Bilkent University

Department of Computer Engineering

Senior Design Project

Project Name: StudyB

Analysis Report

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1. Introduction

Our project aims to provide a platform where willing students can find study partners, share course materials and thus help each other. Thanks to StudyB, students will be able to get together after confirming that they are Bilkent students through their bilkent emails. On the course pages, students will be able to share course materials such as course notes and questions and will be able to answer and help each other. Students who are looking for a study partner will be able to create study rooms and will be able to work together with the people who enrolled in these rooms, either face-to-face or in a virtual environment.

There will be a scoring system to encourage students' cooperation and prevent lurkers. After a 2-week trial period, members who do not participate in any way but benefit from the materials of other people on the platform will be removed from the platform. Also a score system is developed according to the amount of participation which will have scoreboards according to the wishes of the users. Among the members who want to show their participation amounts in the score table, the most participating member will appear on the scoreboard of course page as the master of that course.

In addition, according to the courses students have enrolled, system will have their exam schedules and information, and they will be notified when the exam dates are approaching.

2. Current System

The research has been done about the current study application which is similar or related to our project. There are lots of them which are really close to our application but not exactly the same. Some of the applications are described with short information below.

❏ StudyBlue has a website and mobile application which helps students to study efficiently. They provide lots of study materials such as notes, flashcards. StudyBlue is

acquired by the Chegg web-site which is a platform for students and its features mainly are asking questions or homework and getting solutions to their problems. [1]

❏   StudyBuddy is interactive study mobile application. Its features are the closest to our application. Students can chat and meet about their questions or they can take their questions pictures to ask the tutor. [2]

❏   MyStudyLife is a web-based and mobile application which helps students to organize their educational programs. MyStudyLife is a remainder also for tasks, homework, quizzes or exams. [3]

❏   Eodev is a website and mobile application for generally primary and high school students. Eodev provides to its user to ask questions about their classes. [4]

The applications are really similar to each other in terms of the efficiency of study. But none of them are implemented for any specific university students.

Our project aims to serve for only Bilkent University students. Since the questions which are confronted by the students will be mostly similar and the students will have a chance to meet with each other in a short time on campus to criticize their questions, the efficiency of our application will be high.

3. Proposed System

3.1 Overview

The aim of StudyB is to provide a platform where willing students can find study partners, share course materials and thus help each other. For using the application, users need to be a student at Bilkent University which means the system will not accept any mail address other than Bilkent mail. After the account is created, there will be a 2-week trial period. The goal of this period is to accustom the user to the use of the application and the scoring system. The scoring system aims to encourage students' cooperation and prevent lurkers. Users will be responsible for their activities within the application. A user who does not

participate and share, will not be able to access the information and materials shared by other people and will be removed from the platform. In order to ensure a fair platform environment and to ensure that there is no injustice, the criteria to be looked at should be carefully determined to see if the user is providing adequate participation. Since participation rates will also be used in the scoreboard an appropriate scoring system should be made to ensure a fair competition.

The mechanics and the interface of the application will be simple because it is designed based on user perspective. Simple screens and buttons will be used as it is intended for all users to use the features of the application easily. Using these buttons, users will be able to enroll for courses, share materials, and benefit from other people's sharing. They will also be able to create working groups and participate in the already created ones online or face to face. Although the latest version of StudyB has as few bugs and glitches as possible, if any bugs or glitches are detected, they will be fixed with updates.

3.2 Functional Requirements

❏ Users will create an account with their Bilkent webmail accounts (with the ug.bilkent.edu.tr extension).

❏ Users will select the specific department and course of Bilkent University that they want to enroll in.

❏ Users are going to be directed to the main page of the selected course.

❏ Users can make comments on the posts on the main page.

❏ Users can ask questions about the course.

❏ Users can share documents such as pdf's, images, etc. about the midterms, quizzes, homework, etc. on the main page of the course.

❏ Users can export their calendar to the application to take the exam tips notifications.

❏ Users can take general tips for their assigned courses as a notification. If they do not want to take, they can make that course feature disable from settings.

❏ Users can enroll the study buddy feature by clicking a button on the main page.

❏ Users can start a new conversation with their study buddy in a chat room.

❏ According to the users activities, a score list will be created to identify lurkers and students who contribute most.

❏ Top three contributor students are going to be seen on the score list and the top student is going to be called as the master of that course.

❏ If users do not want to be seen in the score list, she/he can make her/his nickname invisible in the list.

❏ Lurkers can be identified from this score list if they do not contribute for a month and after that, they will be in the suspension period as a punishment.

3.3 Nonfunctional Requirements

3.3.1 Usability

❏ StudyB will have a minimalist user interface in its main page therefore it will be easy to use and learn.

❏ Google calendar is going to be able to be added to the account if the user prefers to follow midterms, finals.

❏ Feedbacks will take into consideration to develop the application better.

3.3.2 Reliability

❏ StudyB will not allow any user from outside of Bilkent University.

❏ StudyB should be used any time as a stable system and should avoid any crash.

❏ StudyB should prevent lurkers from the system for the best usage.

3.3.3 Scalability

❏ StudyB will be used in only Bilkent University for now. Undergraduates are going to be able to assign to the application. Database should be scalable for at least the number of students in Bilkent University and should support dynamical changing of the users.

3.3.4 Privacy

❏ User information will be private including their email address and private messages between two users in chat rooms. Also, if the user desires, nicknames will be unseen and a random number will be shown as nickname to other users.

3.4 Pseudo Requirements

1. The application should require active internet connection in order to access to the course materials and information.
2. The language of the StudyB should be in English.
3. The target platform must be an Android.
4. The implementation language must be JavaScript and C#.
5. Angular and ASP.NET, Entity Framework Core should be used.

3.5 System Models

3.5.1 Scenarios

The scenarios are specified to define the use of the system. Some of the important basic and complex scenarios are defined below.

3.5.1.1 Scenario 1

Use case name :   SigningUp

Participants   :   John:Student

Flow of events :   1. John opens the StudyB application.

2. He tries to sign up with an email address which is not Bilkent mail.

3. He gets "Please try your Bilkent mail" error message from the system.

4. He signs up with his Bilkent mail address and password.

5.The system sends a confirmation mail to John and he gets the message "The confirmation message is sent to your mail address" from the application screen.

6. John goes to his mailbox and clicks to the confirmation link and verifies that he is a Bilkent student.

7. He determines his password and completes his account information.

8. He clicks to the OK button.

9. He is signed up to StudyB successfully.

3.5.1.2 Scenario 2

Use case name :   Sign In

Participants   :   John:Student

Flow of events :   1. John opens the StudyB application.

                        2. He touches the Sign In button.

                        3. He enters his mail address and password.

                        4. John signed in successfully.

3.5.1.3 Scenario 3

Use case name :   EnrollingToClass

Participants   :   John:Student

Flow of events :   1. John opens the StudyB application and signs up.

                        2. He clicks to the Courses button.

                        3. John selects the department of the course he wanted in the Courses Screen and he is directed to another screen that includes the selected coded courses.

                        4. John touches the Enroll button near the course he wanted.

                        5. John successfully enrolls to the course to interact with other students in the application.

3.5.1.4 Scenario 4

Use case name :   AskingQuestion

Participants   :   John:Student

Flow of events :   1. John wants to ask questions about homework, midterm or any other material which is related with the course to the other students who enroll in.

                        2. John opens the StudyB application and signs up.

3. He clicks to the course button that he wants to ask about and he is directed to the course screen.

4. He clicks to ask button to share a post in the feed of the course.

5.He writes his questions and posts it to the page.

3.5.1.5 Scenario 5

Use case name :   Arranging Meeting

Participants   :   John:Student

Flow of events :   1.John wants to study with other people to discuss and understand better for a topic of course.

2. John opens the StudyB application and signs up.

3. He clicks the arrange meeting button and creates an empty event.

4. He selects the course, time and place for the meeting.

5.Then he publishes his event in the feed.

3.5.1.6 Scenario 6

Use case name :   Live Chat

Participants   :   John:Student

Flow of events :   1.John wants to study with other people to discuss and understand a topic better of course but he is out of town so he decides to study with other people via StudyB Live Chat.

2. John opens the StudyB application and signs up.

3. He clicks on the button of the course that he wants and he is directed to the specified course screen.

4. He clicks to the Live Chat button and sends his message.

5. StudyB sends a notification to the other users who is enrolled in that course when they log in to the application.

6. Notifications can be closed for the course if it is desired.

3.5.1.7 Scenario 7

Use case name :   ScoreBoard

Participants   :   John:Student

Flow of events :   1. John wants to attend the scoreboard

2. John opens the StudyB application and logs in.

3. He clicks to the scoreboard button and he is directed to the scoreboards screen that shows the available scoreboards according to his enrolled courses.

4. John clicks to "Join The Battle" button near the specified scoreboard of the course that he wants and he can join with his real name or nickname. If he does not want to sign up for the course, he passes that screen. He chooses the name that appears on the screen.

5. John's name successfully appears on the scoreboard.

3.5.1.7 Scenario 8

Use case name :   Export a Calendar for Notifications

Participants   :   John:Student

Flow of events :   1. John wants to export his exam calendar to the StudyB.

2. John opens the StudyB application and logs in.

3. He clicks export button and then uploads his calendar according to the courses he enrolled.

4.He wants to take notifications for his exams and he marks the notification button from settings.

3.5.1.8 Scenario 9

Use case name :   Comment

Participants   :   John:Student

Flow of events :   1. John opens the StudyB application and logs in.

2. John wants to make a comment or ask something about the post that he sees on the feed.

3. He clicks comment button and enters his message to the text box under the post.

4. John clicks to the send button.

5. John's comment is successfully shared.
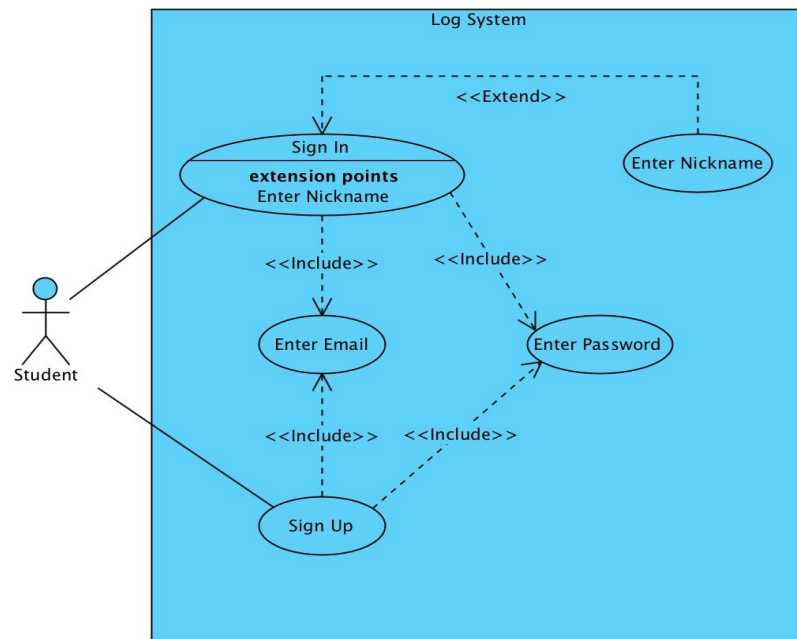
3.5.2 Use Case Model

3.5.2.1 Log System

Figure 1 : Log System Use Case

Use Case 1: Sign In
Primary Actor: Student
Stakeholders and Interest:
  1. Students who wants to get in the system
Entry Conditions:
  1. Students must have an account to sign into system.

Use Case 2: Sign Up
Primary Actor: Student
Stakeholders and Interest:
  1. Students who want to enroll to the system
  2. System creates an account.
Entry Condition: -
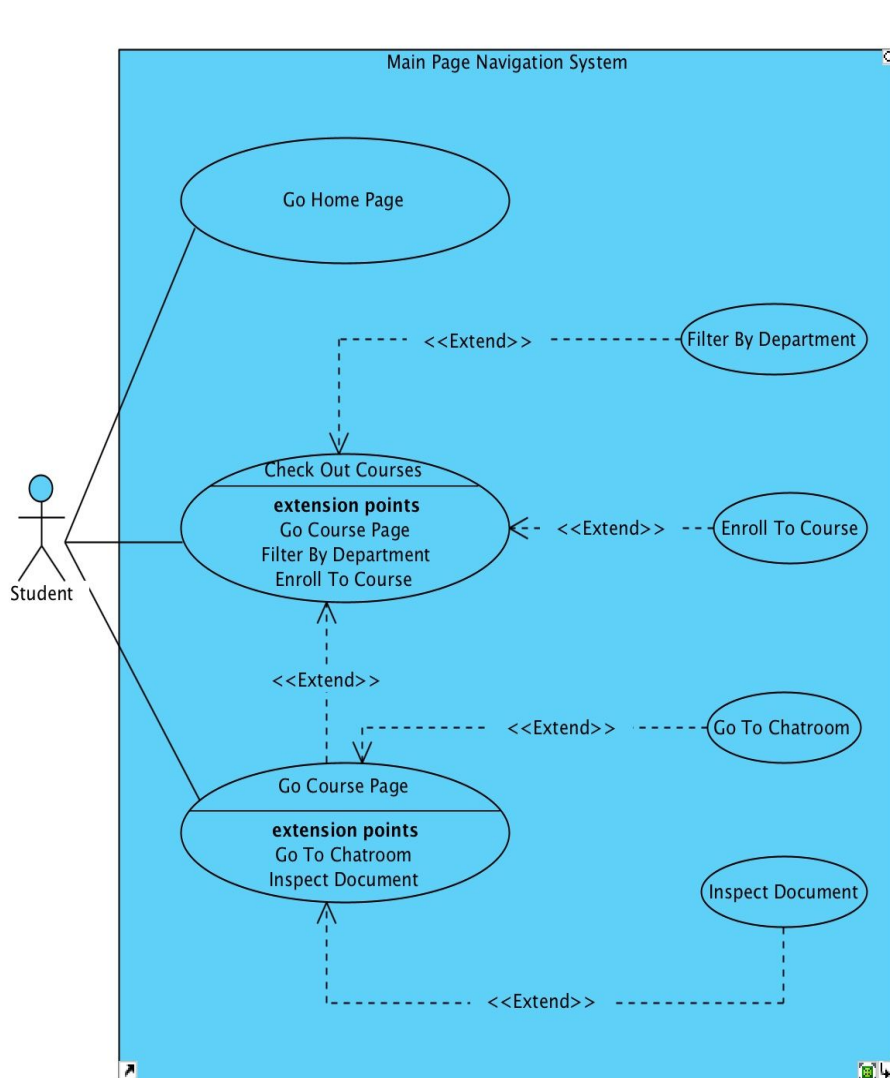
3.5.2.2 Main Page Navigation System

Figure 2 : Main Page Use case

Use Case 1: Go To Home Page
Primary Actor: Student
Stakeholders and Interest:
1. Students who wants to return to main page.
Entry Conditions:
1. Students should be logged in.

Use Case 2: Check out Courses

Primary Actor: Student
Stakeholders and Interest:
1. Students who want to check available courses.
2. Students who wants to enroll to a new course
Entry Condition:
1. Students should be logged in.

Use Case 3: Go Course Page
Primary Actor: Student
Stakeholders and Interest:
1. Students who want to navigate to specific courses page.
Entry Condition:
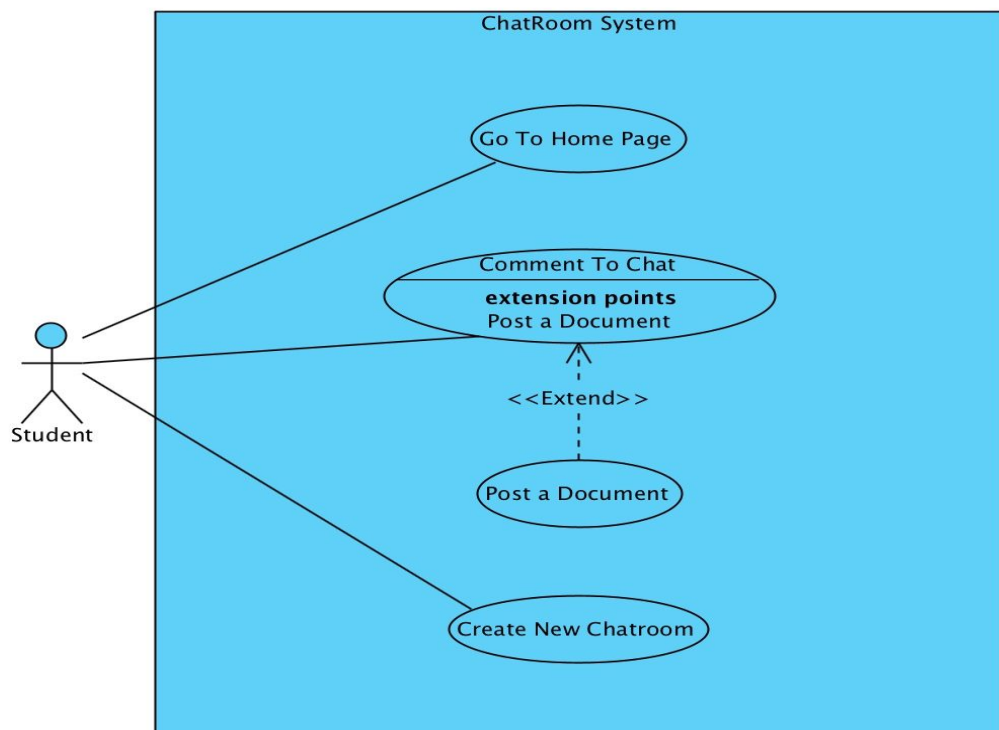1. Students should be logged in.

3.5.2.3 Chat Room System

Figure 3 : Chat Room Use case

Use Case 1: Go To Home Page
Primary Actor: Student
Stakeholders and Interest:
1. Students who wants to return to main page.
Entry Conditions:
1. Students should be logged in.

Use Case 2: Comment To Chat
Primary Actor: Student
Stakeholders and Interest:
1. Students who want to participate in chatroom.
Entry Conditions:
1. Students should be logged in.
2. Student should be enrolled to targeted chatroom.

Use Case 3: Create New Chatroom
Primary Actor: Student
Stakeholders and Interest:
   Students who wants to return to main page.
Entry Conditions:
   Students should be logged in.
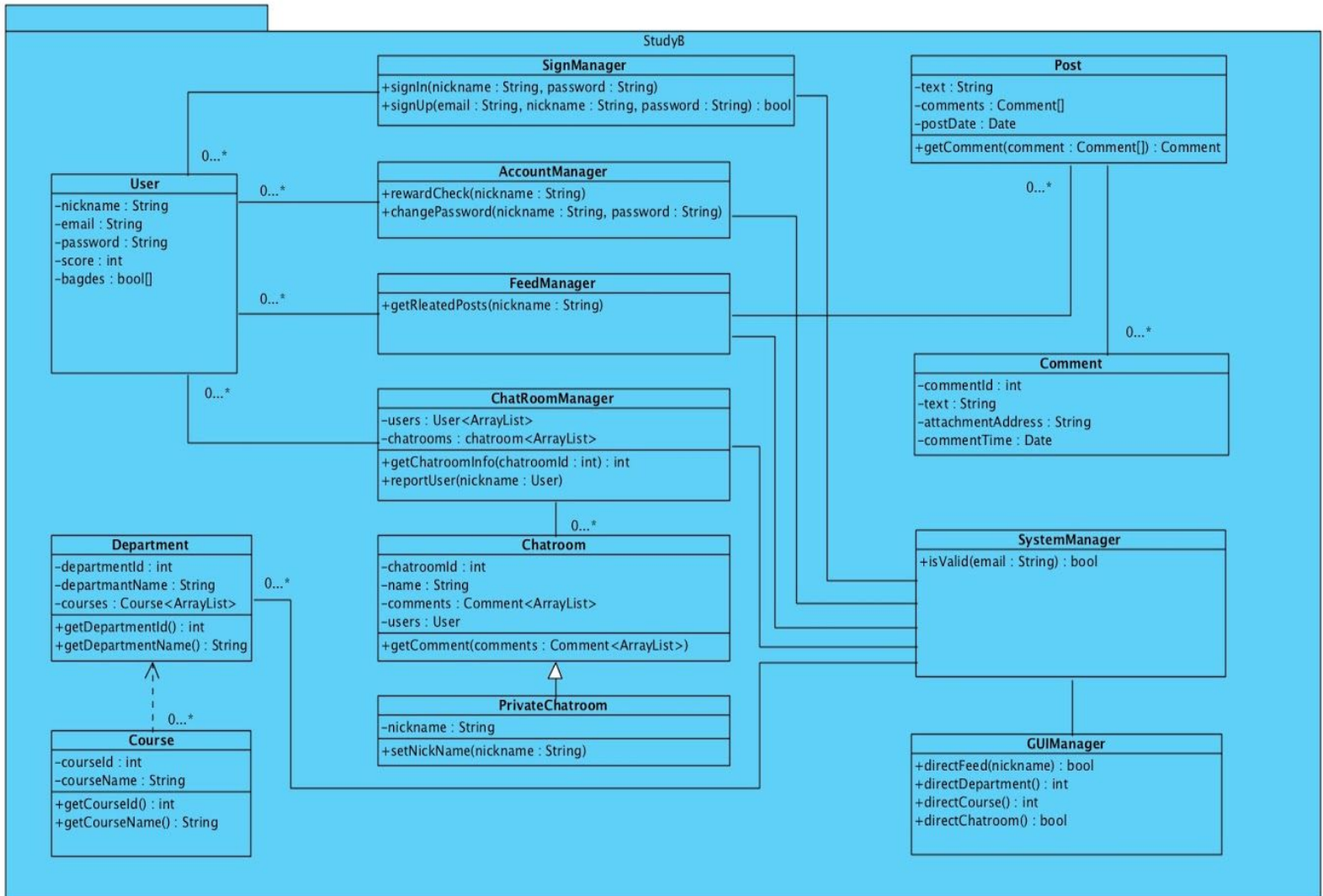
3.5.3 Object and Class Model

Figure 4 : Class Diagram of the System

Sign Manager: is used to provide users to enroll the application.
Account Manager: is used to control account activities for the scoreboard.
Feed Manager: is used to control and manage the main page of the courses.

Chat Room Manager: is used to control the chatroom for any inconvenience action.

Chat Room: is used to create a default chat room.

Private Chat Room: is used to create a chat room between two users.

Post: is used to keep information such as the date and comments of the post.

Comment: is used to keep information such as the date of the comment.

User: is used to keep information about users.

Department: is used to include department information such as name.

Course: is used to include courses information such as name and code of class.

System Manager: is used to manage all sub-manager classes.

GUI Manager: is used to create interface and pass between different pages of application.

3.5.4 Dynamic Models

3.5.4.1 Sign-Up Sequence

Figure 5 : Sign-Up Sequence Diagram
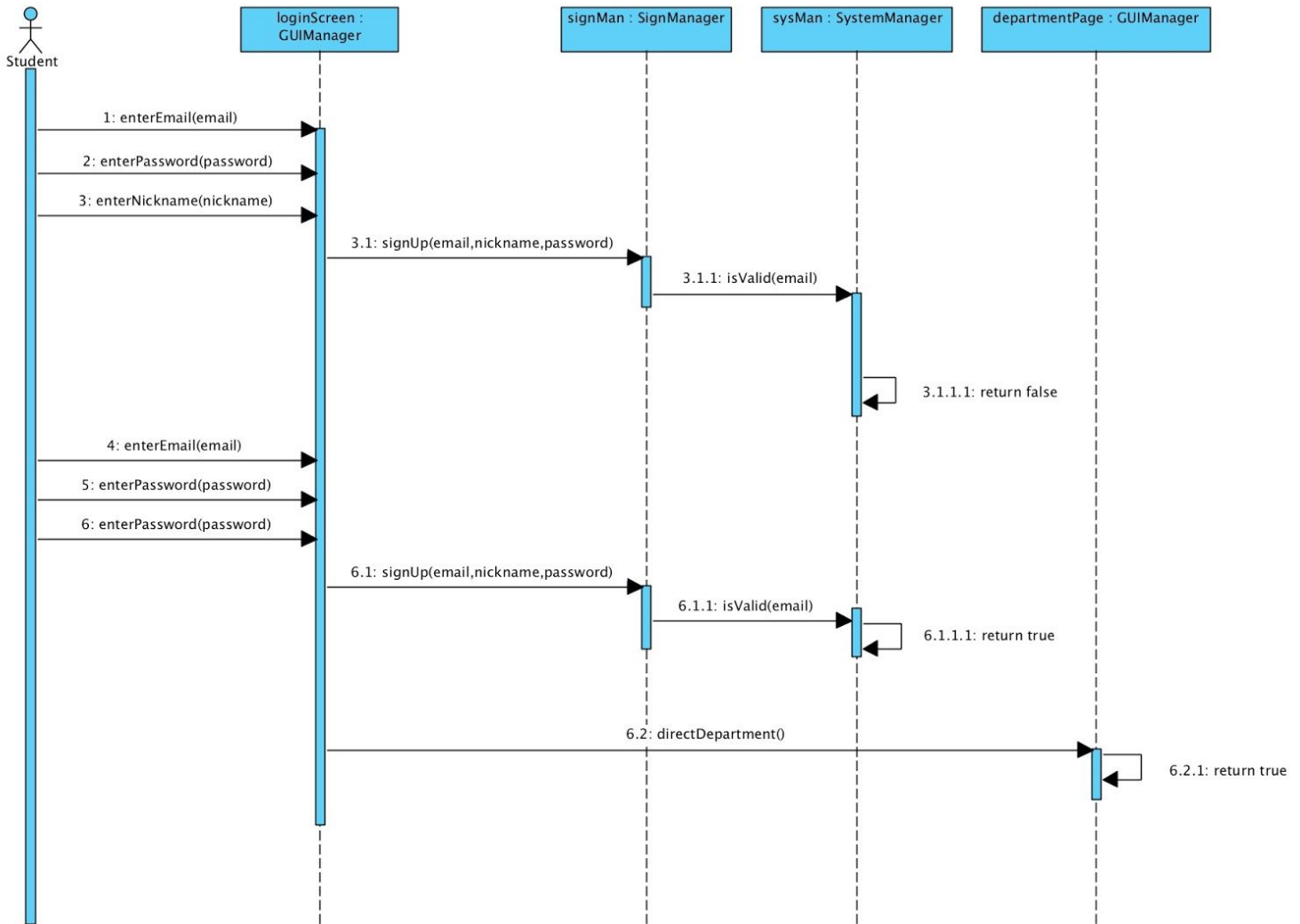
The students enter their information to sign up to the application in the login screen with the control of Sign Manager class. The given information will be checked for its validity by System Manager. Database will be used to check the emails and only Bilkent emails will be accepted by the system. After validation, students directly go to the department page to select his/her department.

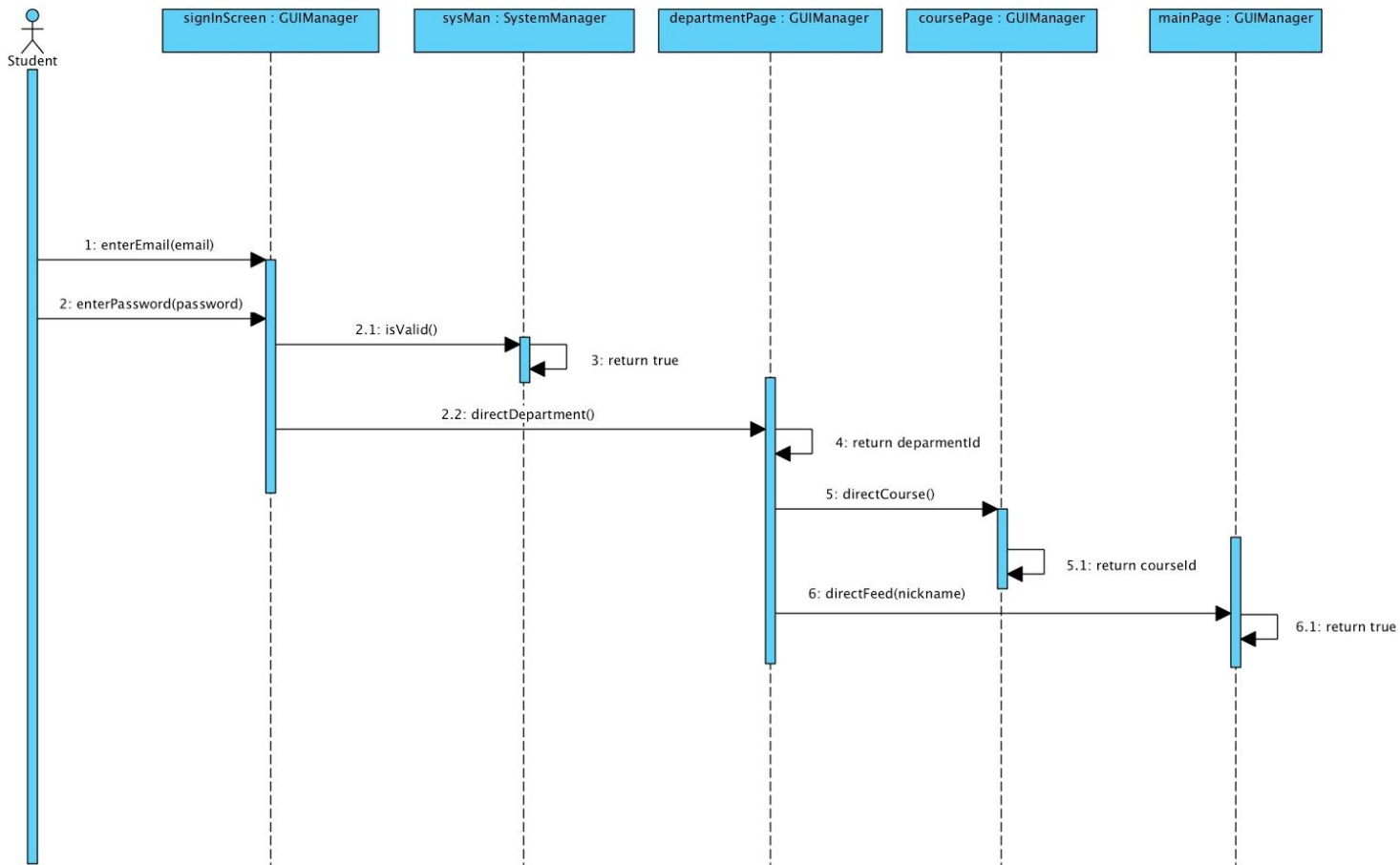## 3.5.4.2 Sign-In Sequence

Figure 6 : Sign-In Sequence Diagram

Students who enrolled before the application enter his/her email and password. After checking the correctness of the given information by the System Manager, students are directed to the department page. Students select the department and then the course of the department. Then main page of the course is available for the students.

3.5.4.3 Post and Comment Sequence

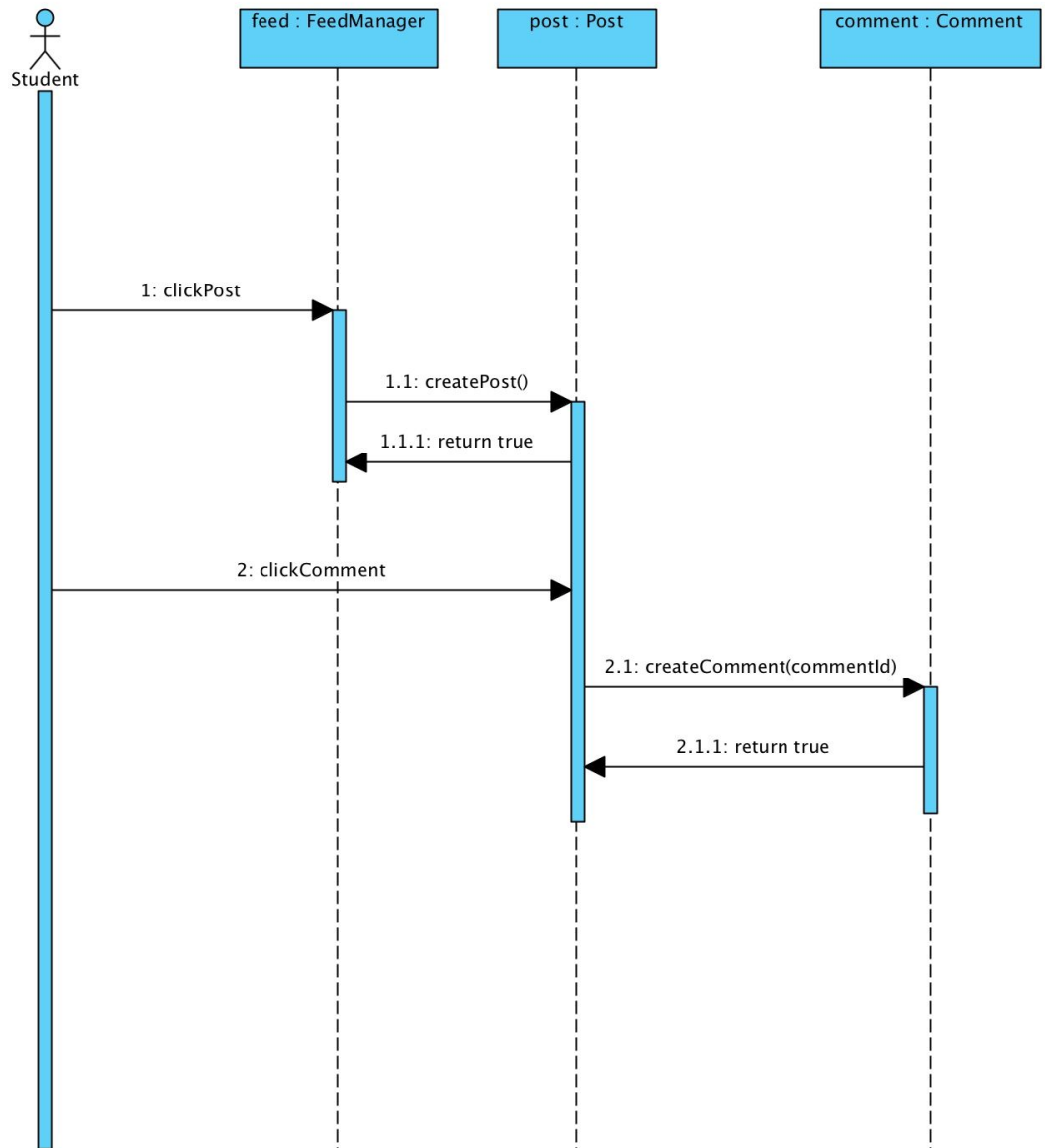Figure 7 : Post and Command Sequence Diagram

Students wants to publish a post and then click to post in main page which is handled by Feed Manager. Then he/she creates an object of Post class. She/he wants to comment to his/her post or another students post. She/he clicks comment button below the specific post and creates an object of Comment class which is a part of that post and handled by Post class.

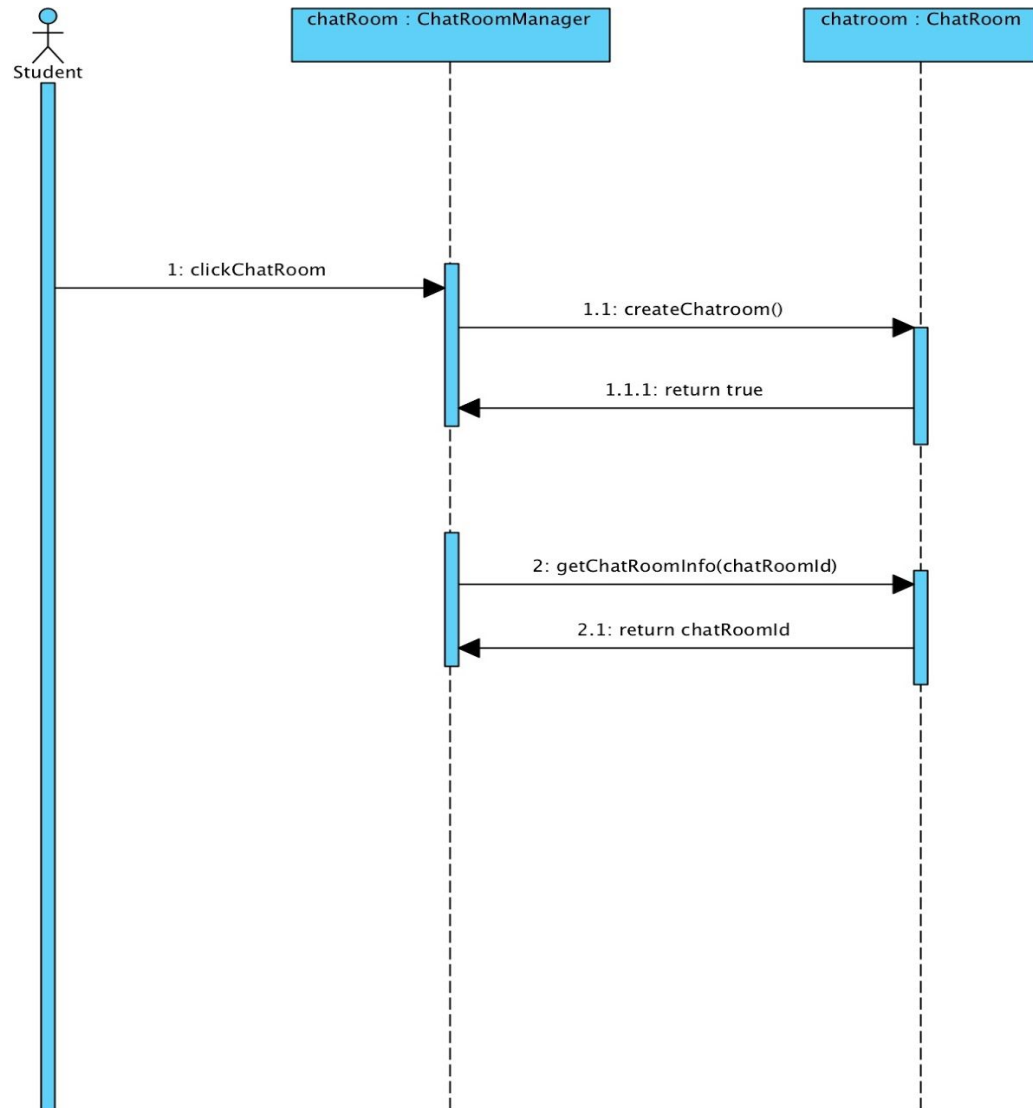### 3.5.4.4 Chat room Sequence

Figure 8 : Chat Room Sequence Diagram

Students wants to open a chat room to communicate with other students. She/he clicks the chatroom and create an object of Chatroom class. Chatroom Manager validates that room is correctly opened. Chatroom Manager checks the chat rooms for any inconvenience messages by taking the specific id which is defined for every chat room.
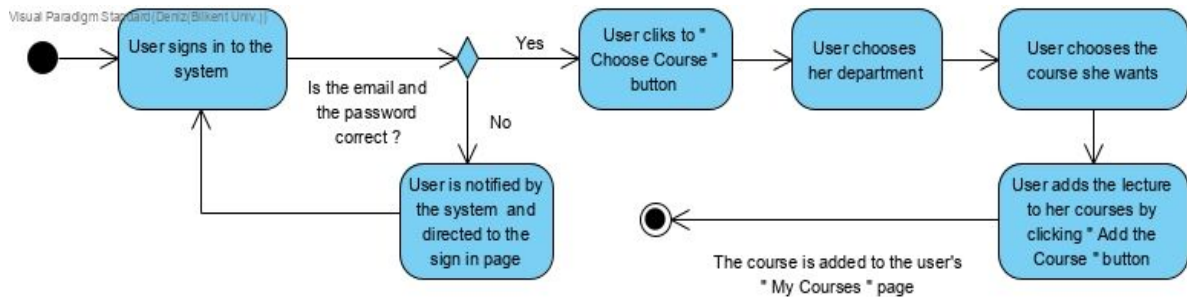
3.5.4.5 Select Course Activity Diagram

Figure 9 : Select Course Activity Diagram

In this activity diagram user is adding a new course to her "My Courses" page starting from sign in to the system. First user signs in to the system by entering her email and password, if they don't match with each other system will notify the user and sends her back to sign in page. After signing in user will select the choose course option by clicking the related button. Then she will select the department the course is in and will select the course she wants to add to her course list. After that she will click the button " Add Course " and the course will be added to her "My Courses" page.

3.5.4.6 Open Chat Room Activity Diagram
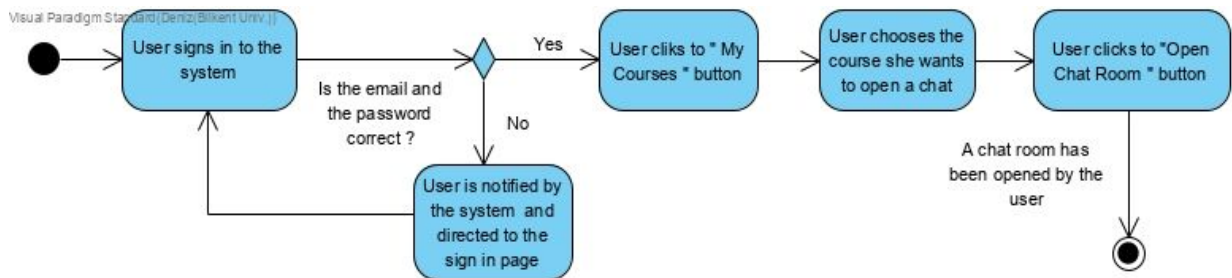
Figure 10 : Open Chat Room Activity Diagram

In this activity diagram user is opening a new chat room in one of her courses starting from sign in to the system.First user signs in to the system by entering her email and password, if they don't match with each other system will notify the user and sends her back to sign in page. After signing in user will click to the " My Courses " button. Then she will click to the " Create Chat Room" button and a chat room will be created.

3.5.5 User Interface - Navigational Paths and Screen Mock-ups

3.5.5.1 Navigation Path
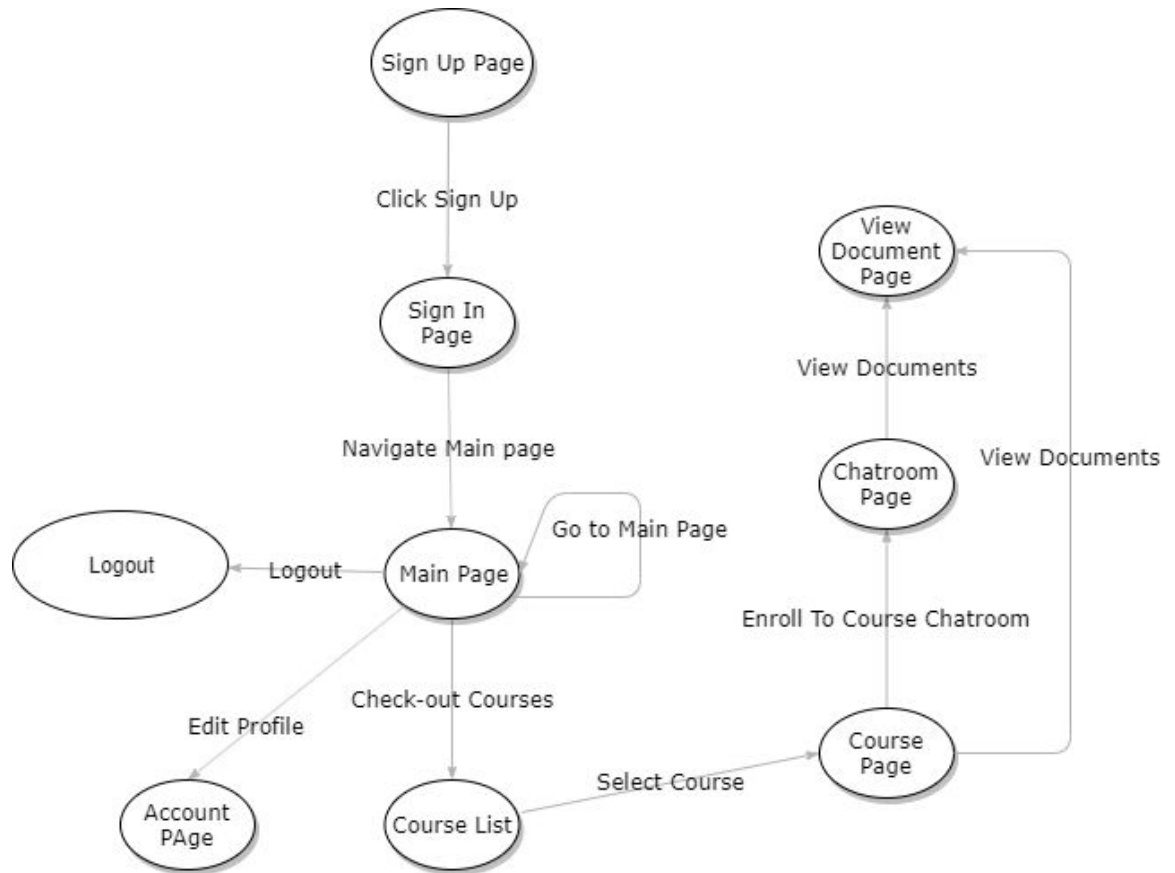
Figure 11 : Navigation Path of the system

Navigational path diagram shows the path/relations between the screens. Application starts with sign-in page if no account is available user should sign up for application. After user credentials are checked and confirmed user is navigated to Main Page. From Main Page user can logout, check available courses and can edit account settings. User can List courses then enroll for courses using Course List Page and Course Page. Course Page is an intermediate page for user interactions so they can see shared documents without dealing with chatroom. User can navigate to Main Page from every page. Therefore, navigation paths for Main Page is negated.

3.3.5.2 Login Screen

In our app, students can create their own account choosing sign in button. However if the student already has an account they can choose sign up button to go their account.
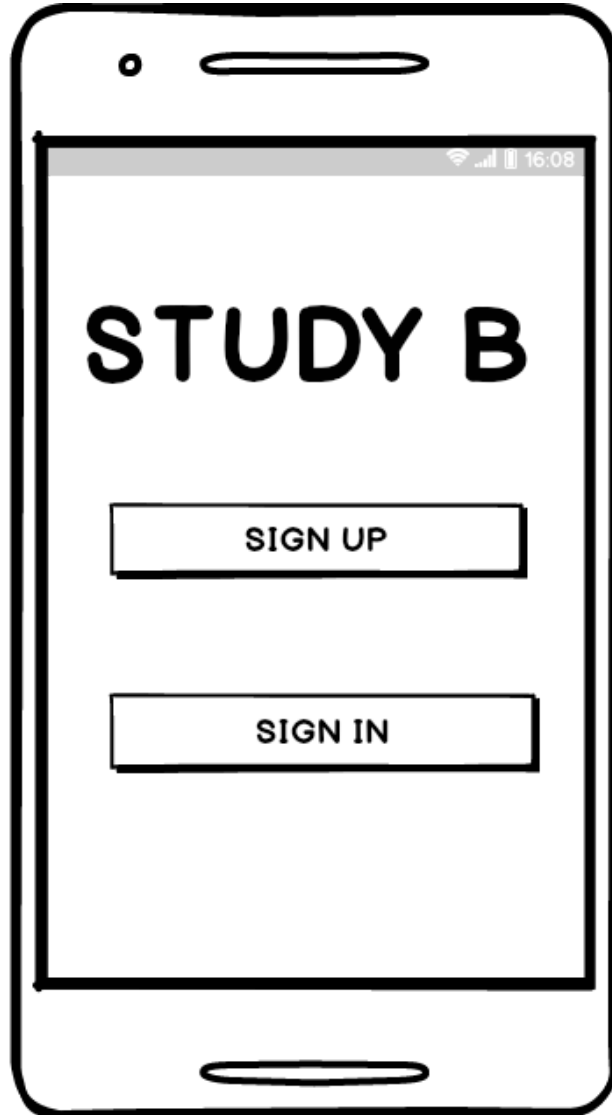
Figure 12: Login Screen Mock-up

3.5.5.3 Create Account Screen

In this screen, students create their account. StudyB asks students to enter their name, surname, email which is Bilkent University email (ug.bilkent.edu.tr) and nickname that can be their name or something else.
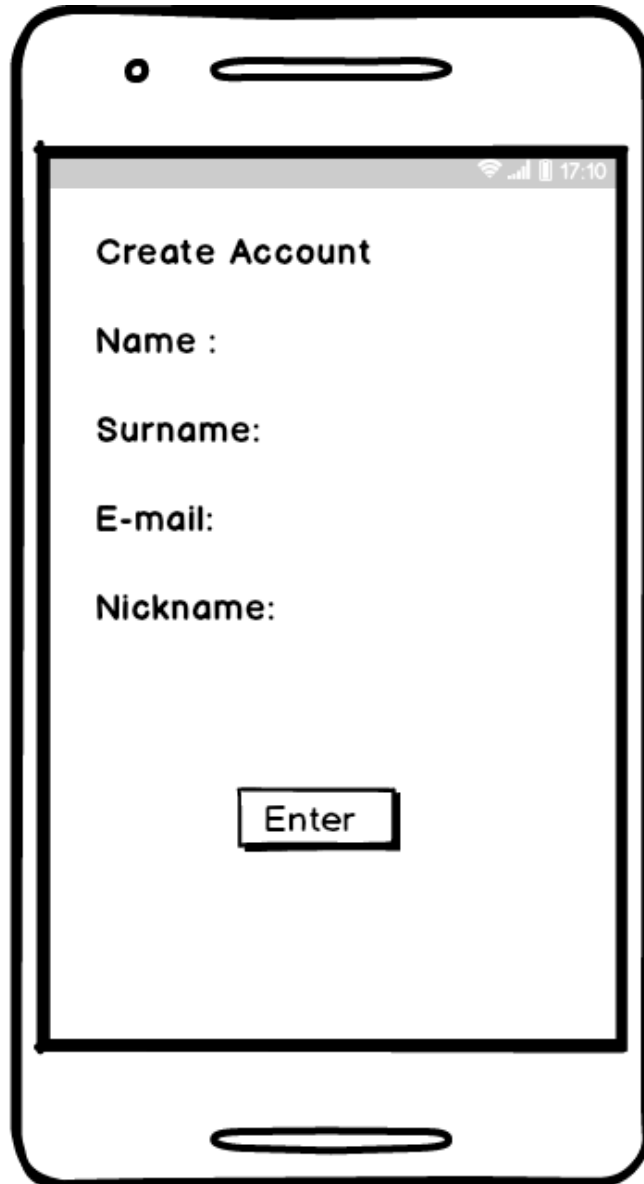
Figure 13 : Create Account Screen Mock-up

3.5.5.4 Main Page Screen

In the main page the student can choose the lecture and look at their courses as a list. They can see their chats with my chat button and they can add their schedule to main page.
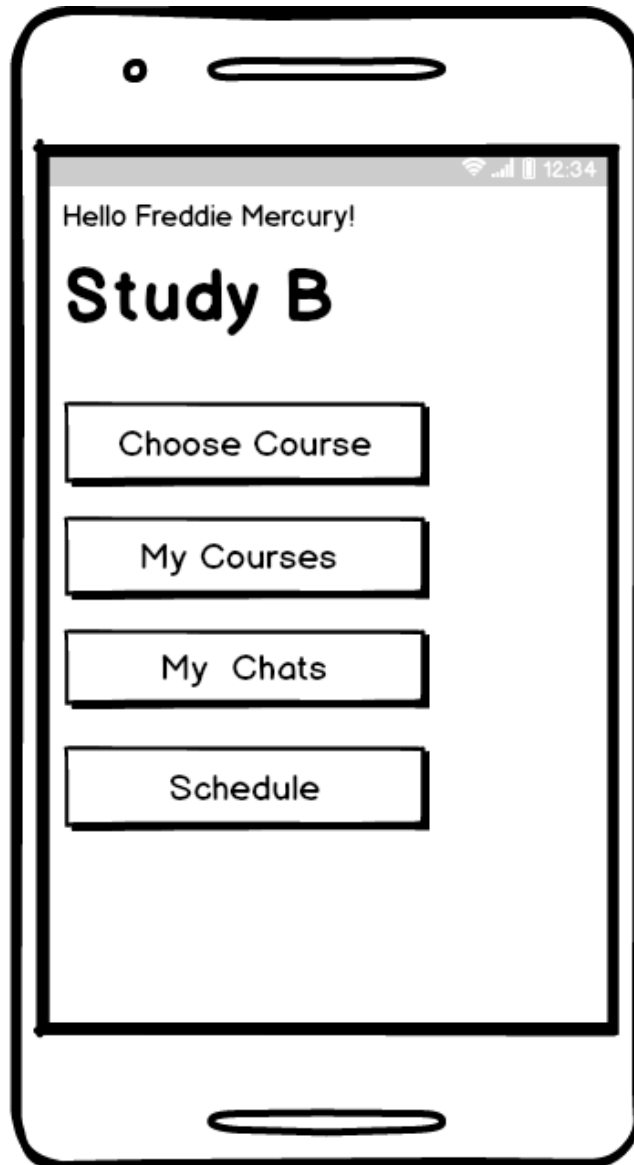
Figure 14: Main Page Mock-up

3.5.5.5 Choose Lecture Screen

When the students enrol the StudyB, the next step will be choosing the lecture. Students can look at only one lecture documents at the same time.
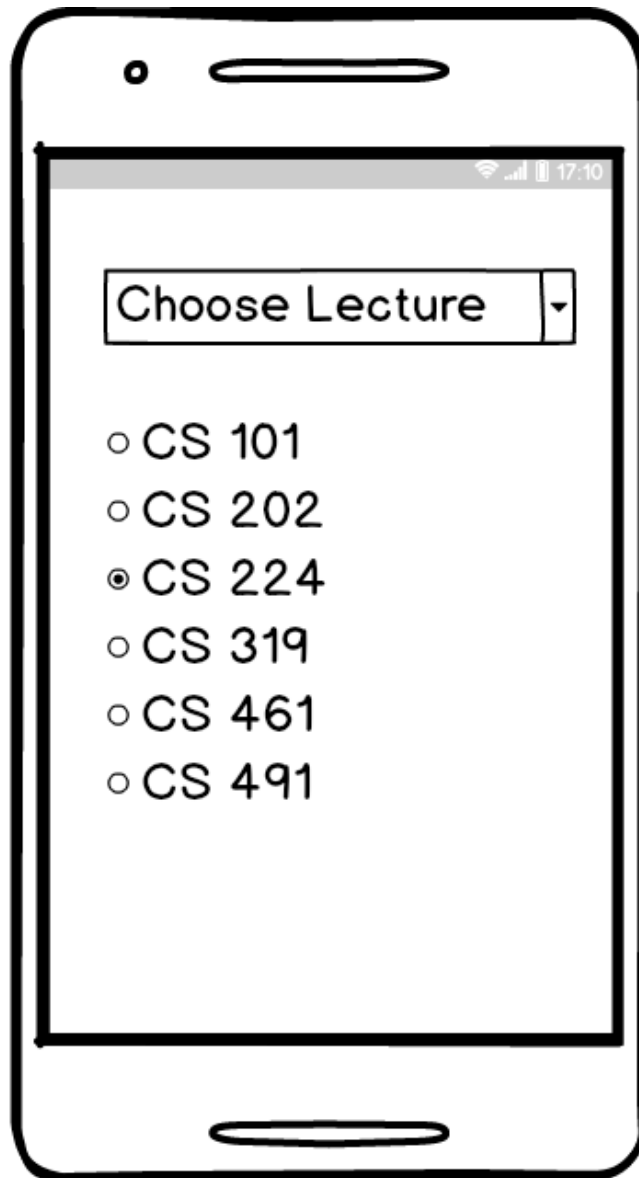
Figure 15 : Choose Lecture Screen Mock-up

3.5.5.6 Lecture Screen

After choosing the lecture student can go to the chosen lecture page. For example, if the students choose CS 224 for course they can see different buttons. For instance, the lecture notes button cover in class taking notes from the different student if you miss one of the class you can look this application or if you want to learn other sections lecture notes you can find it too. The chat room button allows the student to communicate with friends who enrolled in the same course. Study group button is for the students who are looking for working partners. The exam tip button help students to get high grades for exams. This part is a summary of the other students' experience who took that lecture before.
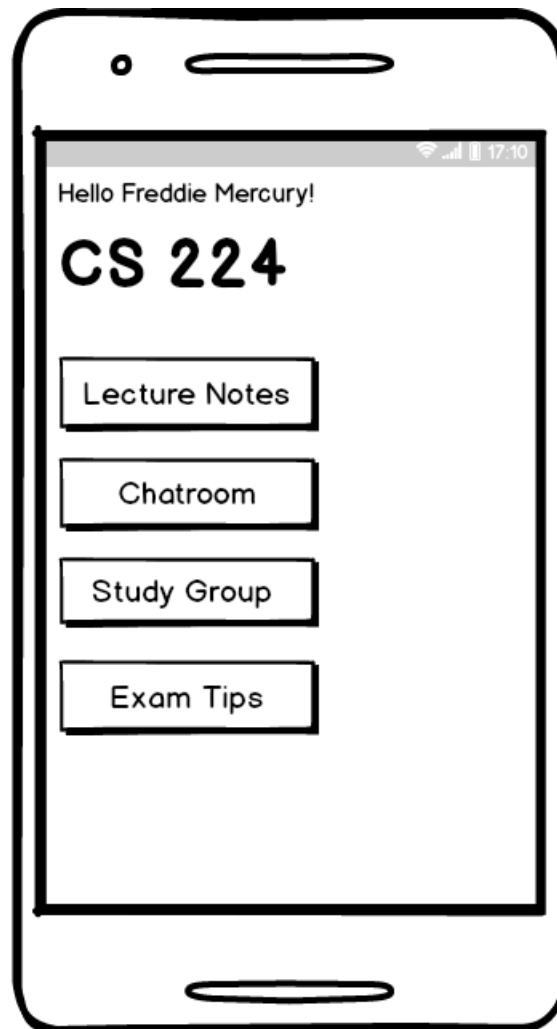
Figure 16 : Lecture Page Screen Mock-up

3.5.5.7 Chat Room Screen

   If the students choose the chat room screen they can connect with the people who are taking this lecture communicate with them. They can ask their questions each other in this platform and they can share the document. Also, they can see their old conservation on this platform.
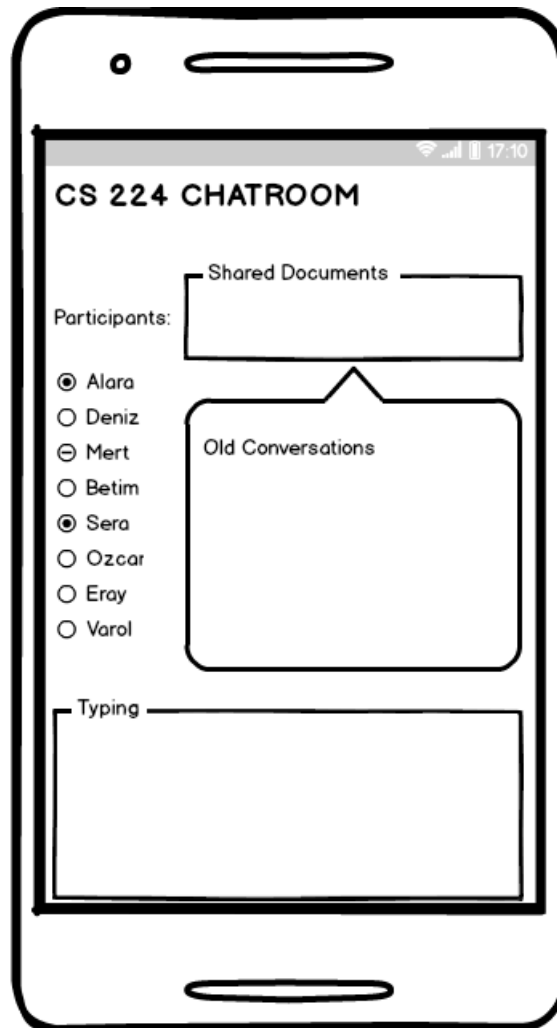
Figure 17 : Chatroom Screen Mock-up

4. Other Analysis Elements

4.1. Consideration of Various Factors

	Effect level	Effect
Public health	3	Individual users may face with cyberbullying, which is harassment of people by using electronic means of communication while using our program. This may cause psychological problems to the user such as emotional distress and an impact on self-esteem. So we will implement a report user functionality to ensure public and personal health preservation.
Public security	5	The safety of personal information is a major concern in our society. Therefore, an application should be error-prone and should not leak any personal information. Any leakage of personal information can compromise the safety of individuals. Thus to avoid this we will not ask any unnecessary information from users such as credit card information or home address. Only necessary information such as email address, name,

		and surname of the user will be asked. Also, we want our application to be only for Bilkent students and Bilkent graduates. To accomplish this, the only people who have Bilkent webmail will be able to sign-up for our application.
Public welfare	0	The application does not have an effect on public welfare. Or will not be affected by public welfare.
Global factors	3	With the speed of contemporary developments technology grows so fast. So any application that is produced has to adapt this growth even after it is deployed. Therefore our application has to be flexible and scalable to keep up with evolving technology.
Cultural factors	6	The society of Turkey consists of conservative people. Therefore, people may not want to use public chat rooms. People have to be ensured that no physical or psychological harm will come to them after they signed-in and participated in a public chat room.

Social factors	9	Bilkent University always promotes and advises students to socialize and share their insights with others. But some students may not be able to socialize with their peers due to various reasons. Therefore our application will help students to socialize with others easily by just signing-up and participating in class chat rooms or public chat rooms. The application will help people to connect online which will have gamification features to promote physical meetings. These features will encourage students to socialize not only in online also offline.

Table 1: Factors that can affect analysis and design

4.2. Risks and Alternatives

In the project life cycle environment, any things can go wrong that slows or halt the project progress. So before starting implementation project leaders and teams have to try to foresee risks and possible ways to cope with them. Many real-world projects miss deadlines that are decided before the implementation phase. Our project also has this risk. To avoid the risk of missing deadlines and falling behind our schedule we will meet at least two times a week and report our progress to our team members regularly. Also, we are a group of 5 people so, in the case of some unfortunate situations such as illness, the number of group people can decrease. This risk of losing people can slowdown project progress. To avoid this we divided work packages at least two group members so if anything happens to a member the other member can always finish the work package. Miss communication between team members can cause bugs and errors in the code. To

prevent this we carefully separated packages and decided on how we implement our project by specifying and drawing appropriate UMLs for them.

	Likelihood	Effect on the Project	B Plan Summary
Risk of falling behind deadlines	8	Failing to meet 3 or 4 deadlines can be detrimental to our project. If many deadlines are missed, we may not be able to finish our project on time.	We will meet at least 2 times a week and report our progress to our teammates.
Risk of losing team member	8	An unfortunate event can happen to a team member. This may slow down project and can cause us to miss deadlines.	Assigned work packages to at least two members so the package can still be finished in case of missing team member.
Risk of miss communication	3	Can cause bugs and errors in the program.	We decided on work pairs and draw specific UML diagrams for the implementation.

Table 2 : Risk and Alternatives

4.3. Project Plan

The project is going to be divided among the group members for the implementation phase to work more efficiently and in an organized way.

WP#	Work package title	Leader	Members involved
WP1	Database	Mert	Sera, Deniz,
WP2	User Interface	Betim	Alara, Mert
WP3	Front-end Development	Sera	Alara, Betim
WP4	Back-end Development	Alara	Sera,Deniz
WP5	Testing	Deniz	Betim, Mert

Table 3: List of work packages

WP 1: *Database*	
Start date: *19.01.2019* **End date:** *07.02.2020*	

Leader:	*Mert*	**Members involved:**	*Sera,Deniz*

Objectives: *Database will be implemented.*

Tasks:
Task 1.1 Chat Table: *It will keep the information of chat rooms*

Deliverables
D1.1: Database UML
D1.2: Fully Implemented database

WP 2: *User Interface*	
Start date: *08.02.2020* **End date:** *17.03.2020*	

Leader:	*Betim*	**Members involved:**	*Alara, Mert*

Objectives: User-friendly interface design will be implemented.

Tasks:
Task 2.1 Creating Mockups : *Mockups will be designed to give an idea.*
Task 2.2 CSS Implementation: *Real user interface will be implemented.*

Deliverables
D2.1: *Mockups*
D2.2: CSS Codes
D2.3: *Real User Interface*

Table 4 and 5: Database and User Interface List

WP 3: *Front-end Development*			
Start date: *08.02.2020* **End date:** *17.03.2020*			
Leader:	*Sera*	**Members involved:**	*Alara, Betim*
Objectives: Making functional and easy to use application.			
Tasks: *Task 2.1 CRUD request implementation:* *Getting related information from backend.* *Task 2.2Basic implementation of pages :* *Pages will be implemented without functions.* *Task 2.3Implementation of functions of the page :**Pages will be implemented fully with functions.*			
Deliverables *D2.1:**Interface of the pages* *D2.2:**Function of the pages*			

Table 6: Front-end DevelopmentList

WP 4: *Back-End Development*			
Start date: *08.02.2020* **End date:** *17.03.2020*			
Leader:	*Alara*	**Members involved:**	*Sera,Deniz,Mert*
Objectives: Creation of functional API.			
Tasks: *Task 2.1 CRUD Request:* *Alteration of the database tables and receiving related information from the database.* *Task 2.2 Functions :* *Functions will be implemented.*			

Deliverables **D2.1:**Working API **D2.2:**API Documentation	

Table 7 : Back-end development List

WP 5: *Testing*			
Start date: *08.03.2020* **End date:** *17.03.2020*			
Leader:	*Deniz*	**Members involved:**	*Betim, Mert*
Objectives: Testing features of API and front-end functions.			
Tasks: **Task 2.1 Creating Test Cases:** *Appropriate test cases will be designed.* **Task 2.2 Testing Front-end and API :***Test cases will be used for front-end and API..*			
Deliverables **D2.1:**Test Cases **D2.2:**Ready to deploy application			

Table 8 : Testing List

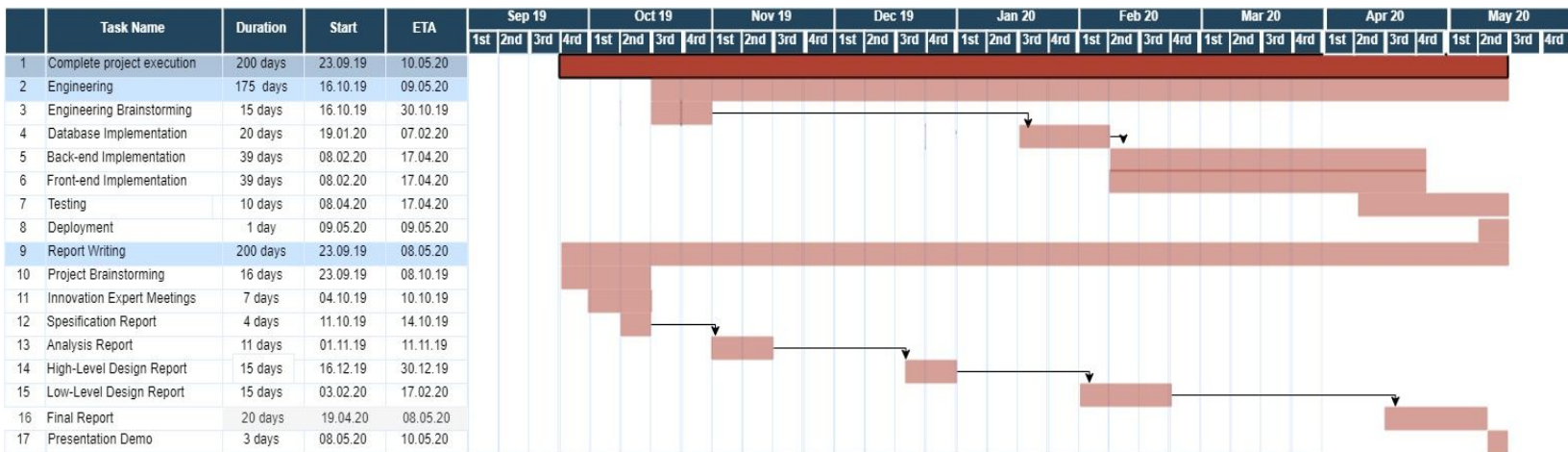|	Task Name	Duration	Start	ETA
1	Complete project execution	200 days	23.09.19	10.05.20
2	Engineering	175 days	16.10.19	09.05.20
3	Engineering Brainstorming	15 days	16.10.19	30.10.19
4	Database Implementation	20 days	19.01.20	07.02.20
5	Back-end Implementation	39 days	08.02.20	17.04.20
6	Front-end Implementation	39 days	08.02.20	17.04.20
7	Testing	10 days	08.04.20	17.04.20
8	Deployment	1 day	09.05.20	09.05.20
9	Report Writing	200 days	23.09.19	08.05.20
10	Project Brainstorming	16 days	23.09.19	08.10.19
11	Innovation Expert Meetings	7 days	04.10.19	10.10.19
12	Spesification Report	4 days	11.10.19	14.10.19
13	Analysis Report	11 days	01.11.19	11.11.19
14	High-Level Design Report	15 days	16.12.19	30.12.19
15	Low-Level Design Report	15 days	03.02.20	17.02.20
16	Final Report	20 days	19.04.20	08.05.20
17	Presentation Demo	3 days	08.05.20	10.05.20

Table 9 : Gantt Chart Table

4.4. Ensuring Proper Team-work

We have planned a schedule at the beginning of the semester to make our paperwork and coding in a regular way so that we won't have to be in a rush in the manner of due dates. We have planned that every tuesday evenings and sunday afternoons we are getting together and working on our project. We also have Whatsapp group to communicate online. Other than that we have a Google Drive folder to write our reports concurrently and to share and contain our report related folders. At every thursday lunch break, we are eating together and discussing the project and what to do next. We have a Gantt chart for the project process so we have a general plan to when to start what.

4.5. Ethics and Professional Responsibilities

We believe we have ethical and professional responsibilities to our users, customers and ourselves in this project. Firstly, we consider the security of personal data belongs to our users as an ethical responsibility. We will not share the personal data of our users with any third-party in any condition. Secondly, we plan to make this application free for all because this is project does not mainly aim to make a profit but to make a social good to the society. Other than that, we believe that to finish this project in scheduled time is a professional responsibility to our customers and to ourselves. Lastly during this project, behaving in a good manner and acting helpful and respectful to each other is also a professional responsibility to ourselves as a team.

4.6. New Knowledge and Learning Strategies

We have been brainstorming on which platforms we should code on and which languages we should use. Until now we decided that using AngularJS, ASP .NET and JavaScript. As a group, we have arranged meetings to learn all of them. These three topics are new for all of us, so two days a week, we will meet to improve ourselves and learn until the end of the semester. There are lots of sources that we can benefit from the internet. We are planning to use Udemy, Coursera, TutorialsPoint, w3school, free pdfs and youtube tutorials as learning tools. [5] We will also meet with our advisory professor regularly to get help and information.

5. References

[1]"Study Blue" https://www.studyblue.com [Accessed: November 1]

[2] "Study Buddy Mobile" https://www.studybuddymobile.com [Accessed: November 3]

[3] "My Study Life" https://www.mystudylife.com [Accessed: November 3]

[4] "E-ödev" https://eodev.com [Accessed:November 7]

[5]"Udemy" https://www.udemy.com [Accessed:November 7]

[6]"Coursera" https://www.coursera.org[Accessed:November 10]

[7]"Tutorials Point" https://www.tutorialspoint.com[Accessed:November 10]

[8]"w3Schools" https://www.w3schools.com[Accessed:November 10]