

SUKOCO - SUNY Korea

Community:

Final Report

Team Members:

Gyuri Kim

Sungwoong Park

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1. Introduction

a. Product description

Many new students have a problem finding information about their colleges including SUNY Korea. After being a SUNY Korea student for two years, I felt the absence of the school community among SUNY Korea students, because of this, I was not able to know which courses by which professors are better. This inconvenience disturbed me to choose classes to take.

Sukoco is a web application designed to help communication between SUNY Korea students, and manage their timetable.

- Ability to create timetable and add courses by their course number
- Ability to view and create the review of professors

b. Scope

This product is to support students to make decisions for which courses they should take. Product will not suggest any information or opinions to users directly. Our product is to give only the public opinion. Our data collection will not be connected to the SBU system to get a grade they got, but all information should be given when they are volunteering.

The product will be running on Chrome Desktop Version with various resolutions.

c. Users

The product's primary users are SUNY Korea students including SBU and FIT, who want to get information about professors and courses, and use and share their timetable. Since our users are college students, we are expecting them to be familiar with the common user interface. Currently, we are limiting our target to SUNY Korea because of our workload, but various users will be using it.

d. User feedback

We got feedback from professors. These are:

1. Indication where the users are very weak.
2. The input of reviews are not explicitly explained.
3. There are possible factors that we can monetize.
4. There is no user feedback when login has failed

For these feedbacks, we noticed that it was the fault of our mockup process. We tried to think and make it look perfect, but we never thought in the way of the new users. Therefore, the change of the mockup was inevitable. For the first feedback, we changed

our mockup to indicate what page they are in. Secondly, we changed the text explanation to be more descriptive on the “Write review” page. For the third one, we are trying to think whether the monetization could be a moral hazard, but it is definite that we need a business model.

e. Existing Alternative

There are existing alternative apps which are Everytime, RatemyProfessor, and Campus-pick. The Everytime application handles the timetable and community service, and the RateMyProfessor website shows reviews of the professors. However, when we use timetable service in Everytime, we have to type every single class name, classroom, and instructor manually. Also, there are no reviews of professors from SUNY Korea in the RateMyProfessor. Therefore, we try to make a website that doesn't need to type all the information about the class to add in a timetable. Also, we are going to provide professor reviews for SUNY Korea students.

f. References

1. Our UI Mockup

https://www.figma.com/file/gYfUOC8VJASMSwOnGk7pZf/CSE416_Protoype?node-id=0%3A1&t=AfgzczaCEki2VnD3-1

2. Ph.D kim net to refer to the review system.

<https://phdkim.net/>

3. Reference for the school community system

<https://everytime.kr/>

4. Chatting System Reference

<https://www.kakaocorp.com/page/service/service/KakaoTalk?lang=en>

5. Reference for the rating the professor

<https://www.ratemyprofessors.com/>

2. Requirements

a. Functional Requirements

Common Interface

- Must Level
 - Function to “Register”
 - Function to “Log in”
 - Function to “Log out”
 - Function to “View the review of professors”
- Should Level
 - Function to “Edit its profile
 - Editing user Id or email should require more authentication.
 - This includes almost every information of its information such as email, id, pwd, and email

Common Users

- Must Level
 - Function to “add courses to their table”
 - Function to “edit or remove courses on their timetable”
 - Function to “leave and remove(edit) a review for professors”
- Should Level
 - Function to “find the course by its information”

Faculty

- Must Level
 - Function to “request to remove the reviews”
 - This is limited to only when students leave an insulting message which is not beneficial to the community.
 - Function to “modify its information”
 - This includes the office hour and office room number of professors

Administrator

- Must Level
 - Function to “remove the reviews”
 - Function to “add courses to the database”

The requirements related to the chatroom are deleted. The main reason for this deletion is because of the lack of time. However, the priority of the chatting system was not essential because the workload required to implement is much higher than any other function because we never learned about the websocket, and the required functions to regulate the chatroom are so many. Profile image is also deleted because the main purpose of profile image is to show their image on the chatting system.

At first, we decided to show the grades and semesters that students took. However, the reviews are anonymous and students should not be identified by their information to the professor. Therefore, we decided to delete students' grades and semester. We got a feedback from the professor that if there is no information about the written date, students may think those reviews are not useful. So, we sorted reviews in latest order.

b. Non-functional Requirements

1. Users should be able to complete use cases and perform all function requirements in the web application via Chrome.
2. All users' private data should be obtainable and accessible only when necessary.
3. On this web application, all communication should be secured with SSL.
4. This web application should handle at least 200 connections and secure the average load time in 1 second.
5. The web application will be given in English.

c. Use Cases

Use Case	Edit timetable
Primary Actor	Common User
Priority	Essential
Scenario	<ol style="list-style-type: none"> 1. User try edit(add/delete) timetable. 2. User add course(s) using course ID. 3. System checks course ID is valid and provides alert.
Extensions	If the course ID is invalid or does not exist, provide an alert.

Use Case	Edit Profile
Primary Actor	Common User
Priority:	Essential
Scenario:	<ol style="list-style-type: none"> 1. User edit password. 2. Users save the password. 3. System checks if the password is valid or not and if it's valid, provides an alert.
Extensions:	If the password is invalid form, provide an alert to fix the password in the right form.

Use Case	Add courses
Primary Actor	Common Users
Priority	Essential
Scenario	<ol style="list-style-type: none"> 1. User logs in the website 2. User is redirected to the timetable website. 3. User press + button. 4. User types the course number and press add course. 5. The system shows the changed time table.
Extensions	4-1. If the course number doesn't exist, it will not accept and give feedback to the user that course number doesn't exist.

Use Case	Write a review
Primary Actor	Common User
Priority	Essential
Scenario	<ol style="list-style-type: none"> 1. User logs in the website. 2. User presses "Reviews" to go to the review page. 3. User find professor by major and name 4. User presses "write a review" 5. User fills the information requested. 6. User presses the submit button, and the system will redirect to the review page of the professor.
Extensions	5-1. On the recommended level, it will automatically block bad words with some language filters.

d. User Interface

<First draft>

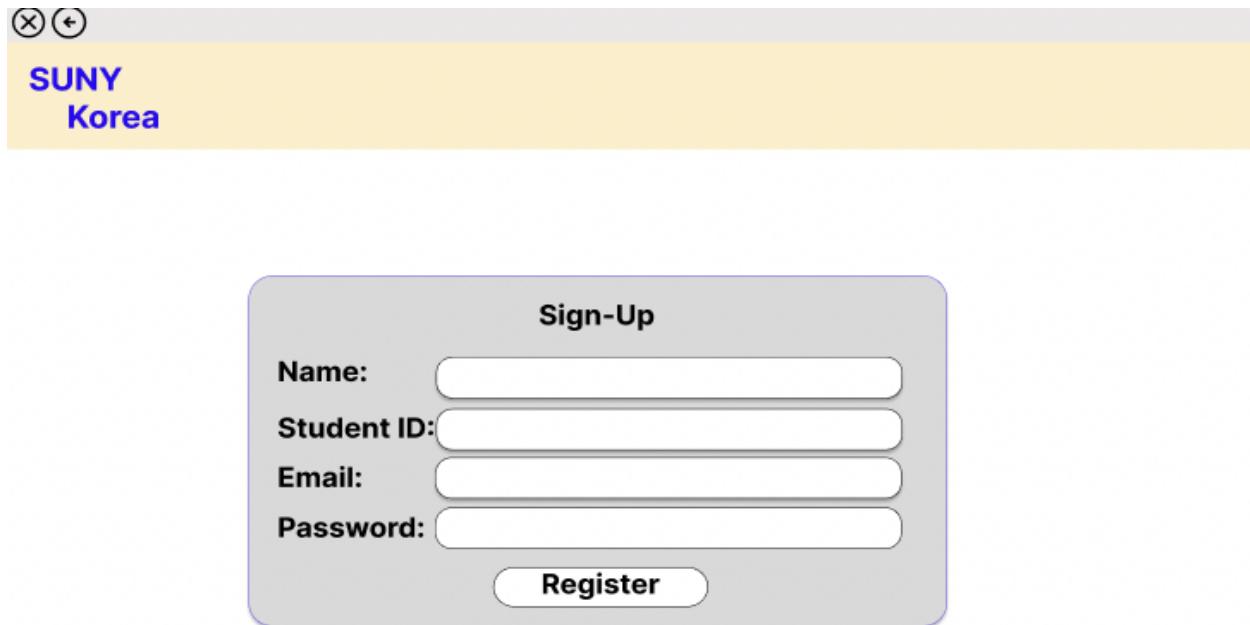


Figure1: Main Page

The main page wireframe includes:

- Header:** Features a yellow gradient bar with a close button (X), a back arrow, and the text 'SUNY Korea'.
- Content Area:** Contains a rounded rectangle labeled 'Log-In'.
- Form Fields:** Two input fields for 'Email:' and 'Password:'.
- Buttons:** Two rounded rectangular buttons labeled 'Log-In' and 'Sign-up'.
- Link:** A small link 'Forgot your password?' located below the 'Sign-up' button.

Figure2: Sign-up Page

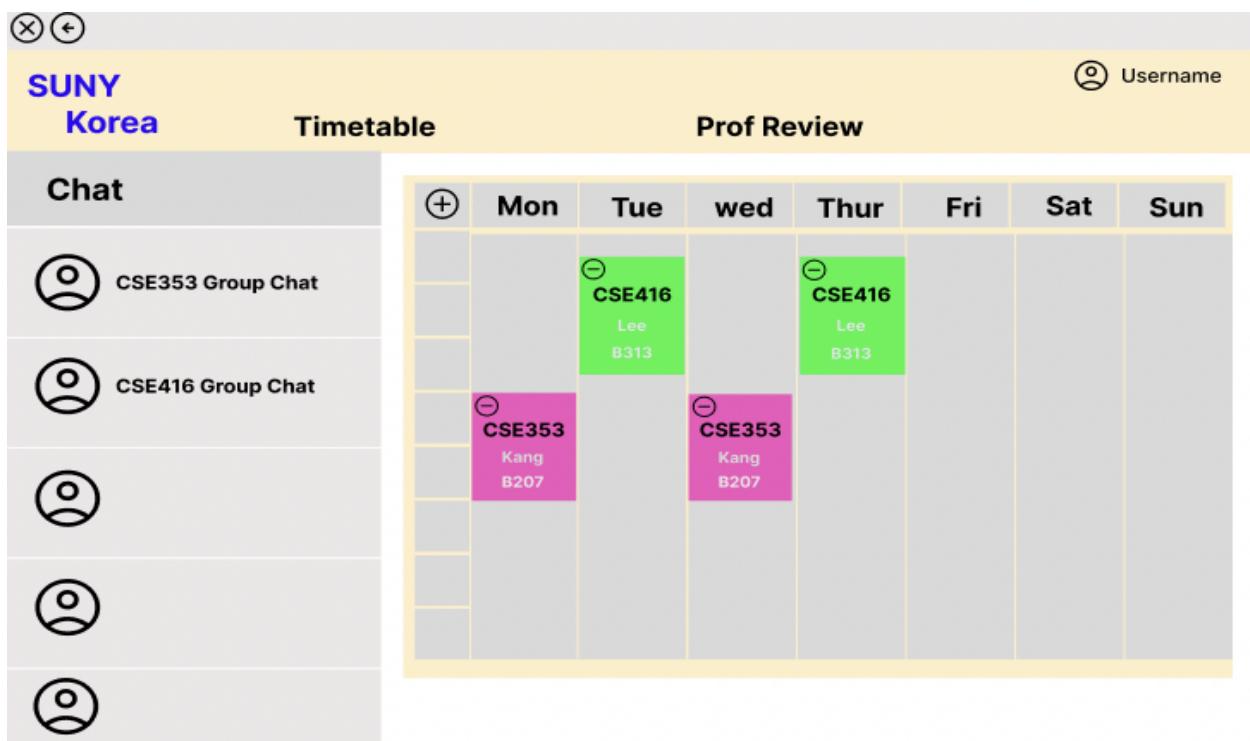


The image shows a sign-up form titled "Sign-Up". It contains four input fields: "Name:", "Student ID:", "Email:", and "Password:". Below the fields is a "Register" button.

Name:	<input type="text"/>
Student ID:	<input type="text"/>
Email:	<input type="text"/>
Password:	<input type="password"/>

Register

Figure 3: MainPage with login User



The image shows a main page for a user named "Username". The page includes a header with "SUNY Korea" and a "Timetable" section. The "Timetable" section displays a weekly schedule from Monday to Sunday. A sidebar on the left lists "Chat" options: "CSE353 Group Chat", "CSE416 Group Chat", and three other entries represented by icons.

Mon	Tue	wed	Thur	Fri	Sat	Sun
	CSE416 Lee B313		CSE416 Lee B313			
	CSE353 Kang B207		CSE353 Kang B207			

Figure 4: Add Course Page

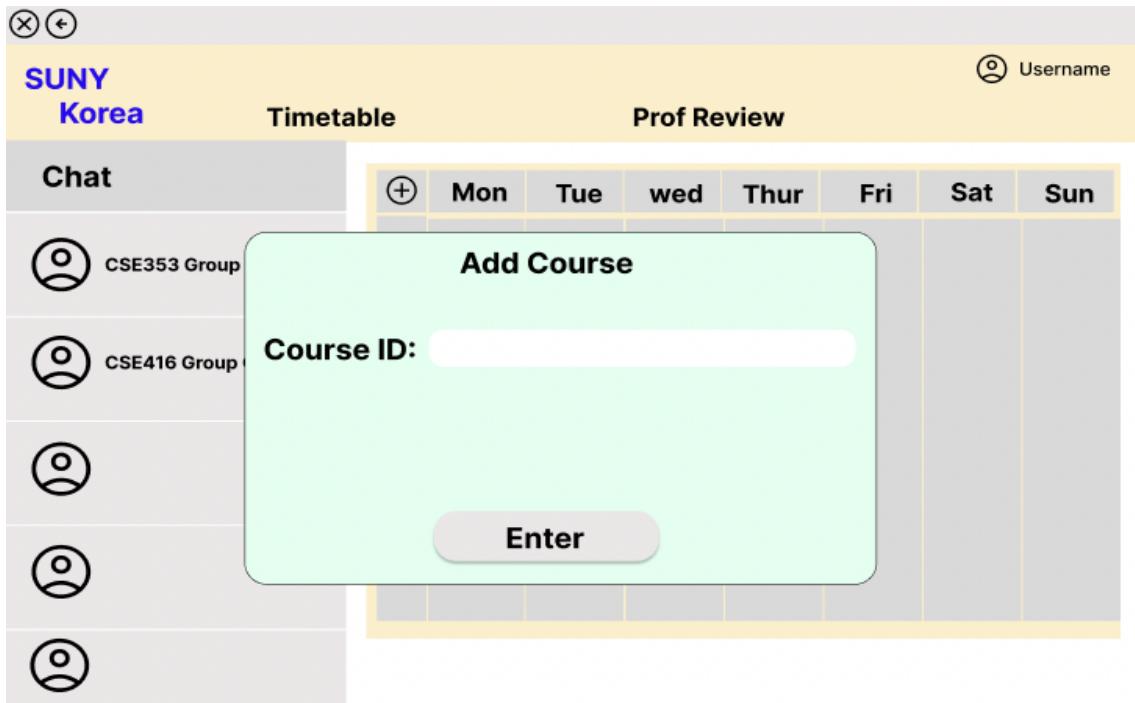


Figure 5: Chatting Page

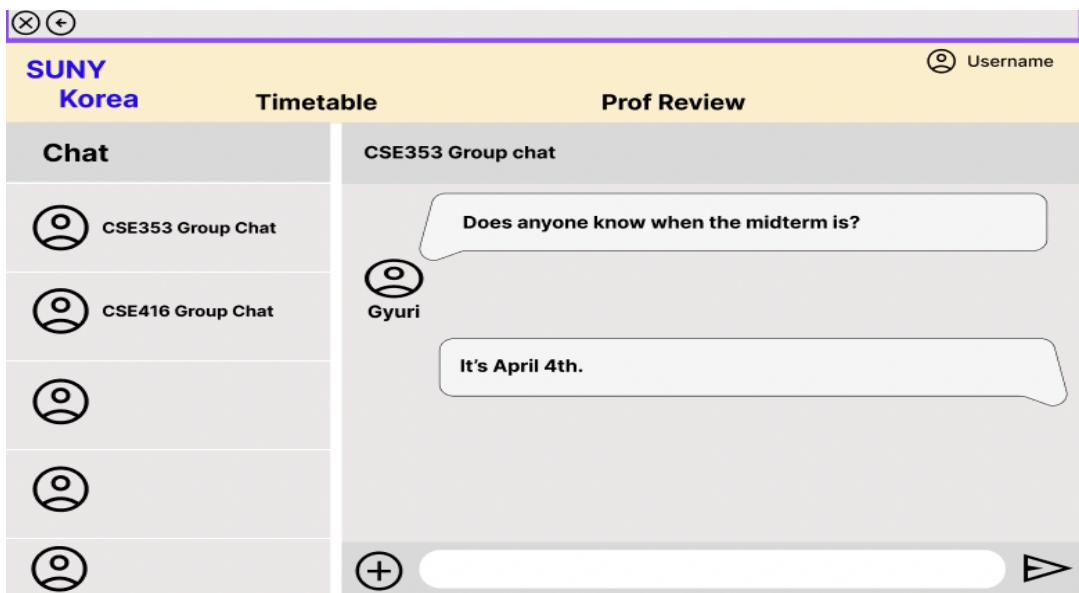
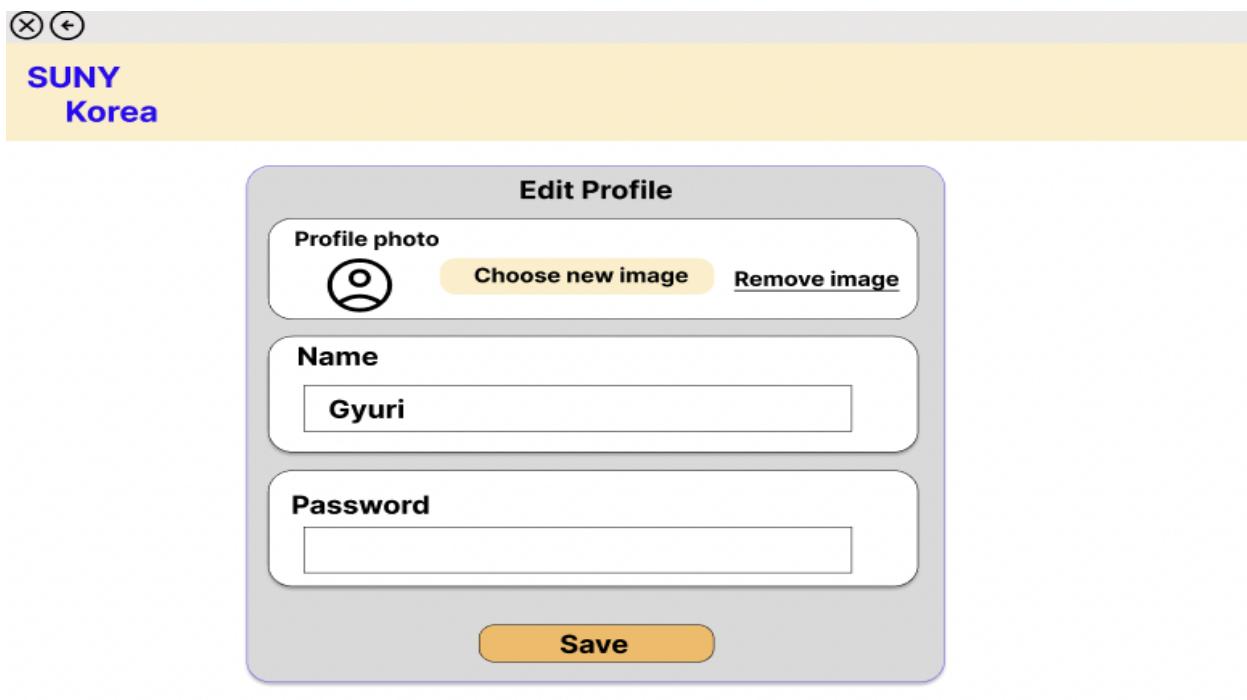
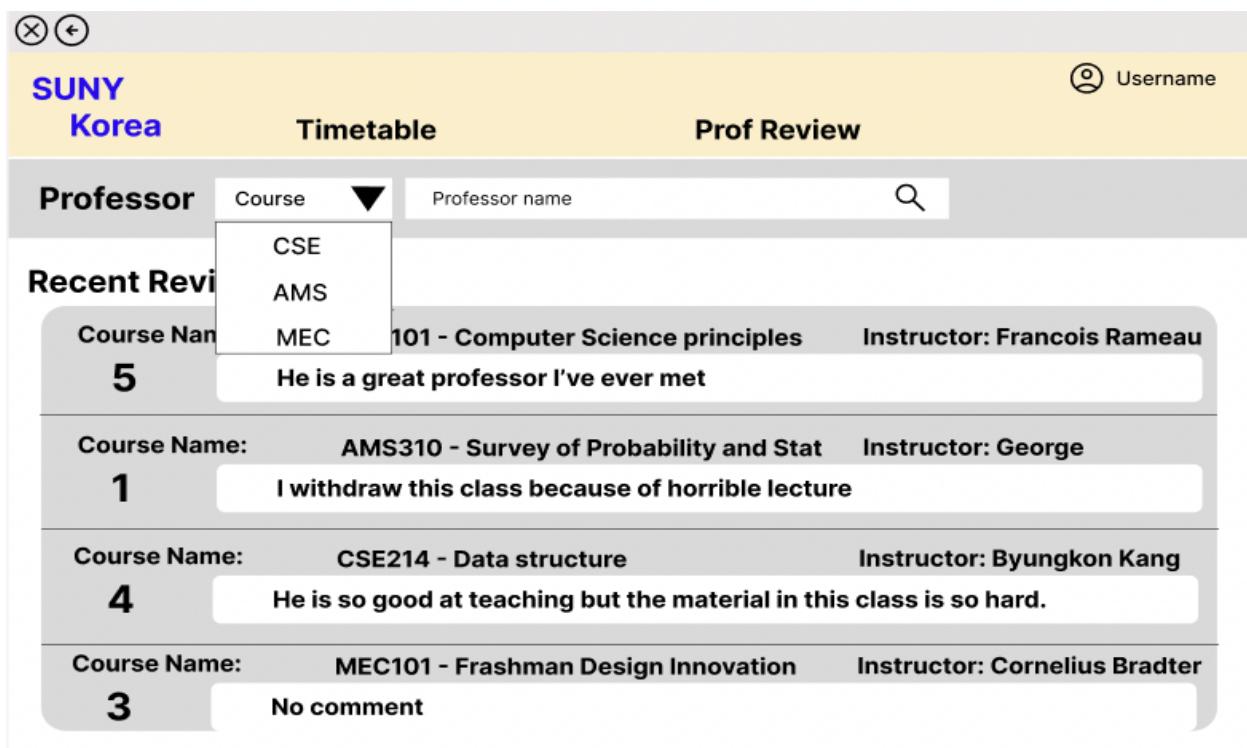


Figure 6: Edit Profile Page



The screenshot shows the 'Edit Profile' page. At the top, there are close and back buttons. Below them, the 'SUNY Korea' logo is displayed. The main form has a light gray background with rounded corners. It contains three sections: 'Profile photo' with a placeholder icon, a 'Choose new image' button, and a 'Remove image' link; 'Name' with the value 'Gyuri' in an input field; and 'Password' with an empty input field. A large orange 'Save' button is located at the bottom right of the form.

Figure 7: Prof Review Page



The screenshot shows the 'Prof Review' page. At the top, there are close and back buttons, the 'SUNY Korea' logo, a 'Timetable' link, and a 'Prof Review' link. To the right of the 'Prof Review' link is a user icon and the text 'Username'. The main content area has a light gray header with 'Professor' and a dropdown menu showing 'Course' with options 'CSE', 'AMS', and 'MEC'. Below this, a table lists recent reviews:

Recent Review	Course Name	Instructor
5	101 - Computer Science principles	Instructor: Francois Rameau He is a great professor I've ever met
1	AMS310 - Survey of Probability and Stat	Instructor: George I withdraw this class because of horrible lecture
4	CSE214 - Data structure	Instructor: Byungkon Kang He is so good at teaching but the material in this class is so hard.
3	MEC101 - Freshman Design Innovation	Instructor: Cornelius Bradter No comment

Figure 7.1:

(X) (C)

SUNY Korea **Timetable** **Prof Review**

Professor CSE ▼ Arthur Lee

4.6/5 Arthur Lee Rate Professor

Comments

Quality	Grade: A	Semester: 2022 Fall
5	Here is the comment	
Quality	Grade: A-	Semester: 2022 Spring
4		
Quality	Grade: C-	Semester: 2021 Fall
1		

Figure 8: Rate Professor Page

(X) (C)

SUNY Korea **Timetable** **Prof Review**

Arthur Lee

Select Course

Rate the professor

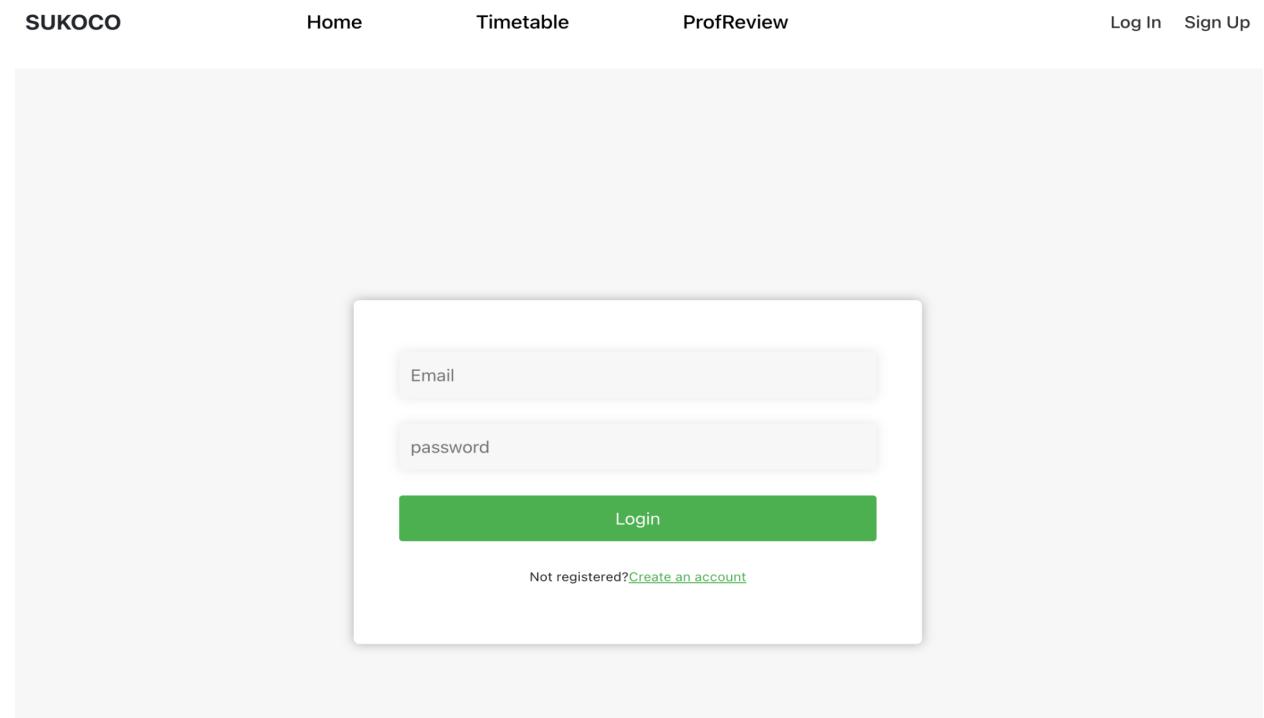
Letter grade you get

Semester you've taken

Comment

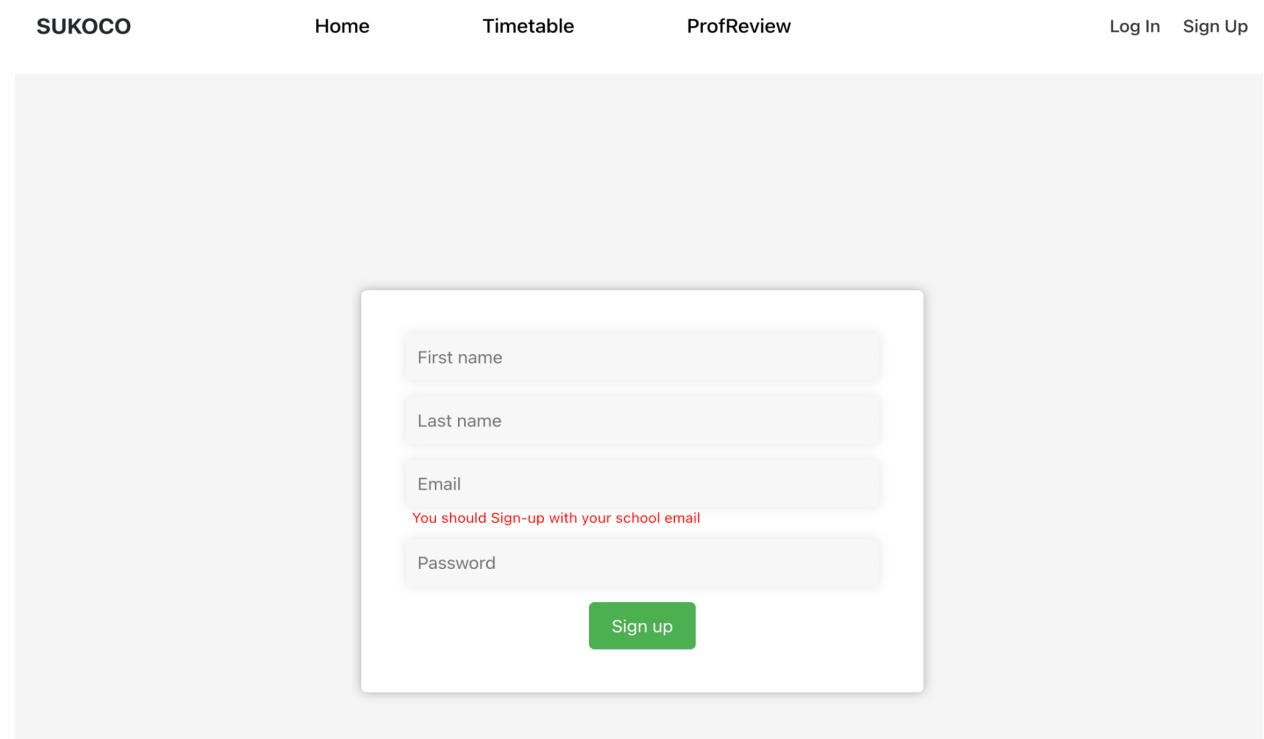
<Final>

Figure1: Main Page



The screenshot shows the main page of the SUKOCO application. At the top, there is a navigation bar with the logo "SUKOCO" on the left and links for "Home", "Timetable", "ProfReview", "Log In", and "Sign Up" on the right. The central part of the page features a large, light-gray rectangular area containing a login form. The form consists of two input fields: "Email" and "password", followed by a green "Login" button. Below the button, a small link reads "Not registered? [Create an account](#)".

Figure2: Sign-up Page



The screenshot shows the sign-up page of the SUKOCO application. The layout is similar to the main page, with the "SUKOCO" logo and navigation links at the top. The main content area contains a sign-up form enclosed in a light-gray box. The form includes four input fields: "First name", "Last name", "Email", and "Password". Below the "Email" field, a red error message states "You should Sign-up with your school email". At the bottom of the form is a green "Sign up" button.

Figure 3: MainPage with login User

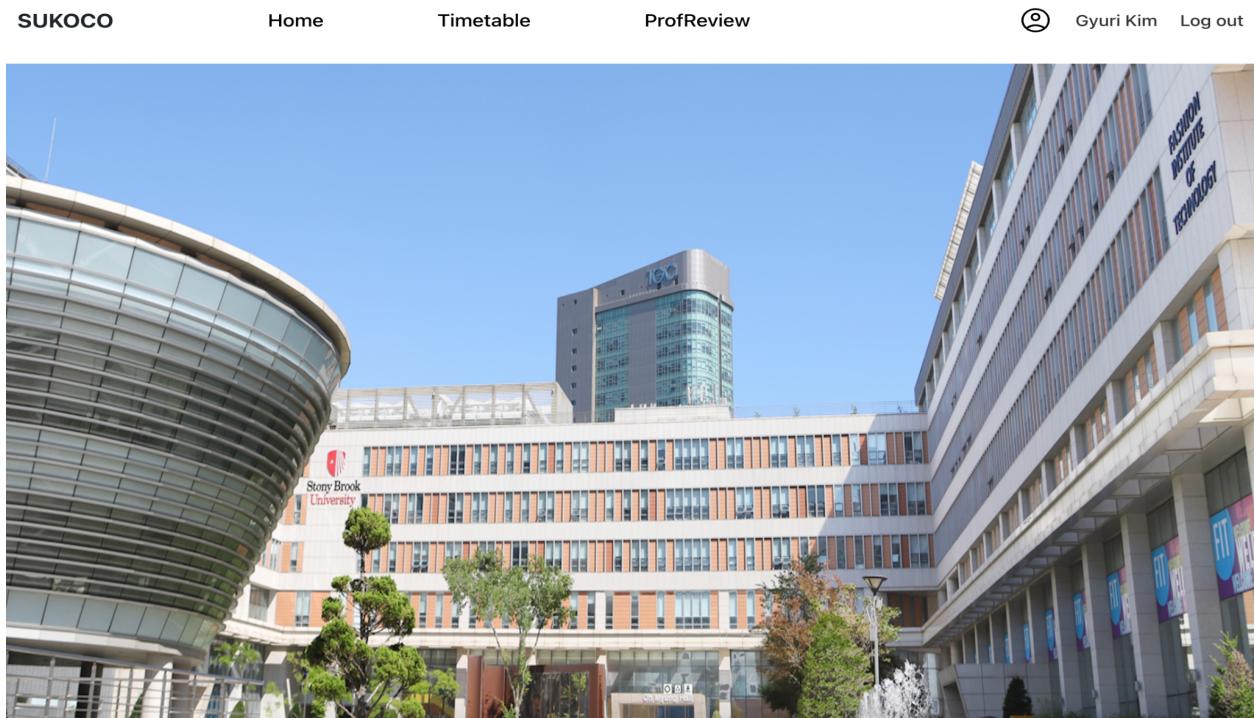


Figure 4: Add Course Page

A screenshot of a web application's "Add Course" page. At the top, there is a navigation bar with links for "Home", "Timetable", and "ProfReview". On the right side of the navigation bar, there is a user profile icon, the name "Gyuri Kim", and a "Log out" link. Below the navigation bar is a large, light-gray grid representing a weekly timetable. The grid has columns for each day of the week (Mon, Tue, Wed, Thur, Fri) and rows for time intervals from 9:00-10:00 to 17:00-18:00. In the bottom right corner of the grid, there is a green button labeled "ADD COURSE +". A modal dialog box is currently open in the center of the grid. The dialog box has a title "Type Course ID" and a sub-section "Course Number" containing a text input field. At the bottom of the dialog box are two buttons: "CANCEL" and "SUBMIT". In the background, the grid cells contain course information: "EST440 Sehee Park B313" in the Thur 10:00-11:00 slot, and "AMS210 Ky Tran C105" in both the Fri 17:00-18:00 slots.

Figure 5: Chatting Page

Dropped this feature

Figure 6: Edit Profile Page

The screenshot shows a user profile page with a navigation bar at the top. The user is Gyuri Kim. Below the navigation, there is a modal window for editing the profile. The modal contains four input fields: 'Name' (Gyuri), 'Last Name' (Kim), 'Password', and 'Confirm Password'. A green 'Save Changes' button is at the bottom of the modal.

Figure 7: Prof Review Page

The screenshot shows a search interface for professors. It includes a dropdown for 'Select a major', a search bar for 'Professor Name', and a 'Search' button. Below the search bar, the title 'Recent Reviews' is displayed. Three reviews are listed:

- Course Name: - Software Engineering, Instructor: Yoonseok Yang
Rating: 4
Comments: aa
- Course Name: - Software Engineering, Instructor: Arthur Lee
Rating: 5
Comments: 1440981
- Course Name: - Software Engineering, Instructor: Arthur Lee
Rating: 3
Comments: So so class

Figure 7.1:

The screenshot shows a web application interface for rating professors. At the top, there is a navigation bar with links for "Home", "Timetable", "ProfReview", and a user profile for "Gyuri Kim" with a "Log out" option. Below the navigation bar is a search bar with the placeholder "Select a major" and a dropdown menu, followed by a text input field for "Professor Name" and a green "Search" button. A large blue header section displays the text "Rate the Professors". On the left side of this header, it says "4.00/5" and "Yoonseok Yang". To the right of the name is a green "Rate Professor" button. Below the header, the course name "Software Engineering" is listed. A large blue rectangular area contains the number "4" and the letters "aa" inside a white rounded rectangle.

Figure 8: Rate Professor Page

The screenshot shows a "Rate Professor" form for the professor "Yoonseok Yang". The form is divided into four horizontal sections. The first section contains a label "Select Course:" followed by a dropdown menu labeled "Select a course". The second section contains a label "Rate the Professor:" followed by a dropdown menu labeled "Select a Rate". The third section contains a label "Letter grade you got:" followed by a dropdown menu labeled "Select a grade". The fourth section contains a label "Comment:" followed by a large text input field and a green "Submit" button at the bottom.

<Admin>

Figure1: Main Page

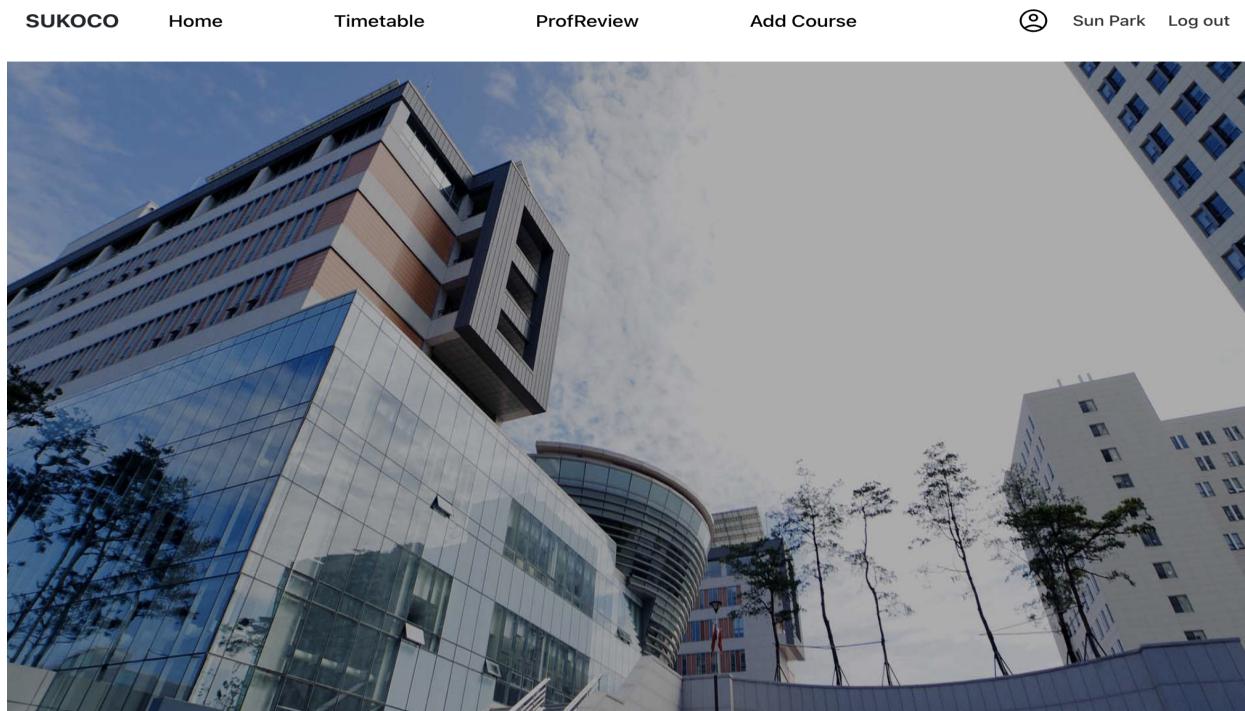


Figure2: Add Courses

SUKOCO Home Timetable ProfReview Add Course Sun Park Log out

classNumber

subject

CRS

courseTitle

cmp

section

credits

Mon Tue Wed Thu Fri Sat Sun

instructor

SBC

Select year for term: 2015 ▾

Spring Summer I Summer II Fall Winter

Figure3: Prof rate page

The screenshot shows a web application interface for rating professors. At the top, there is a navigation bar with links for 'SUKOCO', 'Home', 'Timetable', 'ProfReview', 'Add Course', and user account information ('Sun Park' and 'Log out'). Below the navigation bar is a search bar with the placeholder 'Professor Name' and a 'Search' button. On the left, a section titled 'Rate the Professors' includes a dropdown menu for 'Select a major' and a search input field. The main content area displays a large rating of '3.83/5' for 'Arthur Lee'. Below this, there are two reviews for the course 'Software Engineering'. The first review, marked with a '1', has the comment 'no comment'. The second review, marked with a '5', has the comment '1440981'.

3. Software Design

a. Overview

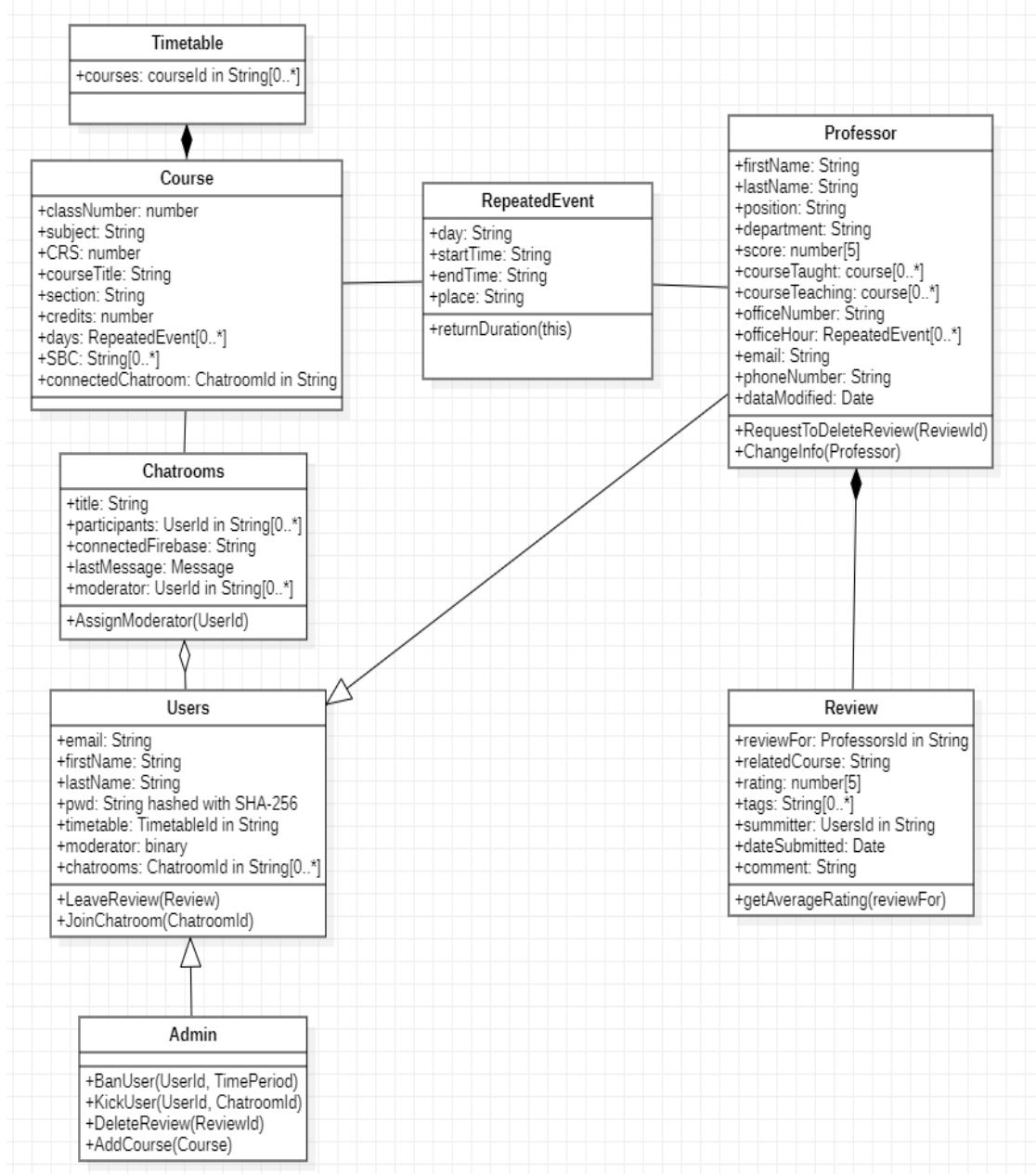
We are using three main tools which are MongoDB, React.js, and Express.js with Typescript, also we are following MVC architecture with no dynamic webpage.

For the front end with React.js, we imported react-dom-router, the uri controller, and navigator, which helps to keep state on uri change, and Axios to adapt API calls with ease, and websocket for real time communication of chatting systems.

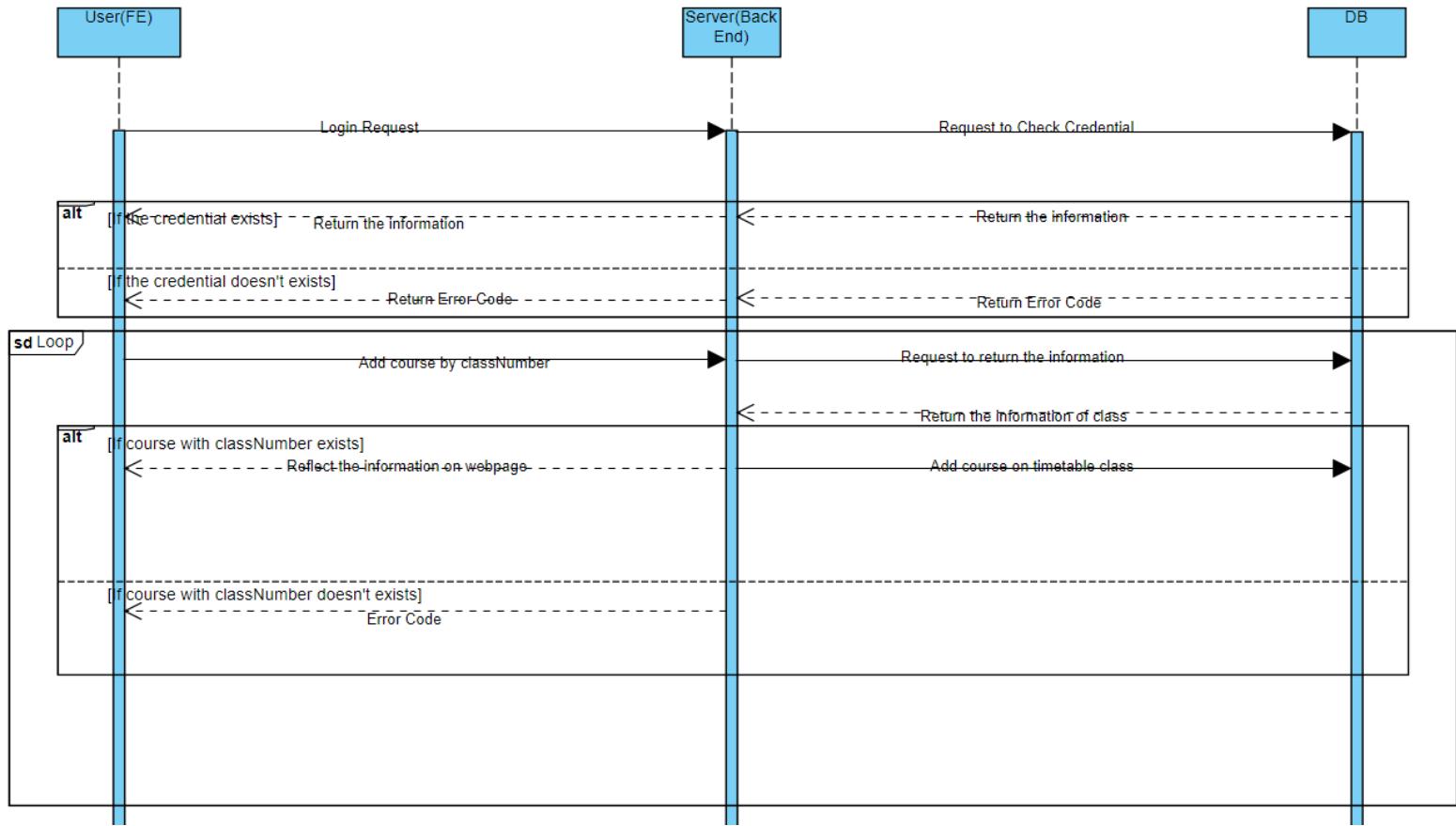
For the back end with Express.js, we used typescript specifically to keep type consistency with all data. For libraries, we used connect-mongo, which helps us stabilize the connection between backend and database, and nodemon for development ease, and websocket for chatting system, and express-session to keep users logged in for a few time although they leave the website.

b. Data Design

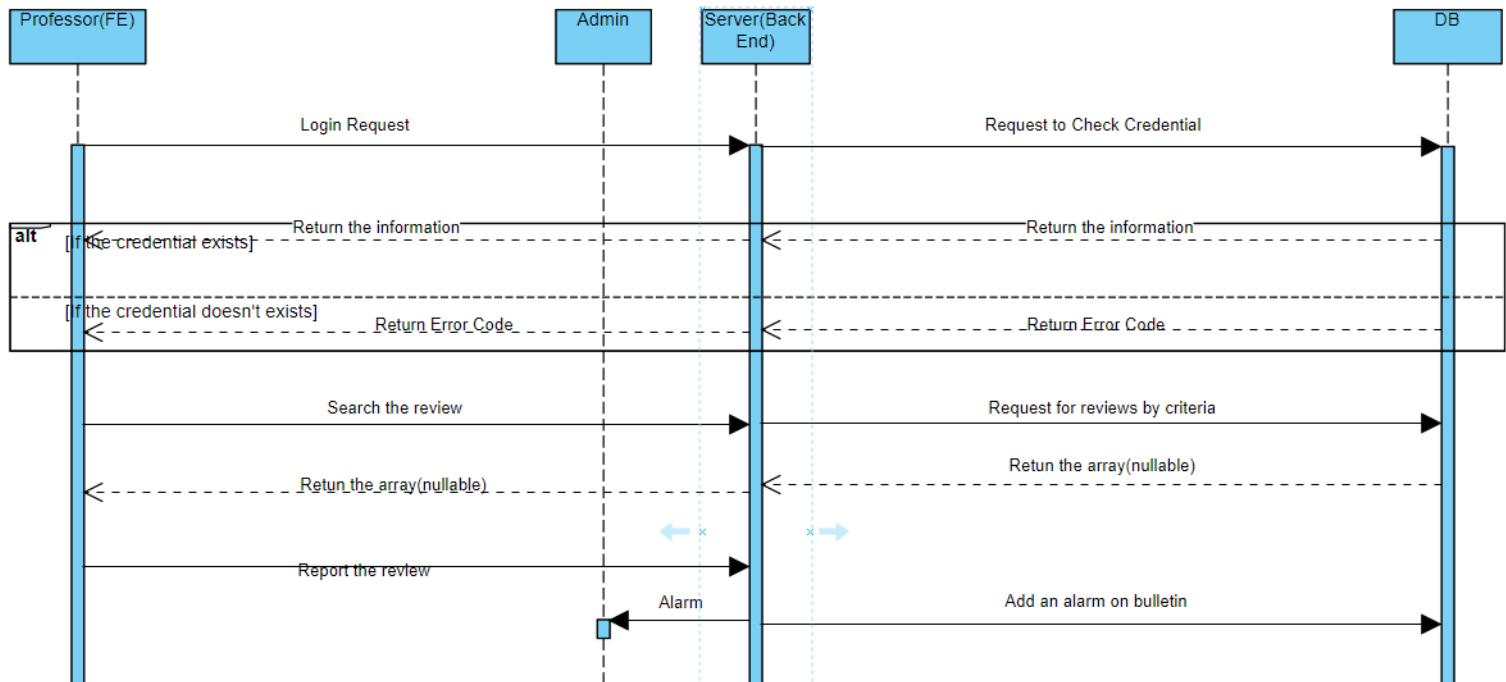
For mongoDB, we make schemas for each collection. Please watch the below image.



c. UML Sequence



This is the UML Sequence diagram for the instance that users login and add the course in timetable.



This is the UML Sequence diagram for the instance that Professor logs in and reports the review.

d. API Design

For RESTful APIs, we set a few uri to communicate with the front and back end.

These are all tables that show the intended functionality.

	GET	POST	PUT	Delete
/review	Retrieve all reviews.	Create a new review. User status should be valid(not banned)	Bulk update of reviews. Authorization needed	Remove all reviews. Authorization needed
/review/1	Retrieve the details for review 1(Class Number)	Error	Update the details of review 1 if it exists	Remove review .Authorization needed.(Whether original writer or admin)
/review/find	Retrieve the reviews by the information of req.body.review	Error	Error	Error
/review/report	Error	Create an alarm to	Error	Error

/course

	GET	POST	PUT	Delete
/course	Retrieve all courses.	Create a new course. Authorization needed	Error	Error

/course/1	Retrieve the details for course 1(Class Number)	Error	Error	Error
-----------	---	-------	-------	-------

/user

	GET	POST	PUT	Delete
/user/login	Error	Get the information of the user based on the credential, and also session information	error	error
/user/register	error	Register the user based on the credential	error	error
/user/logout	error	error	error	Delete the session information in DB.
/user/editProfile/:email	error	error	Edit the profile based on request	

/timetable

	GET	POST	PUT	Delete
/timetable/:email	Get a related courses based on the email given	error	error	error
/timetable/add/:email	error	error	Add a class number in the timetable	error
/timetable/delete/:email	error	error	Delete the designated class number in the timetable	error

e. Deployment

We use Netlify to deploy Frontend and Heroku to deploy Backend.

Frontend deployment procedure using Netlify:

1. Connect your project to a Git repository: Netlify integrates well with popular version control systems like Git. Connect your frontend project to a Git repository hosting service like GitHub.
2. Create a new site on Netlify: Once you're logged in to Netlify, click on the "New site from Git" button on the dashboard. Choose the Git provider where your project's repository is hosted and authorize Netlify to access it. Select the repository and branch you want to deploy.
3. Configure build settings: Netlify needs to know how to build your frontend project. In the build settings, specify the build command, which is typically something like npm run build or yarn build, depending on your project's setup. Set the publish directory to the folder where the built files will be generated, often called dist or build.
4. Monitor the deployment: Netlify will initiate the build process and deploy your frontend project. You can monitor the progress in real-time on the deploy logs page. Once the deployment is complete, Netlify provides a unique URL where your site is hosted.
5. Test and access your deployed frontend: Visit the URL provided by Netlify to see your deployed frontend project. Test all the functionality to ensure everything is working as expected.

Backend deployment procedure using Heroku:

1. Compile and Upload on git: Our backend server is written on typescript and tsc, which is typescript compiler for testing purposes doesn't fit into the environment of the actual server. We should compile it into javascript and push the repository.
2. Make a server on the cloud of Heroku: Heroku supports making an individual server. This server automatically connects to the url, but needs to change the port

into 80.

3. Connect Github Repository: Connect the Github specific branch of the repository. This will automatically upload the file in the branch and run the instruction in package.json.
4. Make it an automatic deployment: Furthermore, we can connect the Github branch, and we can make it build a server when I push any git on the branch

5. Individual Progress Update

a. Gyuri:

Milestone 1 - Complete the log-in, register, and change the profile info page. There was no hard time to implement those functions. Those functions were not connected to the database at that time (milestone1). However, we connected to the database now.

Milestone 2, 3 - Original plan was completing the timetable but there are dependencies, so instead of doing timetable, I completed Rate the professor page. Sungwoong is now working on the backend to connect with the database.

Milestone 4, 5, 6 - Original plan was working on the chatting system but since we decided to remove the chatting system, I'm working on the timetable page. I had a hard time implementing the timetable, so I looked for the references and I found a good resource to follow. Therefore, I followed the resource and changed some parts to be fit in our project.

b. Sungwoong:

Milestone 1: This week is mainly about learning stuff and defining what to do. I learned about the Typescript and made class schemas.. Basic routings are created to let Gyuri know which route should be called for each instance. I also learned about https encryption with OpenSSL.

Milestone 2 and 3: I wasn't able to work on because of health problems.

Milestone 4: Https encryption has been implemented for connection between front and back end. Also, I prototyped API calls to remove dependencies on Gyuri's work. Session login is completed on the backend only, and login and register is done.

Milestone 5: Login with Session and Register frontend and backend implementation, profile page integration, Technically, I worked to change front mockup to actual connected app with backend.

Milestone 6: Currently, I am working on the rate of the professor for both front and back end. It is expected to be done by Sunday, and the system test will be on Monday.

6. Group Progress Update:

We were running behind schedule. For functional requirements, we met the requirements for login and register. Timetable and rate the professor features are on the stage of integration. Chatting system is to be abandoned because of practical obstacles.

a. Reason explained why Chatting System is Abandoned

The first reason is that the schedule has already been delayed. As a result, this means we have limited time and resources available for this project. By prioritizing many features, the chat system has been abandoned for some reason.

The reason that the chat system is not prioritized is that there are already well-made functions to adapt. Practically, it is hard to make a better interface and provide a better user experience than other products. Therefore, we will use Kakaotalk open chat system. Therefore, the url of the open chat room will be provided instead of the chat system.

b. Reason of delay

The reason for this delay is because of improper measurement of learning steps and no work distribution of integration. In the early stage of the project, we were thinking about using Typescript instead of Javascript. The pros of Typescript are error free from type error. However, I failed to estimate the difficulty of Typescript. It was not only about learning new stuff, but lack of documentation compared to Javascript and spending more time defining types on different libraries manually.

a. Extra reason: Before actual development, we had discussed the work distribution.

It was mainly about dividing the frontend and backend, but nothing about integration.

7. Contributions

Gyuri:

Throughout the semester, my primary focus was on frontend development. I undertook various tasks such as creating brainstorming sketches, designing user interfaces in Figma, implementing design(CSS), and coding the website's functionalities. Additionally, I took charge of crafting the majority of the presentation PowerPoint.

Specifically, I was responsible for designing and implementing features such as the login, logout, and signup functionalities, as well as developing pages for the timetable, recent reviews, individual professor reviews, and the ability to rate professors. While Sungwoong provided assistance in resolving errors and aligning functionalities with the API, the bulk of these tasks were accomplished by me.

Sungwoong:

My main responsibility is to make a backend. First of all, I designed the document structure of the database. Additionally, I made the backend for API calls, and for the development stage, I implemented HTTPS connection.

Also I implemented API calls on the frontend. I made all API calls on the frontend, and cookie and session. Also I made functions for ratemyprofessor pages and admin pages. The web views and CSS are not my parts.

8. Self-reflection

Gyuri:

Throughout the semester, my focus on frontend development allowed me to gain valuable experience in various aspects of web design and implementation. The process of creating brainstorming sketches and translating them into Figma designs enabled me to visualize the user interface and layout effectively. It was satisfying to see these designs come to life through the coding of website functionalities. I particularly enjoyed working on features like login, logout, and signup, as well as crafting pages for the timetable, recent reviews, and individual professor reviews, which provided users with valuable information and a seamless user experience. The ability to rate professors added an interactive element to the website, enhancing its overall value. Collaborating with Sungwoong to resolve errors and align functionalities with the API was a valuable learning experience, and I appreciated the opportunity to enhance my problem-solving skills. Overall, I am proud of my contributions and the progress I made in frontend development throughout the semester. It was fulfilling to see my hard work culminate in a functional and visually appealing website, and I look forward to applying the knowledge and skills I gained in future projects.

Sungwoong:

I realized that the planning should be with some spare time to handle the problems. Personally, I had a health issue, but the planning was barely possible with all of my effort. Because of this problem, I spent more time after being sick, but I should drop some features. Because the feature could be dropped reasonably, it was not a big deal, but this could be a problem if the feature is very essential and important. Additionally, we experience

miscommunication which causes more time to spend on this project, so this is the reason to plan with spare time.

9. Summary

As a result of this project, we managed the project planning and scheduling, and this project perfectly broke our misconception of planning. We faced many software design problems such as misalignment of input and output.

For doing our own project without instruction, we experienced software design and requirement defining, that we cannot do in the assignment. Defining requirements was not very hard, but making a software design based on those requirements is much harder. Because of lack of effort on software design, we experienced many misalignment on the stage of the integration.

After all of these problems, we learned about the practical hardship of the actual project somehow. As a result, we can say that this project was a great opportunity to experience software engineering.

10. Links

Presentation:

https://docs.google.com/presentation/d/1i3Em00uWkUmOltYHTZzAIdgs5c-ExZvHfFYDOzZO_NZO/edit?usp=sharing

Frontend github: <https://github.com/GyuriKimm/CSE416>

Deploy: <https://cse416-sukoco.netlify.app/>