

Epoka Unified System

Requirements Specification

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**CEN 302 – Software Engineering
Faculty of Architecture and Engineering
Department of Computer Engineering**

EUS

Epoka Unified System

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1. Executive Summary

1.1 Project Overview

A lot of students struggle with deadlines. They have a hard time keeping up with everything going on around them. This is due to the large workload students have to deal with in a daily basis.

Epoka Unified System introduces a way for solving this problem by keeping track of every activity, event or deadline the students have. EUS does this by incorporating notifications as its primary way of communicating with the user. Through using this system, the student will have access on all of his data, which include, but are not limited to, attendance, grades, courses, timetables. Furthermore, the user (the student) will be able to interact with the professors through the use of notifications.

It is a web application intended to provide an easy-to-use, intuitive interface, which allows the users to access their university related data. This application also provides a channel of communication between the student and the professor, but it is not only limited to this. The Registration Office workers do not have direct communication with the other users, but are all of importance in the application's utilization. It is all supervised by an admin.

EUS's main purpose is to provide an easy-to-use tool that students can use to be on top of their schedule and interact with the professors of the respective courses they have chosen. A lot of focus is given to individualism on EUS. Every student will have the ability to choose what notifications to see, which course hours can be seen at the timetable etc. On the other side EUS provides the professors with options that make it easy for them to specify which students will get their notifications, which makes the whole experience of EUS much more specialized. Adding here the Registration Office which makes the whole user registration possible.

The intended audience of EUS are:

- Students
- Professors
- Registration Office
- Admin

1.2 Purpose and Scope of this Specification

This document specifies the requirements of the project without any technical implementation, thus focusing solely on the description of the entire infrastructure of the program.

The software's purpose is to provide an easy-to-use tool that students can use to be on top of their schedule and interact with the professors of the respective courses they have chosen.

This application also provides a channel of communication between the student and the professor.

In scope

Modification of the methods of collecting and storing information to meet the rules of GDPR set by the European Union.

Modification of Labor Relations Processing to meet the requirements of the Albanian legislation regarding the topic.

Out of Scope

Technical implementation of the system.

Development obstacles and solutions.

The way of obtaining and using the software.

2. Product/Service Description

The Epoka-Unified-System is meant to be used by students and professors which is the main idea behind the designation of the entire solution.

The whole student and professor experience in Epoka University is a continuous series of exams, project and assignment deadlines which have to be respected. At times it is pretty hard to remember every single task or exam that the student or professor has to participate in. This unanimously came to be the design philosophy behind every decision that the team is taking.

Practically the team is attempting to provide a simple and clean interface that displays efficiently and with no delay all the personal data of a student or professor.

To further simplify things the addition of notifications and reminders might help increase the productivity and subsequently the performance of the users of the system.

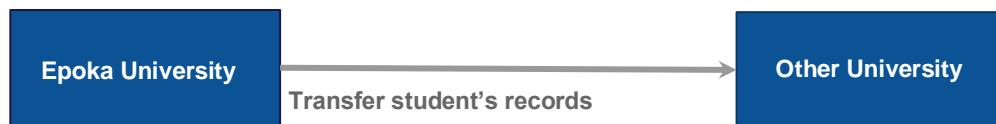
In addition, there will be a Registration Office which will make sure the users are registered and an admin who is able of many functionalities regarding the system's maintainability.

2.1 Product Context

The software is supposed to be related directly to Epoka University managing staff.

It is an independent system whose intended audience are students, professors, registration office and an admin.

It does not interface with a variety of related systems, unless a student transfers its studies to another university. In this case the student's records are also transferred to the specified university.



2.2 User Characteristics

There are four user categories who will be using this product:

- Students
- Professors
- Registration Office
- Admin

Students are able of the following functionalities:

- Can access their account anytime.
- Are able to use the GUI to display the needed information.
- Change their passwords.
- Edit and Update their profile anytime.
- Tend to use the Electronic System at times where it is crucial to obtain the necessary information as fast as possible.
- Will rely on the displayed data to do many crucial university-related actions.
- Add customized events and deadlines.
- Set up reminders.
- Send request to specific professors to enroll to their course.
- Request major change.
- Log out anytime

Professors are able of the following functionalities:

- Can access their account anytime.
- Are able to use the GUI to display the needed information.
- Change their passwords.
- Edit and Update their profile anytime.
- Visit students' profile.
- Approve students' request to enroll to their course.
- Have average to expert level technical knowledge of a system of the sort.
- Repeatedly communicate with the system to provide the grades and assignments in a timely manner.
- Rely on the communication bridge (EIS system currently) to correctly and timely transmit grades and assignments to the students.
- Log out anytime.

Registration Office is able of the following functionalities:

- Can access the system anytime without having an individual account.
- Are able to use the GUI to display the needed information.
- Visit students and professors' profile.
- Register users.
- Grant permissions to students and professors.
- Update timetable.
- Create/edit/view notifications and send them to students and professors.
- Create courses and assign professors.

The admin is able of the following functionalities:

- Can access their account anytime.
- Visit their account.
- Change their password.
- Log out anytime.
- Register users.
- Grant permissions to all users.
- Add/delete/edit user accounts.
- Log out anytime.

2.3 Assumptions

The EUS system is designed to provide cross-platform functionality because of its web-based structure. Users are expected to run the software on the well-known platforms Windows, Mac and mobile environments. Because of the complexity of the solution the device should have at least average computation power and a reliable internet connection.

The intended audience (students, professors, registration office, admin) are expected to be at least semi proficient in the English language to understand the utilities provided. The interface is being developed to be simplified and the modules are designed to effectively group together functionalities to make the learning curve of the program as smooth as possible.

It is assumed that the professors and students are differentiated by their card issuance number and when they firstly sign up they're going to be provided with different operations based on their user category.

It is assumed that the personal information of the student and the professor is confidential and can only be viewed by them (except the admin).

It is assumed that every professor has access to the list of the students that attend his course and if they lecture more than one course the lists of the students divided by the course they're enrolled into.

Only the managing staff of the university (register office) can verify the students when they sign up. They are the only ones that are responsible for deleting students' records when they are no part of the university anymore (ex. they have transferred their studies to another university, they have dropped their studies at this university etc.). They are also assumed to handle the changes of the students' information when they change major.

It is assumed that the system is able of some functionalities and they're done by it in an automatic manner.

2.4 *Constraints*

- Users are expected to run the software on the well-known platforms Windows, Mac and mobile environments. Because of the complexity of the solution the device should have at least average computation power.
- The users should make sure to have reliable internet connection in order for the software to work.
- The intended audience (students, professors, registration office, admin) are expected to be at least semi proficient in the English language to understand the utilities provided.
- The audience should know how to put to use the application.
- The back-end structure should be ready to respond to all requests at any time which might be highly concurrent peaking at University operating hours.
- The EUS is a very complex system which manages crucial operations for students, professors and registration office workers, therefore the administrators should always be available to respond to complaints when certain scenarios fail to provide functionality or a better way is suggested.
- Professors' views and functionalities must function correctly first to provide the server information which will adequately be displayed to the students.

2.5 *Dependencies*

A part of the software that monitors the professors' operations is dependent on the part of the software that monitors the students' operations and also on the part of the software that monitors the registration office's operations.

There are some dependencies between students and professors:

- The students cannot enroll to a specific course if the corresponding professor does not accept their request.
- The students do not have access in viewing their grades if the professors do not post them on the application.
- The students do not have access in viewing their attendance if the professors do not post them on the application.
- The students do not have access in viewing their materials related to the specific course/s if the professors do not post them on the application.

There are some dependencies between the Registration Office and the professors:

- Professors cannot log in in their account if they are not registered by the Registration Office.
- Professors cannot view their courses if they are not created by the Registration Office.
- Professor cannot see the updated timetable if the Registration Office hasn't uploaded the updated version of it.

There are some dependencies between the Registration Office and the students:

- Students cannot log in in their account if they are not registered by the Registration Office.
- Students cannot view the courses they are enrolled in if they are not created by the Registration Office.
- Professor cannot see the updated timetable if the Registration Office hasn't uploaded the updated version of it.

3. Requirements

3.1 *Functional Requirements*

The requirement numbering has a scheme - BR## (BR for Business Requirement).

Req#	Requirement	Comments	Priority	Date Rvwd	SME Reviewed/Approved
BR_01	The system must be supported by a web application.	This is the main platform for using the software.	2	04/06/19	Megi Hoxha/ Ergj Dervishaj

BR_02	The system should, but not necessarily, provide the users with a mobile view platform.	This will allow the users to operate on the application by using their mobile phones.	3	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_03	The software should have different views for different level of users.	A view with different functionalities for the students, another view for with different functionalities for the professors, one for the Registration Office and one for the admin.	2	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_04	The system creates custom notifications based on user preferences.	The students, professors and the Registration Office create customized events and deadlines and the system sends them the notifications.	2	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_05	The system confirms students' application to enroll to a specific course after deadline of selection week is past due.	The student select the courses and their application is automatically accepted if the deadline is past due.	2	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_06	All the accounts of the users should be secured by a password.	Only users know their password. Passwords are going to be hashed in the database.	1	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_07	Users can change their password.	They can change their passwords in case they forget them. A PIN will be sent to their email address. After entering it the users can change their forgotten password to a new one.	2	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_08	Users cannot edit their personal information except their passwords.	No user can change their personal information (username, name, surname, major, card number, card issuance date).	2	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_09	Users can change/modify the settings.	Professors and students can specify the operations that appear by default.	3	04/06/19	Megi Hoxha/ Ergi Dervishaj
BR_10	The professors should be able to view all their students.	(A) list/s of all the students that are enrolled to their course should be provided by the system to all of the professors.	2	04/06/19	Krist Kokali/ Gerard Kraja

BR_11	The professors should approve(not) the students' request to enroll to their course.	After the request is approved by the specific professors the request is also sent to the supervisor who officially approves the request.	2	04/06/19	Krist Kokali/ Gerard Kraja
BR_12	The professors create notifications about assignments and deadlines related to them.	Each time the professor enter an assignment he also creates a deadline related to the assignment and send the notification to the students.	2	04/06/19	Krist Kokali/ Gerard Kraja
BR_13	The professors decide who receives the notifications.	Since a professor might have more than one course they lecture on, they can choose who receives a specific notification.	2	04/06/19	Krist Kokali/ Gerard Kraja
BR_14	The professors can edit the notifications.	They can change the deadline of the assignment and also send a notification to the student to notify them for the changes made.	3	04/06/19	Krist Kokali/ Gerard Kraja
BR_15	The professors edit the courses' description.	Whenever something new is added to the curricula of the course the professors can change their courses' description.	3	04/06/19	Krist Kokali/ Gerard Kraja
BR_16	The professors enter all the materials related to a specific course.	The professors can add materials related to the course (online books, PowerPoint presentations etc.)	3	04/06/19	Krist Kokali/ Gerard Kraja
BR_17	The professors enter students' grades and they specify the type and the weight each grade is assigned to.	Professor enter the grades of each student and specify its type (midterm exam, final exam, quiz, laboratory assignment, homework) and the weight of the grade (the weight it has on the final grade).	2	04/06/19	Krist Kokali/ Gerard Kraja
BR_18	The professors enter students' attendance.	After each lection the professors add if students attended the course or not.	2	04/06/19	Krist Kokali/ Gerard Kraja
BR_19	The students view the notifications, events and deadlines entered by the professors.	Each time the professors enter an assignment and a deadline related to it, the notification is sent to the students to view them.	3	04/06/19	Paolo Miraka/ Ergj Dervishaj

BR_20	The students can create customized events and deadlines.	Each student is able to create its own event or deadline so it can notify oneself.	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_21	The students select courses they want to enroll to.	In the course selection week a list of the courses available in his major is provided to the students and each one of them should and is able to select the courses they want to enroll to.	2	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_22	The students drop courses they do not want to be enrolled to anymore.	Students are able to drop courses they do not want to be enrolled to anymore and send this request to specific competences.	2	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_23	The students view grades, attendance, materials on each course.	They are able to view anything related to a specific course including attendance, grades and materials.	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_24	The students view all notifications, events and deadlines.	They are always notified for specific events and deadlines whenever professors enter them.	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_25	The students choose which notifications to see.	The students can always choose which notifications to see. They can also turn off notifications if they want to.	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_26	The students can search for a specific notification.	At any case a student misses a notification they can search for it.	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_27	The students view the bus timetable and the courses timetable.	The students can view the bus timetable (Epoka Campus-Durres, Durres-Epoka Campus, Tirane-Epoka Campus, Epoka Campus-Tirane). Students can view the courses timetable also (today's courses timetable or the upcoming days' courses timetable).	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_28	The students can request major change.	The major change is directed to the Registration Office.	3	04/06/19	Paolo Miraka/ Ergi Dervishaj

BR_29	The students request transcript or attendance verification printing.	The request is sent to the Registration Office, so they print it beforehand, in order for the response to be faster.	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_30	The Registration Office registers users.	The Registration Office does the registration of the students and the assignment of the professors.	2	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_31	The Registration Office creates courses and assigns professors.	The Registration Office creates the courses first in order for them to appear in the other users' interface.	2	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_32	The Registration Office views students' grades and attendance.	They are able to view the transcript of each student and also the attendance of them in order to print them (transcript or attendance verification).	3	04/06/19	Paolo Miraka/ Ergi Dervishaj
BR_33	The Registration Office creates deadlines/events.	They create deadlines and event and send the notifications to students and professors.	2	04/06/19	Megi Hoxha/ Gerard Kraja
BR_34	The Registration Office chooses the audience of the notifications they send to.	The audience may be the professors or the students divided by their department.	2	04/06/19	Megi Hoxha/ Gerard Kraja
BR_35	The Registration Office can edit the notifications.	They can add additional information, change the deadlines etc.	3	04/06/19	Megi Hoxha/ Gerard Kraja
BR_36	The Registration Office provides input data used to generate timetable.	They upload the timetable and edit it in case changes are necessary.	2	04/06/19	Megi Hoxha/ Gerard Kraja
BR_37	The Registration Office views timetable change requests.	Students can send timetable change request if overlap occurs and the Registration Office verifies it and makes the necessary changes if any.	3	04/06/19	Megi Hoxha/ Gerard Kraja

3.2 Non-Functional Requirements

3.2.1 Product Requirements

3.2.1.1 User Interface Requirements

The application where the main focus will be put on is the web application. It should be compatible for all Chrome, Mozilla and Safari.

The sketches of the interfaces are going to be attended to the Appendix C.

- The main page of the application is just a login interface.
 - It will contain Epoka University's logo.

Below the user is asked to enter:

- Their E-mail
- Their password,
- Followed by a login button.

Two links follow the login button:

- The “Forgot your password?” link
- “Don’t have an account?” link which direct the users to specific interfaces.

- The “Forgot your password?” link directs the users to another page where:
 - they are asked to enter their E-mail address where a code is going to be send to reset the password
 - and a send button.
- The send button directs the users to another page where:
 - the users are asked to enter the code they received in their e-mail address
 - and a verify button.
- The verify button directs the users to another page where:
 - the users are asked to enter the new password twice
 - and a reset password button that directs the users to the login interface.
- The “Don’t have an account?” link directs the users to a page where they are required to enter some personal information including:
 - name
 - surname
 - gender
 - email
 - password
 - confirm password
 - recovery email

- student ID No
- card issuance date
- and a signup button that directs the users to the login interface

The Student Interface contains:

A side menu which shows all the available menus the user can access after logging in. They appear in this order:

- **Notifications:** The students see the deadlines which should be accomplished sooner first. Below the notifications related to specific courses are posted appearing by the ones posted lately first. Students can also choose the course they want to get notifications about or search a particular one in the search bar. They also have the opportunity to star/unstar/mark as complete the notifications.
- **Calendar:** The calendar of the real time month will be shown. The numbers (representing the days of the month) who have deadlines to meet or events to see are followed by a number representing the number of the events/deadlines related to that day. (For a clearer view, see Appendix C). If the students want to create a customized event/deadline they can do so by clicking in the day they want their deadline to appear and a box will be shown to be completed with the necessary information like: the course's name, name of the event/deadline, a short description and the finish time.
- **Timetable:** At the top of the page the bus timetable will be shown of the real time date of the user. The students can choose the bus start place and also the arrival place. Below the bus timetable, the courses timetable will be shown, firstly the todays course timetable and below the upcoming days courses timetable.
- **Courses:** During the course selection week the students can view all the available courses and select the ones they want to enroll to. These will appear in the selected courses table. Each student is allowed to select as much courses as to not surpass the max ECTS (thirty-five). Once the course selection week is done the students are redirected to another interface which provides the necessary information of the selected courses namely: course grades, attendance and materials.
- **My Profile:** General information about each student will be shown including their credentials and the transcript of their all academic years.
- **Settings:** This menu is divided into three sections:
 - **General:** At the top left of the page the profile picture of the user will be shown. The student can change it according to their preferences. They can change their password and secondary email and also request major change switch to dark mode and choose language.
 - **Transport preferences:** Students will be able to set up a notification x minutes before the bus leaves.

- **Courses preferences:** Students will be able to choose their priority course, set up a reminder for a specific percentage of unattended hours, set up a reminder for a specific “max can get” grade, set up a reminder for a deadline and one when new materials are uploaded.

The Professor Interface contains:

A side menu which shows all the available menus the user can access after logging in. They appear in this order:

- o **Notifications:** They create all the deadlines and send the notifications to the students. The notifications will contain a name, a description, the finish time and an upload button so the professors can upload the specific assignments. Professors can choose who can view the notification. They can search a particular one in the search bar and also have the opportunity to star/unstar/mark as complete the notifications.
- o **Calendar:** The calendar of the real time month will be shown. The numbers (representing the days of the month) who have deadlines to meet or events to see are followed by a number representing the number of the events/deadlines related to that day. If the professors want to create a customized event/deadline they can do so by clicking in the day they want their deadline to appear and a box will be shown to be completed with the necessary information like: the course’s name, name of the event/deadline, a short description and the finish time.
- o **Timetable:** The courses timetable will be shown, firstly the todays course timetable and below the upcoming days courses timetable.
- o **Courses:** The list of the students enrolled to their course will be appeared. The professors can upload each students’ grades (should also specify the type and the weight of the grade), attendance (attended and unattended hours) and course materials.
- o **Settings:** The professors will be able to change general settings like switching to dark mode or choosing another language. They can also change notification preferences.

The Registration Office Interface contains:

A side menu which shows all the available menus the user can access after logging in. They appear in this order:

- o **Notifications:** They create deadlines and send the notifications to the students and professors. The notifications will contain a name, a description, the finish time. In case the notification represents an event, the notification will only contain a description of the event. The Registration Office can choose who can view the notification. They can search a particular one in the search bar and also have the opportunity to star/unstar/mark as complete the notifications.

- **Calendar:** The calendar of the real time month will be shown. The numbers (representing the days of the month) who have deadlines to meet or events to see are followed by a number representing the number of the events/deadlines related to that day. If the Registration Office wants to create a customized event/deadline they can do so by clicking in the day they want their deadline to appear and a box will be shown to be completed with the necessary information like: the course's name, name of the event/deadline, a short description and the finish time.
- **Timetable:** The Registration Office will be able to upload the calendar (not create it in the application) and separate it in different faculties.
- **Courses:** This interface will allow the Registration Office to create the courses and send the notification to the specific professors and students. They open the course by specifying the course's name, description and assign the professor.
- **Settings:** The Registration Office will be able to change general settings like switching to dark mode or choosing another language. They can also change notification preferences.

The Admin Interface contains:

Only a home menu where he views information, searches and applies filters. A log out button by which he is automatically logged out.

3.2.1.2 Usability

3.2.1.2.1 Learnability:

- The application is easy to use hence no specific training will be needed for the users.
- The users will be automatically informed in case of any error by using a message digest which is known to be relatively free from collisions.
- The application will know the specific users that are allowed to use the application (by the username), so it will not allow random users to sign up and use the application.

3.2.1.3 Efficiency Requirements

3.2.1.3.1 Performance Requirements

- The software will be based on web and has to be run from a web server.
- The software shall support all the students and the professors who must have access in the system at any time.

- The application's time of execution will depend on the user's internet connection strength.
- The performance of the application will depend on the number of active user accessing the website.

3.2.1.3.2 Capacity

- Every user will use the same database. If multiple requests are made to the server, the requests will form a query.
- The application will be stored in a web server.
- The database will not be very large and complex.

3.2.2 Organizational Requirements

3.2.2.1 Availability

- The application (web and mobile) will be available for usage 24 hours for each day of the week.
- The application will be available for all the users. Everything needed is a PC/mobile and Internet connection.
- The application will be accessed and in any geographical area.
- The application will be reliable.

3.2.2.2 Latency

The latency of the software will depend on:

- The Internet connection strength.
- The size of the database since the number of the users will be big.
- Because of the complexity of the solution the device should have at least average computation power.

3.2.2.3 Monitoring

Application Performance Monitoring:

The performances pulse of the application will be measured by writing reports. High quality reports give additional insight into performance trends and indicate directly to the performance of the application.

An additional way to measure the application's performance will be by allowing the users to rate the application and write their suggestions on what should be improved.

Log Monitoring:

Log files will be generated. Errors, problems, and more information will be constantly logged and saved for analysis.

Monitoring logs will help to identify security events that occurred or might occur.

3.2.2.4 Maintenance

The existing software will be modified while preserving its integrity, to fulfill the objective of the software maintenance.

To maintain the software, the collaborators will try to re-document their software systems from time to time to keep it updated.

The users will be automatically informed in case of any error by using a message digest which is known to be relatively free from collisions.

3.2.2.5 Operations

The normal and special operations required by the user will include:

- The ability of logging in anytime and accessing their personal information.
- The users are divided into two categories (student and professor) and each one will be provided with different accessibilities.
- The personal information of the student is accessed only by them. It will include:
 - The courses they have selected to enroll to and materials regarding each course.
 - The attended/unattended hours in each one of the courses, together with the final percentage of the attendance.
 - The grades taken in each exam/quiz/homework/laboratory assignment and a prediction on the final grade of the course.
- The personal information of the professor is accessed only by them. It will include:
 - The list of the students enrolled to the course/s they lecture divided into different majors.
 - Their materials regarding the course/s.
- These accessibilities by signing in/up as a student will be:
- **Notifications** – These will include events (ex. “The course registration week”) and deadlines (ex. “WEB Programming: Please submit the Laboratory Assignment 02 (01:45”)). The student will also be able to create a customized event/deadline by writing its name, description, also the time when it should be finished.

- **Calendar** – It will work as an optimization of all events, deadlines and other national events (days off), all in one.
- **Timetable** – It will include the transport and the courses timetable.
As for the courses timetable, the timetable of the current day will be displayed first, followed by the upcoming days of the week. On the other hand, the mobile view will be a little different since the display changes. The user will have to choose the day and then the specified timetable will be shown.
- **Courses** – During the course registration week, the student will have to choose the courses by selecting them in a list where will be displayed all the courses of its major from the first to the third year and then a request for acceptance will be sent to the professor.

My courses – This will include me main information the student will have, including grades, course materials and attendance.

- **My Profile** – It will have the credentials of the students, the transcription of its grades, also the GPA of them.
 - **Settings** – The student is able to change some general information, notification preferences, switch to dark mode, choose another language etc.
-
- These accessibilities by signing in/up as a professor will be:
 - **Notifications** – It will include events (ex. “The grades uploading period”) and deadlines. The professor will also be able to create a customized event/deadline by writing its name, description, also the time when it should be finished for themselves or even send notifications to their students.
 - **Calendar** – It will work as an optimization of all events, deadlines and other national events (days off), all in one.
 - **Timetable** – It will include the courses timetable, the timetable of the current day will be displayed first, followed by the upcoming days of the week. On the other hand, the mobile view will be a little different since the display changes. The user will have to choose the day and then the specified timetable will be shown.
 - **Courses** – The professors will be able to upload students’ grades, attendance and course materials regarding each course (if more than one) they lecture.
 - **Settings** – The professor is able to change some general information, notification preferences, switch to dark mode, choose another language etc.

 - The accessibilities by signing in/up as Registration Office will be:
 - **Notifications** – It will include events which will be end to student and professors. They will also be able to create a customized event/deadline by writing its name, description, also the time when it should be finished.
 - **Calendar** – It will work as an optimization of all events, deadlines and other national events (days off), all in one. will be uploaded by the Registration Office and will be delivered to all of the other users.
 - **Timetable** – It will include the courses timetable and the bus timetable. It will be uploaded by the Registration Office and will be delivered to all of the other users.
 - **Courses** – The Registration Office is in charge of creating the courses and assigning the corresponding professors.

- **Settings** – The Registration Office is able to change some general information, notification preferences, switch to dark mode, choose another language etc.
- The accessibilities by signing in/up as the admin will be:
 - They view information, search and apply filters, register and grant permissions to users/

3.2.3 External Requirements

3.2.3.1 Network and Hardware Interfaces

For the Epoka Unified System to run you will need a PC (regardless of its operating system, it can be Windows or Linux) or Mac, or on mobile (it can be Android or IOS).

Since it is not a resource hungry program, it will run on most systems without a problem. Lastly, a functional standard keyboard and mouse is required.

3.2.3.2 Systems Interfaces

The program will be an integrated software.

There is no synchronization process since the solutions all share the same database. This feature is one of the biggest benefits of having an integrated software solution.

The data of the application is maintained in the database (MySQL). It cannot be edited by any user.

3.2.3.3 Security

3.2.3.3.1 Protection

- The data of each user will be strictly protected.
- The personal information of the student will be protected and secured by the lecturer.
- The email and password of each user will be validated by using specific functions.
- Each lecturer will be provided with the information of the students who are enrolled to his/her course/s.
- Each student will be provided with the information related to him/her.

3.2.3.3.2 Authorization and Authentication

- It will be a Single-Factor Authentication, so it will rely on the email and password of the user
- The user will be authenticated by using their email and password in order for them to log in the software.
- The credentials of the user will be checked by using a function for their validation to verify their identity.
- The two different categories of the users will only be authorized with their accessibilities.
- The information of each user will be private and will be accessed only by the specific actors.

- The standard PubCookie tool will be used.

3.2.3.4 Data Management

- The data that this software will have to deal with varies from personal information of the student, to specific and detailed records.
- This data will be accessed and maintained by certain rules. Depending in the user's level of accessibility (student and lecturer), the range of access will be different.
- The entities and their relationships will be defined in detailed schemas and diagrams.

3.2.3.5 Standards Compliance

Our application is a system developed to manage all academic activity of both students and professors. Sensitive information will be stored and as such it must be protected.

Given that there is existing regulation by the EU, called the General Data Protection Regulation (GDPR), we strive to comply with it in order to protect the privacy of the system users.

(For further information on GDPR rules and citizens' rights visit this [link](#).)

3.2.3.6 Portability

The system will be web-based; therefore, it will operate the same regardless of the operating system.

The system will be programmed using technologies such as NodeJS, SQL, Express.

The application can be accessed by using a computer or a mobile phone.

3.3 Domain Requirements

- Being able to access the list of faculties and list of students of each department.
- Implementing a repository for study material sharing and assignment submission.
- Being able to access the course and transportation timetables.
- Having access to the attendance records.

4. Software Design/Diagrams

4.1 User Scenarios

Number	User Story Name	Description
1	Successful Login	User logs in successfully by entering his email and password
2	Login failed	User fails to login by using his email and password
3	Successful Signup	User succeeds to sign up to the application by entering his credentials
4	Signup failed	User fails to sign up to the application by entering his credentials
5	Password forgotten	User forgets his password, changes it by using a code received to his email account.
6	Profile view and edit	Users can edit their profile in the My Profile menu.
7	Language chosen	User changes the language in the Settings menu
8	Dark mode on	User switches the display to dark mode.
9	Custom notifications	Users get custom notifications from the system.
10	User signs out	Users log out by clicking the log out button at the bottom left of the page
11	Student checks notifications	Student logs in and checks the notifications and deadlines of the upcoming assignments.
12	Student marks/unmarks notifications	Students can mark their or unmark their notifications as complete.
13	Student stars /unstars notifications	Students can star or unstar the notifications they see as important.

14	Student searches specific notifications	Students can also choose the course they want to get notifications for or search a particular one in the search bar.
15	Student checks calendar	Student opens the calendar to check if any upcoming event is coming soon.
16	Student updates calendar	Student updates calendar by adding customized events and deadlines.
17	Course selection	During the course selection day, students choose the courses they want to enroll to.
18	Course information	Students can view information about the course like attendance, grades and additional course materials.
19	Grade reevaluation	Students request grade reevaluation and the request is sent to the professors.
20	Student checks bus timetable	Students can view the bus timetable anytime they want.
21	Student selects start/arrival place of the bus	The students can choose the bus start place and also the arrival place.
22	Student checks courses timetable	After selecting the courses students can check the courses timetable.
23	Student request timetable change	In case of any overlap students can request timetable change and the request is sent to the Registration Office.
24	Student requests major change	Students can request major change to the corresponding competences
25	Student sets up reminders	Students can set up reminders about attendance, "max can get" grades, reminder before bus leaves and course materials uploading.
26	Professor creates deadlines	Professors can upload different assignments and allocate a deadline related to them.

27	Professor sends notifications	Professors can send notifications to students about the posted assignments and chooses who receives the notifications.
28	Professor enter students' list	After students have selected their courses and have enrolled to them professors add the students' names and divide them into lists.
29	Professor uploads course information	Professors enter information about the course.
30	Professor views course materials	Professors view information about the course.
31	Professor enters students' grades	Each time a grade is assigned to the students it is uploaded in the application by professors for the students to view.
32	Professor updates students' grades after reevaluation request form students	After student have sent a grade reevaluation request, this is sent to the professor who makes the necessary changes if necessary.
33	Professor enters students' attendance	After each lecture the professors upload the attended and unattended hours.
34	Professor views timetable	Professors have the accessibility to view the timetable entered by the Registration Office.
35	Professor checks calendar	Student opens the calendar to check if any upcoming event is coming soon.
36	Professor updates calendar	Student updates calendar by adding customized events and deadlines.
37	Registration Office uploads timetable	The timetable of the different departments is uploaded by the Registration Office.
38	Registration Office views timetable change requests	Students send timetable change requests to the Registration Office and they view them.
39	Registration Office updates timetable	After checking the students' request for timetable change, if any overlapping has occurred, the Registration Office updates it.
40	Registration Office creates deadline/event	It creates deadlines and events and sends them to the other users.

41	Registration Office sends notifications to students and professors	For the created deadlines and events notifications are send.
42	Registration Office marks/unmarks notifications	They have the ability to mark or unmark notifications as complete.
43	Registration Office stars /unstars notifications	They have the ability to star or unstar the notifications they want.
44	Registration Office searches specific notifications	They can search specific notifications by writing keywords.
45	Admin views users' information	Admin is able to view all users' information.
46	Admin grants permissions to users	Admin is the one who gives permissions to users and divides them into different levels.

4.2 User Scenarios Extended

1. User Scenario 1 - Successful Login

- a. The user is asked to enter the username.
- b. The user is asked to enter the password.
- c. The user presses the “Login” button.
- d. If the credentials of the users match in the database, user is authorized to be redirected.
- e. The user logs in and is redirected to the main page of the application.

2. User Scenario 2 - Login failed

- a. The user is asked to enter the username.
- b. The user is asked to enter the password.
- c. The user presses the “Login” button.
- d. The user’s credentials do not match with any in the database.
- e. An error message is displayed to the user.
- f. The user tries to enter his credentials again.

3. User Scenario 3 - Successful Sign up

- a. The user clicks on the link “Don’t have an account?”.
- b. The user is redirected to another page where he has to fill a form.
- c. The user is asked to enter his credentials (name, surname, gender, email, password, confirm password, recovery email, student ID number, card issuance date)

- d. The user presses the “Sign Up” button.
- e. The user logs in and is redirected to the main page of the application.

4. User Scenario 4 - Signup fails

- a. The user clicks on the link “Don’t have an account?”.
- b. The user is redirected to another page where he has to fill a form.
- c. The user is asked to enter his credentials (name, surname, gender, email, password, confirm password, recovery email, student ID number, card issuance date) .
- d. The user presses the “Sign Up” button.
- e. The credentials entered are not validated.
- f. An error message is displayed to the user.
- g. The user tries to enter his credentials again.

5. User Scenario 5 - Password forgotten

- a. The user forgets the password and clicks on the link “Forgot Password?”.
- b. The user is redirected to another page where he is asked to enter an email address so a code to reset the password is going to be sent.
- c. The user presses the “Send” button.
- d. The user is redirected to another page where he is asked to enter the code that was received in his email address.
- e. The user presses the “Verify” button.
- f. The user is redirected to another page where he is asked to enter the new password twice.
- g. The user presses the “Reset Password” button.
- h. The user is redirected to the login page.
- i. The user enters his email address and the new password.
- j. The user presses the “Login” button.
- k. The user is redirected to the main page of the application.

6. User Scenario 6 - Profile view and edit

- a. The user is logged in the system.
- b. The user is directed to the main page of the application.
- c. The user clicks on the “My Profile” menu.
- d. The user views his profile.
- e. The user edits his profile credentials.

7. User Scenario 7 – Language chosen

- a. The user is logged in the system.
- b. The user’s main page will be the notification page.
- c. The user clicks on the Settings menu.
- d. The user clicks on the Language drop down menu.
- e. English, Turkish, Albanian appears.
- f. The user chooses the language they want.

8. User Scenario 8 – Dark mode

- a. The user is logged in the system.
- b. The user's main page will be the notification page.
- c. The user clicks on the Settings menu.
- d. The user switches display to dark mode.

9. User Scenario 9 – Custom notifications

- a. The user is logged in the system.
- b. The user's main page will be the notification page.
- c. The student views all the notifications that appear in chronological order.
- d. The student views all the notifications generated by the system.

10. User Scenario 10 - User signs out

- a. The user is logged in the system.
- b. The system user presses the "Log out" button.
- c. The system user is signed out securely.
- d. The system user is redirected to the login page
- e. The system user cannot go back to the page by using back button, only by re-entering the credentials.

11. User Scenario 11 - Student checks notifications

- a. The student is logged in the system.
- b. The student's main page will be the notification page.
- c. The student views the deadlines that are about to end soon first.
- d. The student views all the other notifications that appear in chronological order.

12. User Scenario 12 - Student marks/unmarks notifications

- a. The student is logged in the system.
- b. The student's main page will be the notification page.
- c. The student views the notifications.
- d. The student marks a deadline as complete.

13. User Scenario 13 - Student stars/unstars notifications

- a. The student is logged in the system.
- b. The student's main page will be the notification page.
- c. The student views the notifications.
- d. The student stars a specific notification as important.

14. User Scenario 14 - Student searches specific notifications

- a. The student is logged in the system.

- b. The student's main page will be the notification page.
- c. The student searches a specific notification in the navigation bar.
- d. Notifications related to the keyword entered by the student appear.
- e. The student finds the desired notification.

15. User Scenario 15 - Student checks calendar

- a. The student is logged in the system.
- b. The student's main page will be the notification page.
- c. The student clicks on the Calendar menu.
- d. The student views the events and deadlines in the calendar.

16. User Scenario 16 - Student updates calendar

- a. The student is logged in the system.
- b. The student's main page will be the notification page.
- c. The student clicks on the Calendar menu.
- d. The student clicks on the day they want to add a deadline/event to.
- e. The student fills the information required (name of event/deadline, course's name, description, and finish time).

17. User Scenario 17 - Course selection

- a. The student is logged in the system.
- b. The student clicks on the Courses menu.
- c. The student views all the available courses.
- d. They select the courses they want to enroll to.
- e. The courses are added to the "selected courses" table fulfilling the condition that the maximum ECTS of the courses selected is 35.
- f. The student presses the "Confirm" button.

18. User Scenario 18 - Course information

- a. The student is logged in the system.
- b. The student clicks on the Courses menu.
- c. The student views the courses they are enrolled to in the "Select a course" table.
- d. The student selects the course they want to get information about.
- e. The student views the grades taken on that course.
- f. The student views the attendance of that particular course.
- g. The student views the course materials uploaded by the professor.

19. User Scenario 19 - Grade reevaluation

- a. The student is logged in the system.
- b. The student clicks on the Courses menu.
- c. The student views the courses they are enrolled to in the "Select a course" table.

- d. The student selects the course they want to get information about.
- e. The student views the grades taken on that course.
- f. The student clicks on the “Grade reevaluation” button.
- g. The student fills the form.
- h. The request is sent to the corresponding professor.

20. User Scenario 20 - Student checks bus timetable

- a. The student is logged in the system.
- b. The student clicks on the Timetable menu.
- c. The student checks the bus menu of that day.

21. User Scenario 21 - Student selects start/arrival place of the bus

- a. The student is logged in the system.
- b. The student clicks on the Timetable menu.
- c. The student selects the start place of the bus.
- d. The student selects the arrival place of the bus.

22. User Scenario 22 - Student checks courses' timetable

- a. The student is logged in the system.
- b. The student clicks on the Timetable menu.
- c. The student views the courses' timetable of the day they're in.
- d. The student views the upcoming days courses' timetable.

23. User Scenario 23 - Student request timetable change

- a. The student is logged in the system
- b. The student clicks on the Timetable menu.
- c. The student clicks on the “Timetable change” button.
- d. The request is sent to the Registration Office.

24. User Scenario 24 - Student requests major change

- a. The student is logged in the system.
- b. The student clicks on the “My Profile” menu.
- c. The student clicks on the “Send major change request” link.
- d. The request is sent to the Registration Office.

25. User Scenario 25 - Student sets up reminders

- a. The student is logged in the system.
- b. The student clicks on the “My Profile” menu.
- c. The student sets up reminder x minutes before the bus leaves.
- d. The student selects priority course.

- e. They set up reminder for a “max can get” grade of that course.
- f. They set up a reminder for a specific percentage of unattended hours of that course.

26. User Scenario 26 - Professor creates deadlines

- a. The professor is logged in the system.
- b. The professor clicks on the Notification menu.
- c. The professor creates a deadline.
- d. They upload assignments.
- e. They enter the description needed about the assignment.

27. User Scenario 27 - Professor sends notifications

- a. The professor is logged in the system.
- b. The professor clicks on the Notification menu.
- c. The professor creates a deadline.
- d. They upload assignments.
- e. They enter the description needed about the assignment.
- f. They choose who receives the notification about the uploaded assignment.
- g. They send the notification to the selected students.

28. User Scenario 28 - Professor enter students’ list

- a. The professor is logged in the system.
- b. The professor clicks on the Courses menu.
- c. They enter the names of the students who have enrolled to his course.
- d. If the professor is responsible of more than one course they divide the students according to the course they belong to.

29. User Scenario 29 - Professor uploads course information

- a. The professor is logged in the system.
- b. The professor clicks on the Courses menu.
- c. They enter all the necessary materials related to that course.
- d. The materials are uploaded for the students to view.

30. User Scenario 30 - Professor views course information

- a. The professor is logged in the system.
- b. The professor clicks on the Courses menu.
- c. The professor views the course materials and information.

31. User Scenario 31 - Professor enters students’ grades

- a. The professor is logged in the system.
- b. The professor clicks on the Courses menu.

- c. The professor views the list of the students enrolled to his course.
- d. They enter the grades of each student.
- e. They specify the type the grade is assigned with (midterm exam, quiz, assignment etc.)
- f. They specify the weight the grade holds to the final grade of the student.
- g. They upload the grades in the system for the students to view.

32. User Scenario 32 - Professor updates students' grades after reevaluation request from students

- a. The professor is logged in the system.
- b. The professor's main page is the notifications page.
- c. The professor views grades reevaluation request from students.
- d. They click on the notification.
- e. They are directed in the Courses menu and view the grade that needs reevaluation.
- f. The professor updates the specific grade.

33. User Scenario 33 - Professor enters students' attendance

- a. The professor is logged in the system.
- b. The professor clicks on the Courses menu.
- c. The professor views the list of the students enrolled to his course.
- d. They enter the attendance of each student and upload it for the students to view.

34. User Scenario 34 - Professor views timetable

- a. The professor is logged in the system.
- b. The professor's main page is the notifications page.
- c. They click on the Timetable menu.
- d. They view the timetable.

35. User Scenario 35 - Professor checks calendar

- a. The professor is logged in the system.
- b. The professor's main page is the notifications page.
- c. They click on the Calendar menu.
- d. They view the monthly events and deadlines.

36. User Scenario 36 - Professor updates calendar

- a. The professor is logged in the system.
- b. The professor's main page will be the notification page.
- c. The professor clicks on the Calendar menu.
- d. The professor clicks on the day they want to add a deadline/event to.
- e. The professor fills the information required (name of event/deadline, course's name, description, and finish time).

37. User Scenario 37 - Registration Office uploads timetable

- a. The Registration Office is logged in the system.
- b. The Registration's Office main page is the notifications page.
- c. The Registration Office clicks on the Timetable menu.
- d. They click on the "Upload" button.
- e. They upload the timetable.

38. User Scenario 38 - Registration Office views timetable change requests

- a. The Registration Office is logged in the system.
- b. The Registration Office's main page is the notifications page.
- c. The Registration Office views timetable change requests from students or professors.

39. User Scenario 39 - Registration Office updates timetable

- a. The Registration Office is logged in the system.
- b. The Registration Office's main page is the notifications page.
- c. The Registration Office views timetable change requests from students or professors.
- d. They click on the notification.
- e. They are directed in the Timetable menu.
- f. They update the timetable.

40. User Scenario 40 - Registration Office creates deadline/event

- a. The Registration Office is logged in the system.
- b. The Registration Office clicks on the Notification menu.
- c. The Registration Office creates a deadline or event.
- d. They fill the form entering a name, description, finish time.
- e. They click on the "Create" button.

41. User Scenario 41 - Registration Office sends notifications to students and professors

- a. The Registration Office is logged in the system.
- b. The Registration Office clicks on the Notification menu.
- c. The Registration Office creates a deadline or event.
- d. They fill the form entering a name, description, finish time.
- e. They click on the "Create" button.
- f. They choose the users to whom the notification is going to be send.
- g. They send the notification to the other users.

42. User Scenario 42 - Registration Office marks/unmarks notifications

- a. The Registration Office is logged in the system.
- b. The Registration Office's main page will be the notification page.
- c. The Registration Office views the notifications.
- d. The Registration Office marks a deadline as complete.

43. User Scenario 43 - Registration Office stars /unstars notifications

- a. The Registration Office is logged in the system.
- b. The Registration Office's main page will be the notification page.
- c. The Registration Office views the notifications.
- d. The Registration Office stars a specific notification as important.

44. User Scenario 44 - Registration Office searches specific notifications

- a. The student is logged in the system.
- b. The student's main page will be the notification page.
- c. The student searches a specific notification in the navigation bar.
- d. Notifications related to the keyword entered by the student appear.
- e. The student finds the desired notification.

45. User Scenario 45 - Admin views users' information

- a. The admin is logged in the system.
- b. The admin searches specific user.
- c. The admin views user's information.

46. User Scenario 46 - Admin grants permissions to users

- a. The admin is logged in the system.
- b. The admin grants permissions to professors and Registration Office.

4.3 Use cases

Name	User Login
Summary	The user enters their valid credentials and they log in the system.
Actor	Student, Professor, Registration Office, Admin
Description	The user needs to log in, in order to use the application. They login by entering a valid username and password.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	Gain access to the application.

Name	Profile view and edit
Summary	The user logs in the system and visits their profile. They make changes if necessary.
Actor	Student (other actors do not have a personal profile)
Description	The user logs in and goes to "My Profile" menu. They view their personal information and make necessary changes.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	View and edit the profile.

Name	Notifications checking
Summary	The user logs in the system and is redirected in the main page (notifications page) where they check their notifications.
Actor	Student, professor, Registration Office
Description	The user logs in and is redirected to “Notifications” page. They view their notifications (auto-generated by the system or sent by the other users).
Precondition	The user must have signed up before and must have and existing account. Professors and Registration Office must have administrator privileges.
Alternative	No notifications are displayed.
Post condition	Check notifications.

Name	Calendar creation
Summary	The user logs in the system and goes to “Calendar” menu where they create new deadlines and events and update the calendar
Actor	Student, Professor, Registration Office
Description	The user logs in and is redirected to “Notifications” page. They click on the “Calendar” menu. They click on the days no event or deadlines are about to occur and fill a form. They enter the information required and create a deadline/event.
Precondition	The user must have signed up before and must have and existing account. Professors and Registration Office must have administrator privileges.
Alternative	-
Post condition	Calendar is updated and deadlines and events are created.

Name	Course Selection
Summary	The user logs in the system and goes to “Courses” menu where they select the courses they want to enroll to.
Actor	Main actor is student.
Description	The user logs in and is redirected to “Notifications” page. They click on the “Courses” menu. A list of the courses of their department is shown. They choose the courses they want to enroll to.
Precondition	The user must have signed up before and must have and existing account. Students can select courses only during the courses selection week.
Alternative	-
Post condition	Student enroll to their preferred courses.

Name	Grade reevaluation
Summary	The user logs in the system and goes to “Courses” menu where they request grade reevaluation if they have any complaints about their grading.
Actor	Main actor is student.
Description	The user logs in and is redirected to “Notifications” page. They click on the “Courses” menu. They view the grades of all the course. They click on the “Grade reevaluation” button and the request is sent to the corresponding professor.
Precondition	The user must have signed up before and must have and existing account. Professor must have uploaded the grades
Alternative	No grades displayed.
Post condition	Student send request on grade reevaluation.

Name	Timetable checking
Summary	The user logs in the system and goes to “Timetable” menu where they check the bus and the courses timetable.
Actor	Student, Professor, Registration Office
Description	The user logs in and is redirected to “Notifications” page. They click on the “Timetable” menu. They view bus timetable positioned at the top of the page. Below they can check the today’s courses timetable and the upcoming days’.
Precondition	The user must have signed up before and must have and existing account. Registration Office must have uploaded the timetable.
Alternative	-
Post condition	Users check the timetable.

Name	Major change
Summary	The user logs in the system and goes to “My Profile” menu where they send a major change request to the Registration Office.
Actor	Main actor is student.
Description	The user logs in and is redirected to “Notifications” page. They click on the “My Profile” menu. They click on the “Change major” link and the request is immediately sent to the Registration Office.
Precondition	The user must have signed up before and must have and existing account. Registration Office must have uploaded the timetable.
Alternative	-
Post condition	User sends request to Registration Office.

Name	Course Information uploading
Summary	The user logs in the system and goes to “Courses” menu where upload course information.
Actor	Main actor is professor.
Description	The user logs in and is redirected to “Notifications” page. They click on the “Courses” menu. They click on the “Upload” button.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	Professor uploads course information.

Name	Course creation
Summary	The user logs in the system and goes to “Courses” menu where they create a new course.
Actor	Main actor is Registration Office.
Description	The user logs in and is redirected to “Notifications” page. They click on the “Courses” menu. They click on the “Create course” button.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	Course is created.

Name	Grades entrance
Summary	The user logs in the system and goes to “Courses” menu where they upload students’ grades
Actor	Main actor is Professor.
Description	The user logs in and is redirected to “Notifications” page. They click on the “Courses” menu. They click on the “Upload ” button where they upload students’ grades and specify the type and the weight of the grade.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	Grades are uploaded

Name	Attendance entrance
Summary	The user logs in the system and goes to “Courses” menu where they upload students’ attendance.
Actor	Main actor is Professor.
Description	The user logs in and is redirected to “Notifications” page. They click on the “Courses” menu. They click on the “Upload ” button where they upload students’ grades and specify the type and the weight of the grade.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	Attendance is uploaded.

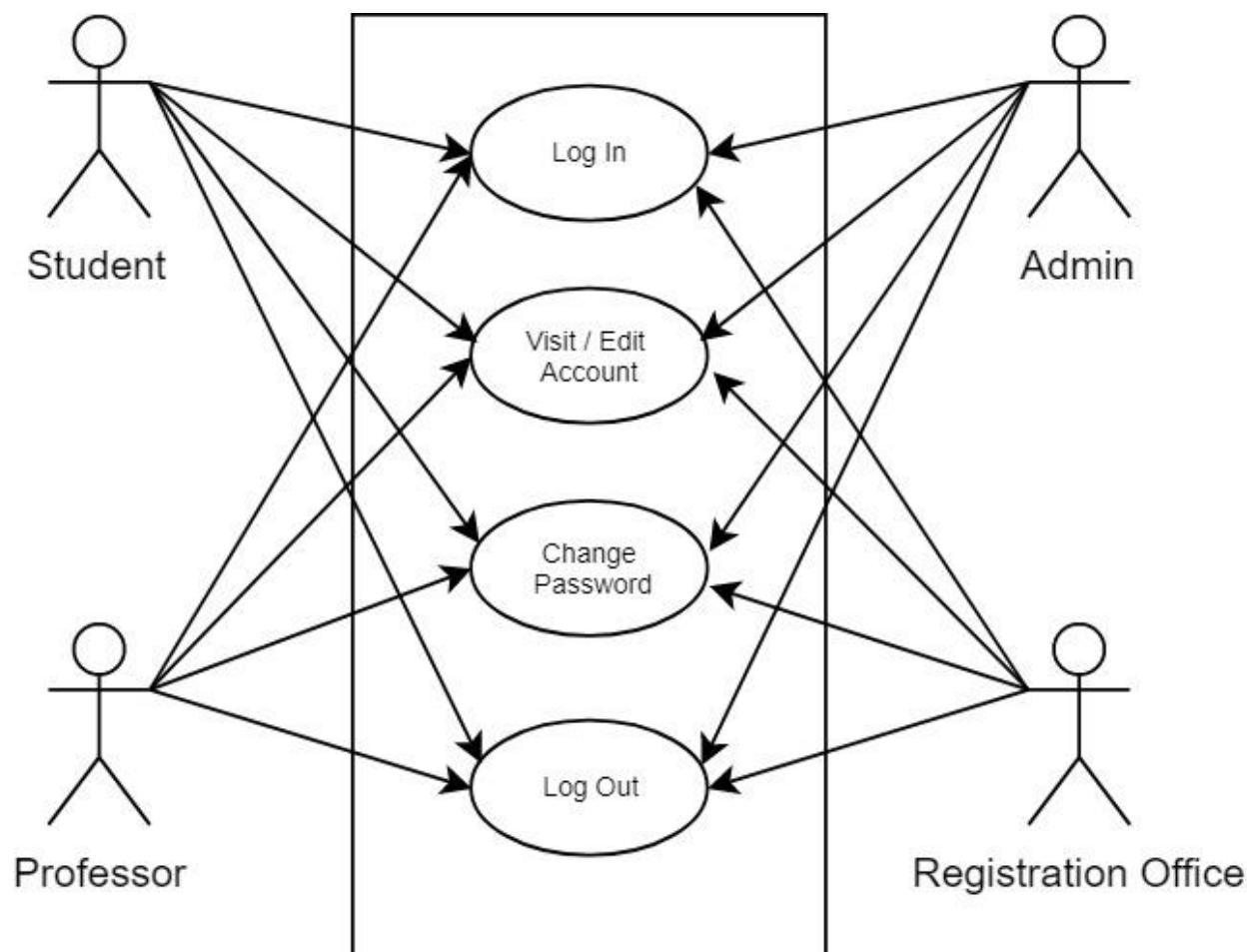
Name	Timetable change
Summary	The user logs in the system and goes to “Timetable” menu where request timetable change
Actor	Student, Professor
Description	The user logs in and is redirected to “Notifications” page. They click on the “Timetable” menu. They click on the “Timetable change” link and fill a form the required information. The request is sent to the Registration Office.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	Request is sent to the Registration Office.

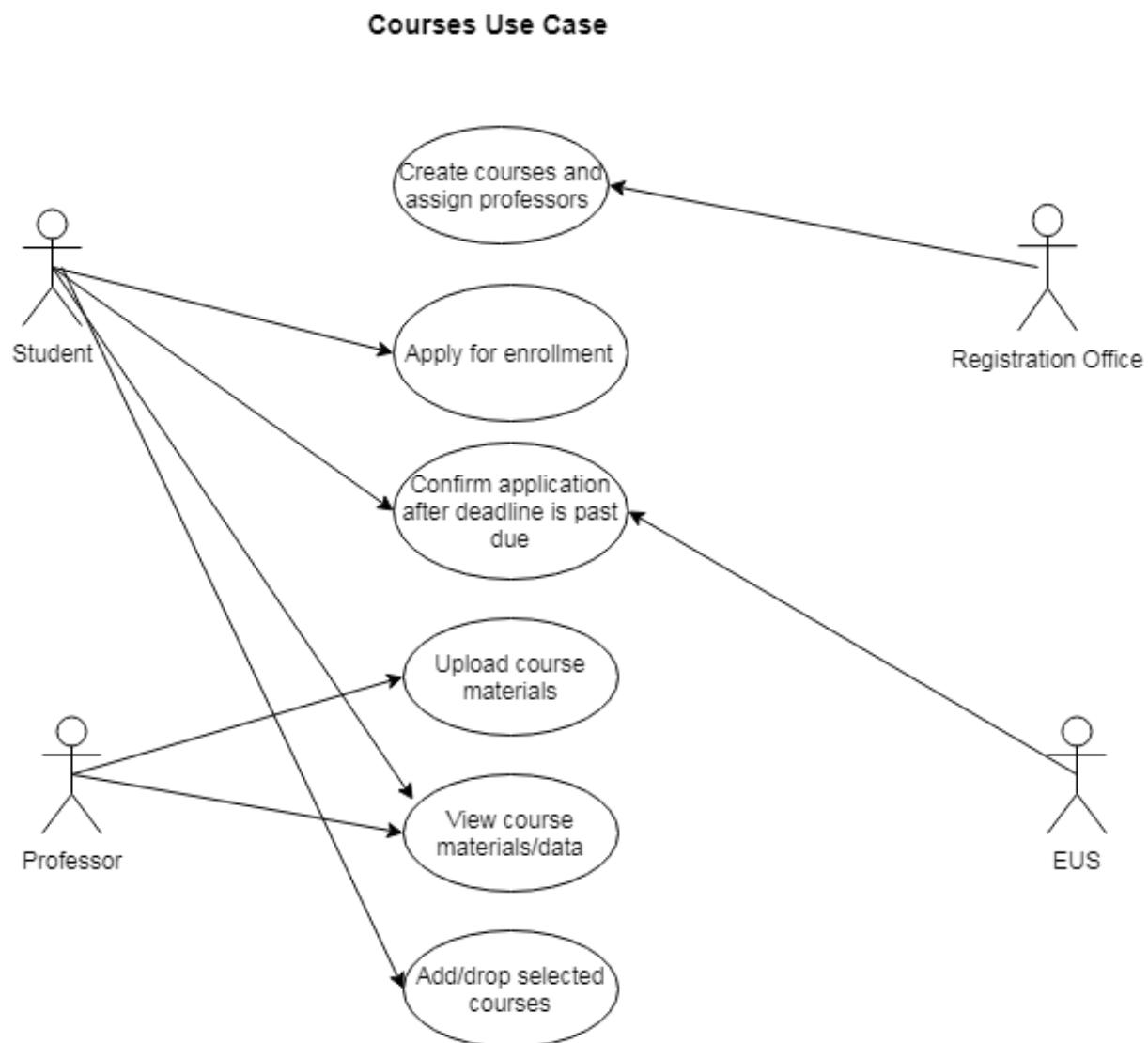
Name	User information
Summary	The user logs in the system and searches a specific user where he views all of his personal information.
Actor	Admin
Description	The user logs in and is redirected to the main page. They search a specific student, view their personal information and credentials.
Precondition	The user must have signed up before and must have and existing account.
Alternative	-
Post condition	Information seen.

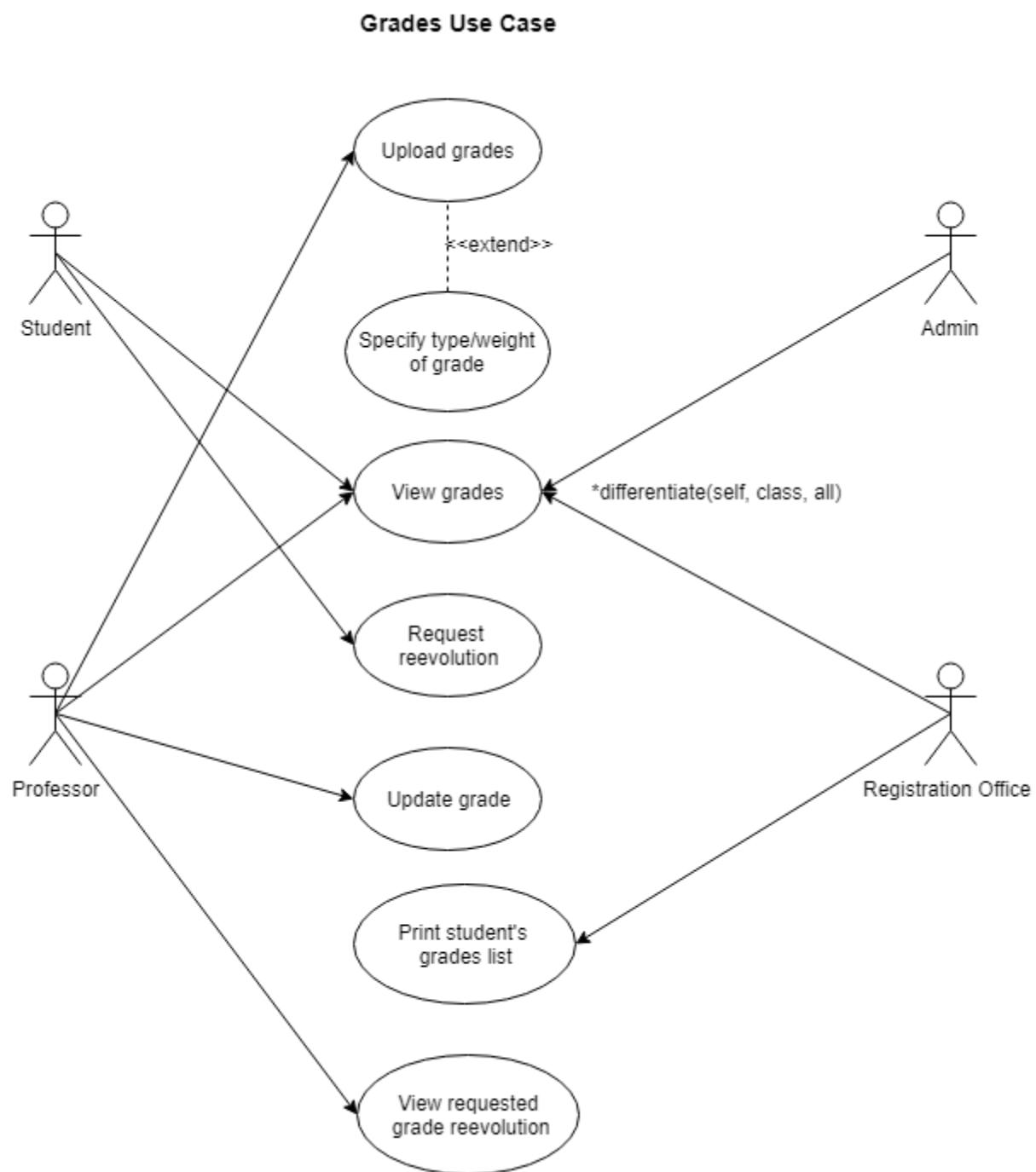
Name	Customized deadline/event creation
Summary	The user logs in the system and is redirected to the Notifications page where he creates a personal deadline/event.
Actor	Student, Professor, Registration Office
Description	The user logs in and is redirected to the main page. They create a deadline or event. Firstly, they fill the form entering a name, description, finish time. The deadline or event is created after they click on the “Create” button.
Precondition	The user must have signed up before and must have an existing account.
Alternative	-
Post condition	Deadline/event created

4.4 Behavioral Diagrams

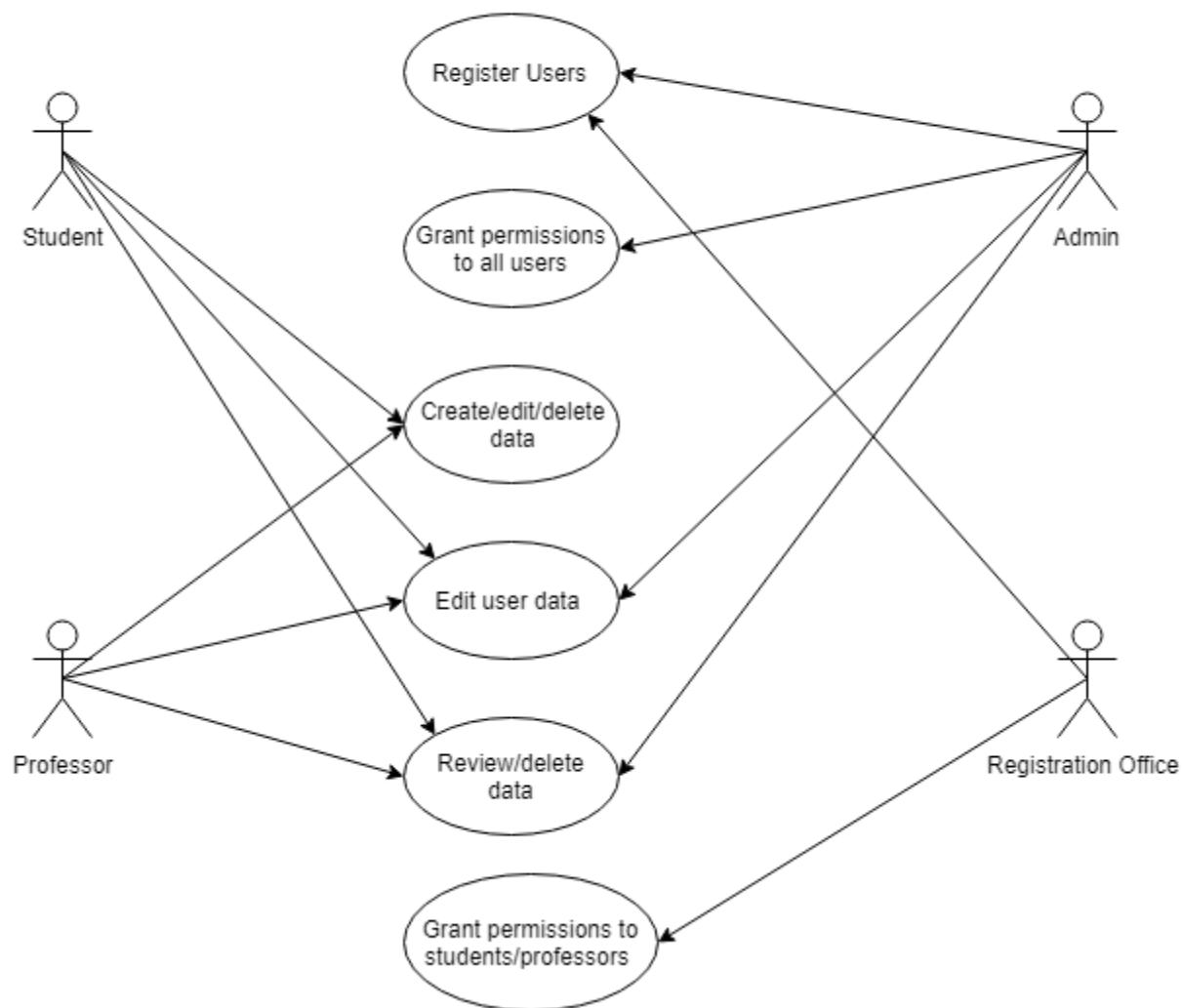
4.4.1 Use Case Diagrams

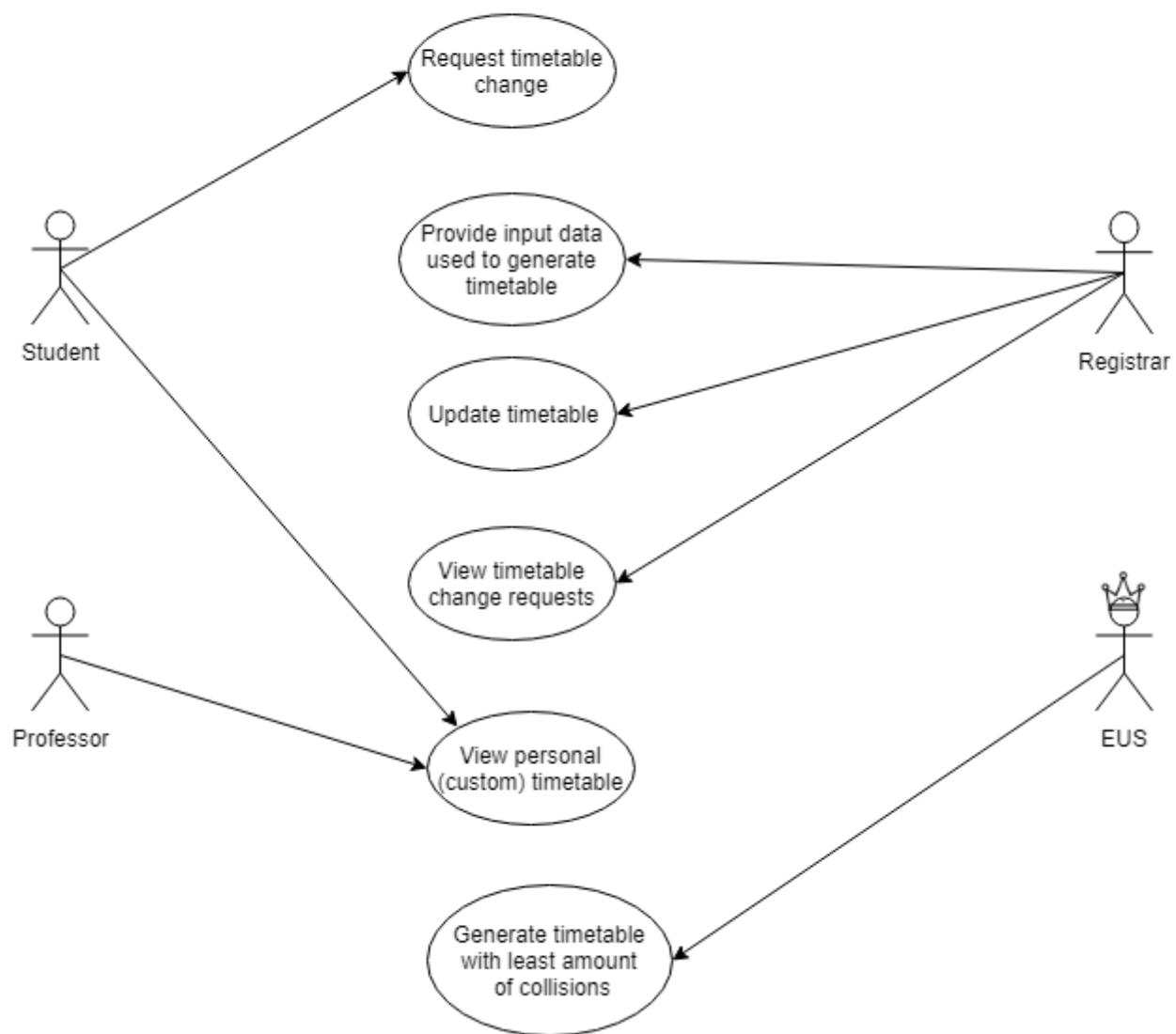


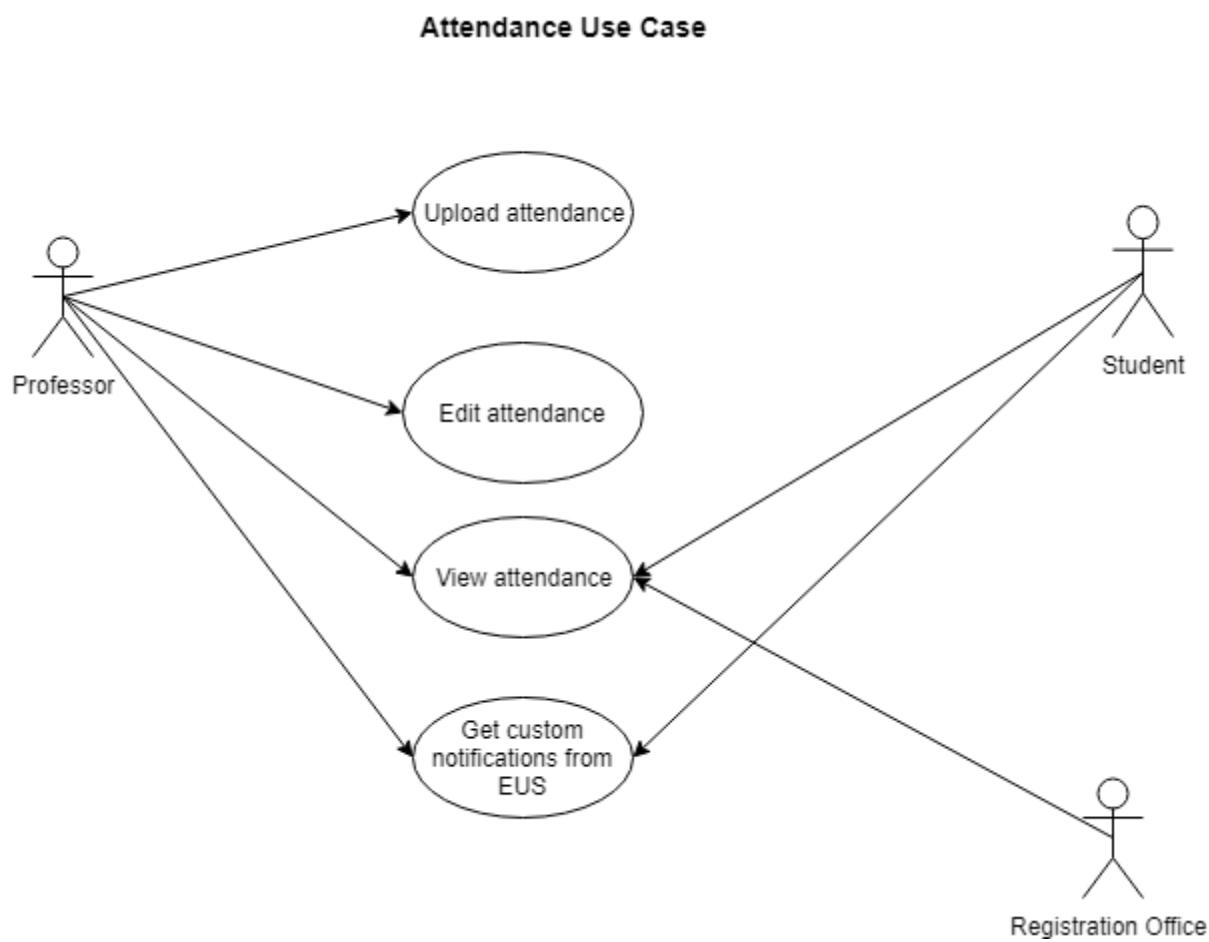






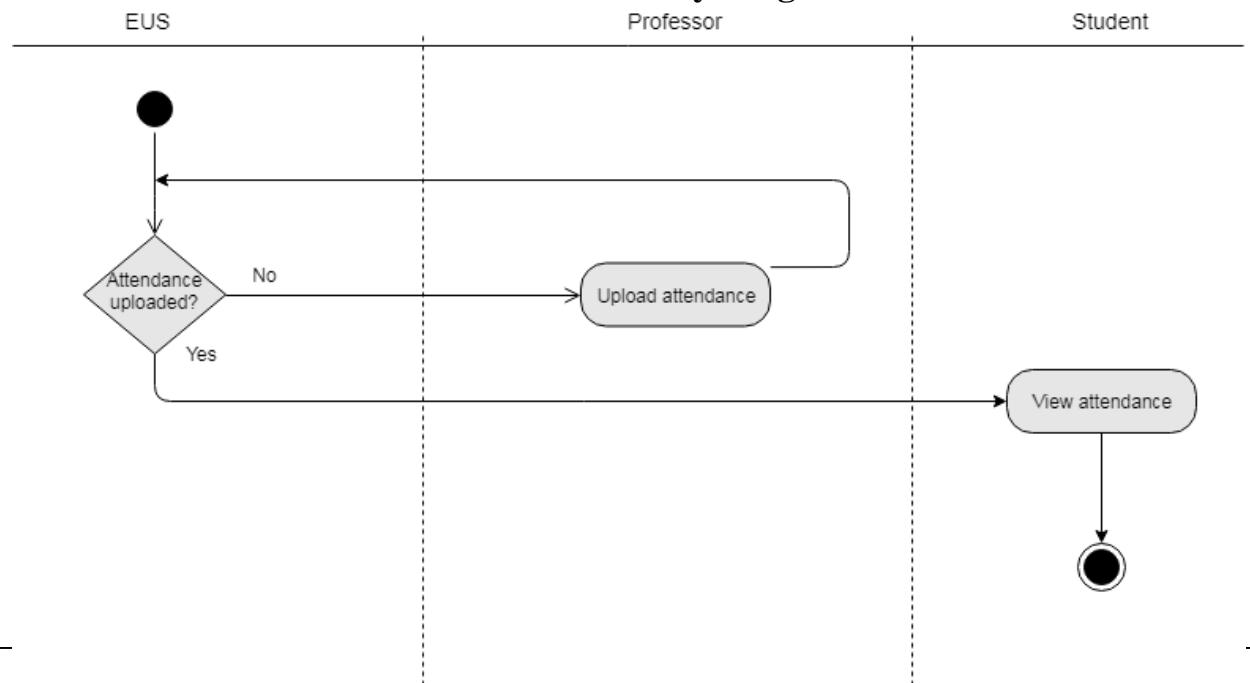
Registration Use Case

Timetable Use Case

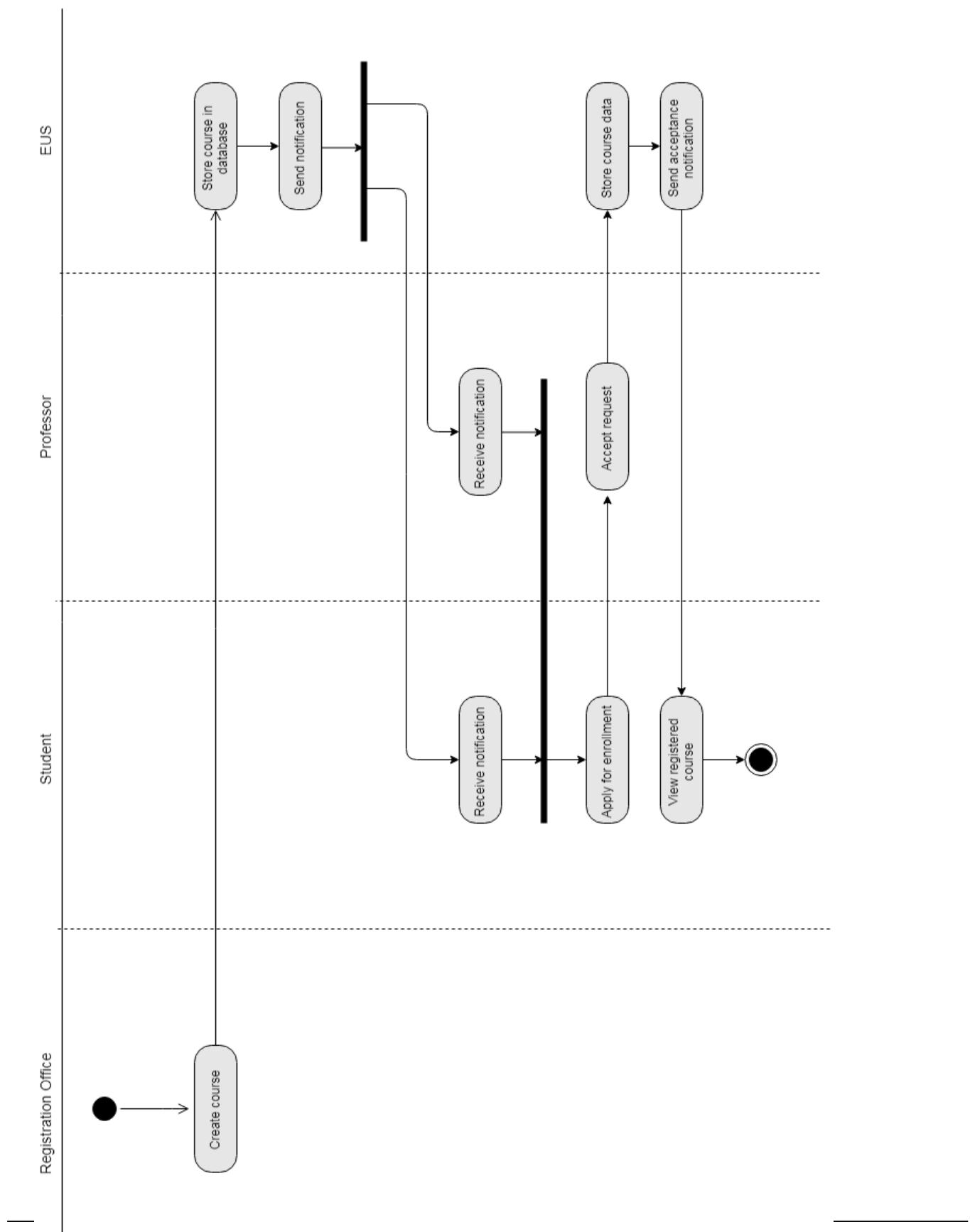


4.4.2 Activity Diagrams

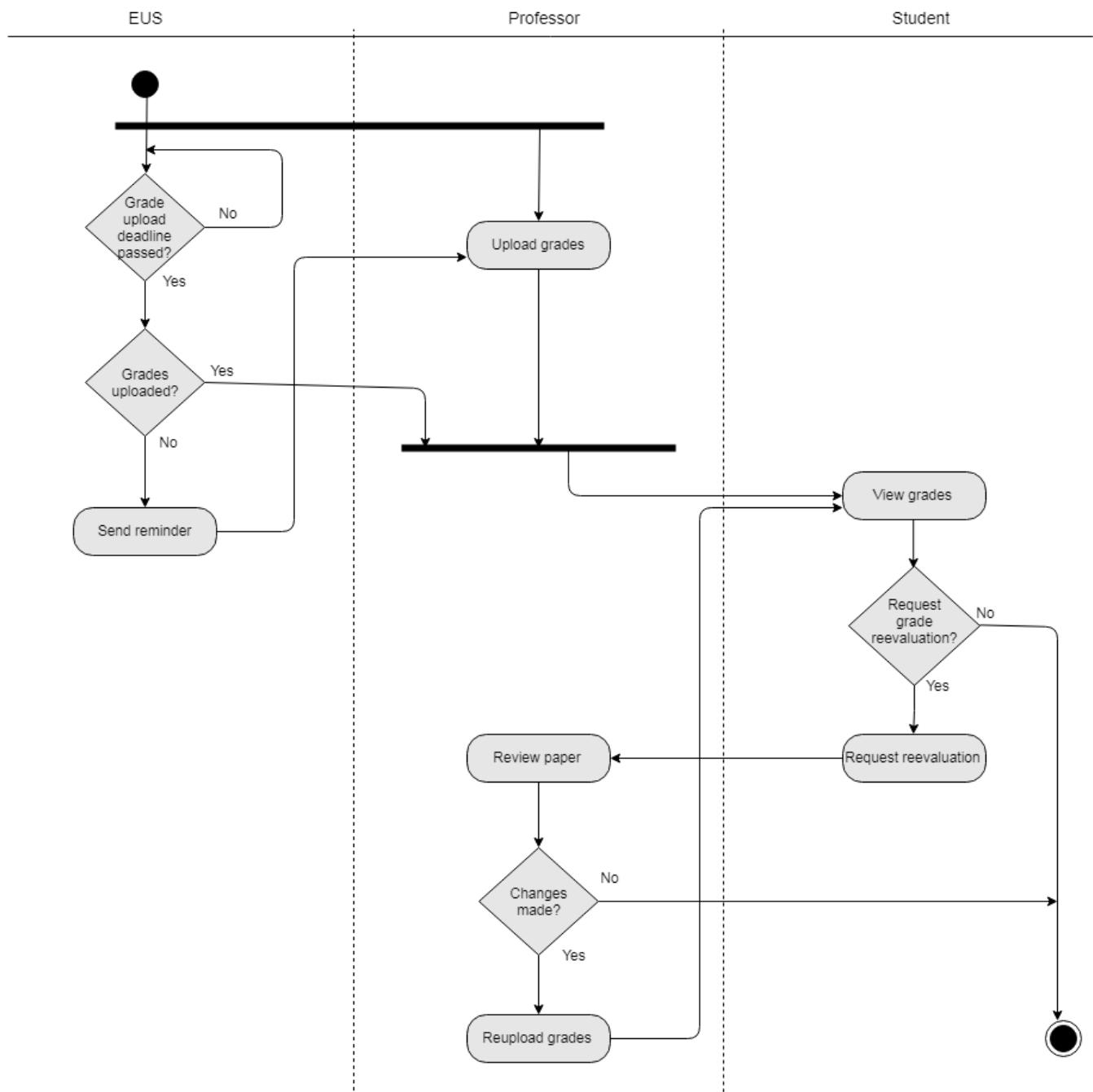
Attendance Activity Diagram



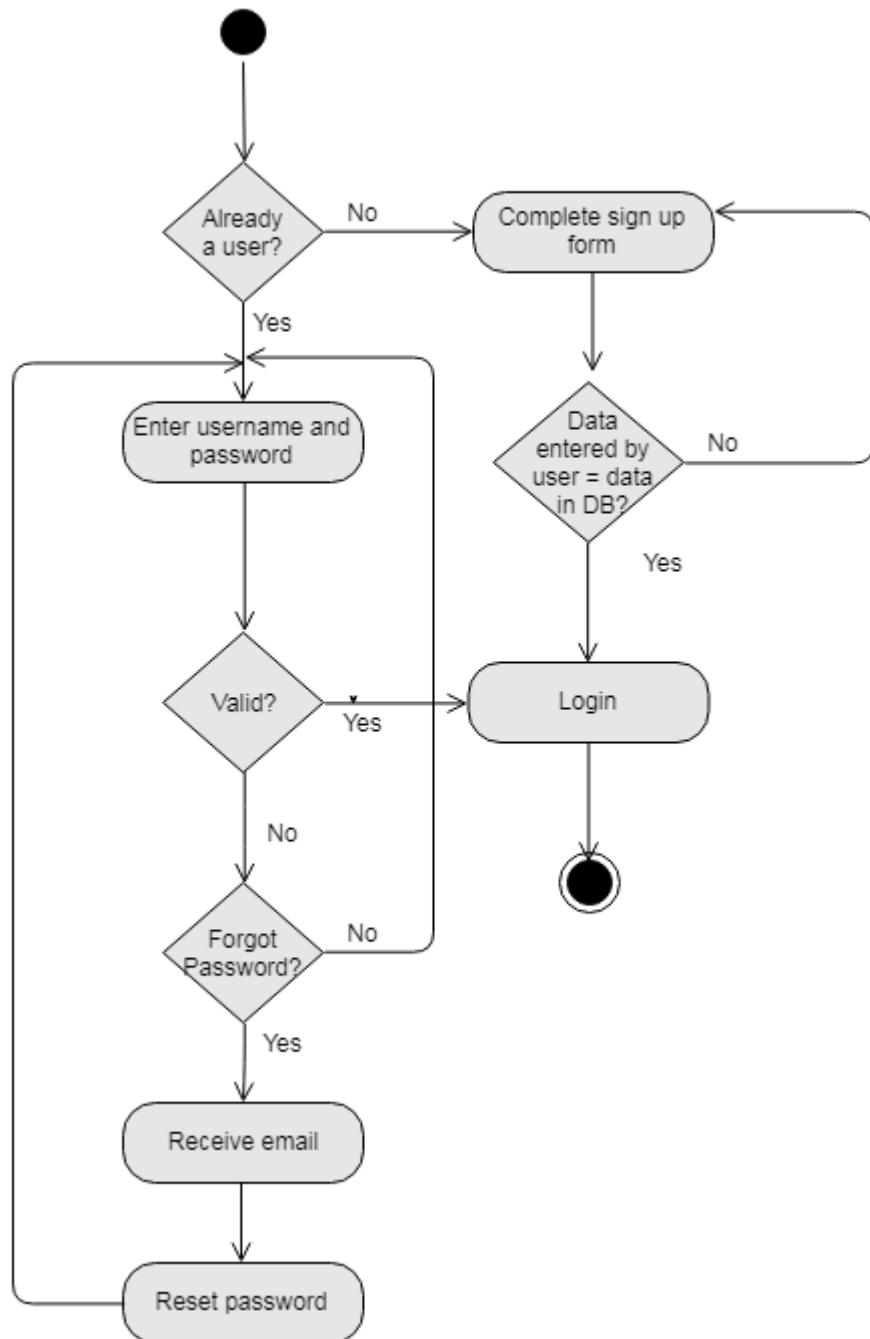
Courses Activity Diagram



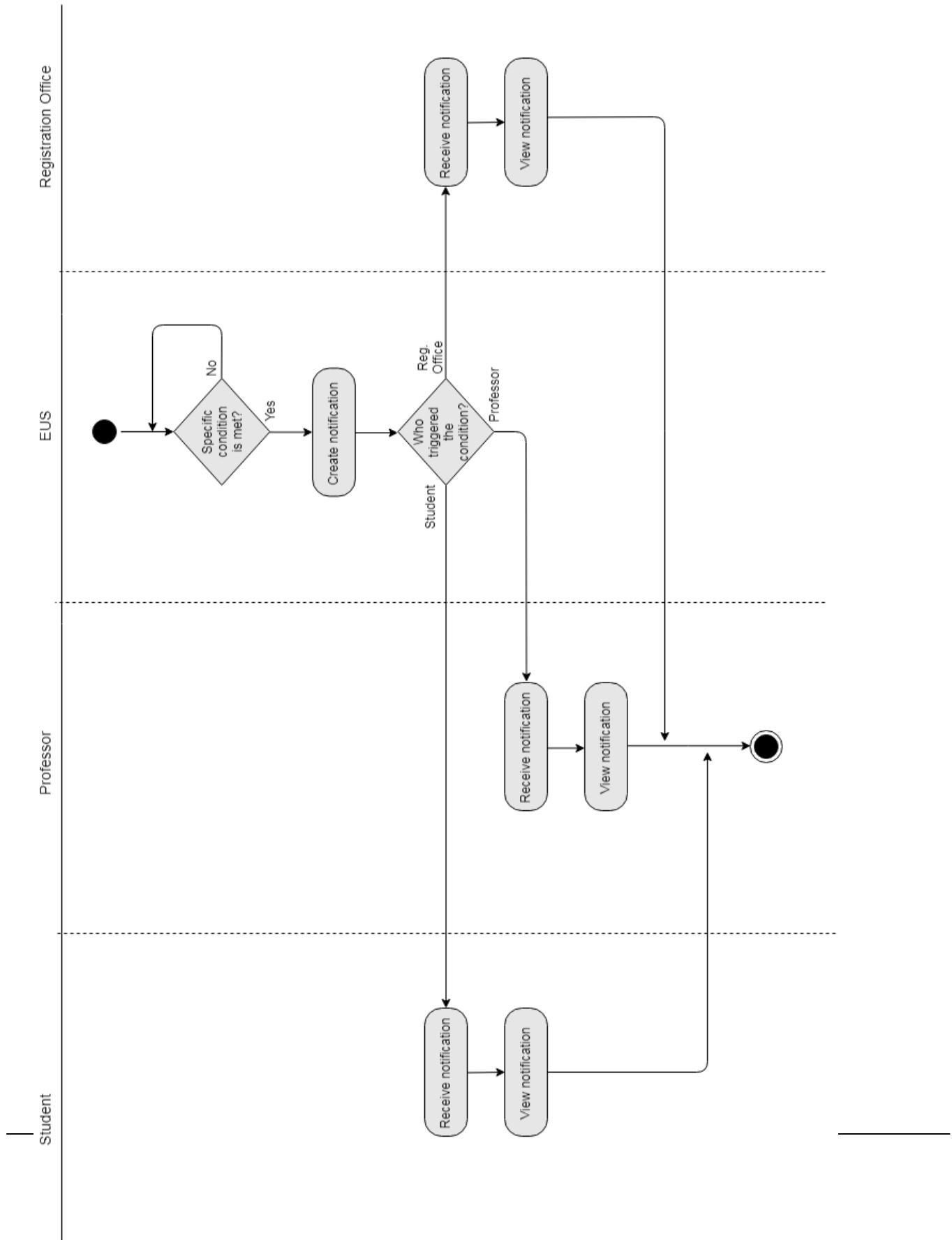
Grades Activity Diagram



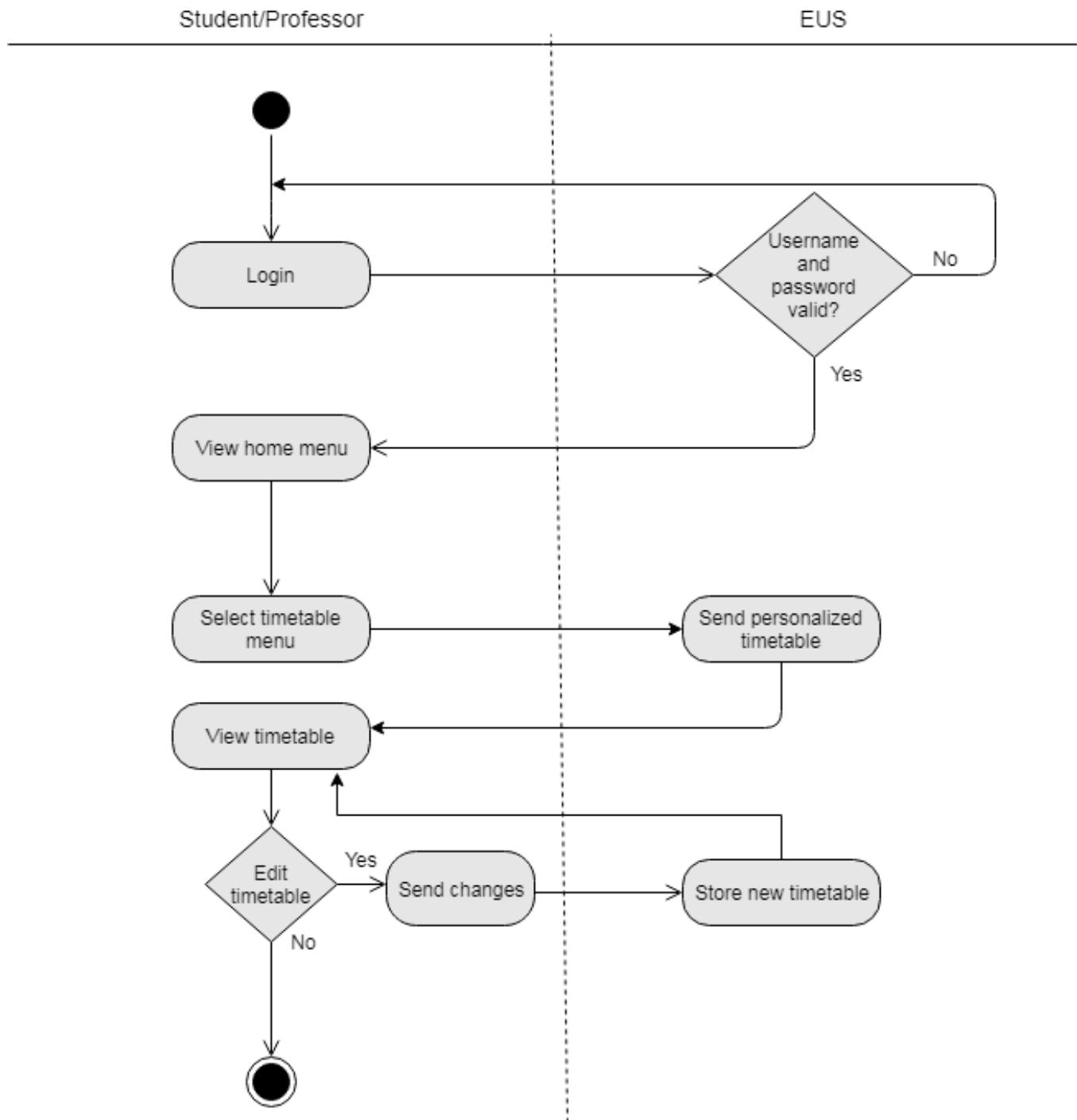
Login Activity Diagram



Notifications Activity Diagram

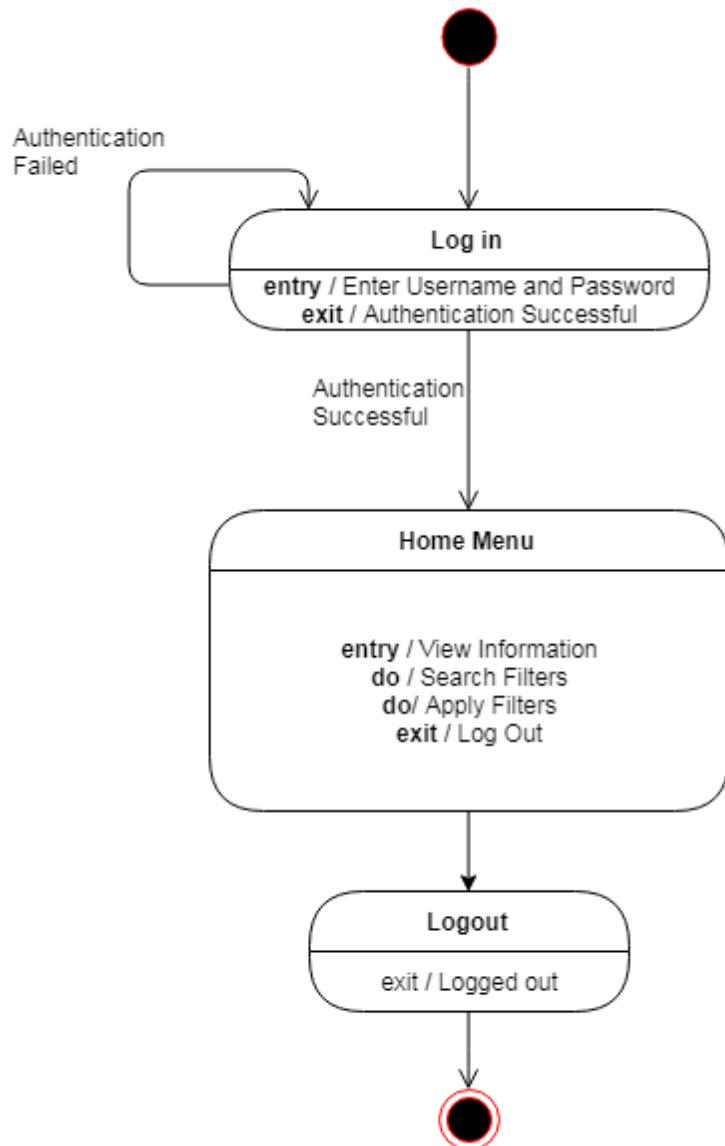


Timetable Activity Diagram

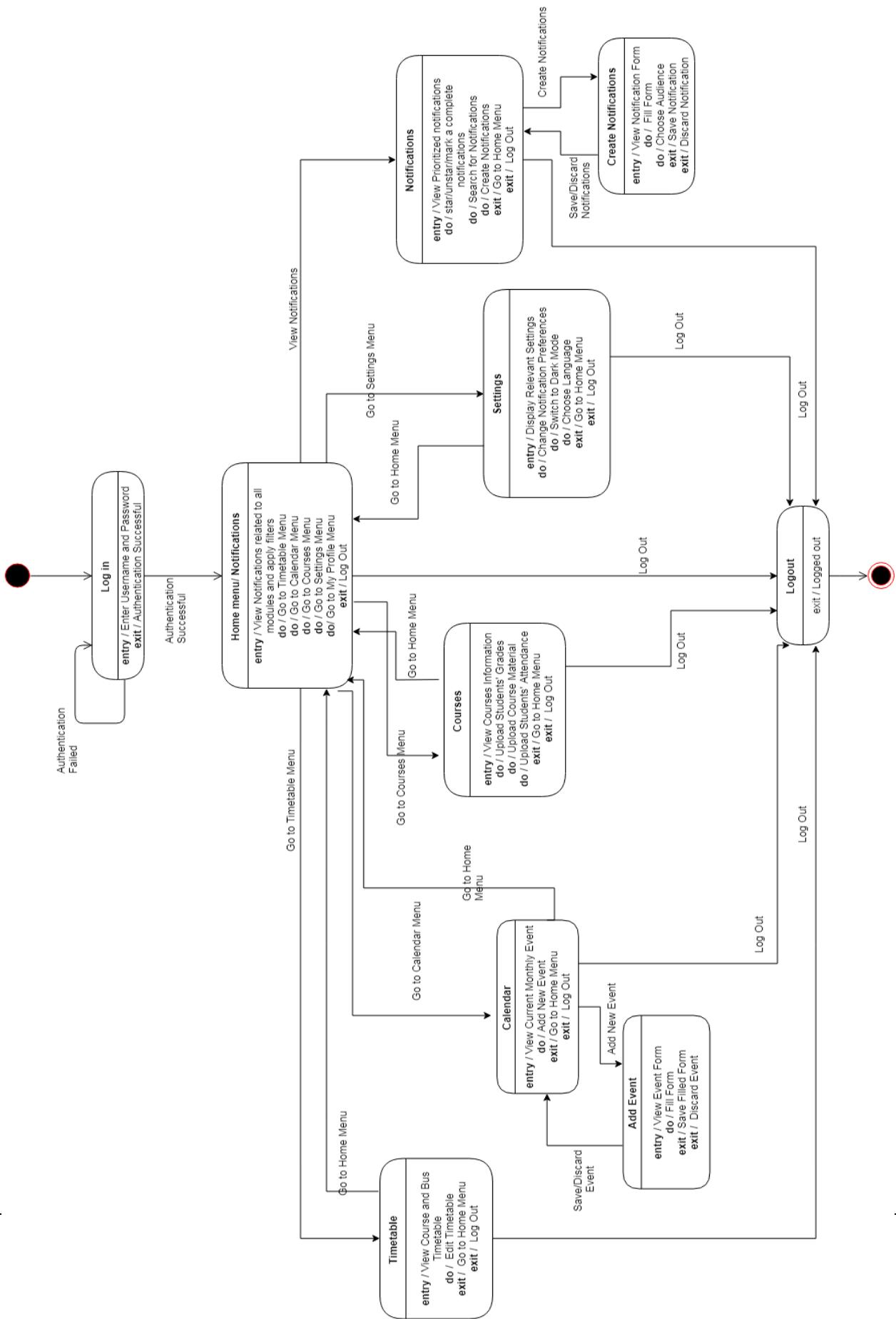


4.4.3 State Diagrams

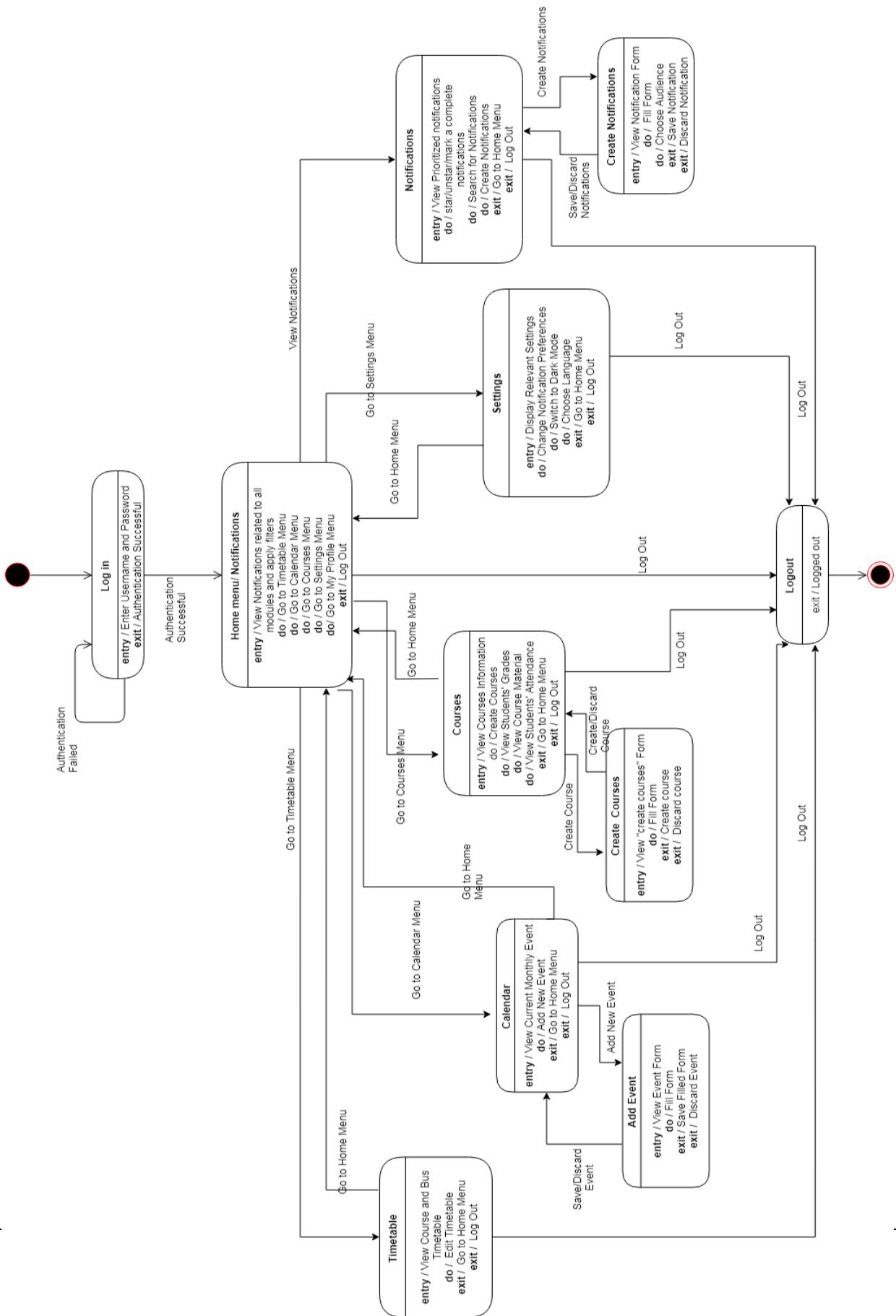
Admin State Diagram



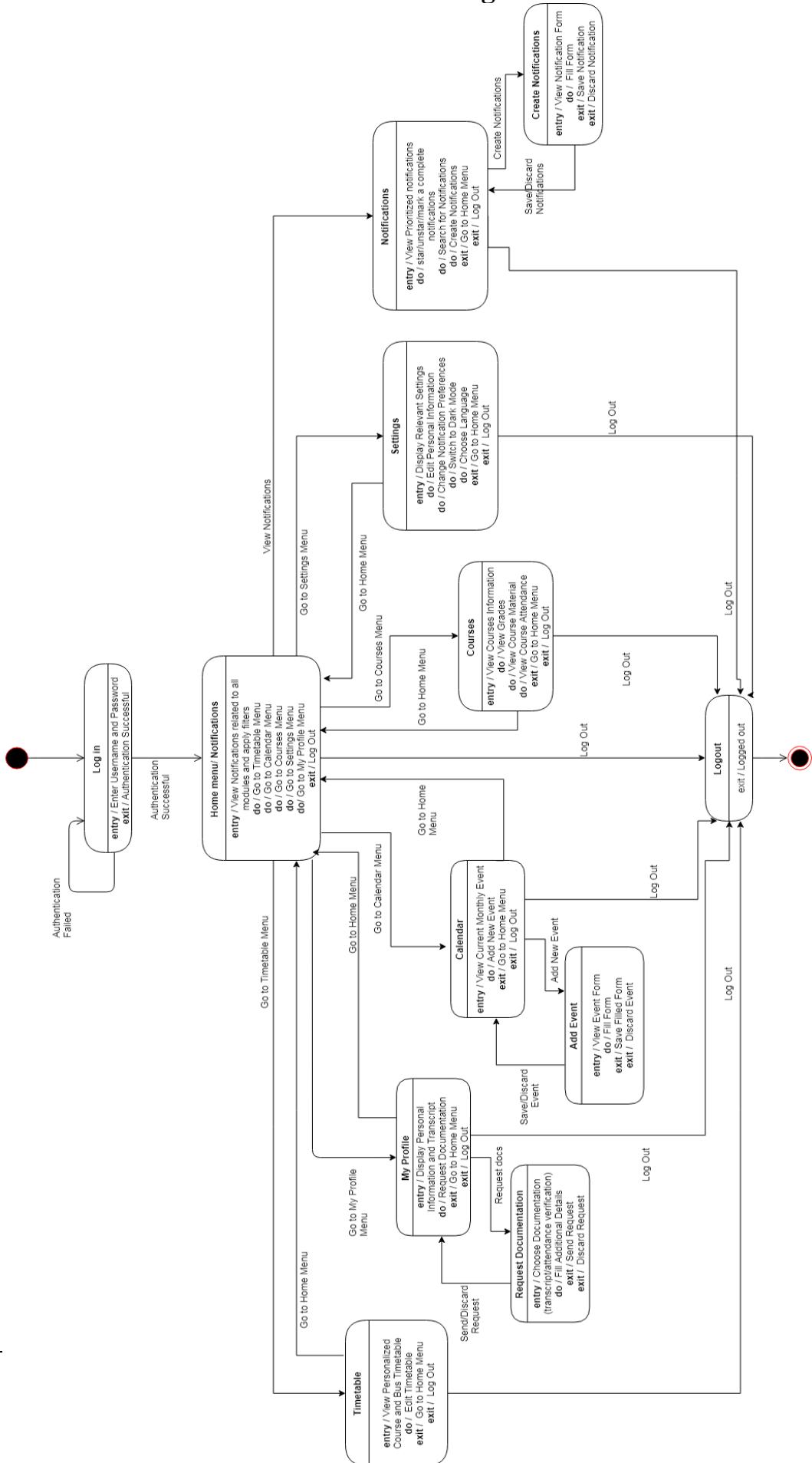
Professor State Diagram



Registration Office State Diagram



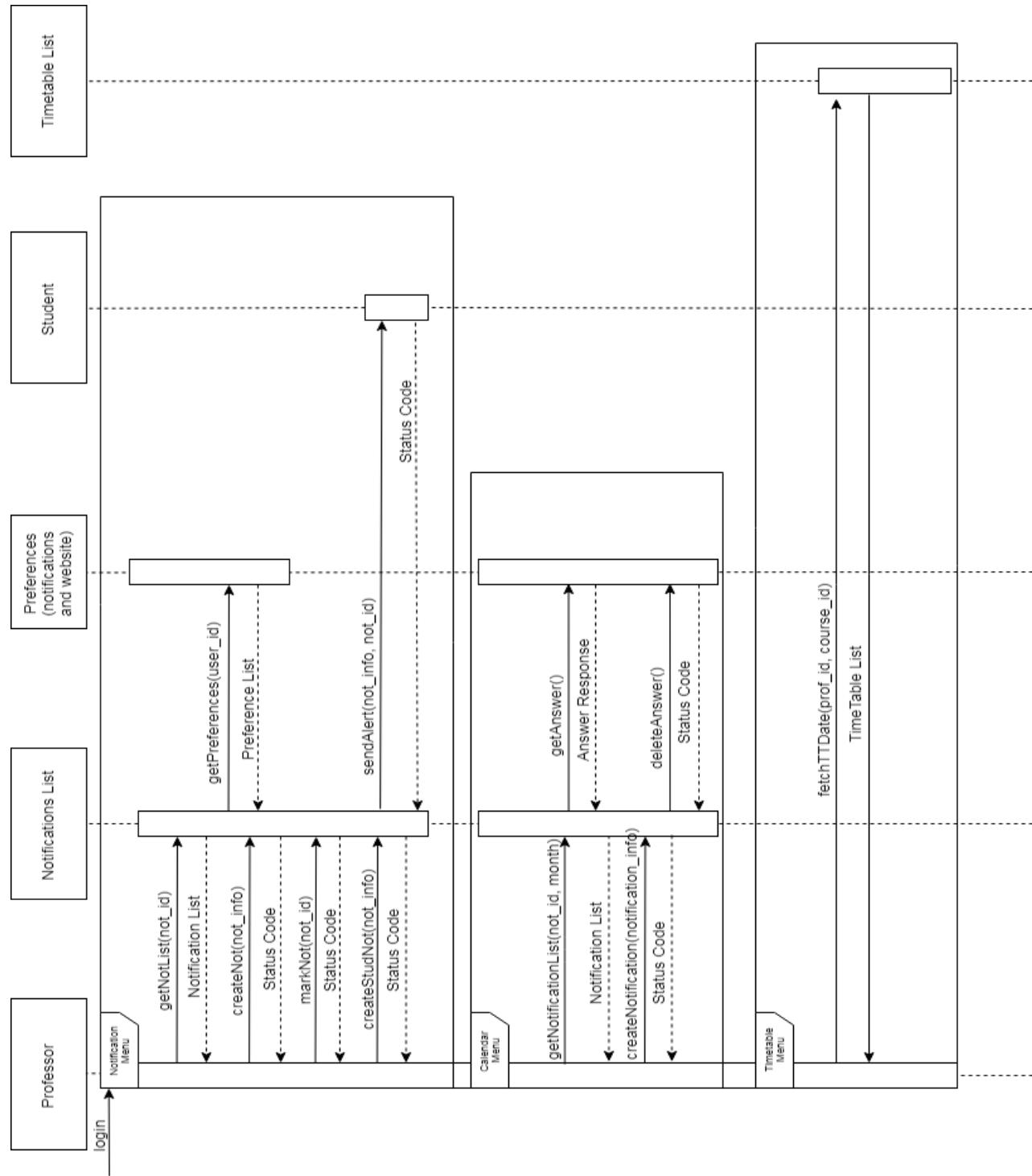
Student State Diagram



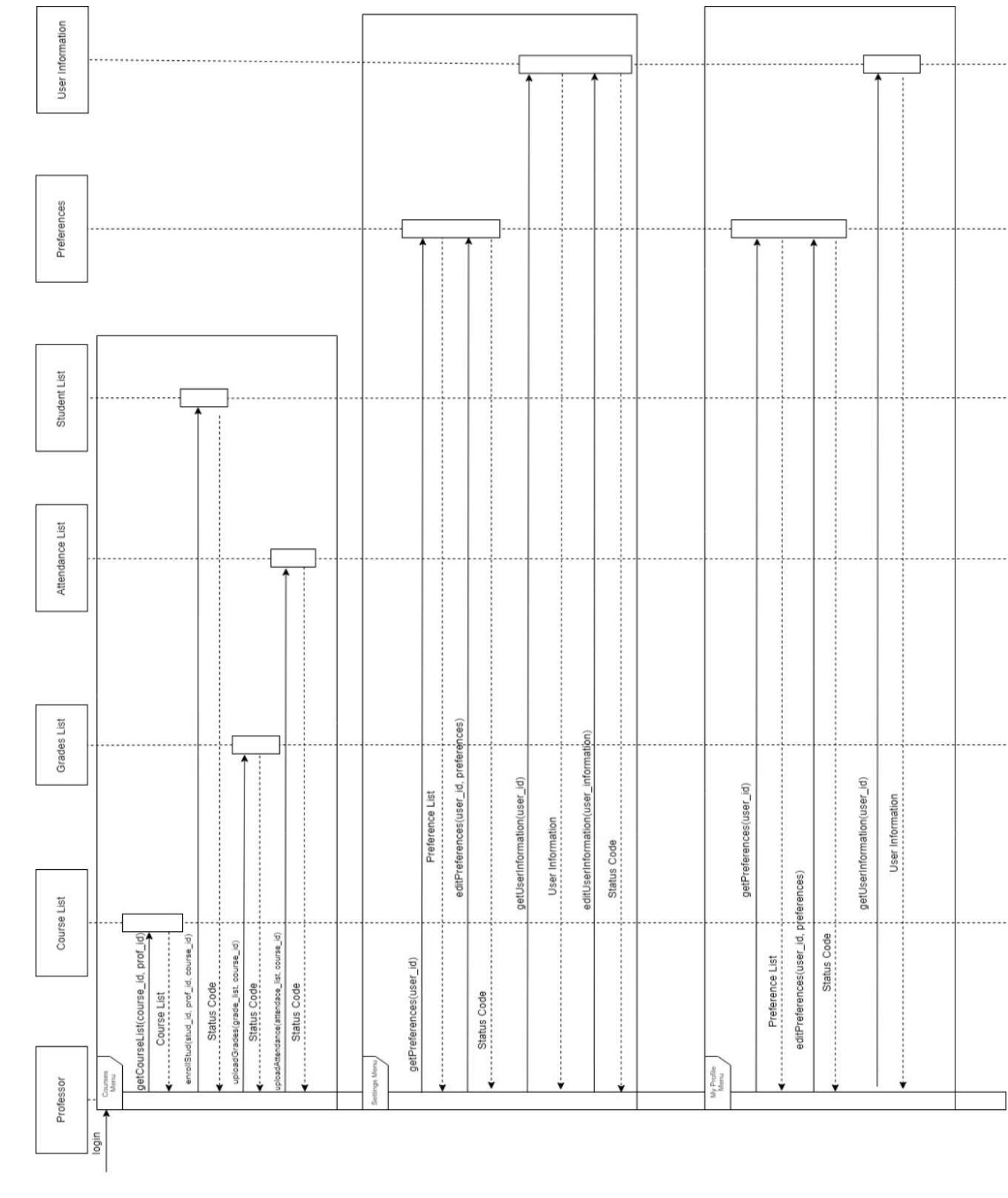
4.5 Interaction Diagram

4.5.1 Sequence Diagrams

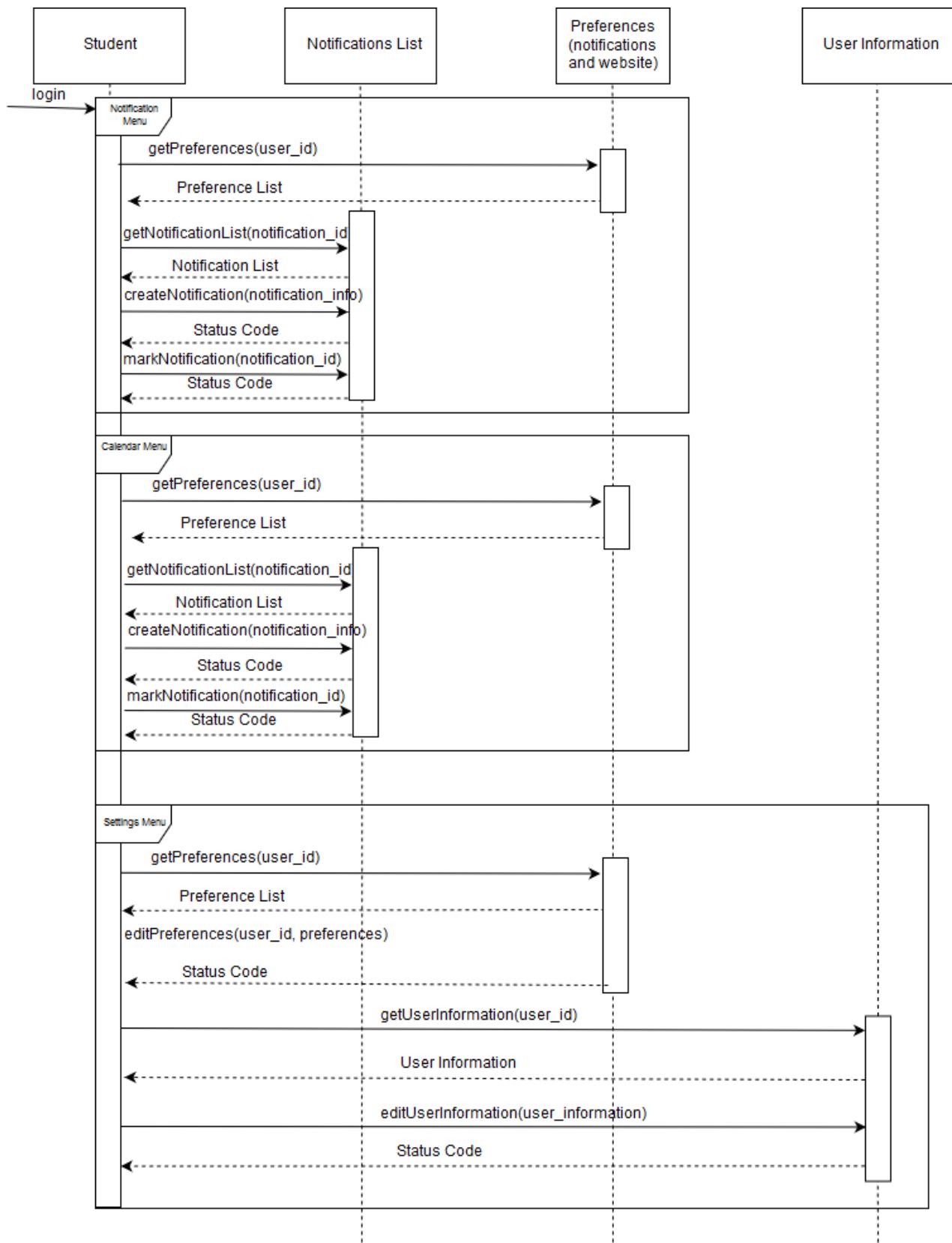
Professor_notifications_calendar_tt



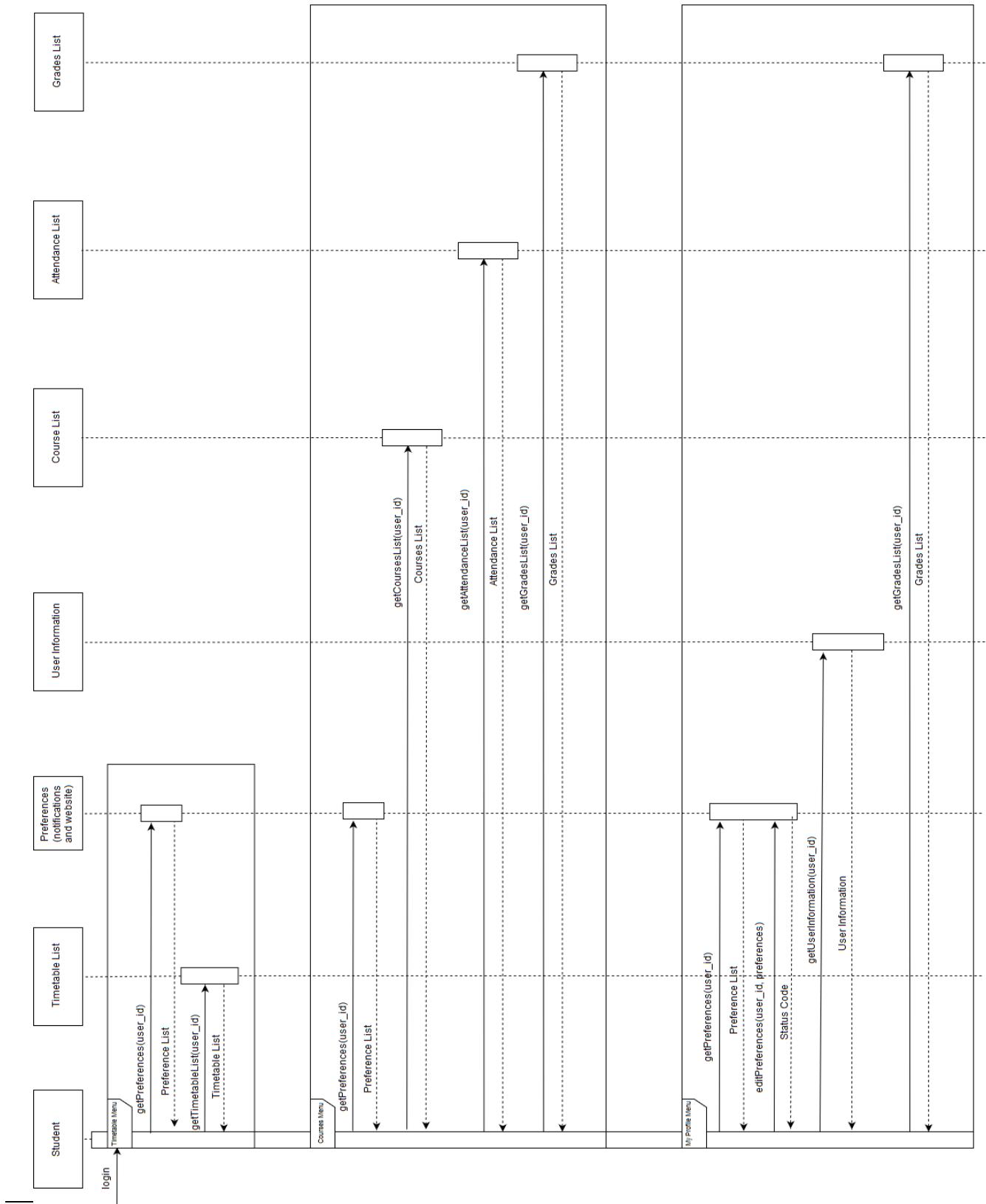
Professor_courses_settings_myprofile



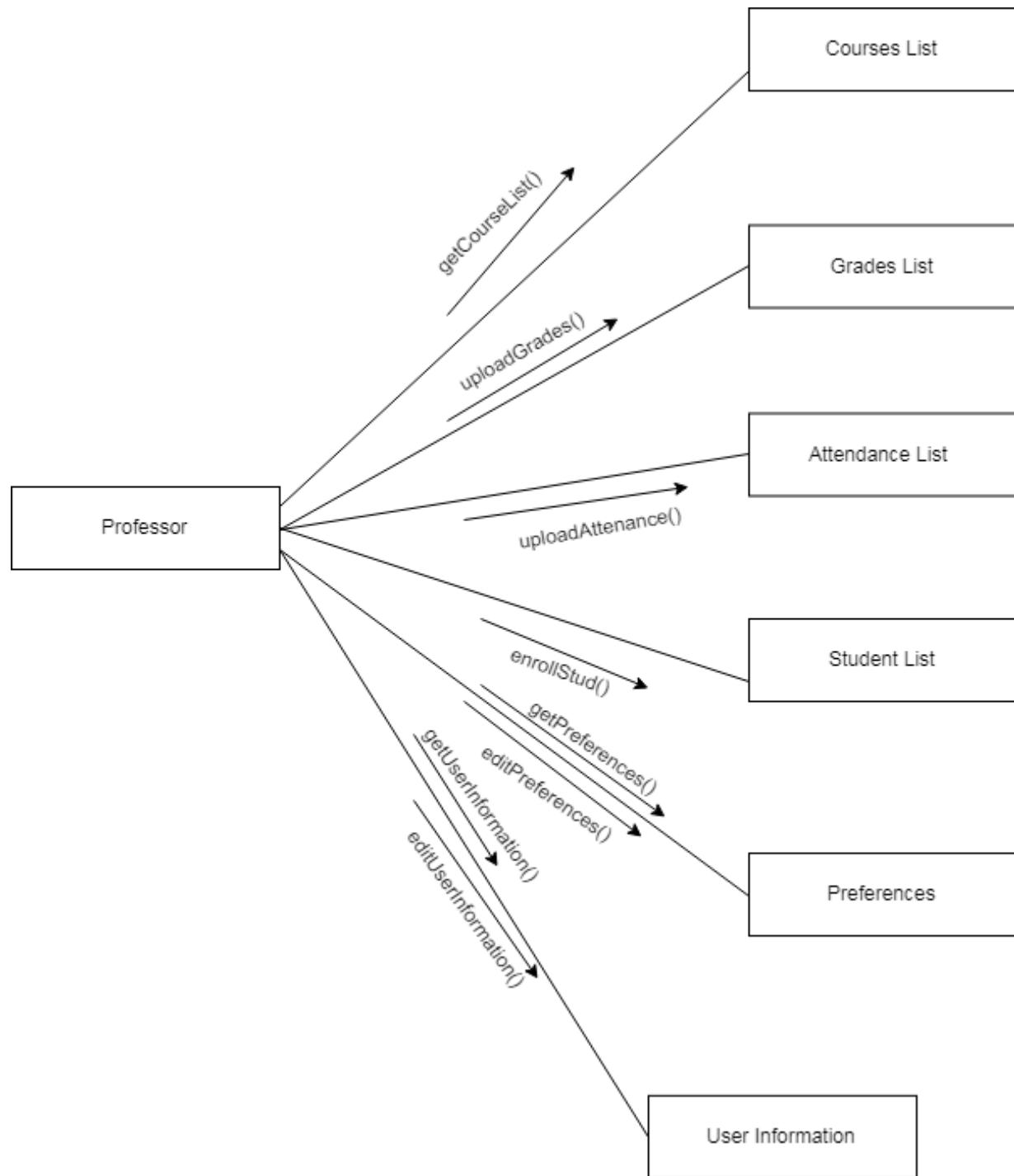
Student_notifications_calendar_settings

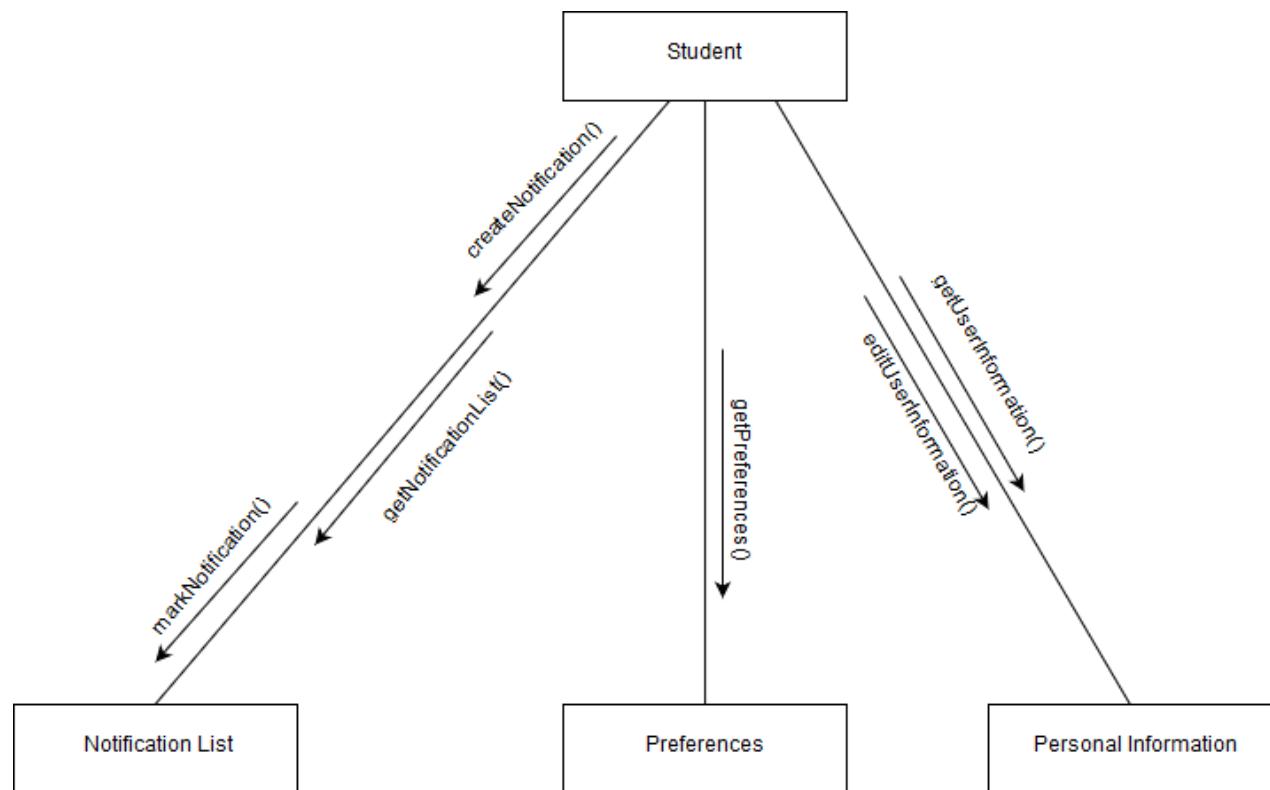
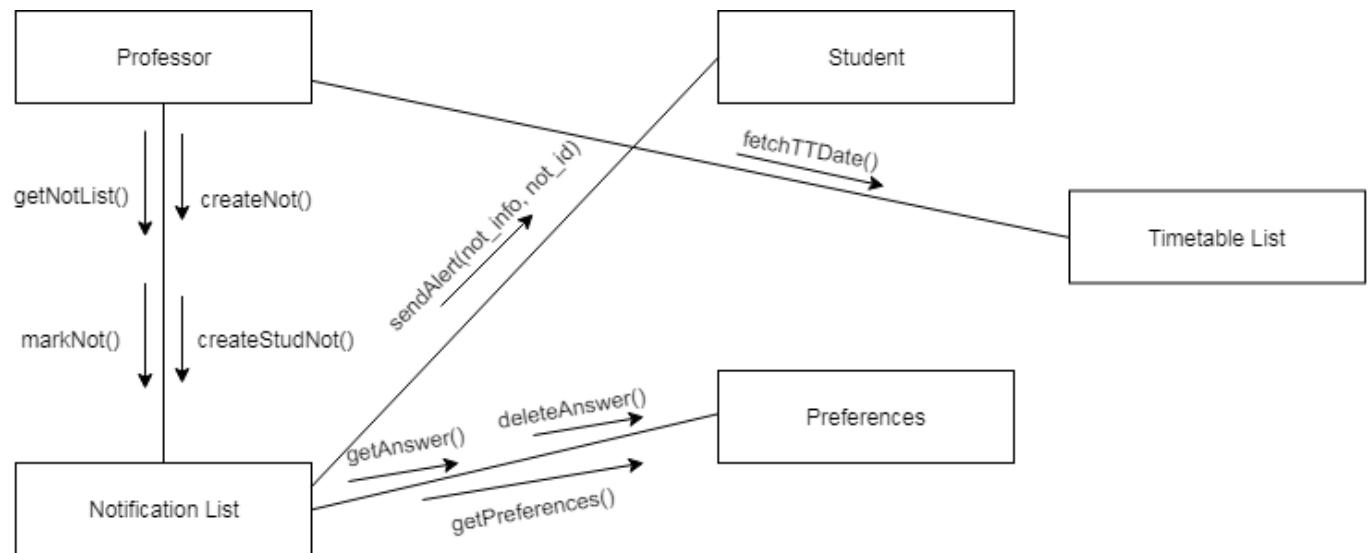


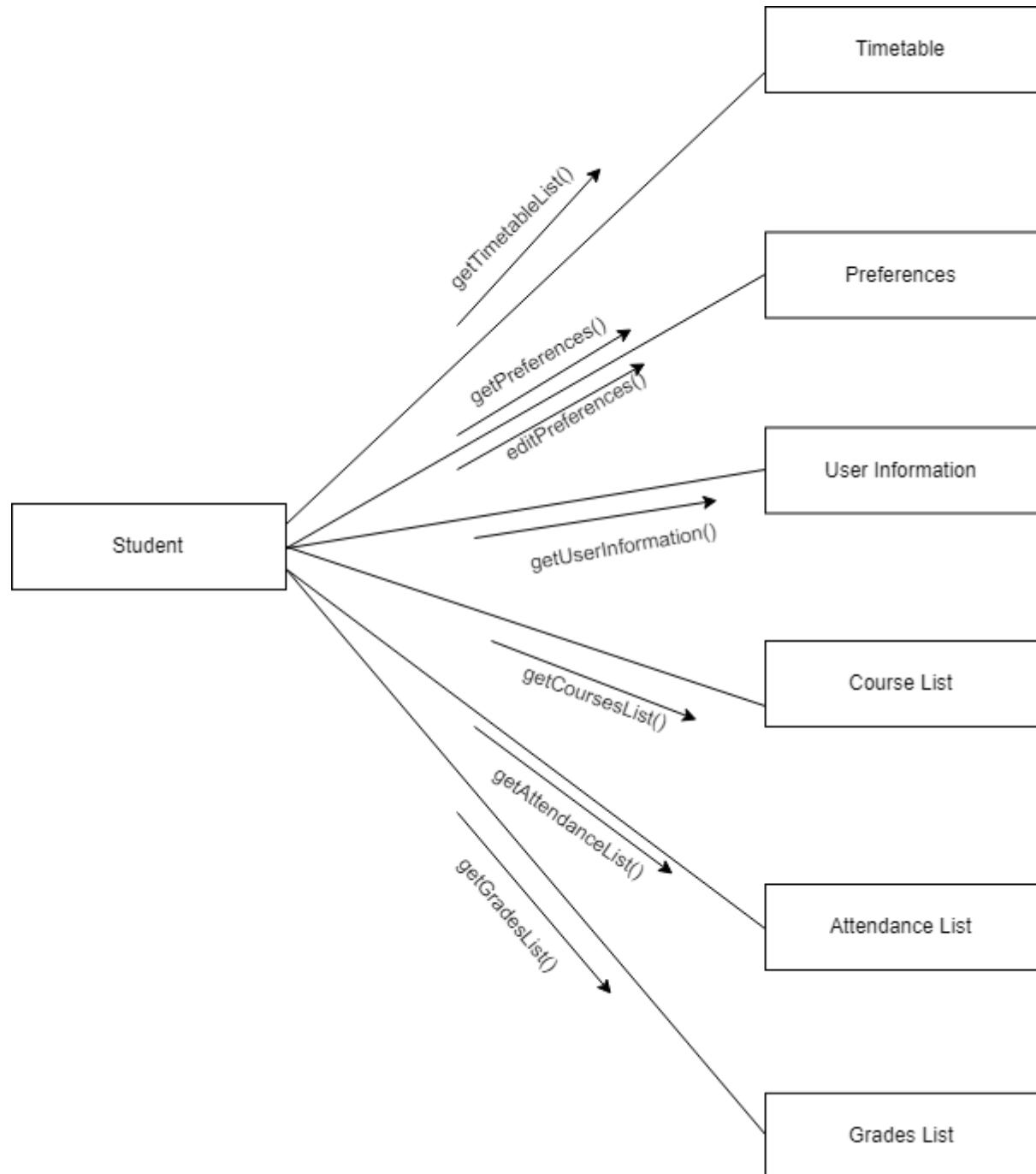
Student_courses_tt_myprofile



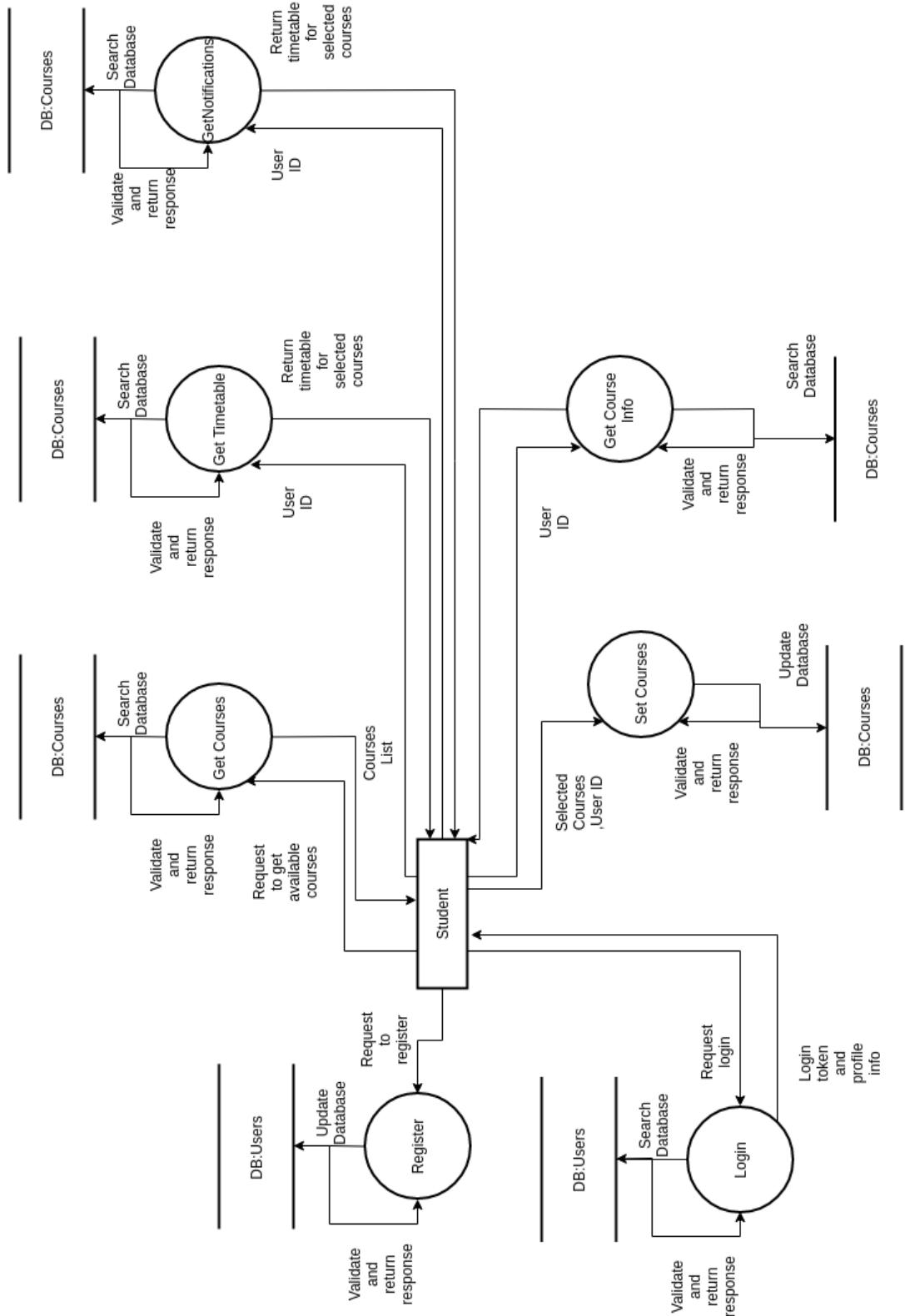
4.5.2 Collaboration Diagrams

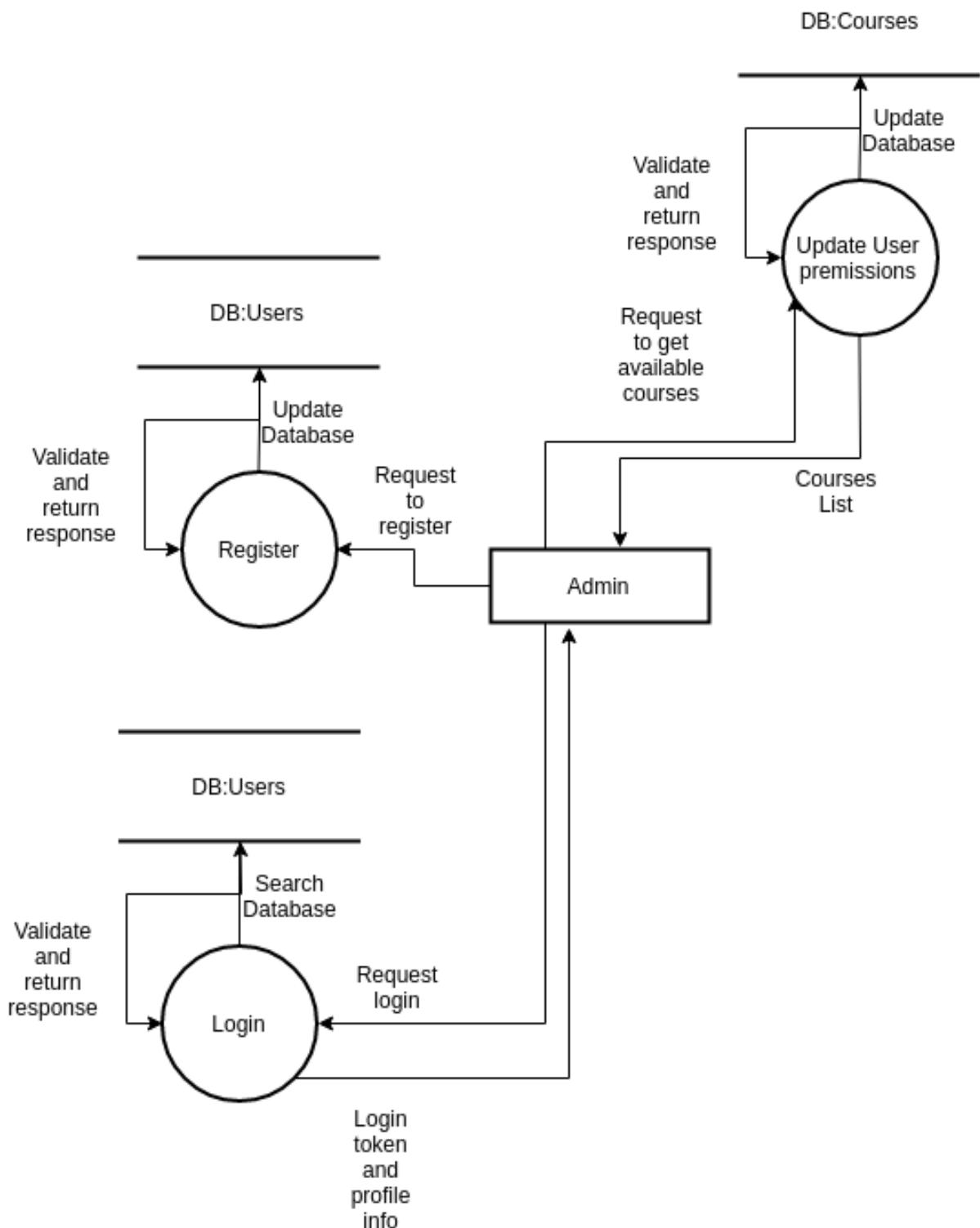


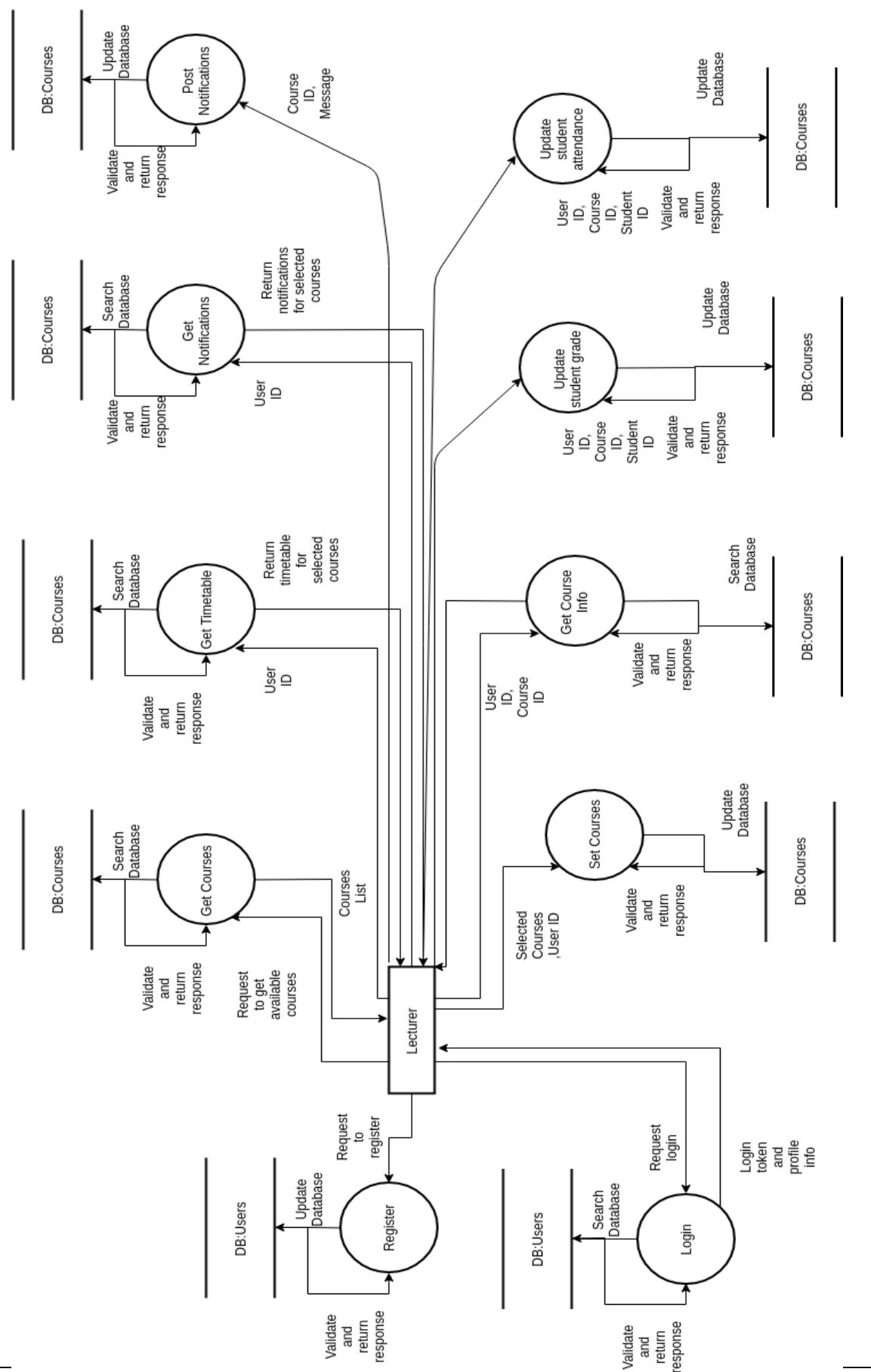


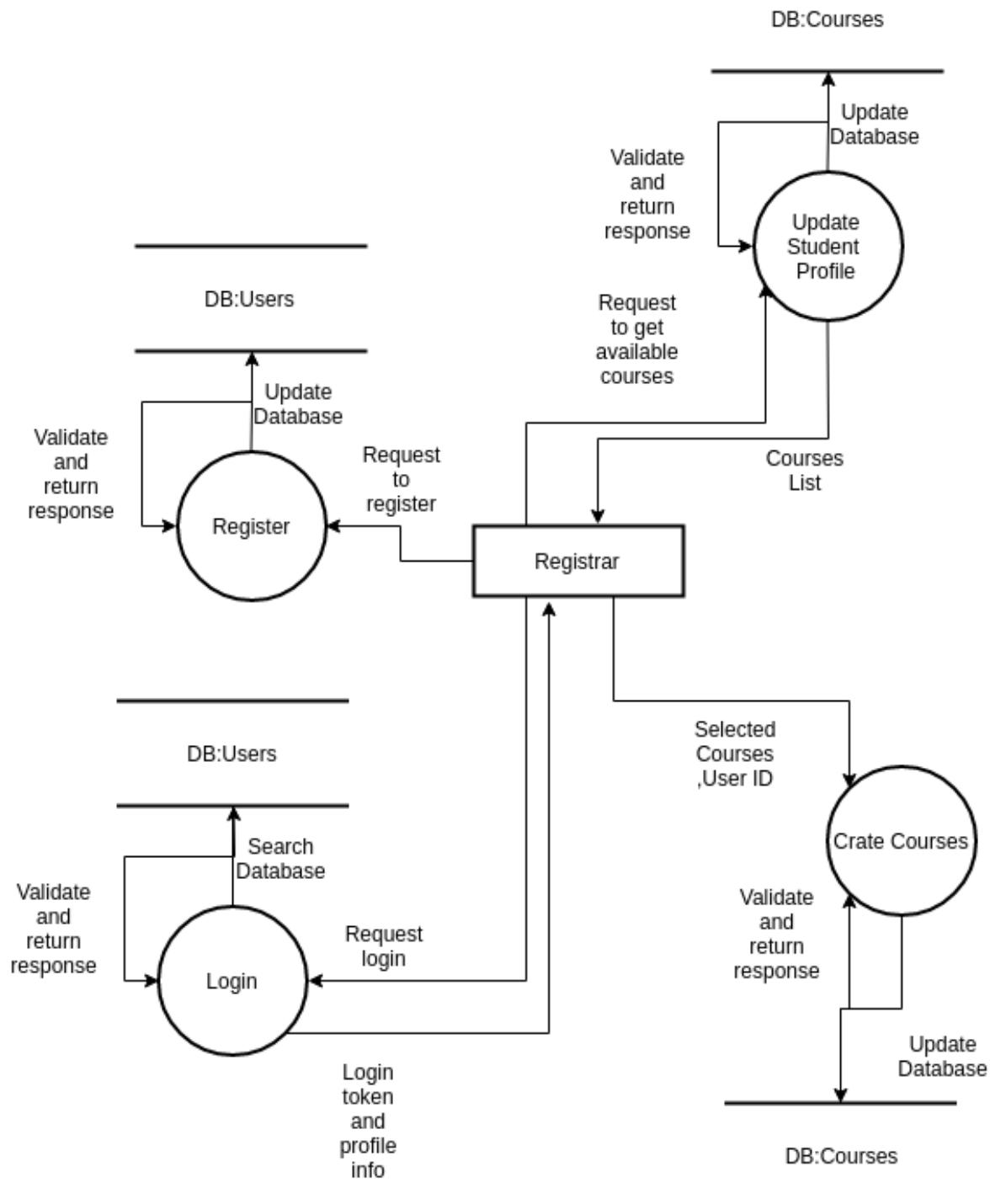


4.6 Data Flow Diagram



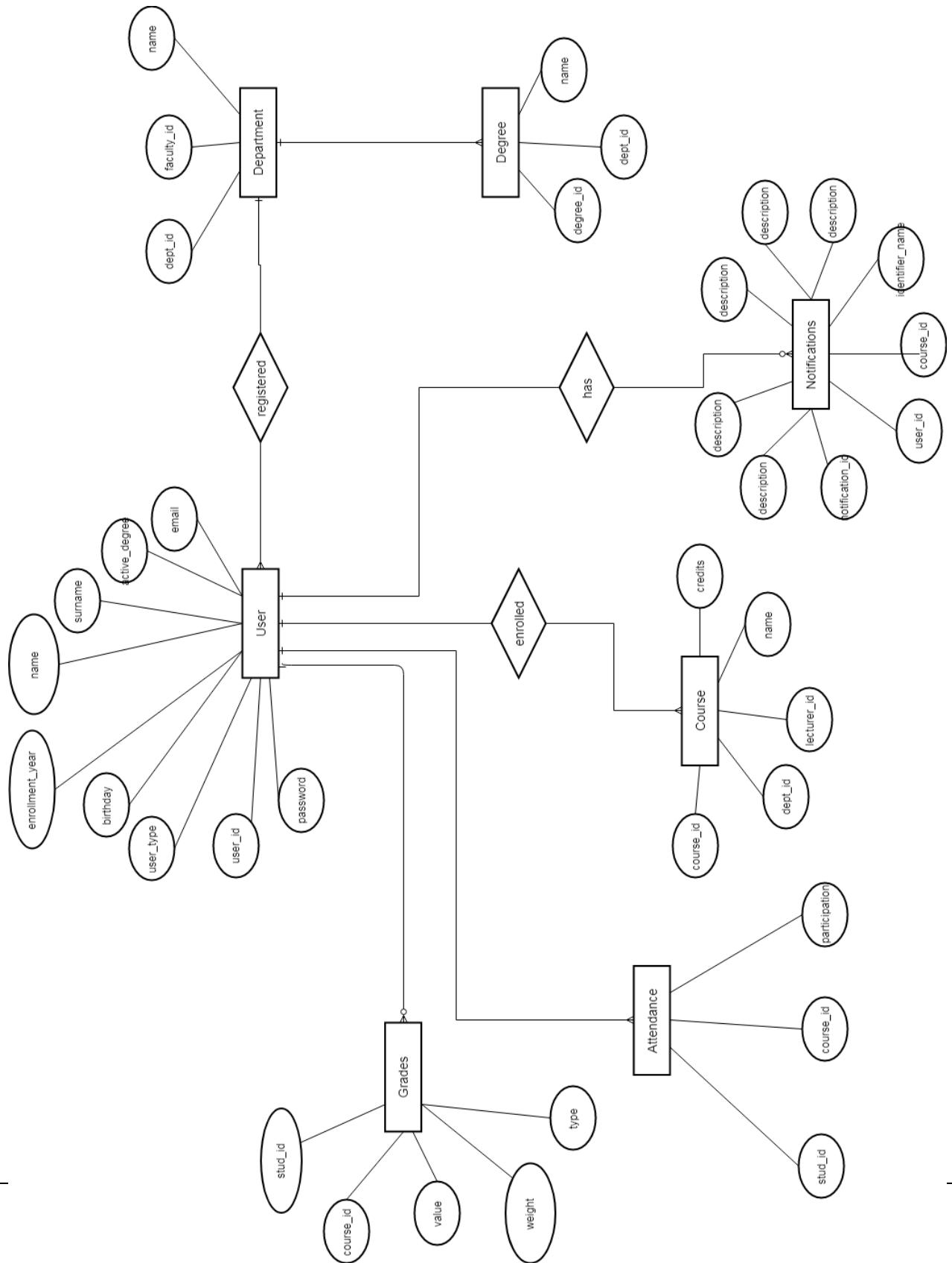




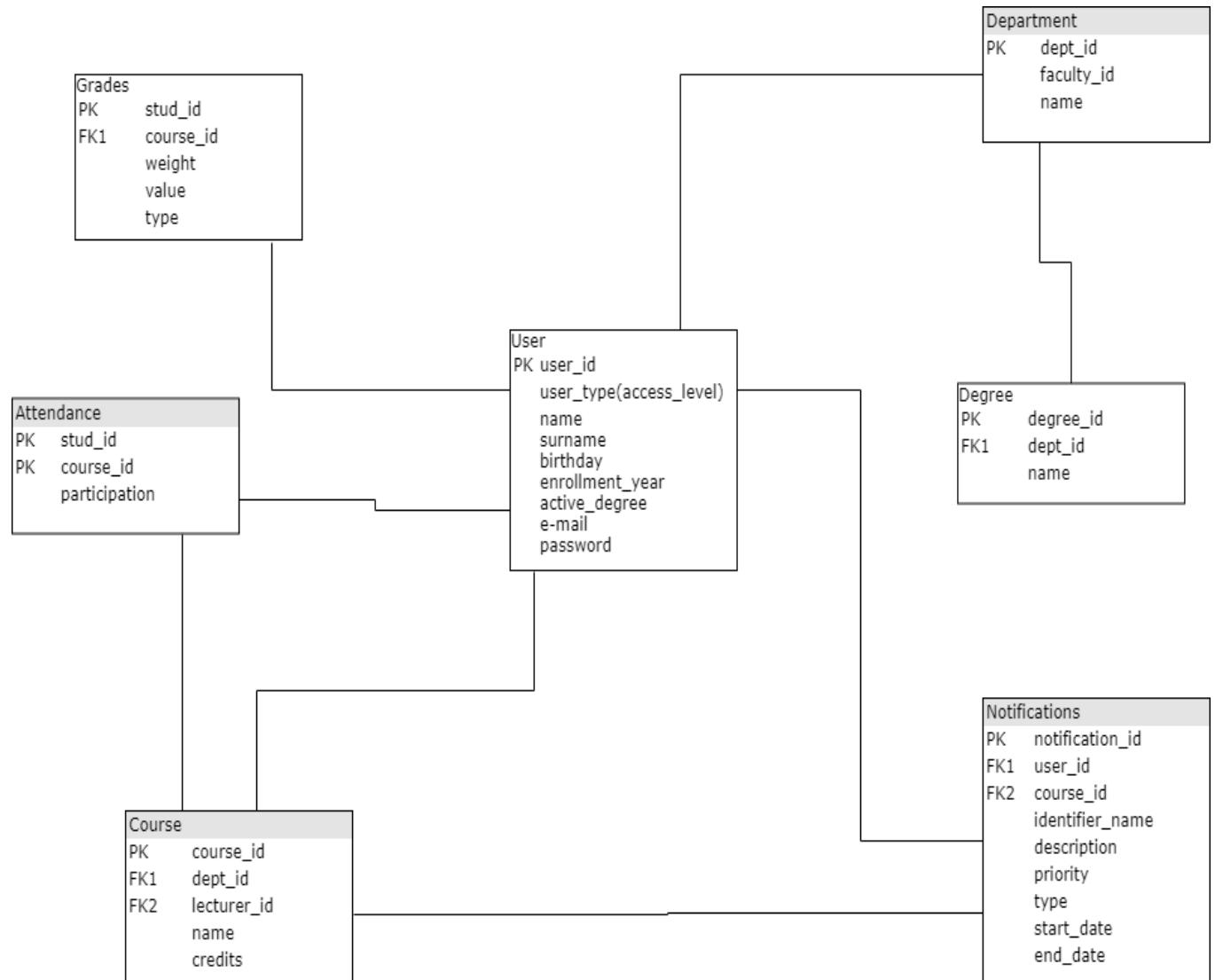


4.7 Structural Diagrams

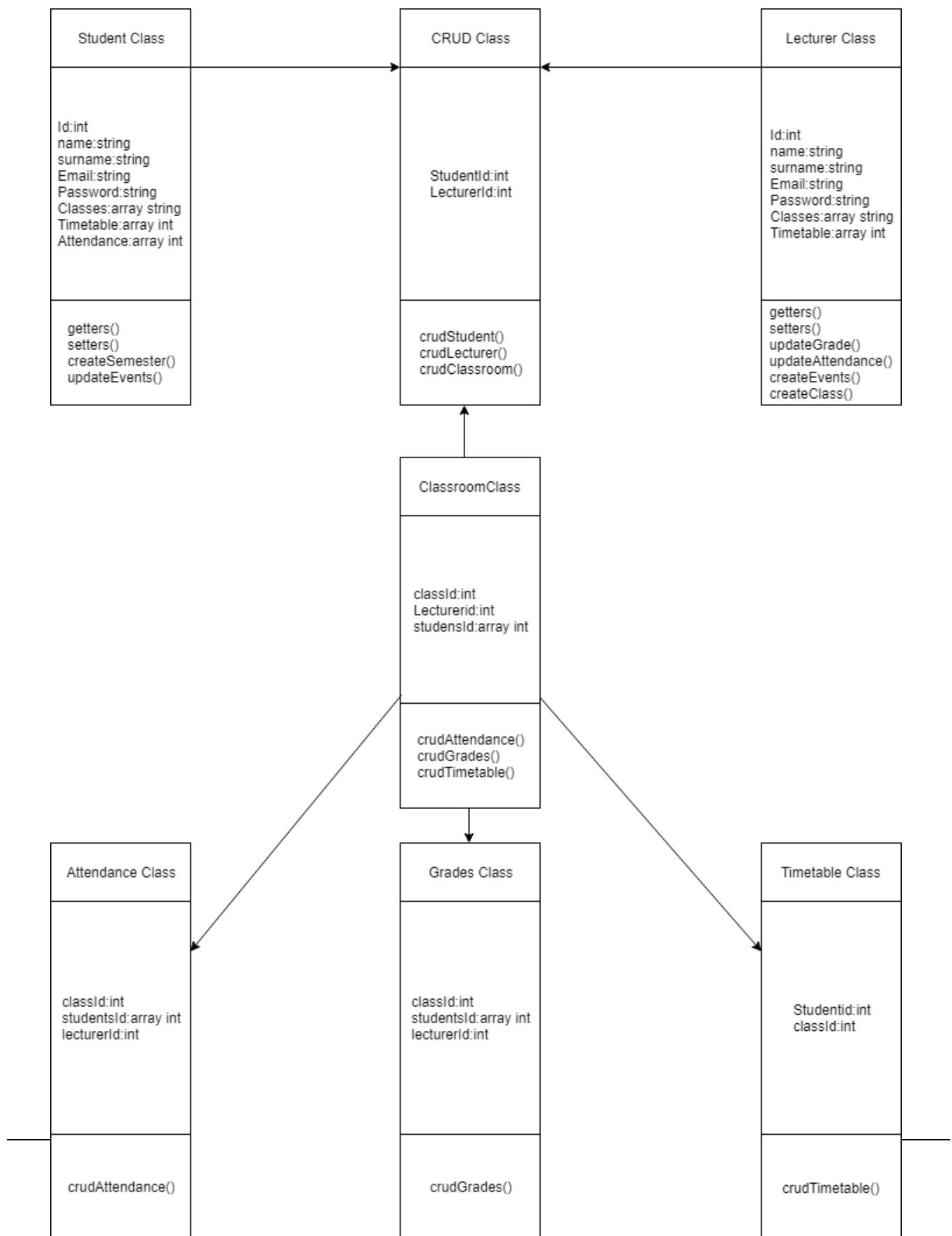
4.7.1 ER Diagram



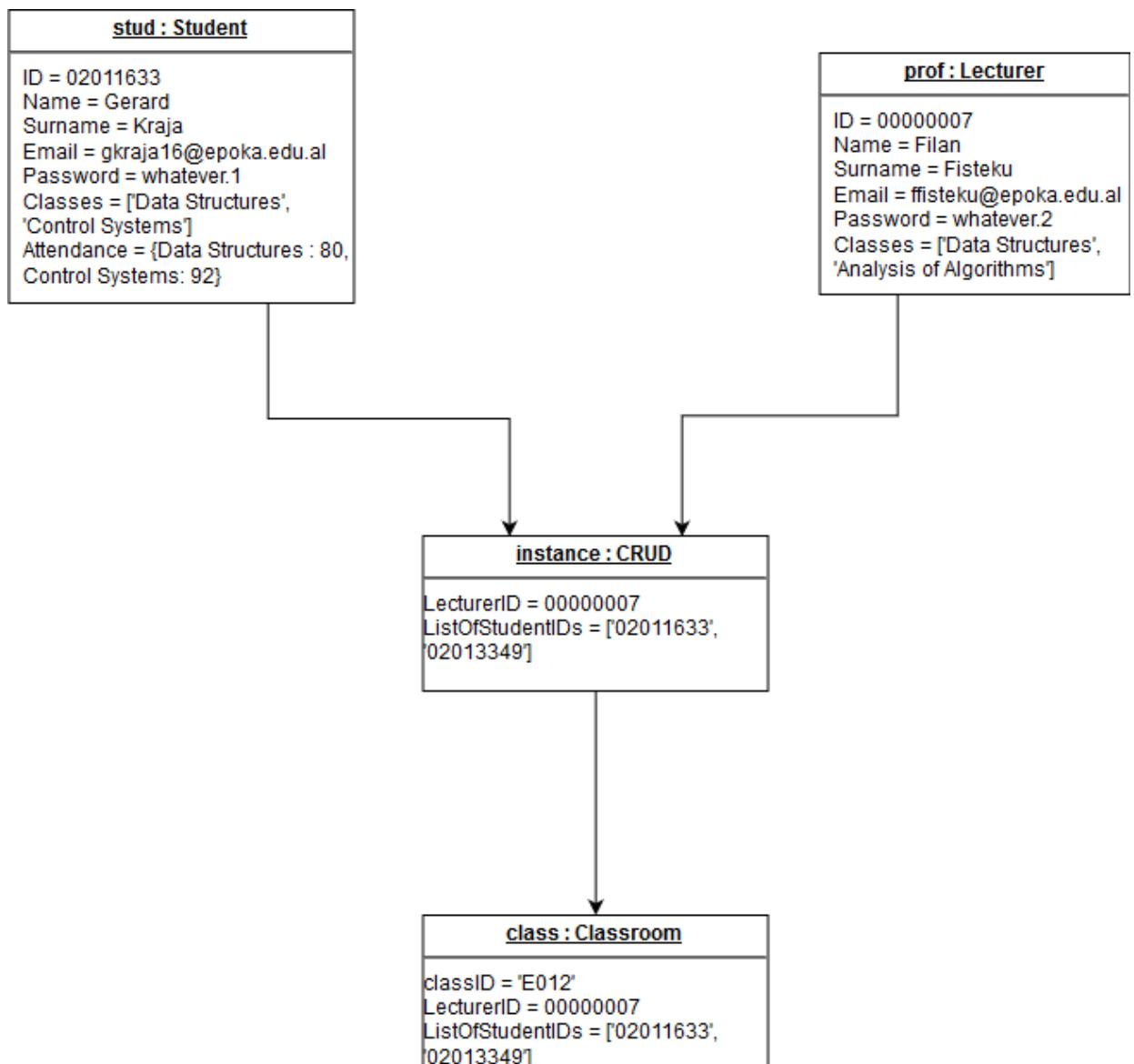
4.7.2 DB Schema

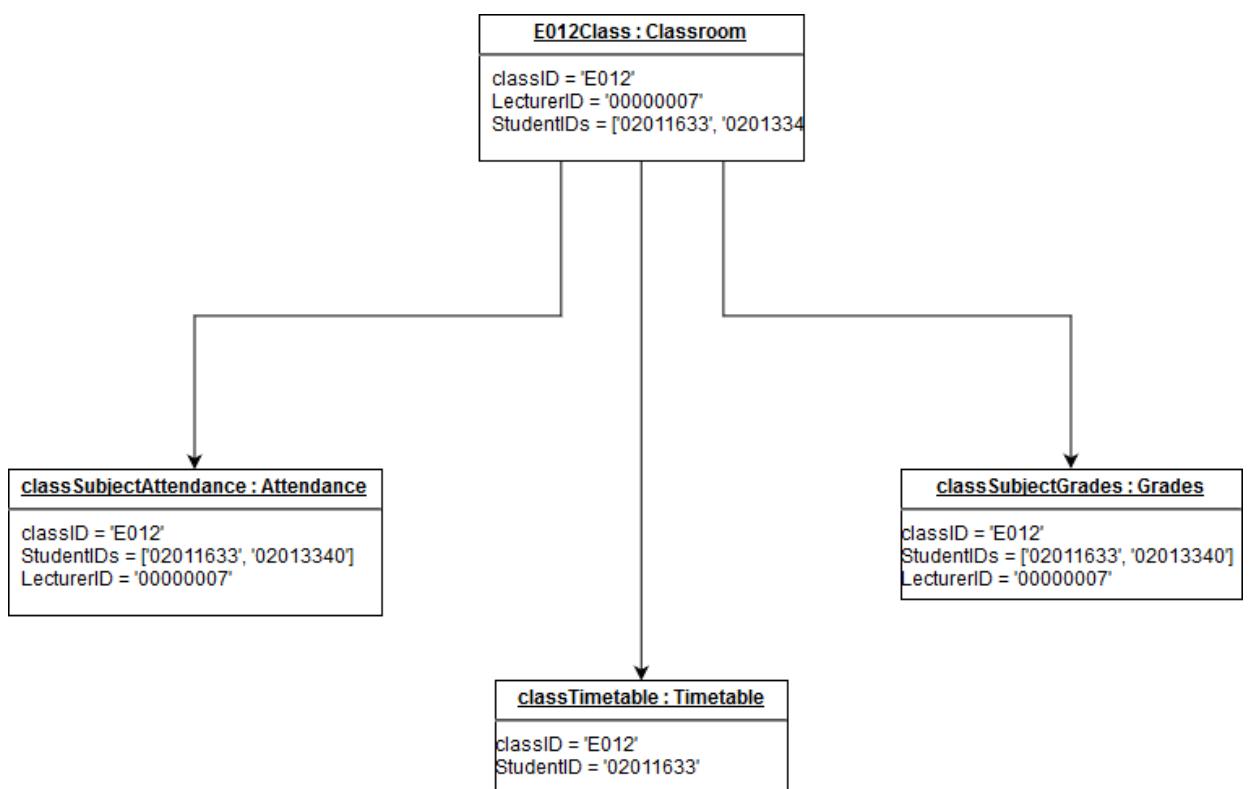


4.7.3 Class Diagram



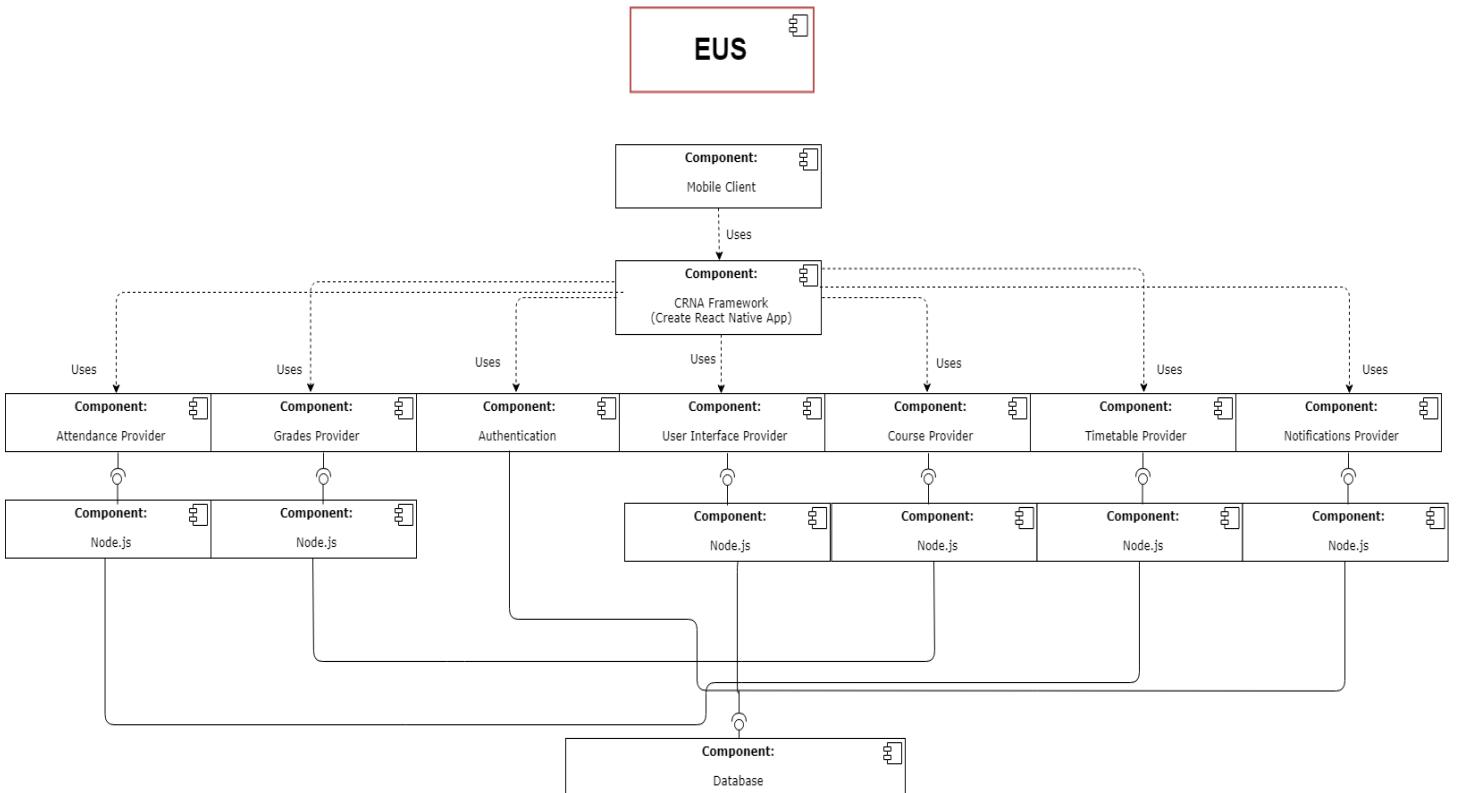
4.7.4 Object Diagrams



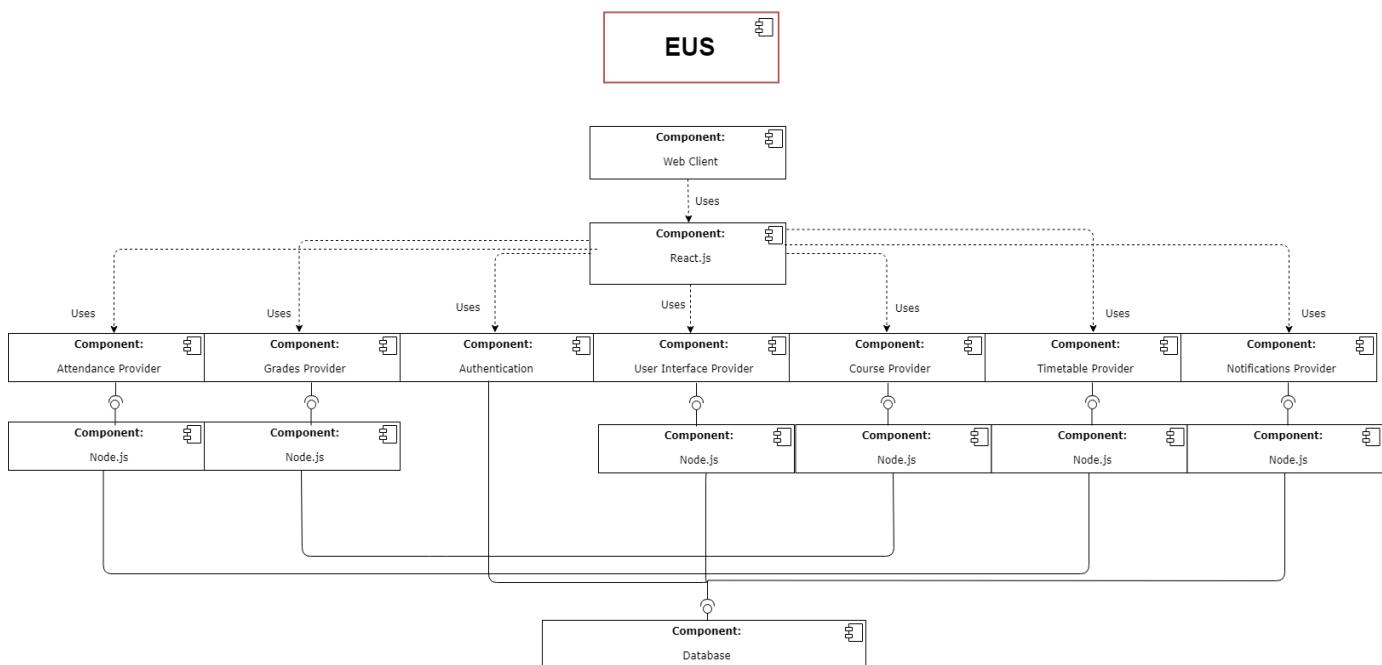


4.7.5 Component Diagram

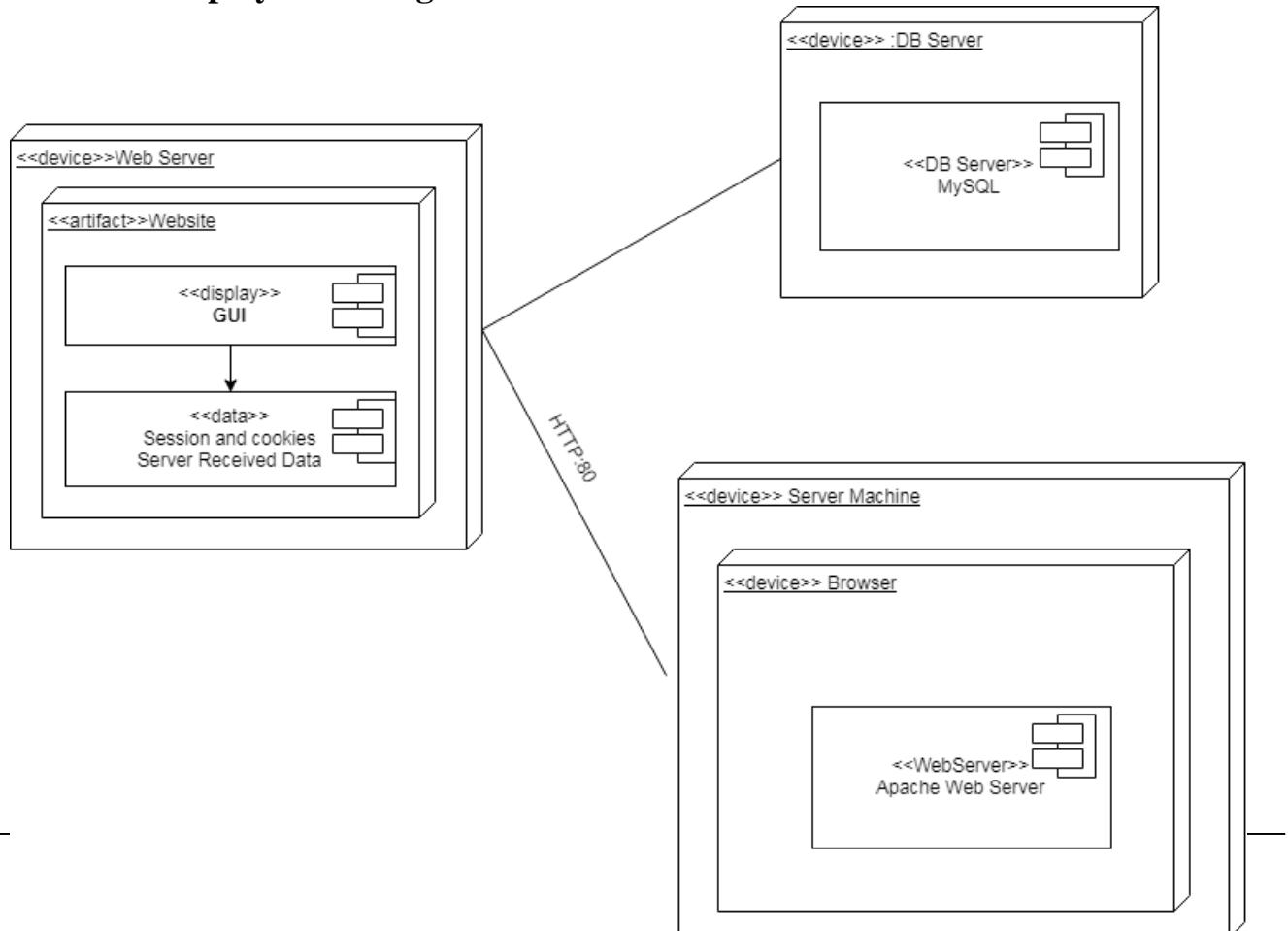
Mobile Component Diagram



WEB Component Diagram



4.7.6 Deployment Diagram



5. Project Planning

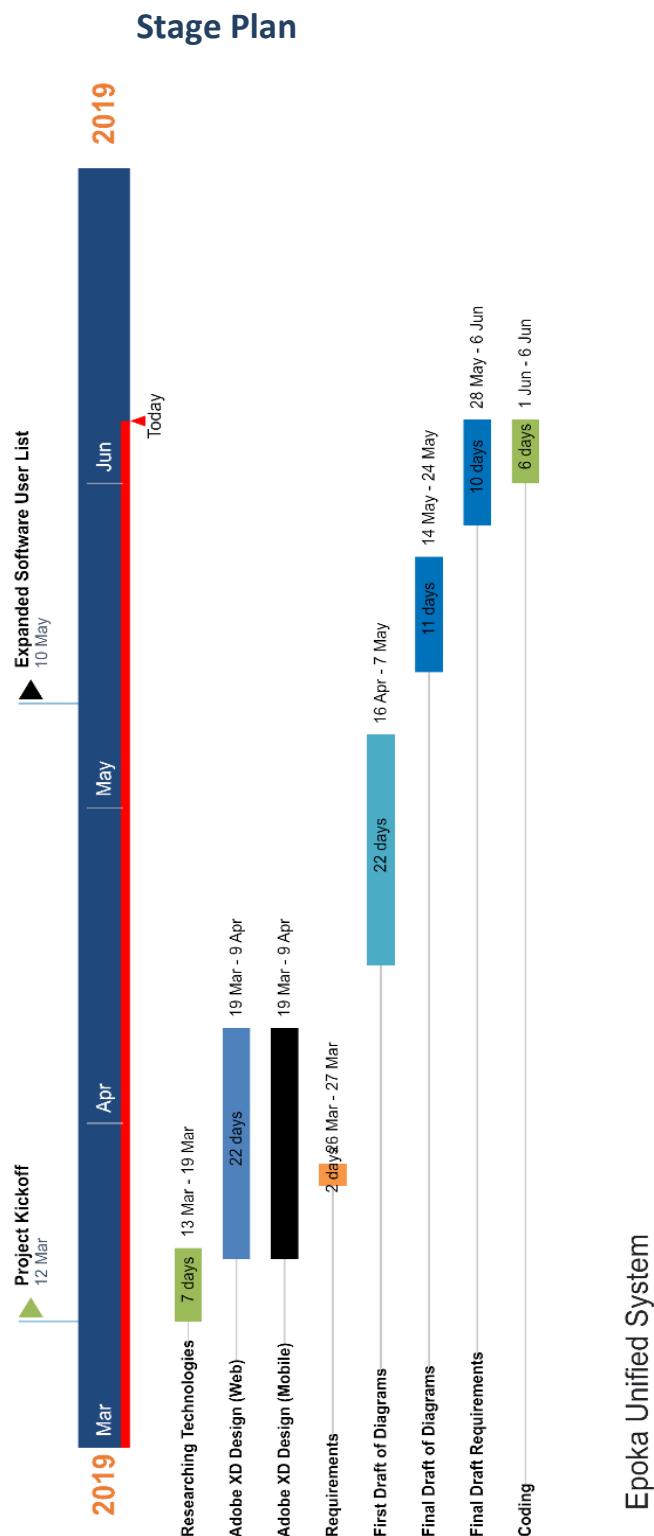
Project name: EUS (Epoka Unified System)

Team members: Ergi Dervishaj, Megi Hoxha, Gerard Kraja, Krist Kokali, Paolo Miraka

Start date: 13.03.2019

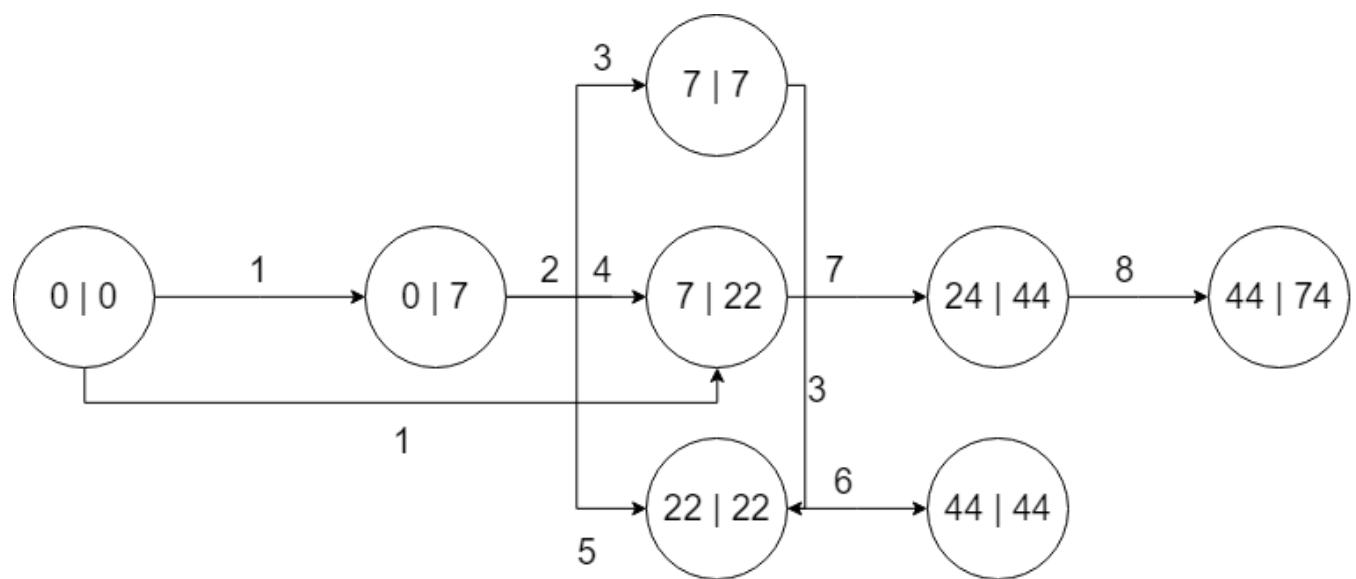
End date: 07.06.2019

Grantt Chart



Network Analysis

No.	Activity	Predecessor	Duration
1	Researching Technologies	-	7
2	Adobe XD Desing (Web)	1	22
3	Adobe XD Design (Mobile)	2	22
4	First Draft Requirements	1, 2	2
5	First Draft of Diagrams	2, 3	22
6	Final Draft of Diagrams	5	11
7	Final Draft Requirements	4	10
8	Coding	7	6



APPENDIX

Appendix A. Definitions, Acronyms, and Abbreviations

Abbreviations:

EUS – Epoka Unified System

SQL – Standard Query Language

XML – Extensible Markup Language

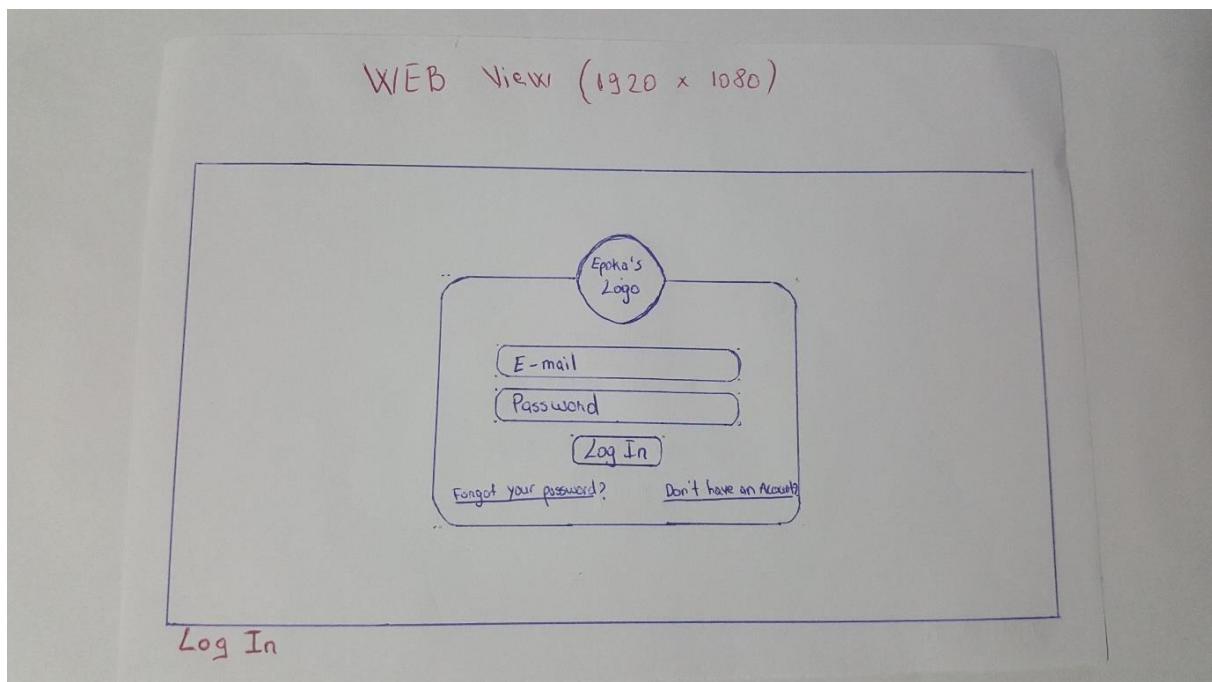
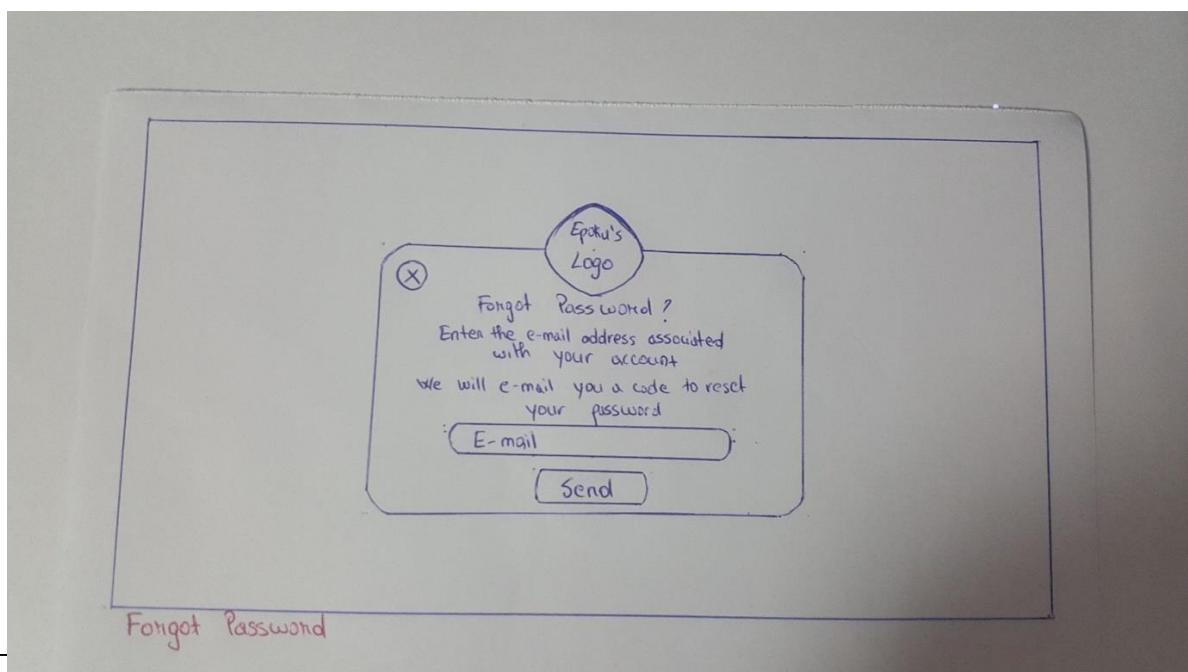
GDPR – General Data Protection Regulation

CRUD – Create, Read, Update, Delete

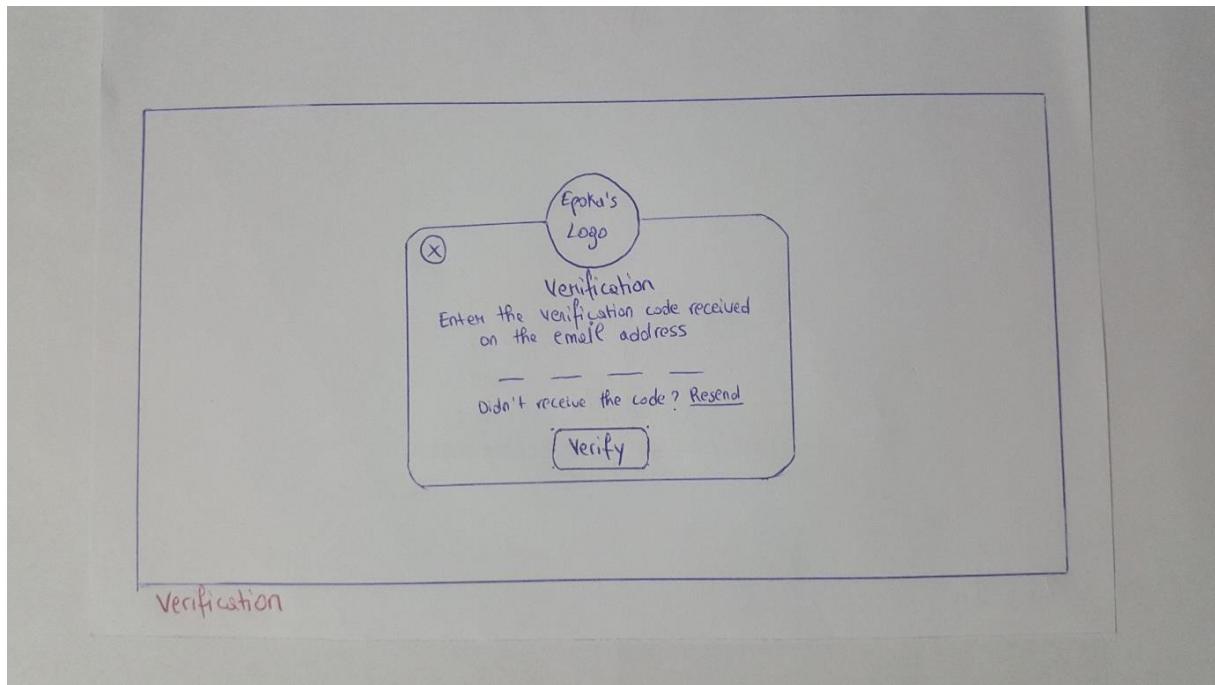
Appendix B. References

- [1] https://ec.europa.eu/commission/priorities/justice-and-fundamental-rights/data-protection/2018-reform-eu-data-protection-rules_en

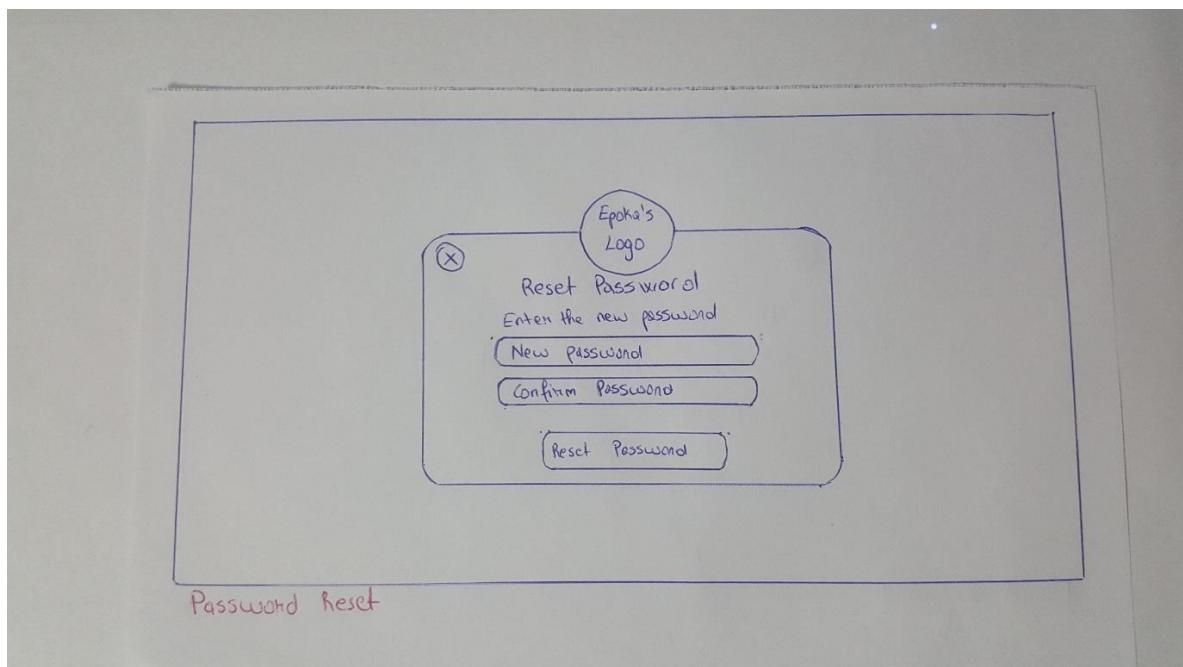


Appendix C. Sketches**Part A – WEB View****1. LOG IN****2. FORGOT PASSWORD**

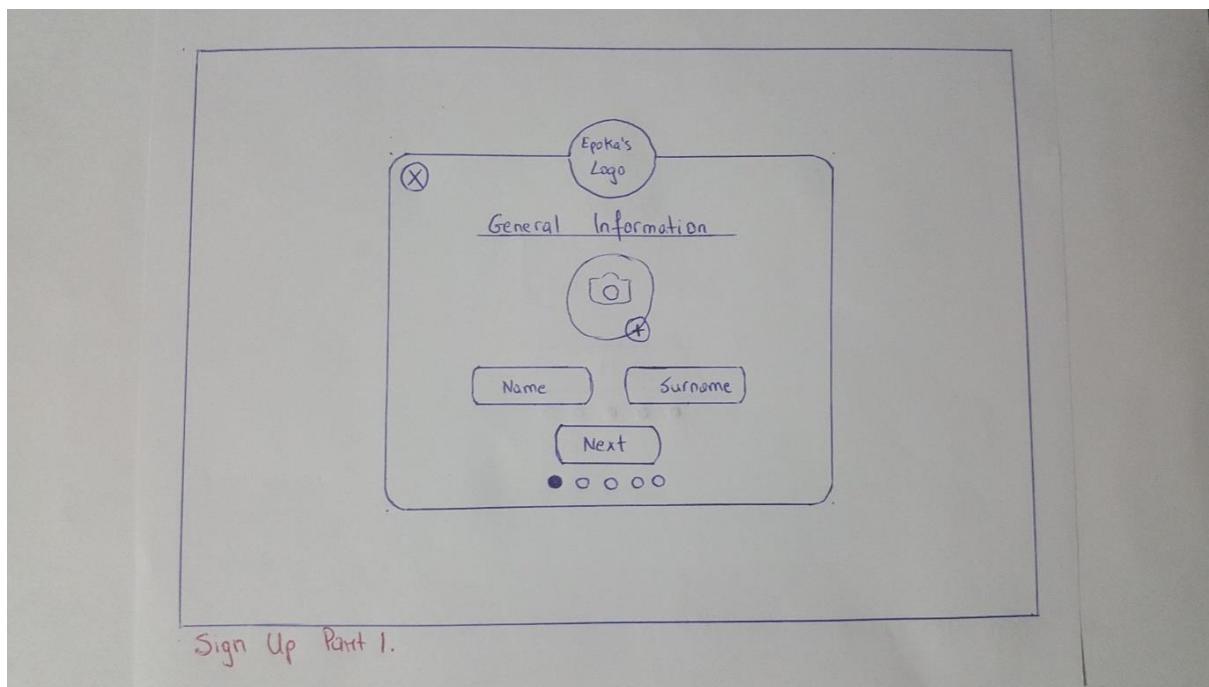
3. VERIFICATION



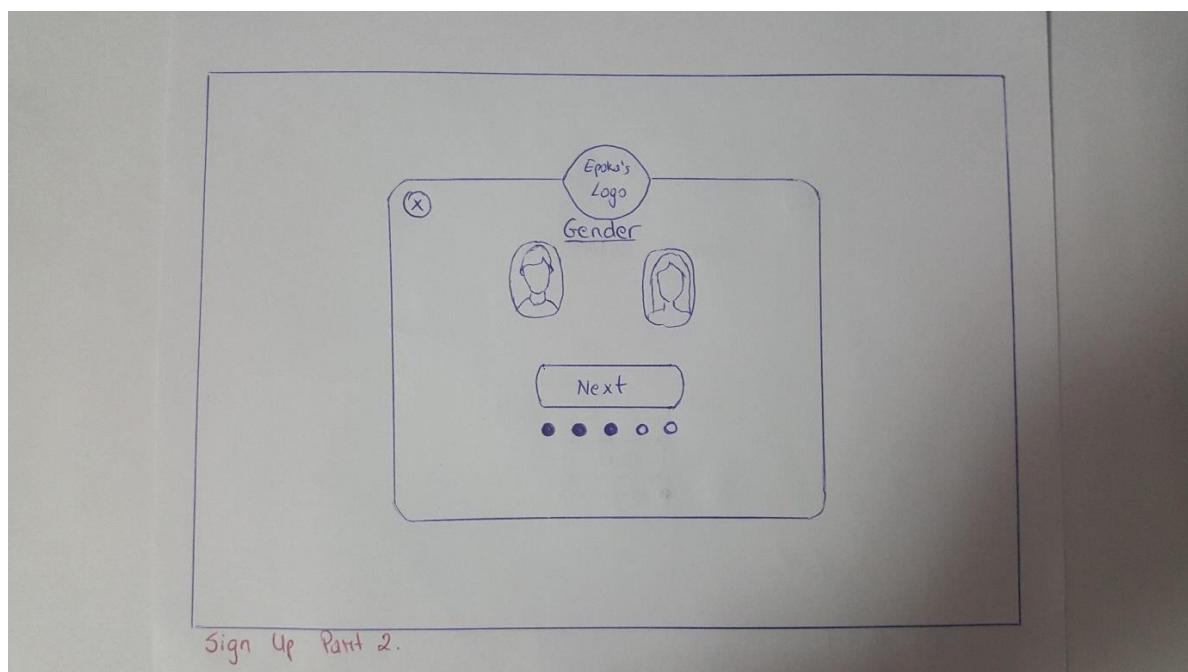
4. PASSWORD RESET



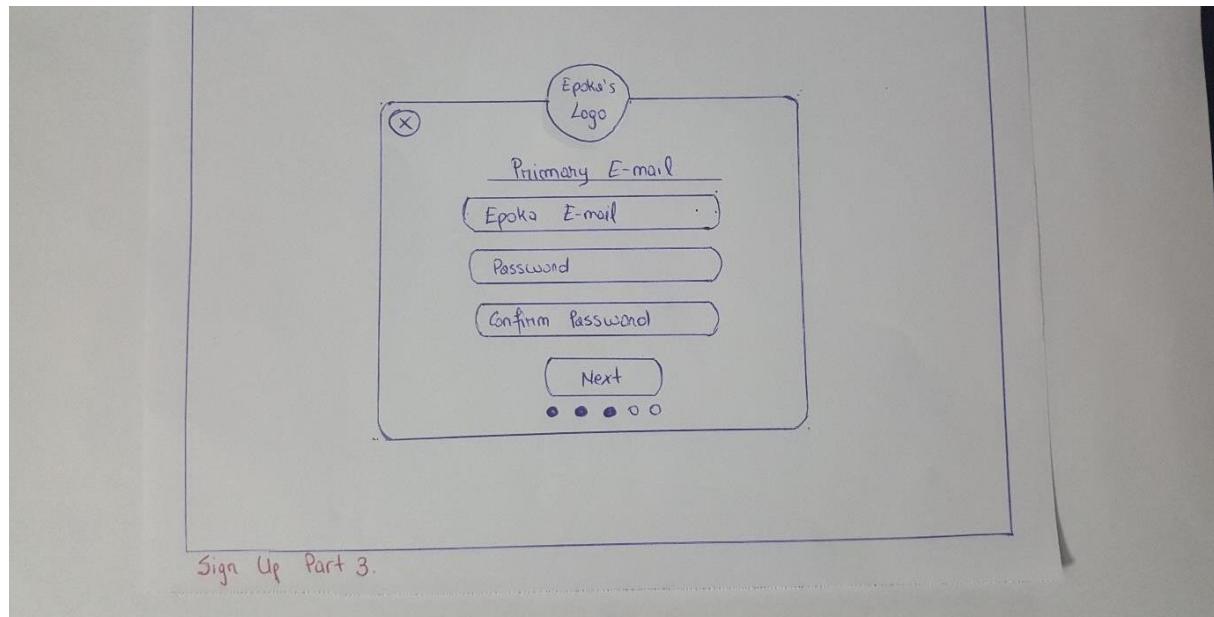
5. SIGN UP PART 1



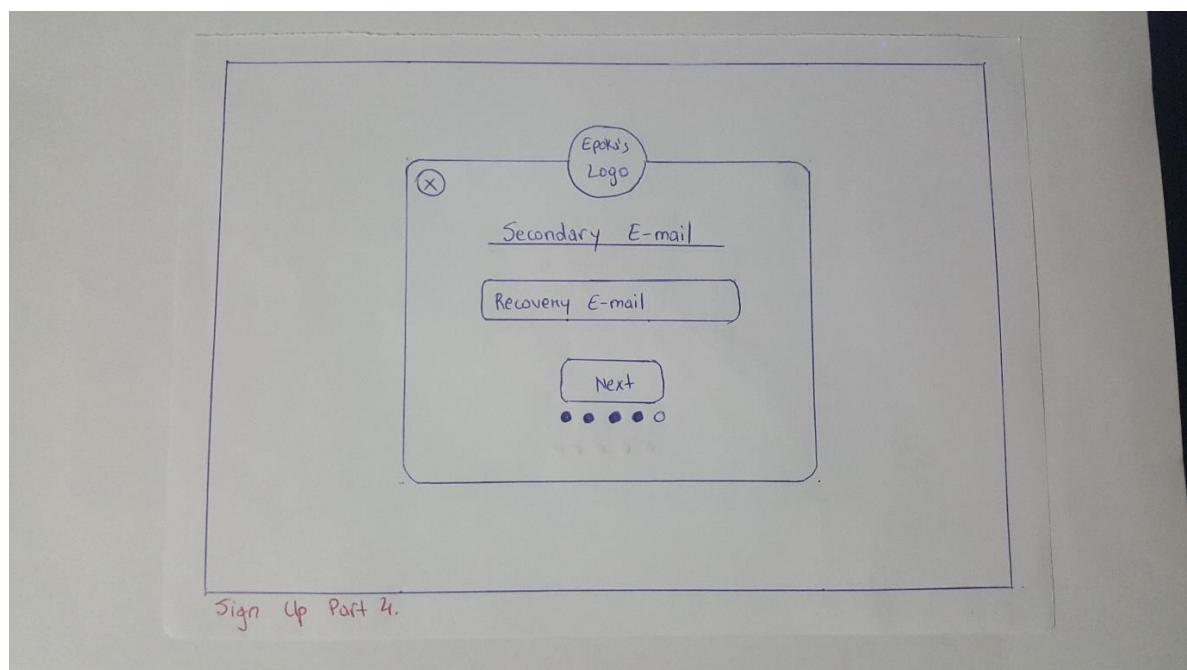
6. SIGN UP PART 2

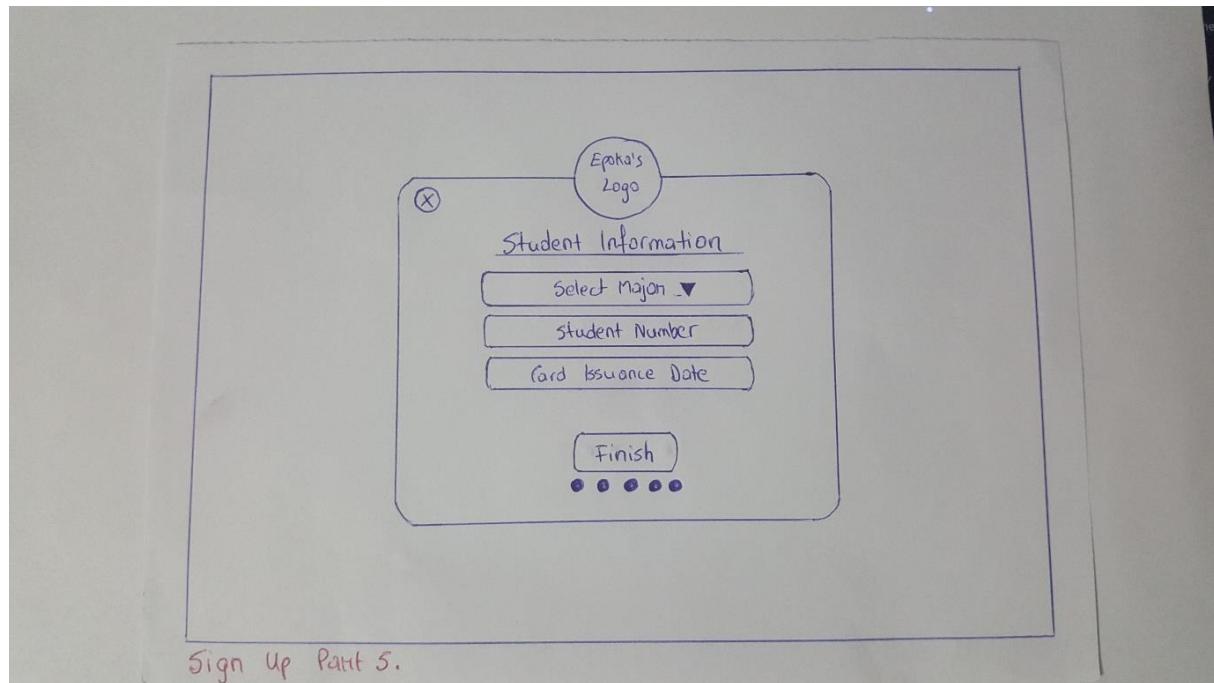


7. SIGN UP PART 3

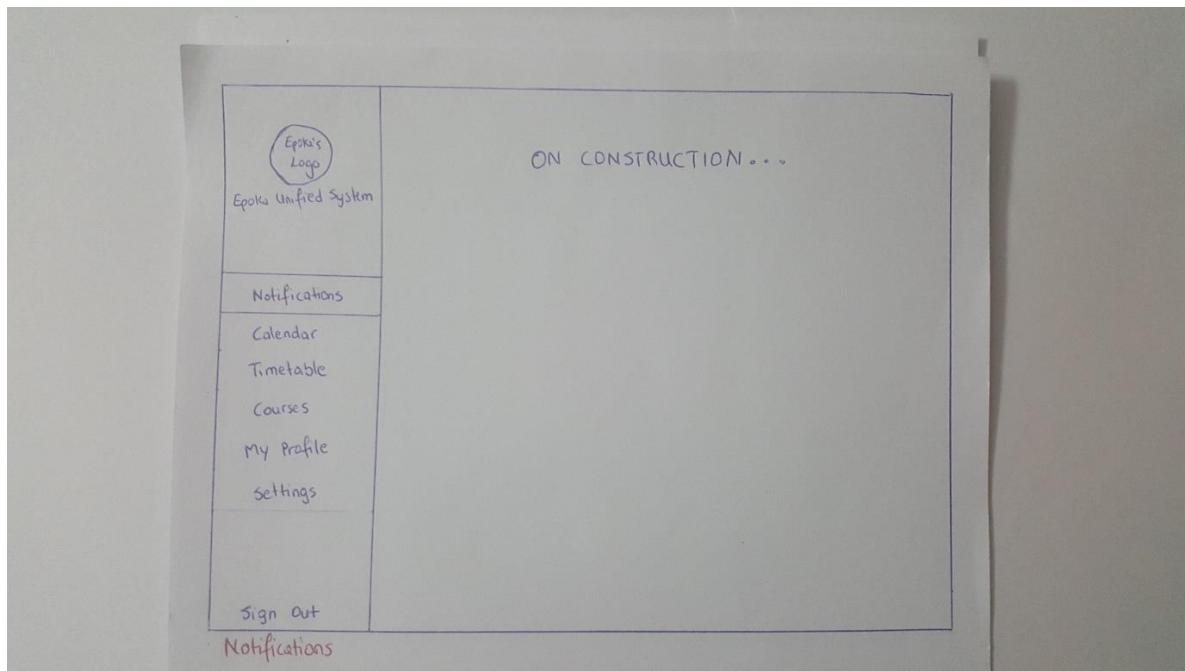


8. SIGN UP PART 4

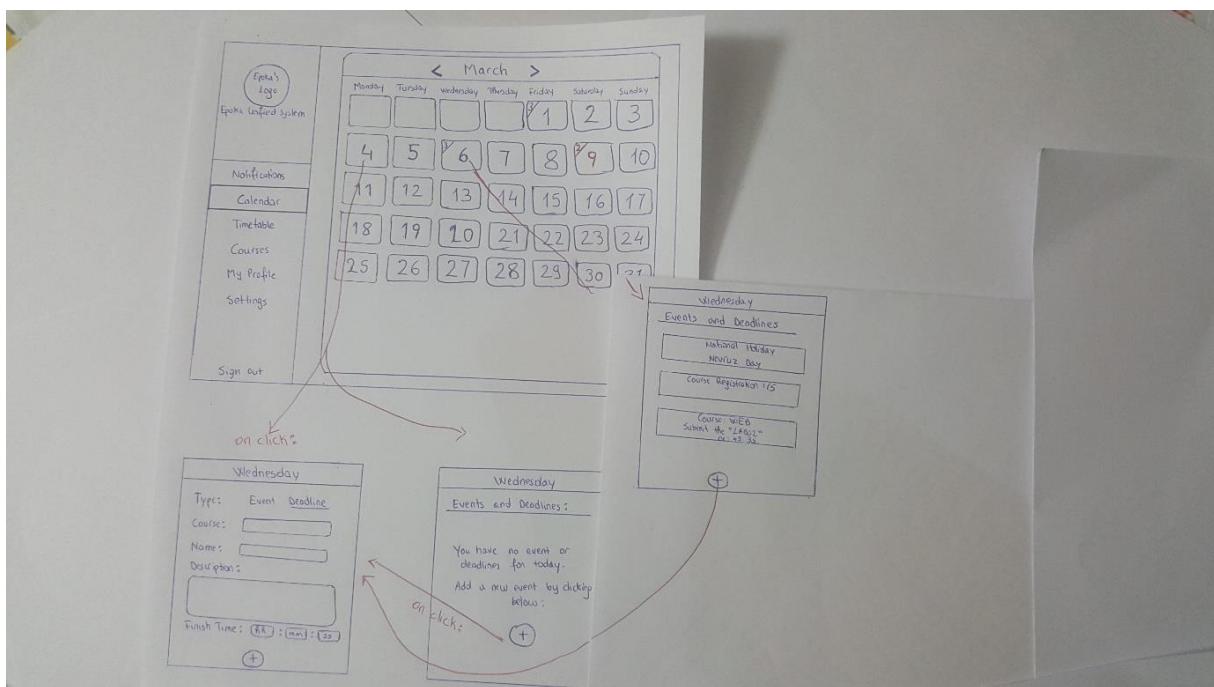


9. SIGN UP PART 5

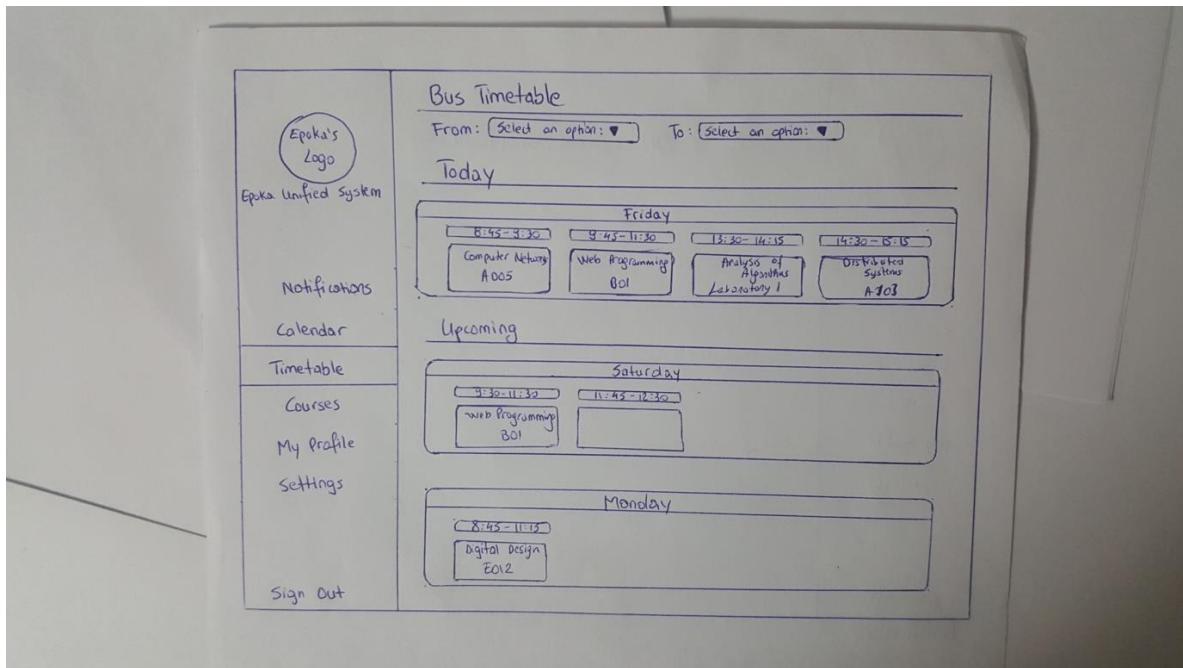
10. NOTIFICATIONS



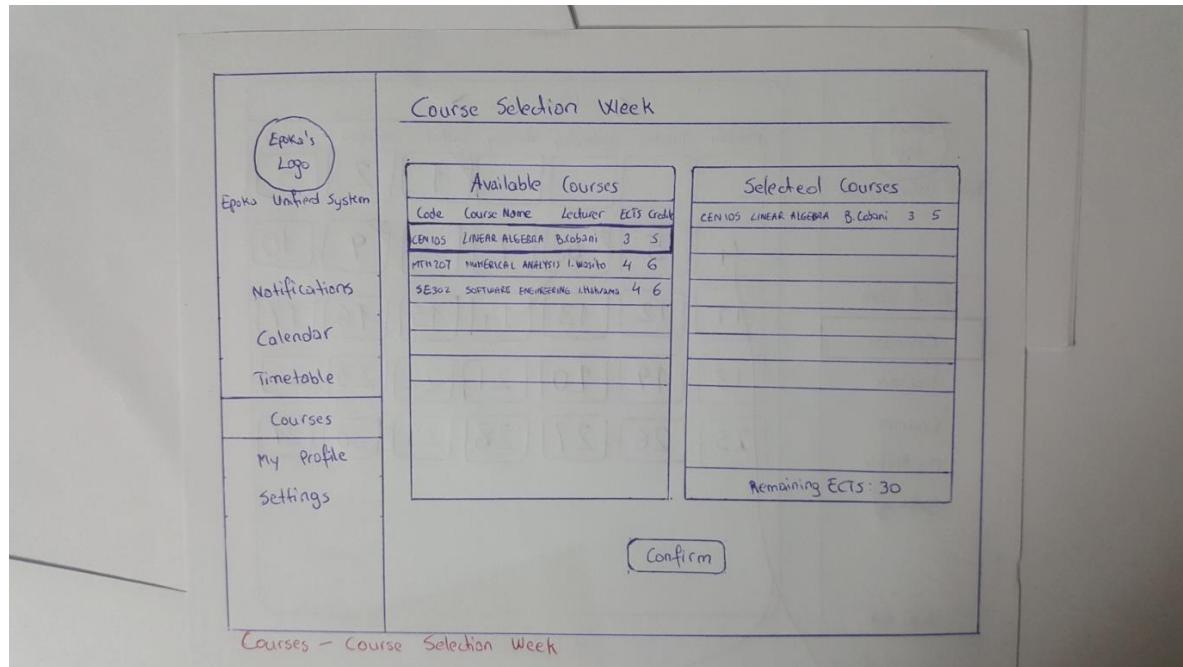
11. CALENDAR



12. TIMETABLE

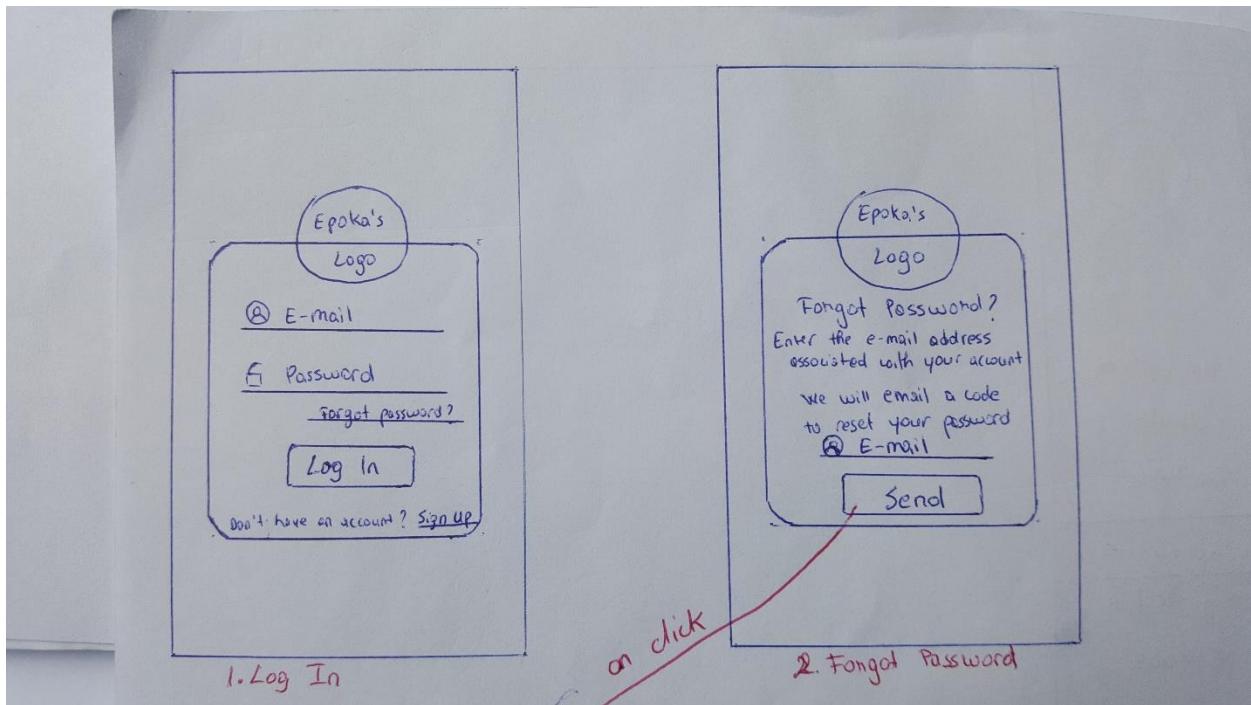


13. COURSE SELECTION WEEK

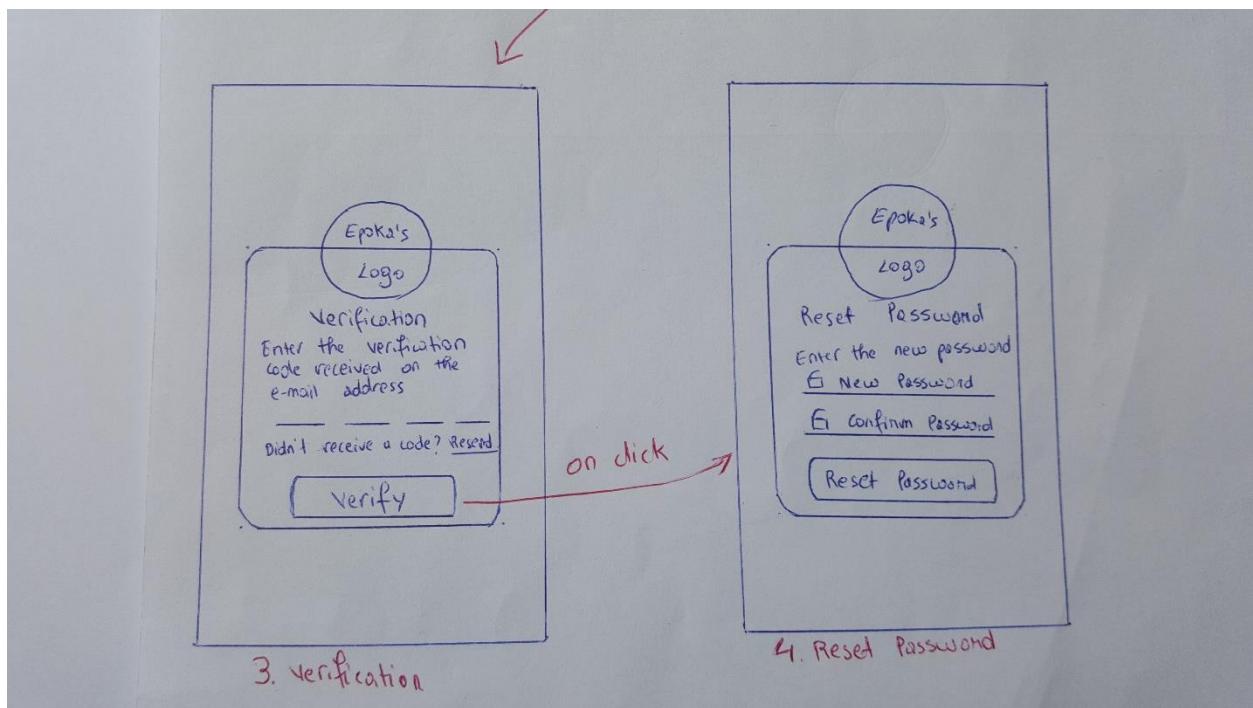


Part B – Mobile View

Login / Forgot Password



Verification/Reset Password

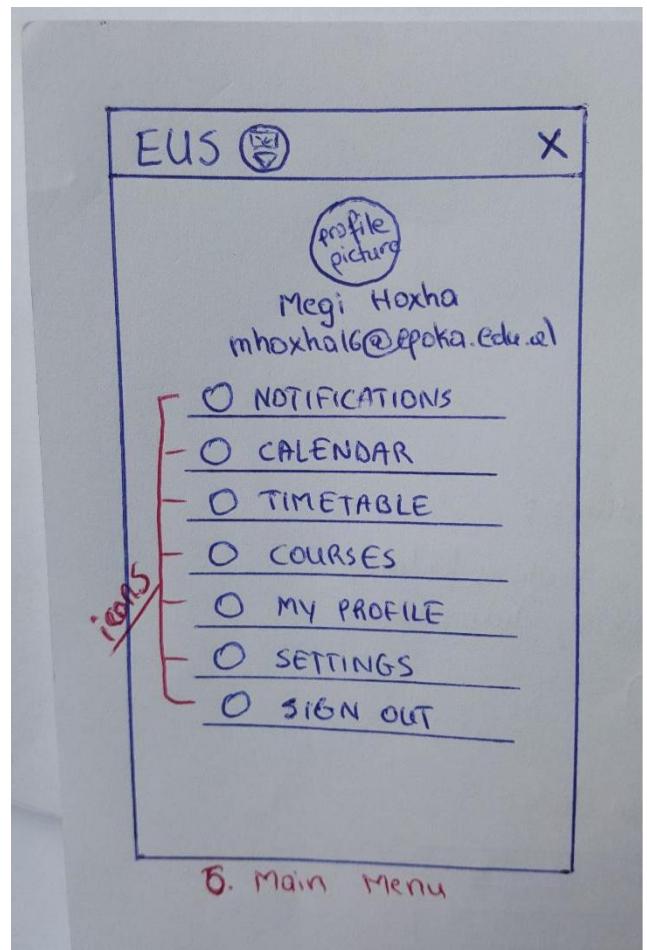


Sign Up

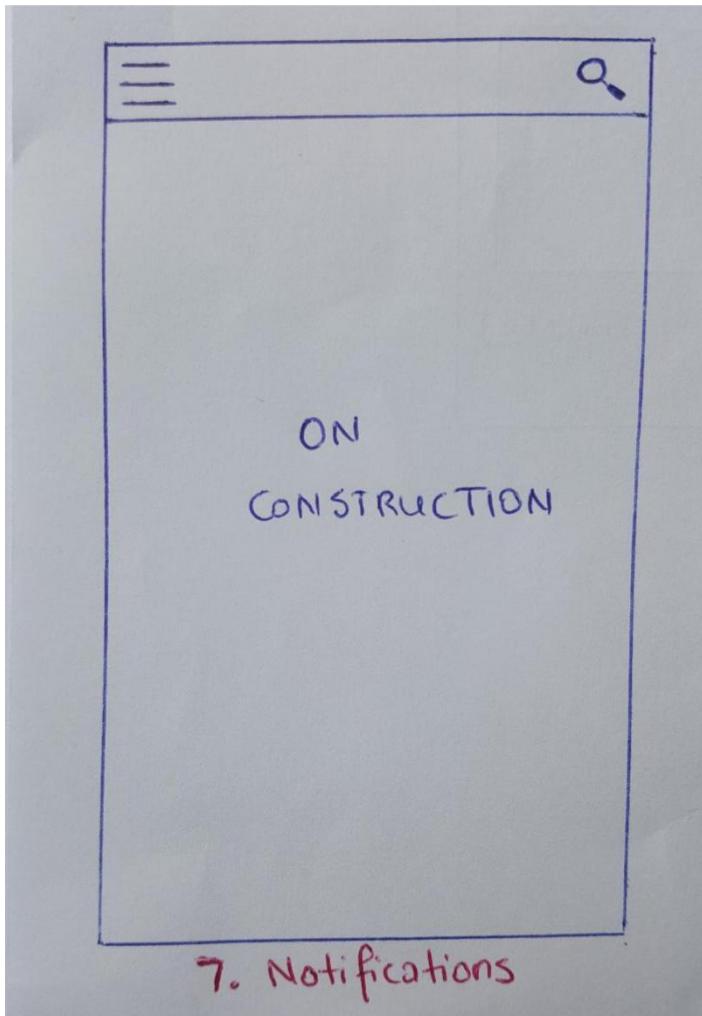
A hand-drawn wireframe of a sign-up form. At the top is a logo placeholder labeled "Epoka's Logo". Below it is a camera icon with a plus sign, indicating where to upload a profile picture. The form includes fields for "Name" and "Surname". There are gender selection buttons for "Female" and "Male". A list of required fields follows: "E-mail", "Password", "Confirm Password", "Recovery E-mail", "Major", "Student ID NO.", and "Card Issuance Date". A "Sign Up" button is at the bottom.

5. Sign Up

Main Menu



Notifications



Calendar + Events/Deadlines

EUS 🇮🇷							X
< March >							
Mon	Tue	Wed	Thu	Fri	Sat	Sun	
4	5	6	7	8	9	10	(1)
11	12	13	14	15	16	17	
18	19	20	21	22	23	24	
25	26	27	28	29	30	31	
...	

Events:

- National Holiday
- Nevruz Day
- Course Registration
- Please complete course registration

Submit "Web" 00:02
0:45:33

(+) +

on click this appears here:

Events and Deadlines:

You have no events or deadlines for today. Add a new event by clicking below:

(+) +

on click:

Type: Event Deadline

Course:

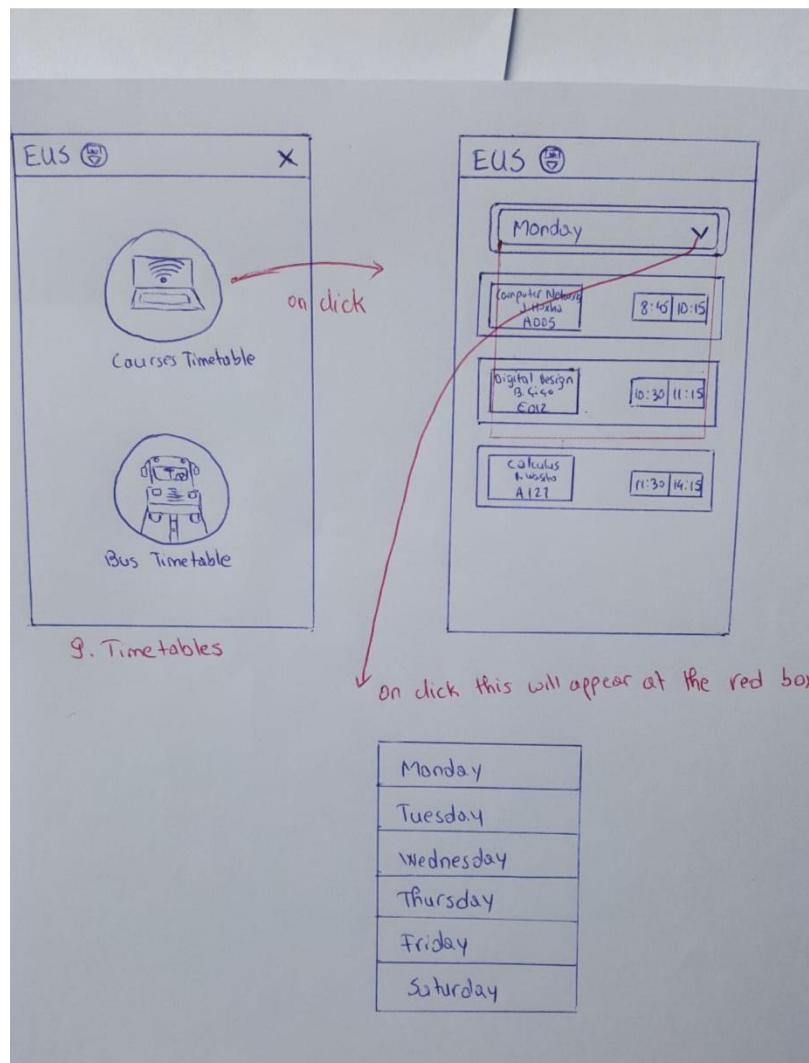
Name:

Description:

Finish Time: : :

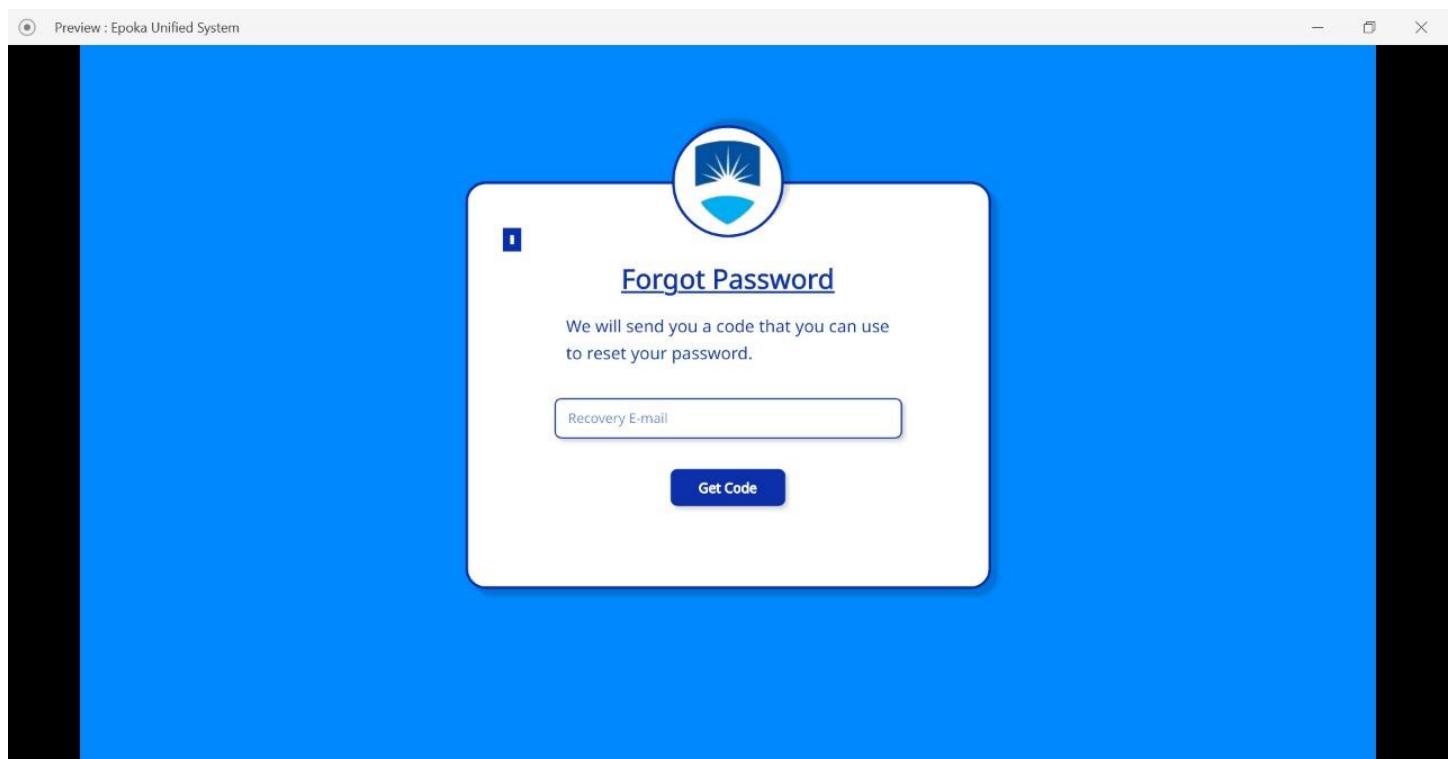
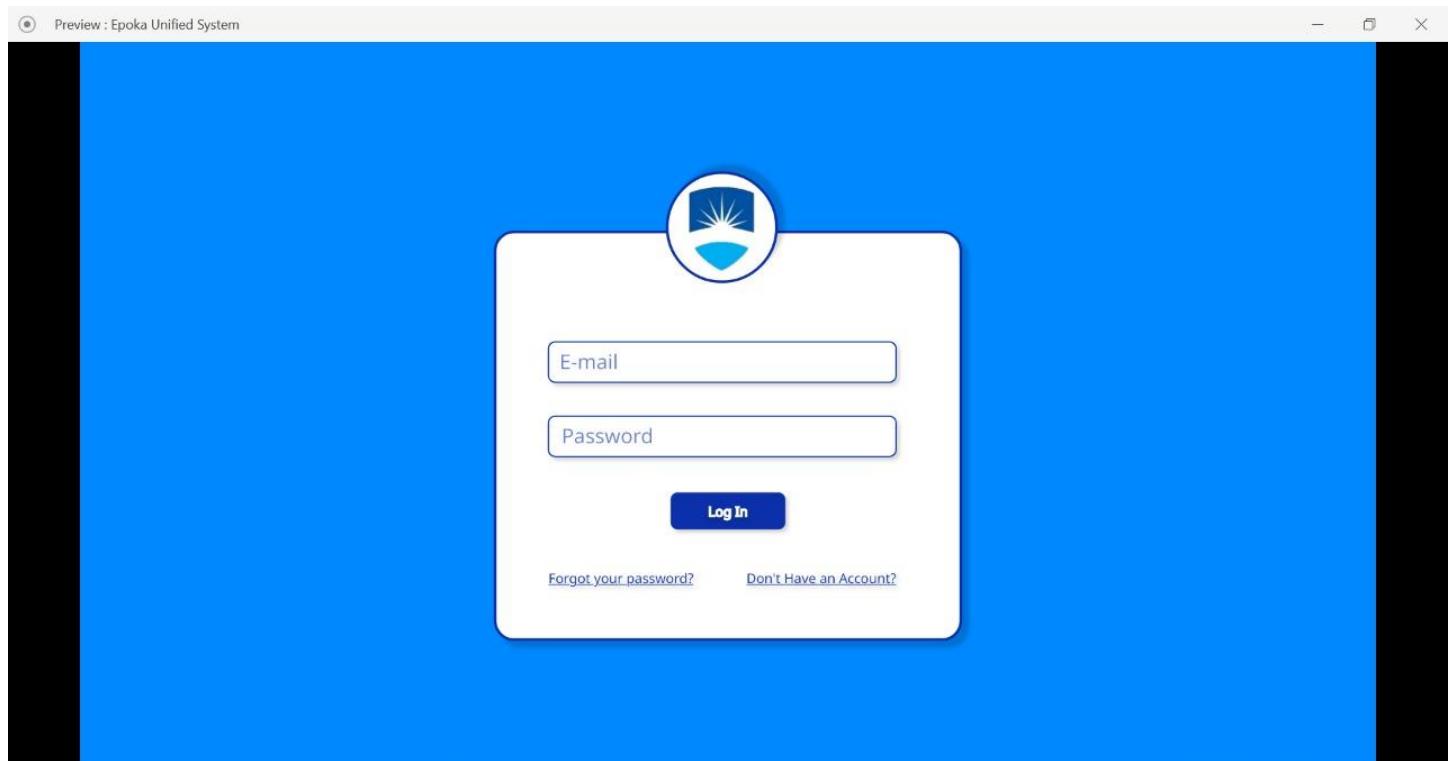
8. Calendar

Timetables



Appendix D. Detailed Design

The following designs were made using Adobe XD.



Preview : Epoka Unified System

The dashboard features a sidebar with a logo and links: Notifications, Calendar, Timetable, Courses, My Profile, and Settings. The main area displays three notifications for 'Computer Networks' with placeholder text about Lorem Ipsum. A 'Notifications' section below includes filters for Show (All), Course (All), and a search bar.

Finishing Soon

Computer Networks

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.

2:20:19

Computer Networks

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.

2:20:19

Computer Networks

There are many variations of passages of Lorem Ipsum available, but the majority have suffered alteration in some form, by injected humour, or randomised words which don't look even slightly believable.

2:20:19

Notifications

Show: All Course: All Search here

Computer Networks

Short description goes here

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

2:20:19

Preview : Epoka Unified System

The dashboard features a sidebar with a logo and links: Notifications, Calendar, Timetable, Courses, My Profile, and Settings. The main area displays three notifications for 'Computer Networks' with placeholder text about Lorem Ipsum.

Computer Networks

Short description goes here

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

2:20:19

Computer Networks

Short description goes here

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

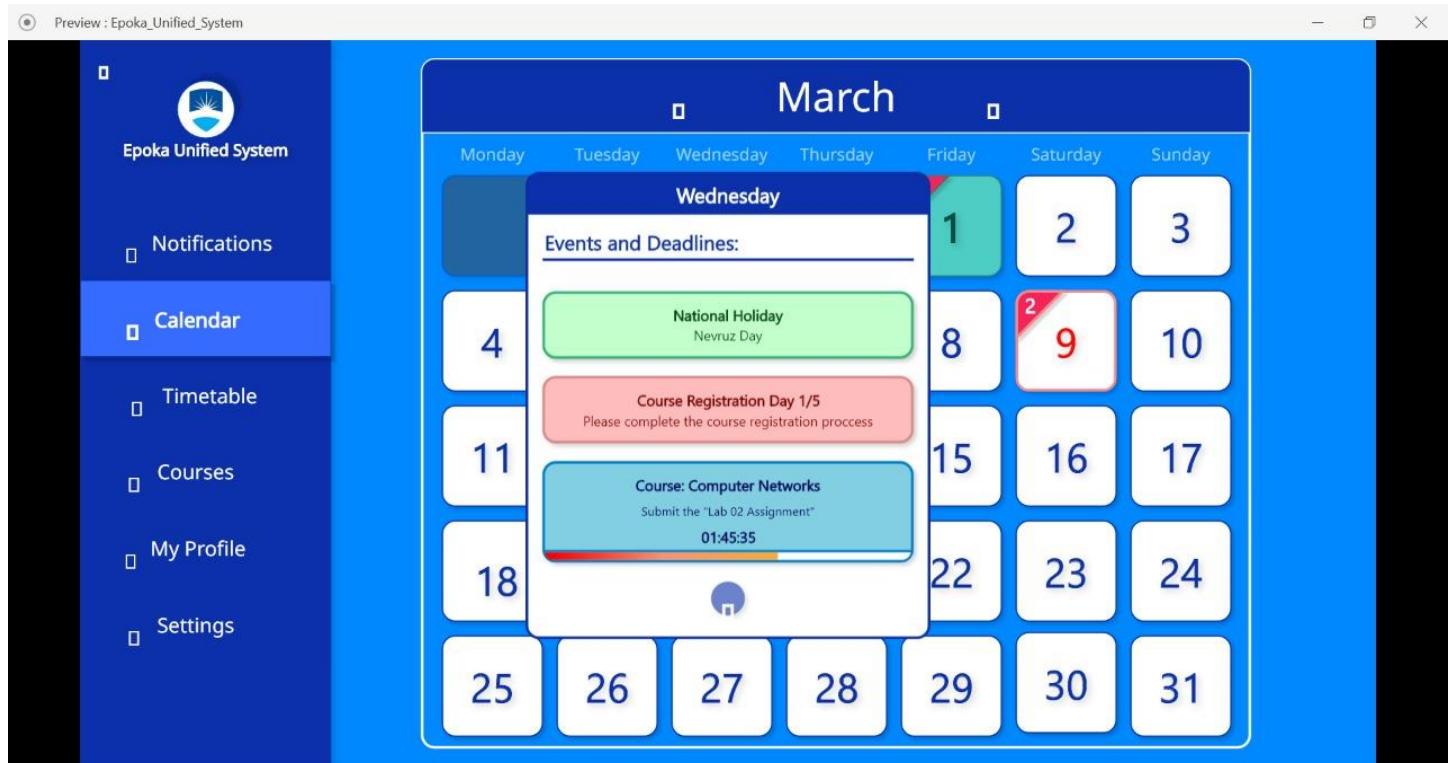
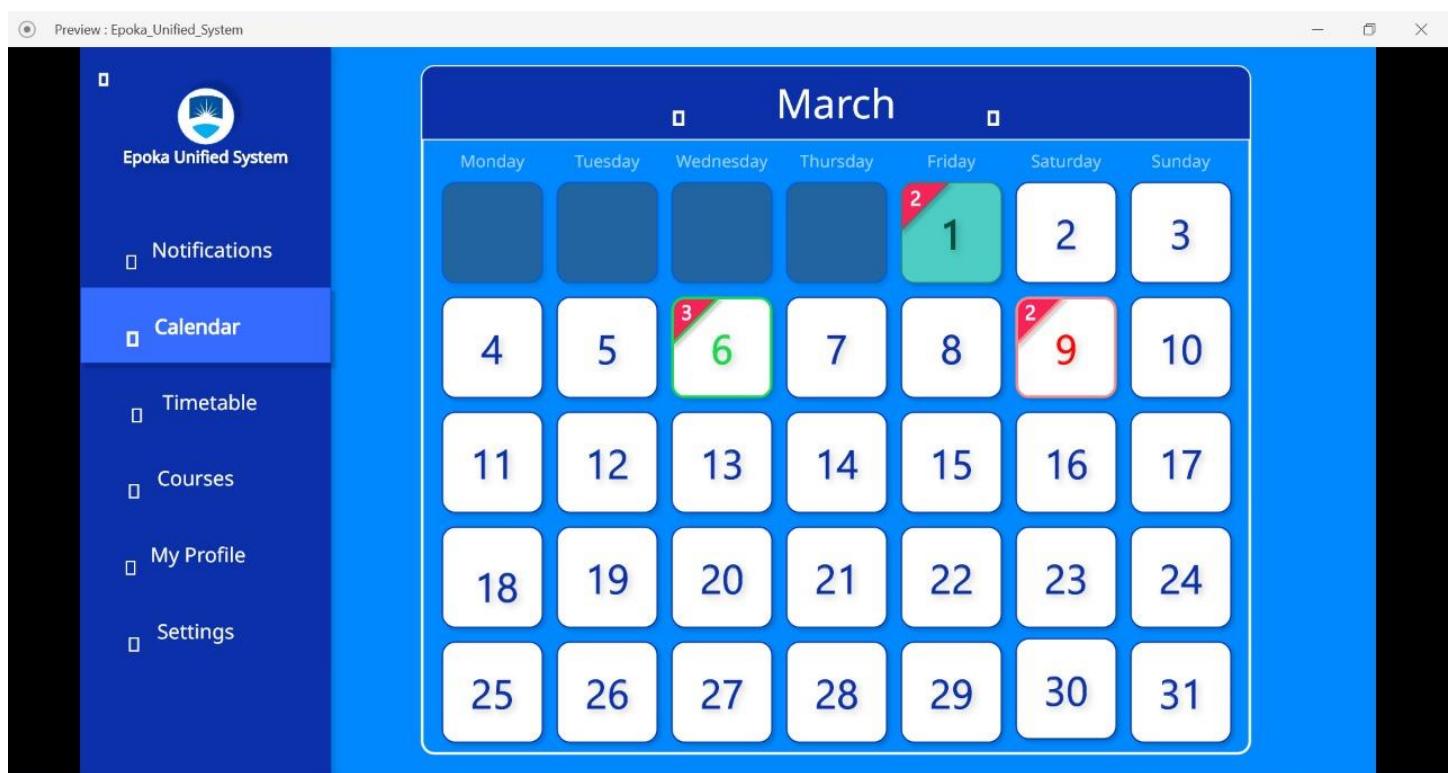
2:20:19

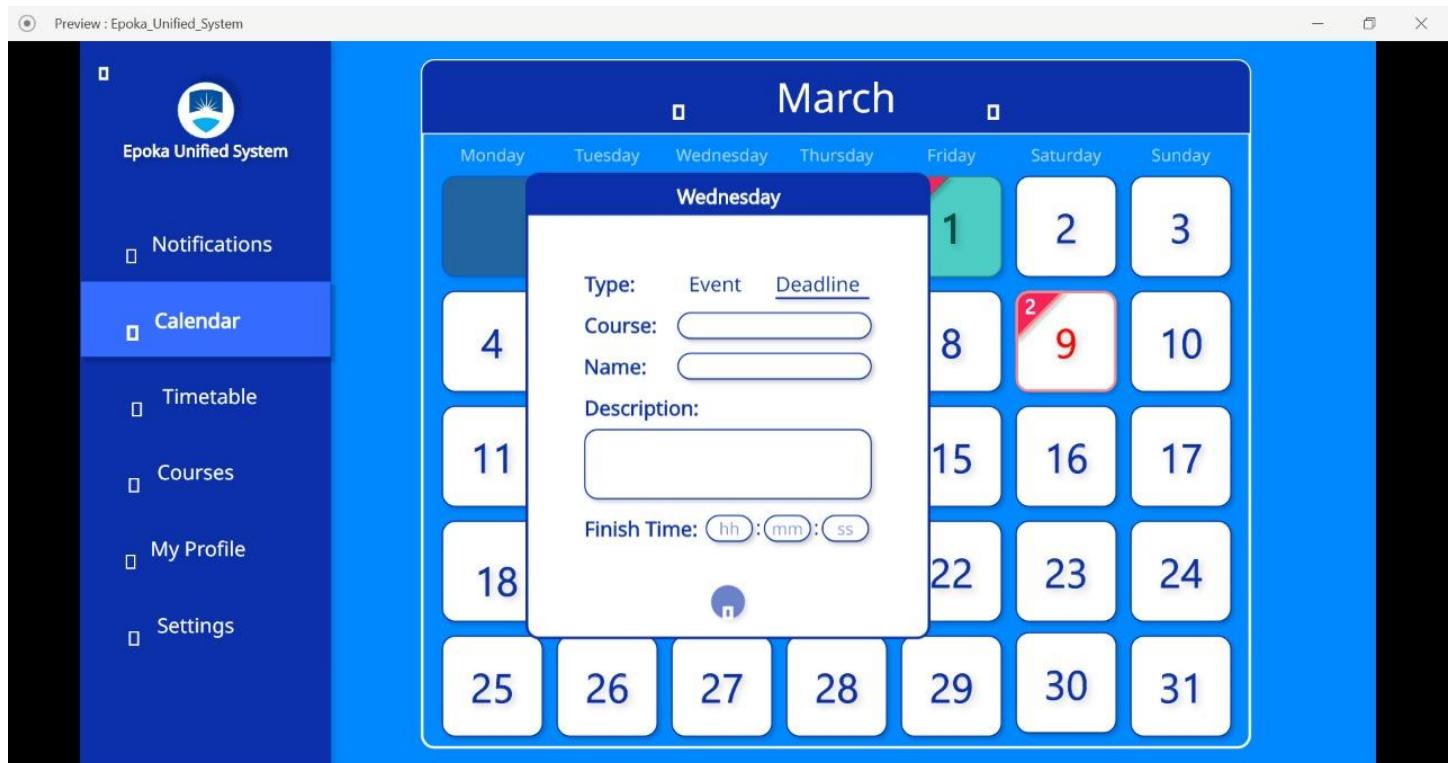
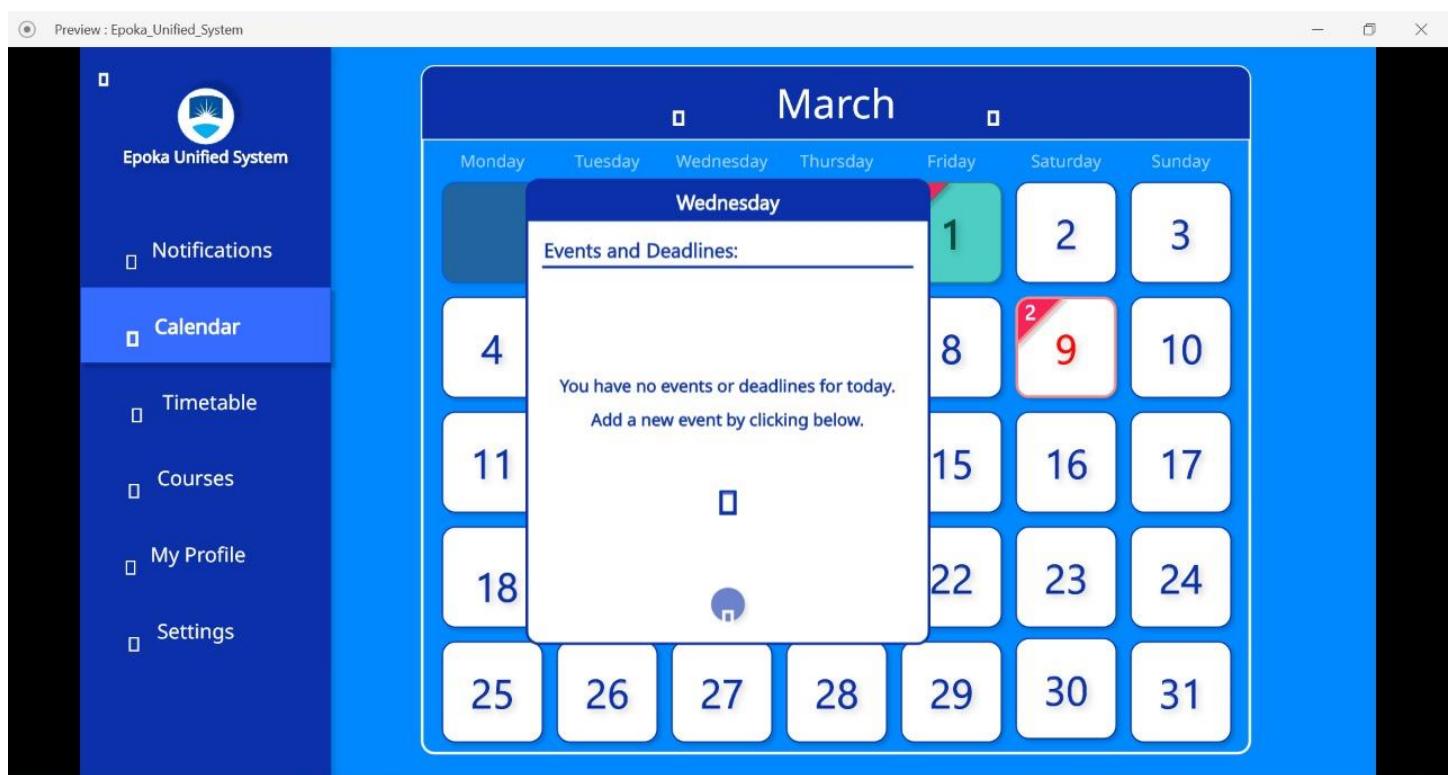
Computer Networks

Short description goes here

Lorem Ipsum is simply dummy text of the printing and typesetting industry. Lorem Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

2:20:19





Preview : Epoka_Unified_System

Bus Timetable

From: Select an option To: Select an option

Friday

7:40 7:45 8:45 9:45 10:45 11:45 12:45 13:45 14:45 15:45 16:45 17:20

Today

Friday

8:45 - 9:30	9:45 - 11:15	13:30 - 14:15	14:30 - 15:15
Computer Networks A 005	Web Programming B 01	Analysis of Algorithms Laboratory 1	Distributed Systems A 103

Upcoming

Saturday

8:45 - 9:30	13:30 - 14:15	14:30 - 15:15
Computer Networks	Analysis of Algorithms	Distributed Systems

Preview : Epoka_Unified_System

Upcoming

Saturday

8:45 - 9:30	13:30 - 14:15	14:30 - 15:15
Computer Networks A 005	Analysis of Algorithms Laboratory 1	Distributed Systems A 103

Monday

8:45 - 11:30	14:30 - 15:15
Computer Networks A 005	Distributed Systems A 103

Tuesday

8:45 - 9:30
Computer Networks A 005

Wednesday

Preview : Epoka_Unified_System

Course Selection Week

Available Courses				
Code	Course Name	Lecturer	ECTS	Credits
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5

Selected Courses					
CEN 105	LINEAR ALGEBRA	Besjana Cobani	3	5	
Remaining ECTS: 30					

Confirm

Preview : Epoka Unified System

My Courses

Select a Course			
Course Name	Attendance	Max. Grade	
LINEAR ALGEBRA	66%	70	CC
LINEAR ALGEBRA	66%	70	CC
LINEAR ALGEBRA	66%	70	CC
LINEAR ALGEBRA	66%	70	CC
LINEAR ALGEBRA	66%	70	CC

LINEAR ALGEBRA			
Grades			
Description	Percentage	Grade	Class Avg.
Midterm	20%	70 / 100	80 / 100
Quiz	10%	70 / 100	80 / 100
Final Exam	70%	70 / 100	80 / 100
Final Grade: CC			

Attendance			
Week 1	Monday	3/27/2019	0/3
Week 1	Monday	3/27/2019	0/3
Week 1	Monday	3/27/2019	0/3
Week 1	Monday	3/27/2019	0/3
Week 1	Monday	3/27/2019	0/3

Materials

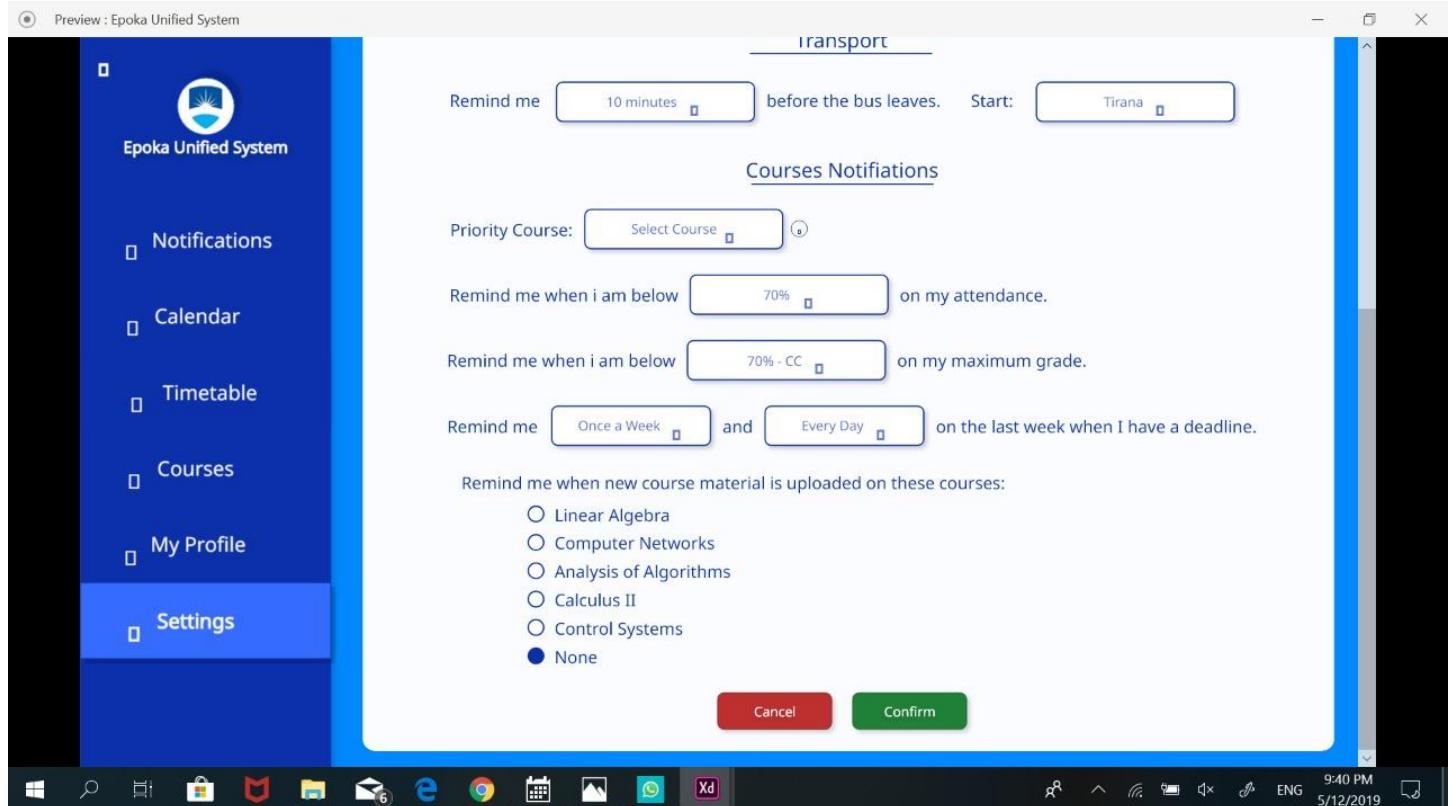
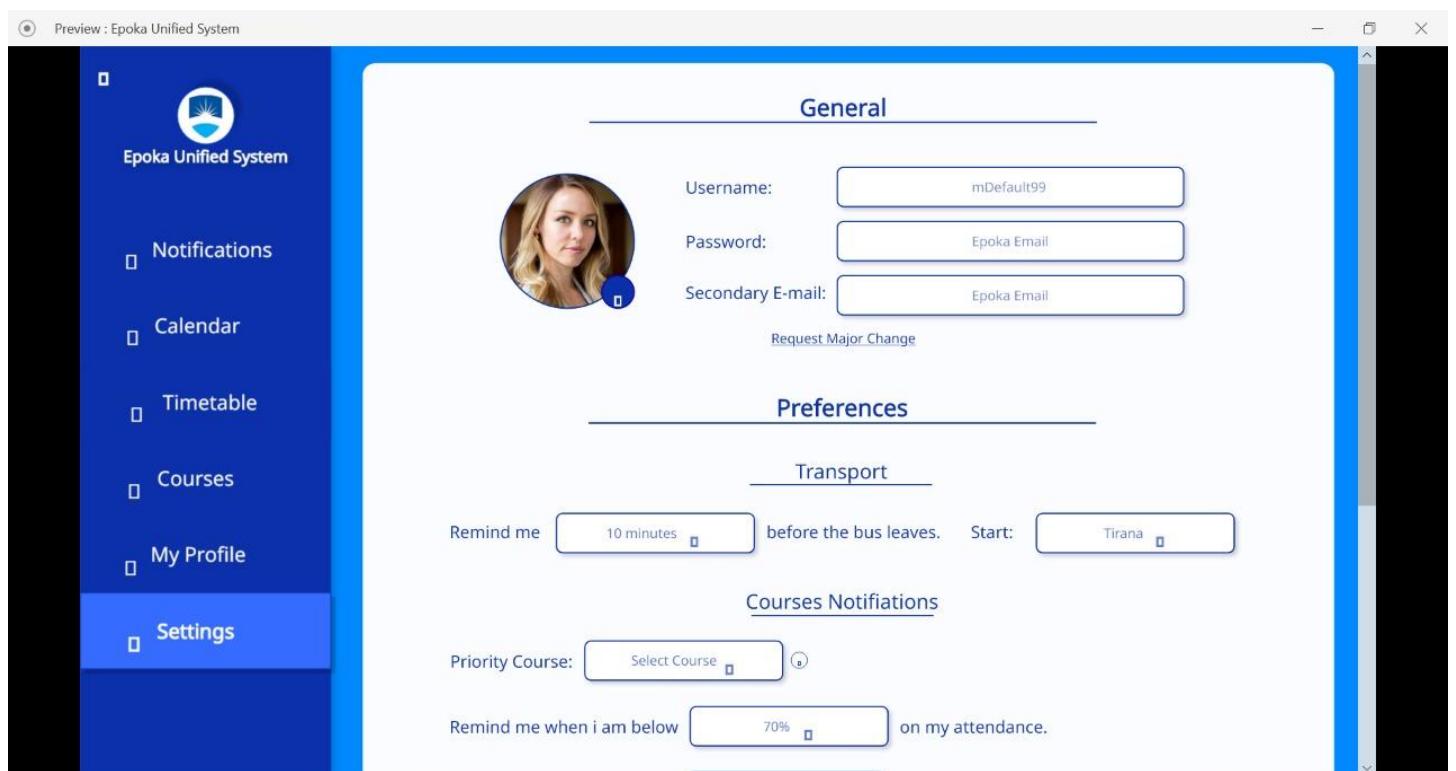
No materials uploaded yet!

Preview : Epoka Unified System

The screenshot shows the 'General' profile page. On the left is a sidebar with a logo and links: Notifications, Calendar, Timetable, Courses, My Profile (which is highlighted in blue), and Settings. The main content area has a header 'General'. It features a circular profile picture of a woman with blonde hair. Below the picture, student information is displayed: Full Name: Marilyn Default, Card Number: xxx-xxx-xxx, Degree: Computer Engineering, E-mail: mDefault16@epoka.edu.al, Year: Third, and Recovery E-mail: random@random.com. There are two dropdown menus: 'Choose Year' set to 'All' and 'Choose Semester' set to 'All'. Below these are two buttons labeled 'First Semester' and 'Second Semester' under the heading 'First Year'.

Preview : Epoka Unified System

The screenshot shows the 'Transcript' page. The sidebar is identical to the previous screenshot. The main content area has two dropdown menus: 'Choose Year' set to 'All' and 'Choose Semester' set to 'All'. Below these are two buttons labeled 'First Semester' and 'Second Semester' under the heading 'First Year'. A message at the bottom states: 'The transcript design will be the same as the existing one in: eis.epoka.edu.al/transcript'.



The image displays three sequential mobile application screens against a blue background:

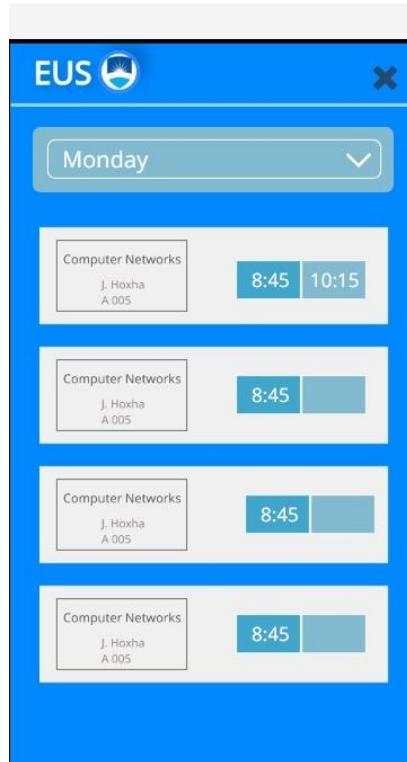
- Login Screen:** Features a logo at the top, followed by fields for "E-mail" and "Password". Below these is a "Forgot password?" link and a large blue "Log In" button.
- Forgot Password Screen:** Shows the same logo. It asks for the user's email address to receive a password reset code. It includes a "Send" button and a note about sending a code.
- Verification Screen:** Displays the logo and asks for a verification code sent to the email. It includes a "Verify" button and a "Resend" link if the code isn't received.

The image displays three mobile application screens against a blue background:

- Reset password Screen:** Shows the logo and a "Reset password" section. It asks for a new password and a confirmation of that password, both in fields with accompanying icons.
- Sign-up Screen:** Features the logo and a "Sign up" section. It includes fields for "Name" and "Surname", gender selection ("Female" or "Male" buttons), and several other account setup fields: "E-mail", "Password", "Confirm Password", "Recovery E-mail", "Student ID No.", and "Card Issuance Date".
- Final Sign-up Screen:** A continuation of the sign-up process, showing the "Sign up" button at the bottom of the screen.

EUS Requirements Specification

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GROUP MEMBERS:

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