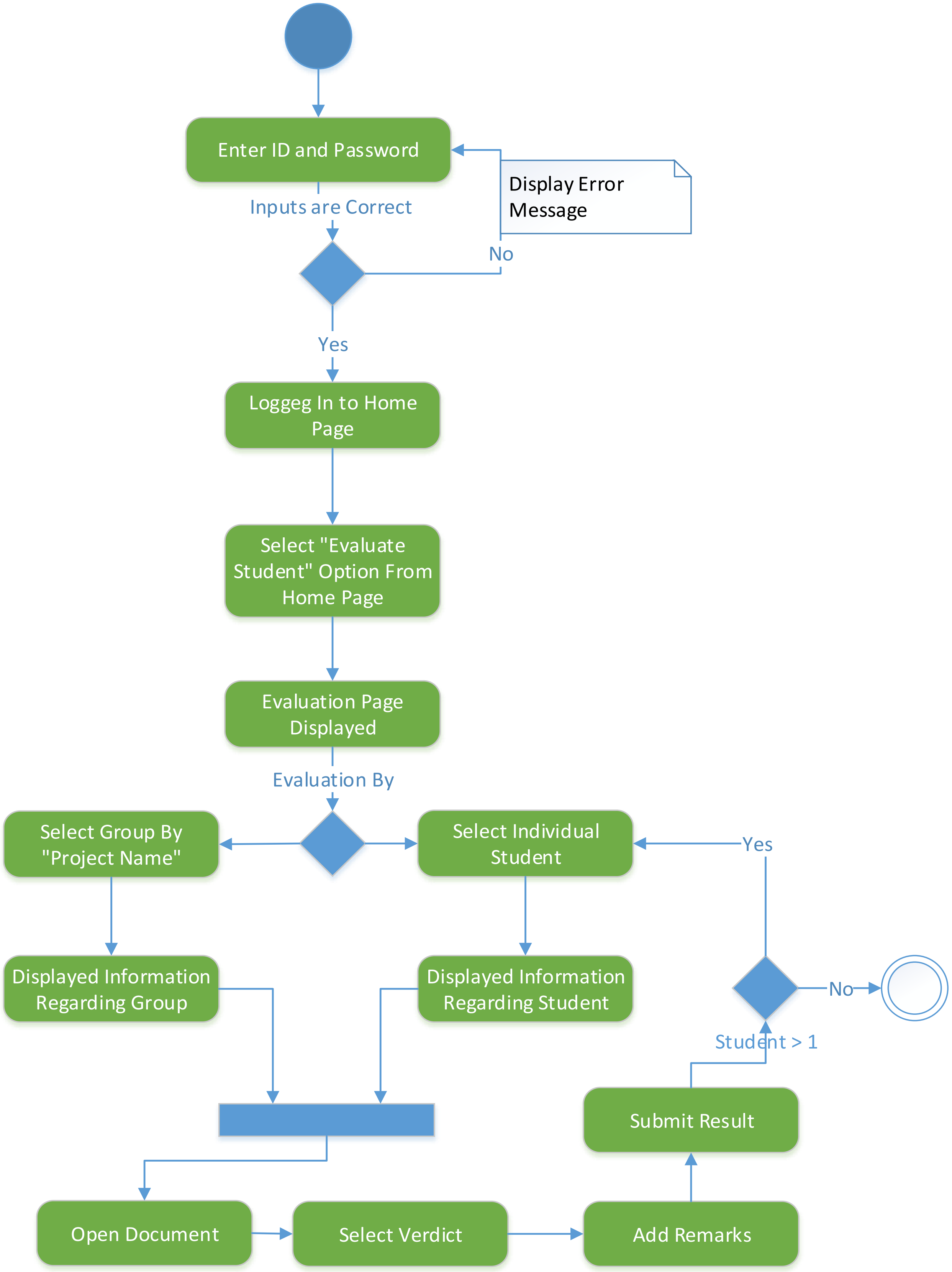
4.3.1.4 Send Message & Email



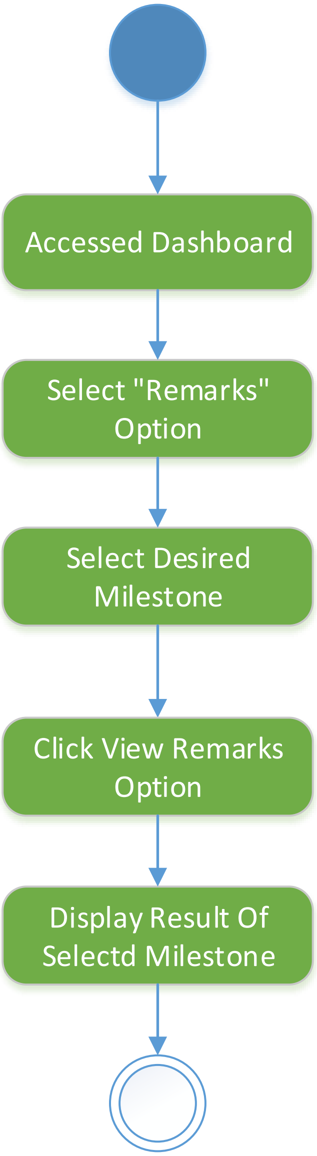
4.3.1.5 View Message & Email



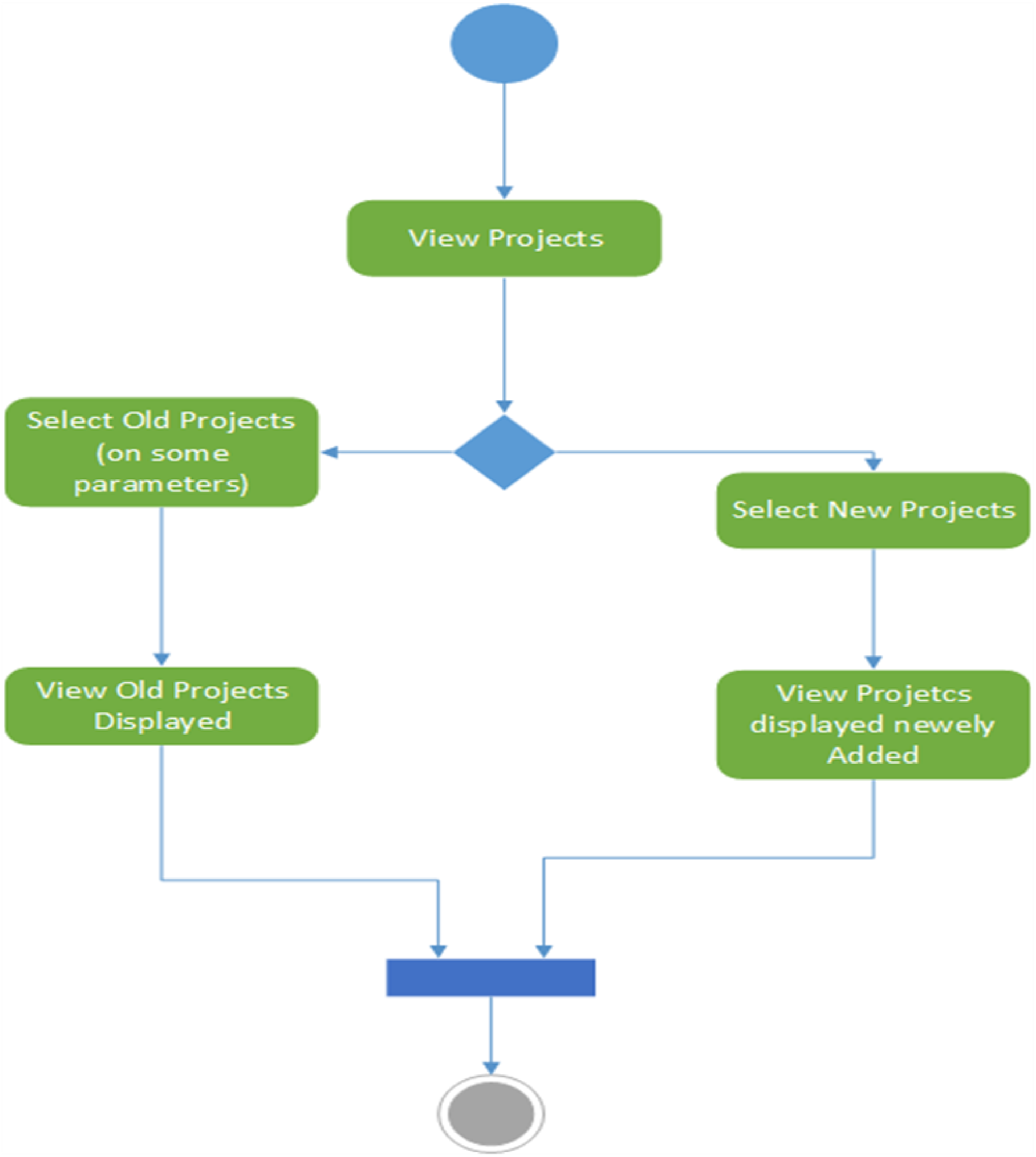
4.3.1.6 Evaluate Student & Upload Remarks


Enter ID and Password
Display Error Message
Inputs are Correct
No
Yes
Loggeg In to Home Page
Select "Evaluate Student" Option From Home Page
Evaluation Page Displayed
Evaluation By
Select Group By "Project Name"
Select Individual Student
Yes
Displayed Information Regarding Group
Displayed Information Regarding Student
No
Student > 1
Submit Result
Open Document
Select Verdict
Add Remarks

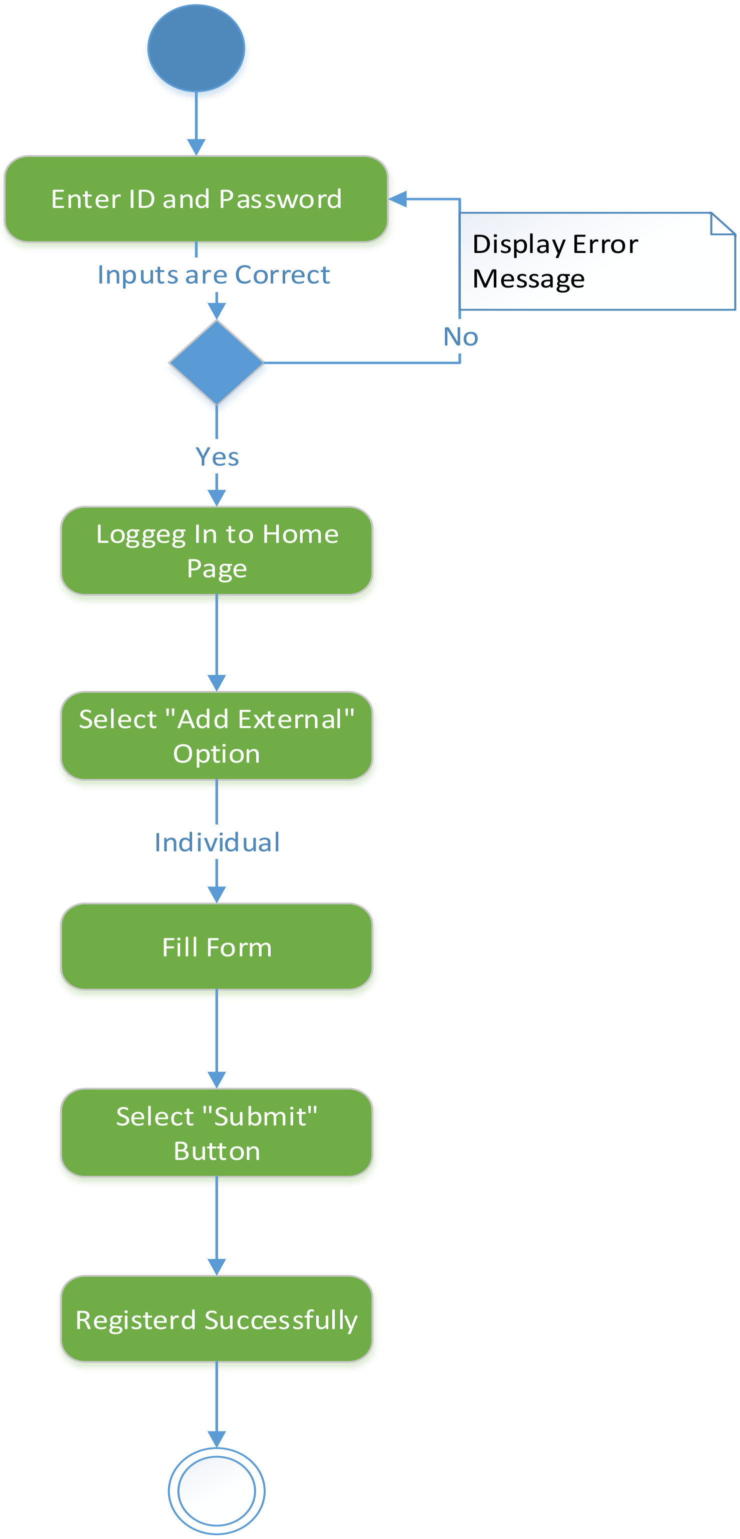
4.3.1.7 View Remarks



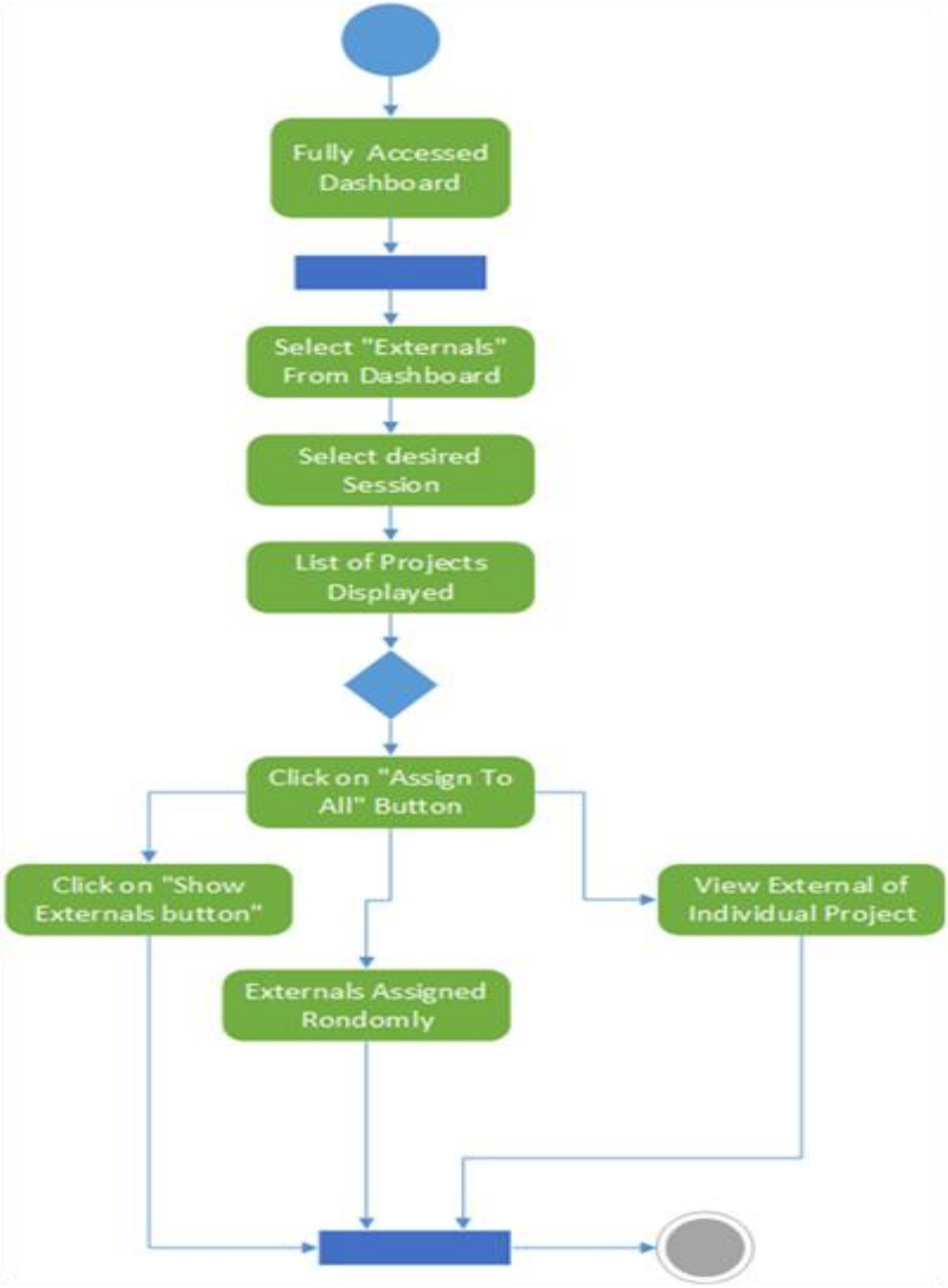
4.3.1.8 View Projects


View Projects
Select Old Projects (on some parameters)
Select New Projects
View Old Projects Displayed
View Projetcs displayed newely Added

4.3.1.9 ADD External

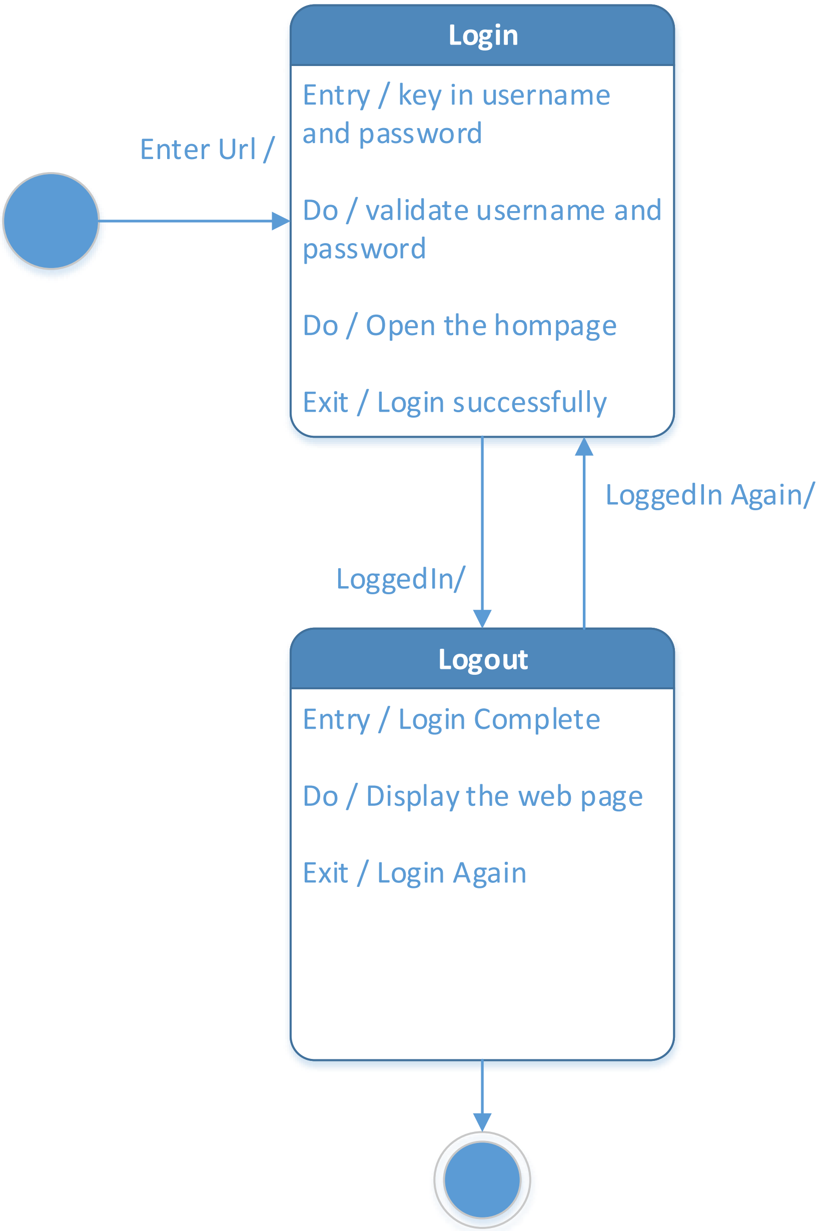


4.3.1.10 Assign External

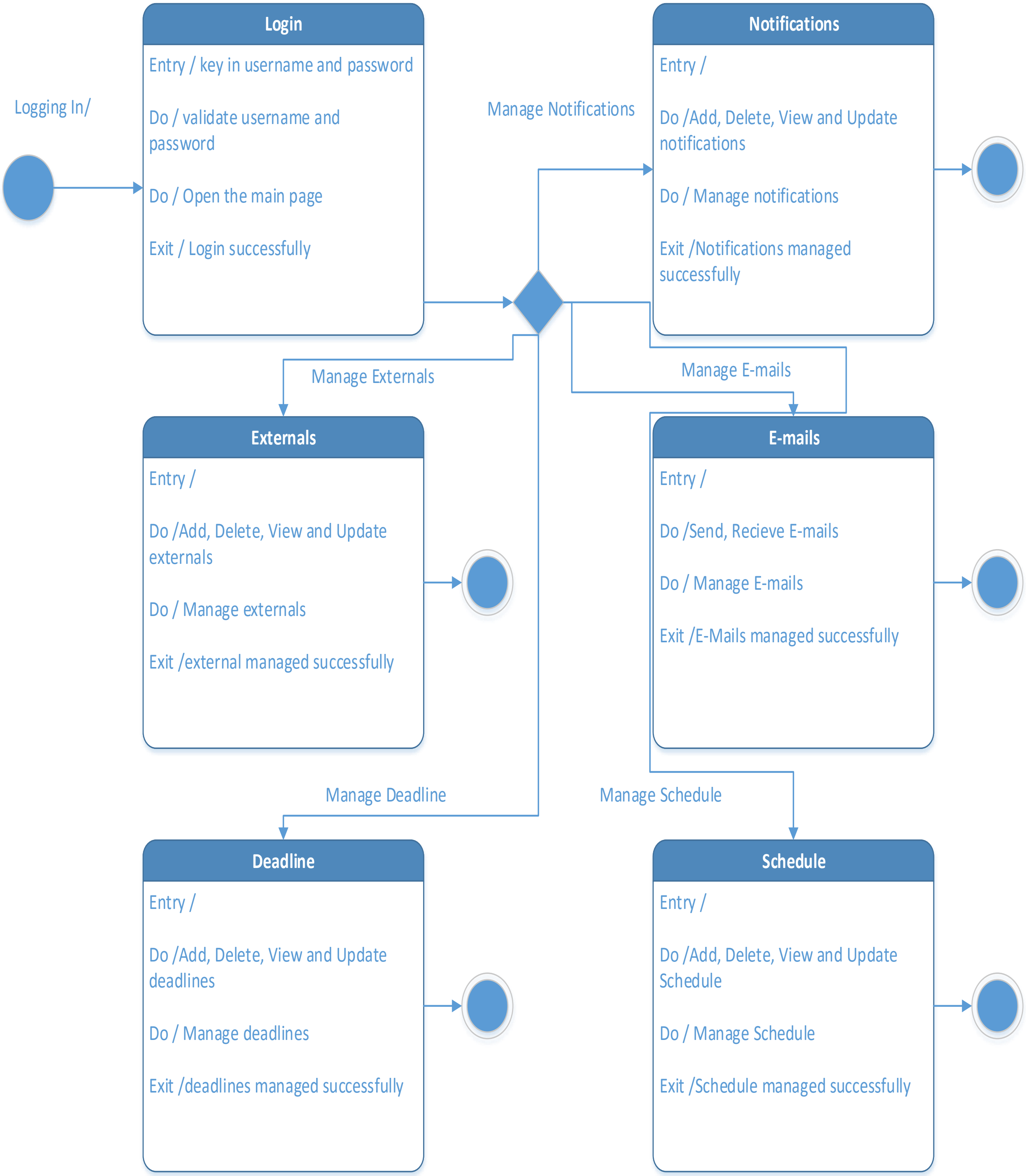

Fully Accessed Dashboard
Select "Externals" From Dashboard
Select desired Session
List of Projects Displayed
Click on "Assign To All" Button
Click on "Show Externals button"
View External of Individual Project
Externals Assigned Rondomly

4.3.2 State Machine Diagrams

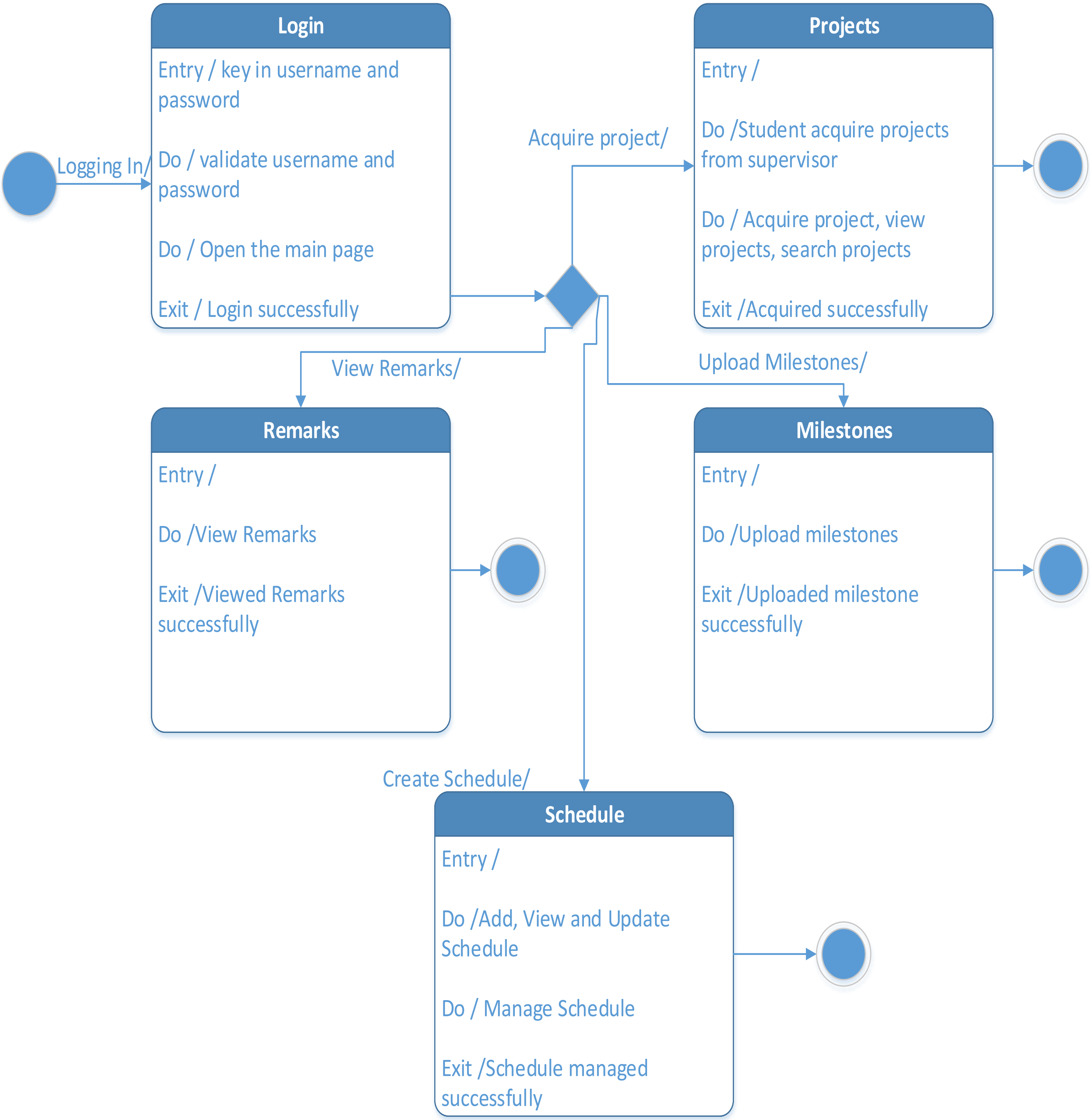
4.3.2.1 Login


Login
Entry / key in username and password
Do / validate username and password
Do / Open the hompage
Exit / Login successfully
Enter Url /
LoggedIn Again/
LoggedIn/
Logout
Entry / Login Complete
Do / Display the web page
Exit / Login Again

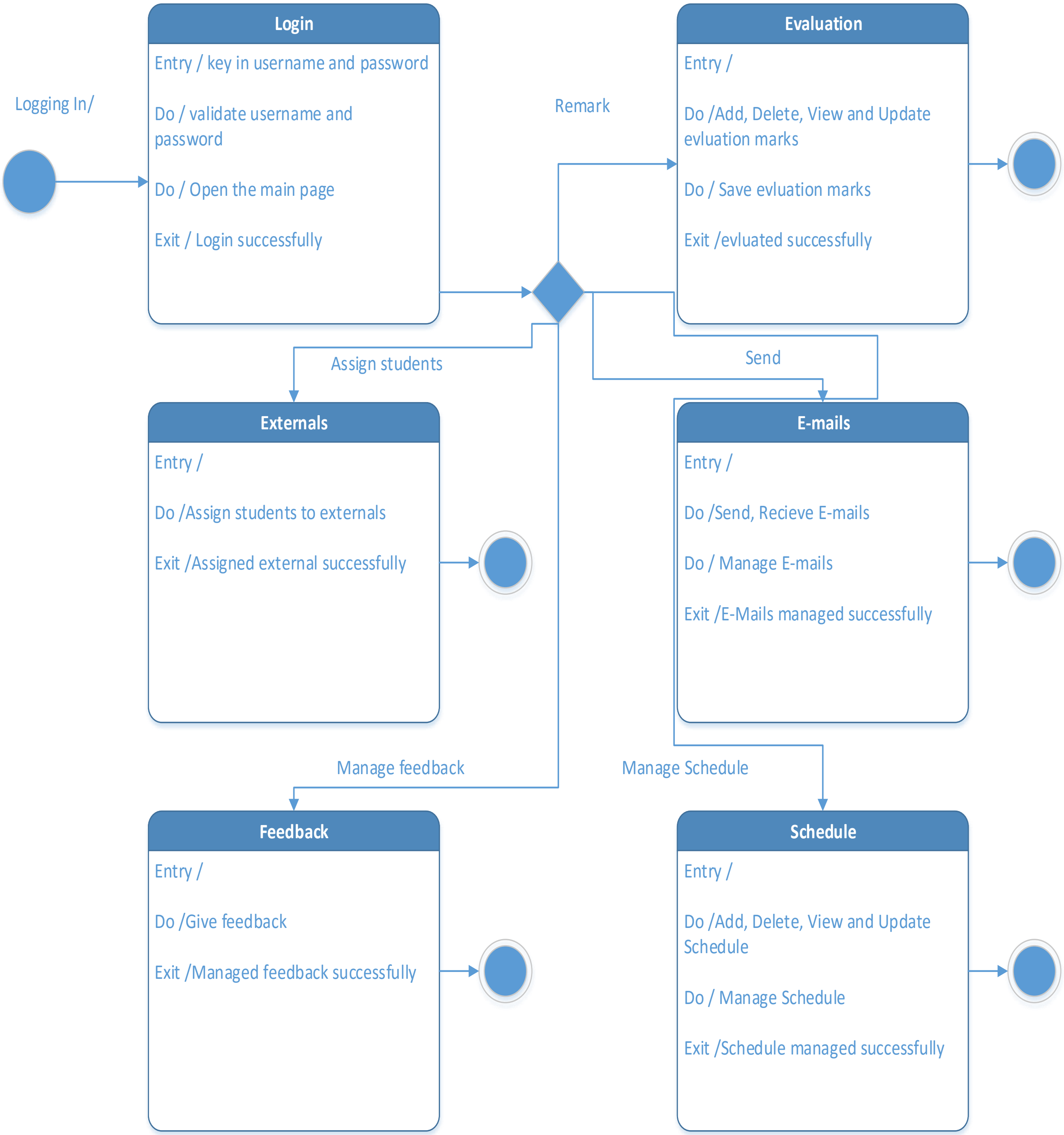
4.3.2.2 Administrator


Logging In/
Login
Entry / key in username and password
Do / validate username and password
Do / Open the main page
Exit / Login successfully
Manage Notifications
Notifications
Entry /
Do /Add, Delete, View and Update notifications
Do / Manage notifications
Exit /Notifications managed successfully
Manage Externals
Manage E-mails
Externals
Entry /
Do /Add, Delete, View and Update externals
Do / Manage externals
Exit /external managed successfully
E-mails
Entry /
Do /Send, Recieve E-mails
Do / Manage E-mails
Exit /E-Mails managed successfully
Manage Deadline
Manage Schedule
Deadline
Entry /
Do /Add, Delete, View and Update deadlines
Do / Manage deadlines
Exit /deadlines managed successfully
Schedule
Entry /
Do /Add, Delete, View and Update Schedule
Do / Manage Schedule
Exit /Schedule managed successfully

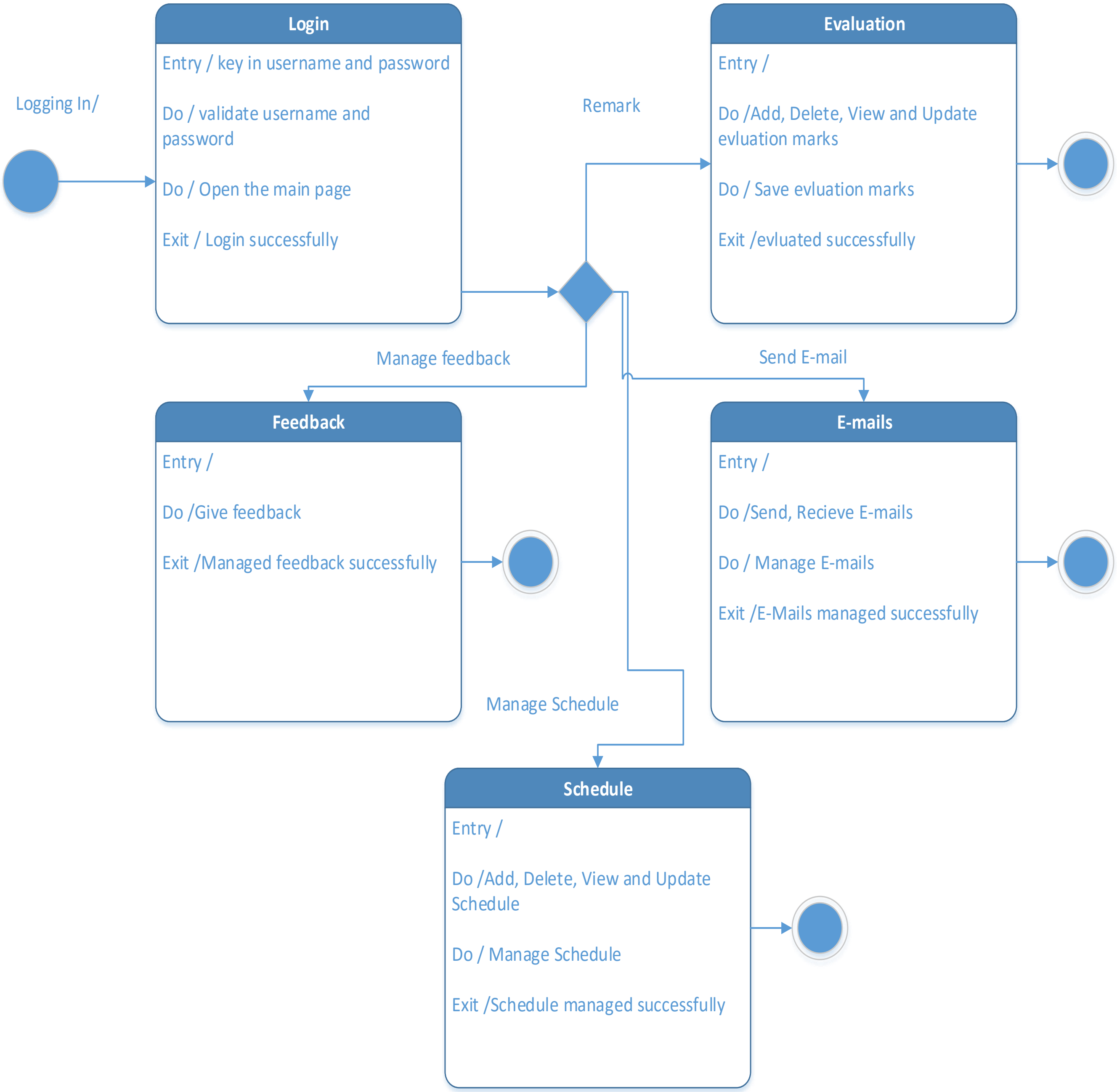
4.3.2.3 Student


Login
Entry / key in username and password
Do / validate username and password
Do / Open the main page
Exit / Login successfully
Logging In/
Acquire project/
Projects
Entry /
Do /Student acquire projects from supervisor
Do / Acquire project, view projects, search projects
Exit /Acquired successfully
View Remarks/
Upload Milestones/
Remarks
Entry /
Do /View Remarks
Exit /Viewed Remarks successfully
Milestones
Entry /
Do /Upload milestones
Exit /Uploaded milestone successfully
Create Schedule/
Schedule
Entry /
Do /Add, View and Update Schedule
Do / Manage Schedule
Exit /Schedule managed successfully

4.3.2.4 PC Member


Logging In/
Login
Entry / key in username and password
Do / validate username and password
Do / Open the main page
Exit / Login successfully
Remark
Evaluation
Entry /
Do /Add, Delete, View and Update evluation marks
Do / Save evluation marks
Exit /evluated successfully
Assign students
Send
Externals
Entry /
Do /Assign students to externals
Exit /Assigned external successfully
E-mails
Entry /
Do /Send, Recieve E-mails
Do / Manage E-mails
Exit /E-Mails managed successfully
Manage feedback
Manage Schedule
Feedback
Entry /
Do /Give feedback
Exit /Managed feedback successfully
Schedule
Entry /
Do /Add, Delete, View and Update Schedule
Do / Manage Schedule
Exit /Schedule managed successfully

4.3.2.5 Supervisor


Logging In/
Login
Entry / key in username and password
Do / validate username and password
Do / Open the main page
Exit / Login successfully
Remark
Evaluation
Entry /
Do /Add, Delete, View and Update evluation marks
Do / Save evluation marks
Exit /evluated successfully
Manage feedback
Send E-mail
Feedback
Entry /
Do /Give feedback
Exit /Managed feedback successfully
E-mails
Entry /
Do /Send, Recieve E-mails
Do / Manage E-mails
Exit /E-Mails managed successfully
Manage Schedule
Schedule
Entry /
Do /Add, Delete, View and Update Schedule
Do / Manage Schedule
Exit /Schedule managed successfully

References

References to any book, journal paper or website should properly be acknowledged. Please consistently follow the style. The following are few examples of different resources i.e. journal article, book, and website.

1 Lyda M.S. Lau, Jayne Curson, Richard Drew, Peter Dew and Christine Leigh, (1999), Use Of VSP Resource Rooms to Support Group Work in a Learning Environment, ACM 99, pp-2. (Journal paper example)

2 Hideyuki Nakanishi, Chikara Yoshida, Toshikazu Nishmora and Turu Ishada, (1996), FreeWalk: Supporting Casual Meetings in a Network, pp 308-314 (paper on web) http://www.acm.org/pubs/articles/proceedings/cscw/240080/p308-nakanishi.pdf

3 Ali Behforooz & Frederick J.Hudson, (1996), Software Engineering Fundamentals, Oxford University Press. Chapter 8, pp255-235. (book reference example)

4 Page Author, Page Title, http://www.bt.com/bttj/archive.htm, Last date accessed. (web site)