

Team Name:	JET SAT TEAM
Team Members:	EUGENE LIM ZHI JIE
	YEO KAI LIANG, JASPER
	CHANG TZE CHUAN
	RAVI SOUNDHARIYA
	AMITA RAVI
	BANERJEE TANYA

Table Of Contents

1. Project Mission statement:	1
2. Functional Requirements:	1
3. Non-Functional Requirements:	2
4. Data Dictionary:	3
5. UI Mockup:	4
6. Use Case Model:	13
7. Use Case Description:	14
8. Identification of Key Objects	32
9. Stereotype Class Diagram	33
11. Sequence Diagrams	35
12. Initial Dialog Map	39

1. Project Mission statement:

There doesn't seem to be a way for people in Singapore to easily plan activities that advocate health and fitness in their day to day life. JET SAT team aims to develop a website which makes it convenient for people in Singapore to plan healthier lifestyles and promote usage of fitness facilities.

2. Functional Requirements:

System functionality to be performed:

- Website must have an “about us” page which shows the purpose of this website/project.
- Website must have a login/register page for users to access/create their accounts.
- Website must be able to cycle through certain functionalities on the home page using a navigation bar.
- Website will cycle through a list of health related tips every day.
- Users must be able to plan their activities on a calendar embedded on the website.
- Users must be able to locate nearby sports facilities and/or healthier eateries using the map.

Information to be processed:

- The system must display dates in DD/MM/YYYY format.

Interface with other systems:

- The system must be able to connect to data.gov.sg database for spatial view of sportSG Sport Facilities Locations:
 1. SportSG Facilities (<https://data.gov.sg/dataset/sportsg-sport-facilities>)
 2. Gyms (<https://data.gov.sg/dataset/gymssg>)
 3. Parks (<https://data.gov.sg/dataset/parkssg>)
 4. Water Activity Facilities (<https://data.gov.sg/dataset/wateractivitiessg>)
 5. Healthier Eateries (<https://data.gov.sg/dataset/healthier-eateries>)
- The website will have a calendar embedded for the user to plan a schedule. (<https://support.google.com/calendar/answer/41207?hl=en>)

3. Non-Functional Requirements:

Usability (UI/UX):

- Font and color of the planner should be appropriate to improve user experience regardless of user age.
(<https://www.websitebuilderexpert.com/designing-websites/pick-best-font-style-for-website/>)
- 90% of users must be able to locate and use the navigation bar to select content to be displayed on the web page in less than 30 seconds.

Reliability:

- Website must be able to support more than 100(?) users concurrently without system failure.
- After a system reboot, website functionality must be fully restored in less than 3 minutes.

Security:

- Passwords should not be viewable at point of entry or any other time.
- System will log out of the current user's account automatically upon closing the website.

Performance:

- Website navigation bar must be able to cycle through main content under 0.5 seconds.
- Website will fully open/load in less than 5 seconds upon first clicking on the link.

Supportability:

- 90% of users should be able to view the website on their mobile phones without interfacing problems.

4. Data Dictionary:

Term	Definition
User	A user is a person who uses the website to plan and explore fitness activities for their healthy lifestyle journey.
System	A system refers to the PlanFit website application.
Healthier eatery	A healthier dining partner with endorsed items on the menus that meet HPB's Healthier Dining Programme guidelines.
Activity	A physical activity e.g., swimming, running, working out at the gym, that improves a person's health.
Sports facility	An area where you can play a sport e.g., tennis courts, football grounds; or do a beneficial physical activity e.g., gyms and swimming complexes. This also includes parks and water activity facilities.
Plan	A timetable with time slots for every half hour. This will be used to show the user the time, duration and location they have booked. Different activities will be represented in different colors.
Health tips	A set of tips from which one is randomly selected each day and displayed on the main page of the website.
Profile	The user's details like name, age etc.
Reward	Rewards are given in the form of points when the user logs in.

5. UI Mockup:

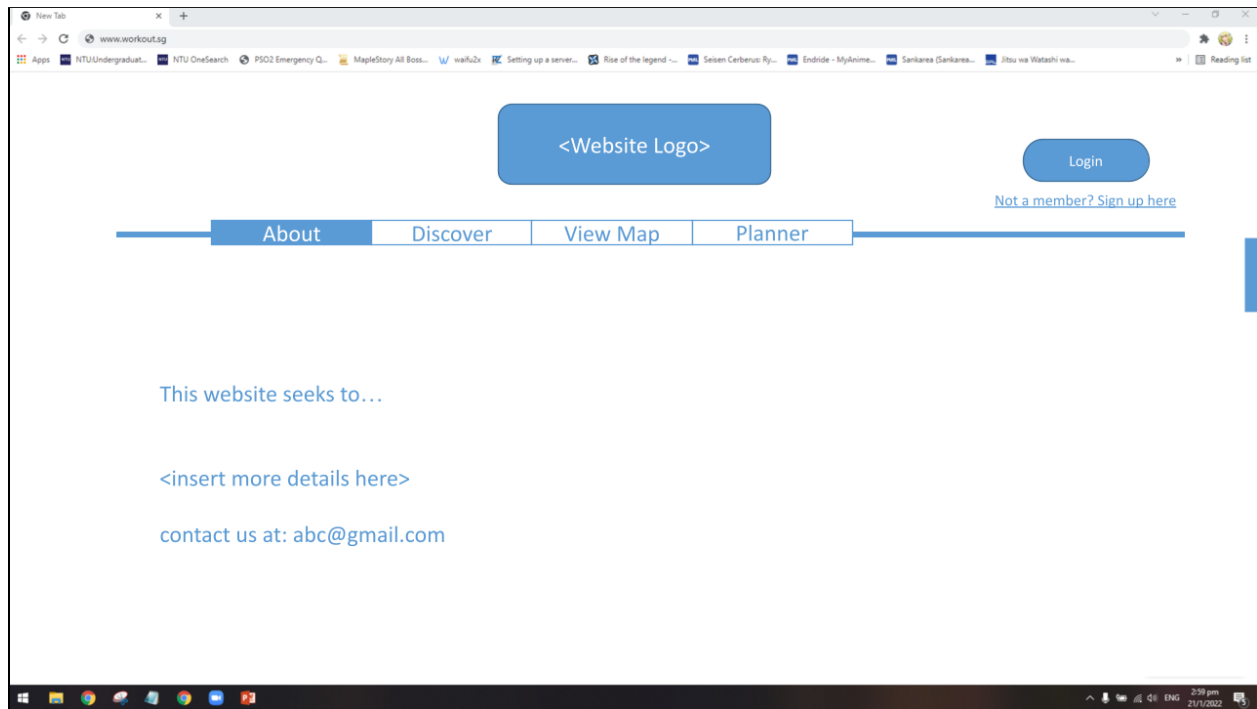


Figure 1: Home Screen

Figure 1 Shows the homepage of the website when a new user enters the website. The About page describes the purpose of the website and the aim of our team when developing this project. The navbar on the website contains several pages which require the user to login first before they may access the content.

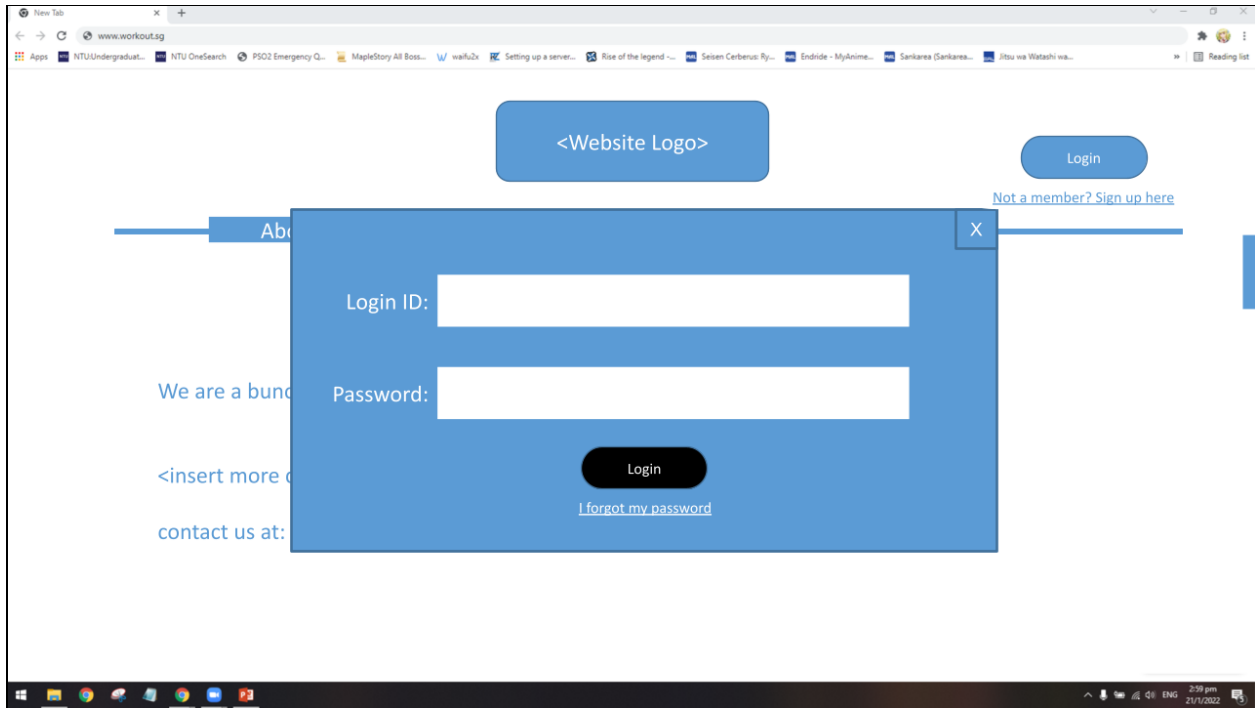


Figure 2a: Login & Register Screens

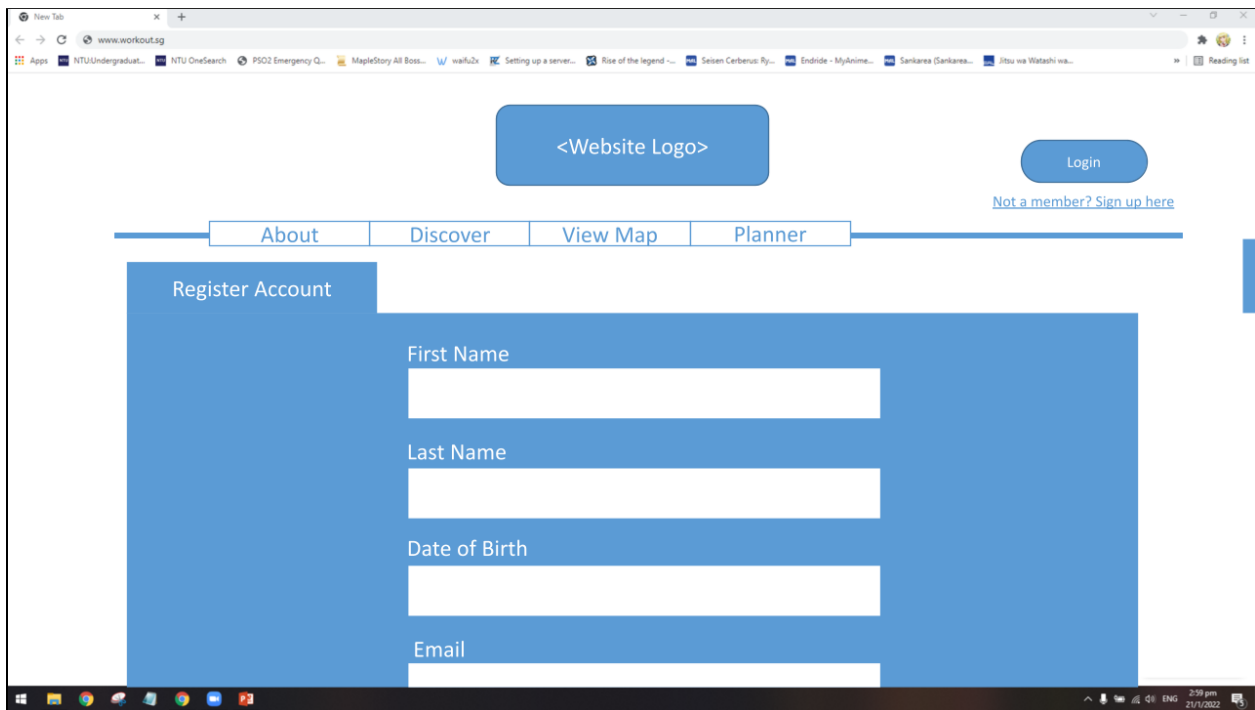


Figure 2b: Login & Register Screens

Figures 2a/2b shows the user interface of the Login and Register page.

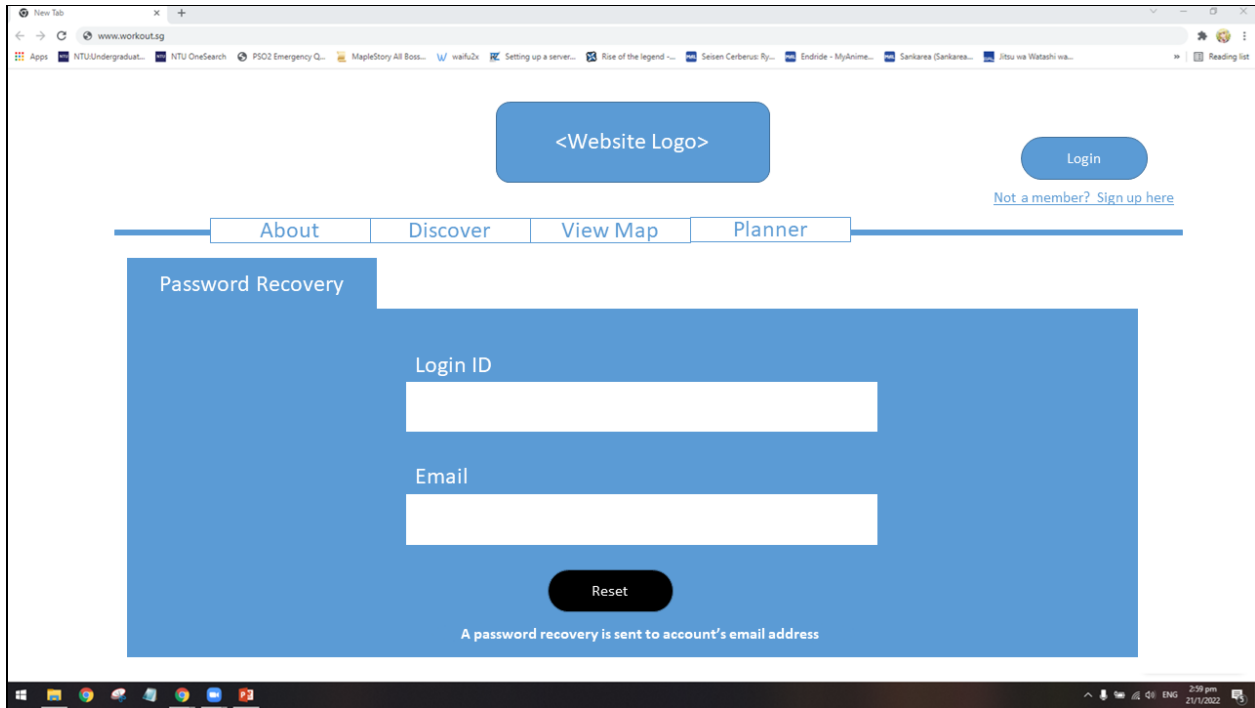


Figure 3: Password Recovery Screen

Figure 3 shows the user interface for the password recovery screen. The user enters this page upon clicking on “I forgot my password” from the Login page. The system sends a password recovery email to the user after the user enters a new password and clicks on the Reset button.

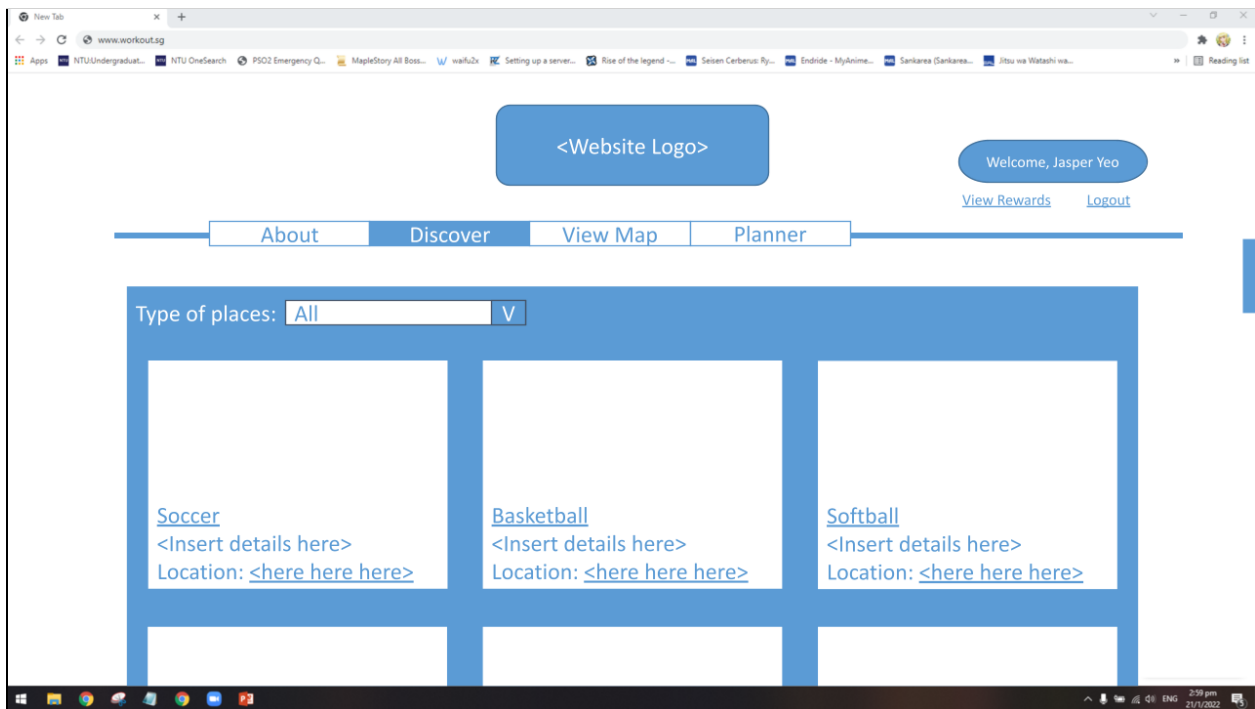


Figure 4a: Discover Screen

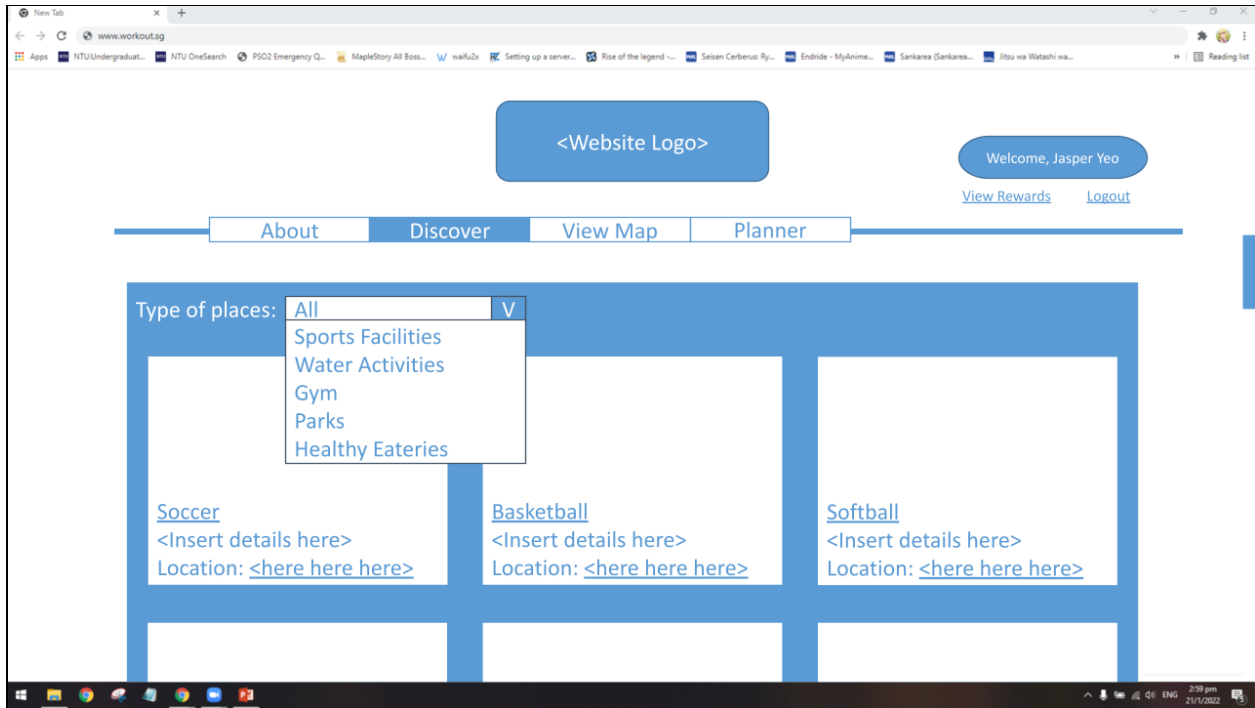


Figure 4b: Discover Screen

Figure 4a is a Discover screen which allows users to view the activities being offered in the different facilities found in the “Explore” tab. It can be narrowed down the dropdown list as seen in Figure 4b.

When a user is interested in an activity, they can click on its link which will bring them to the geographical view of the location in the “View map” page.

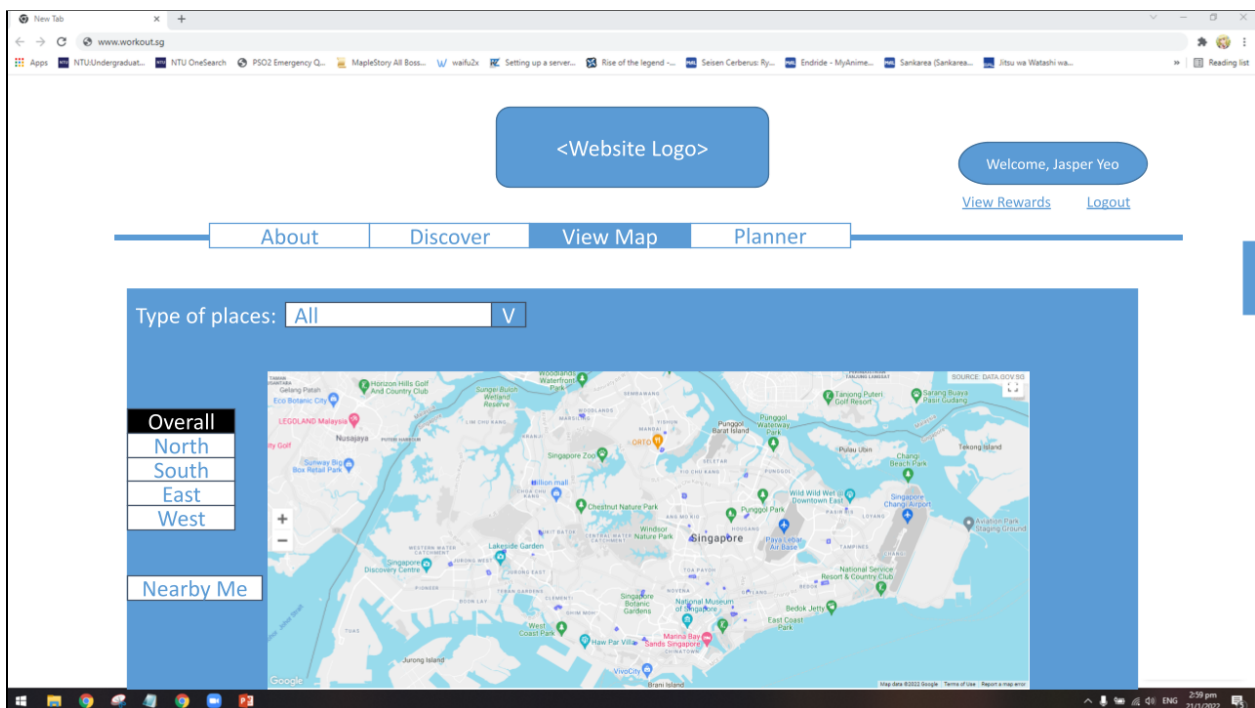


Figure 5a: Explore Screen

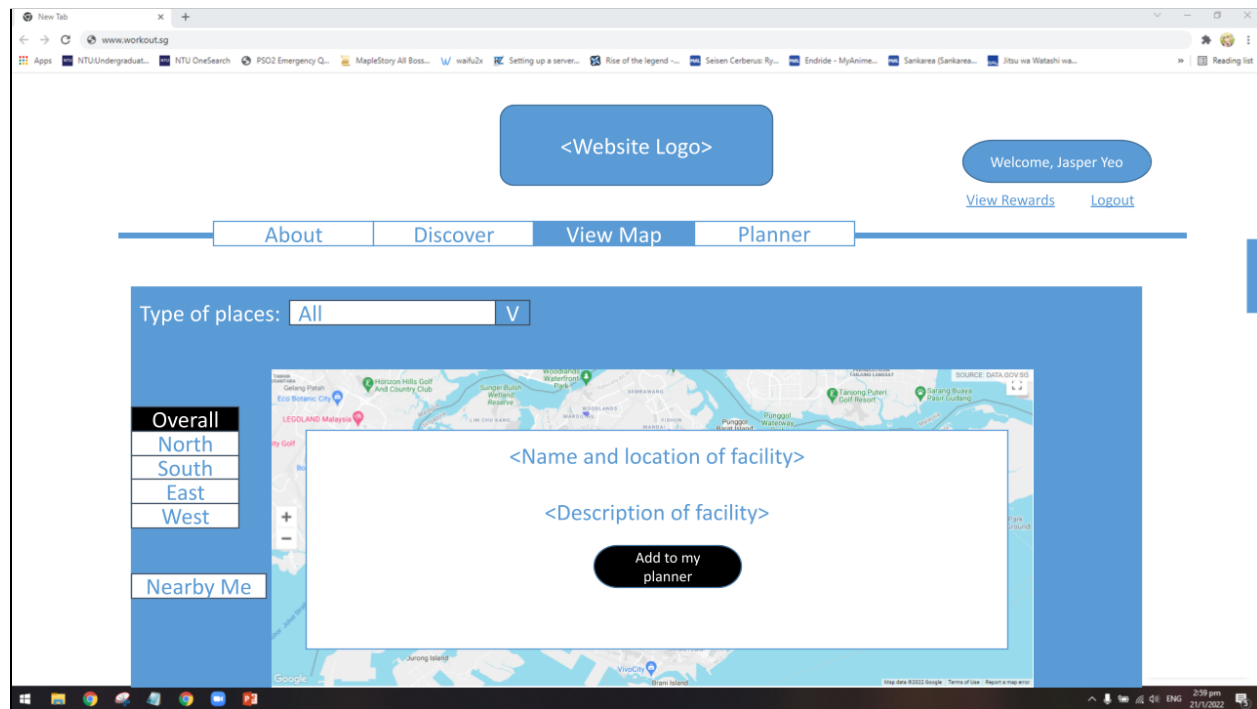


Figure 5b: Explore Screen

Figure 5a shows the user interface for users to view the geographical location of Sport facilities, Healthy Eateries, Gym, Parks and water activities around Singapore.

The filter above the map can be used to filter the activities shown on the map based on the type of facility. Furthermore, the geographical map can be magnified with the North/South/East/West tabs on the left.

Upon clicking on a location on the map, a user can decide to add an activity into their planner as shown in Figure 5b.

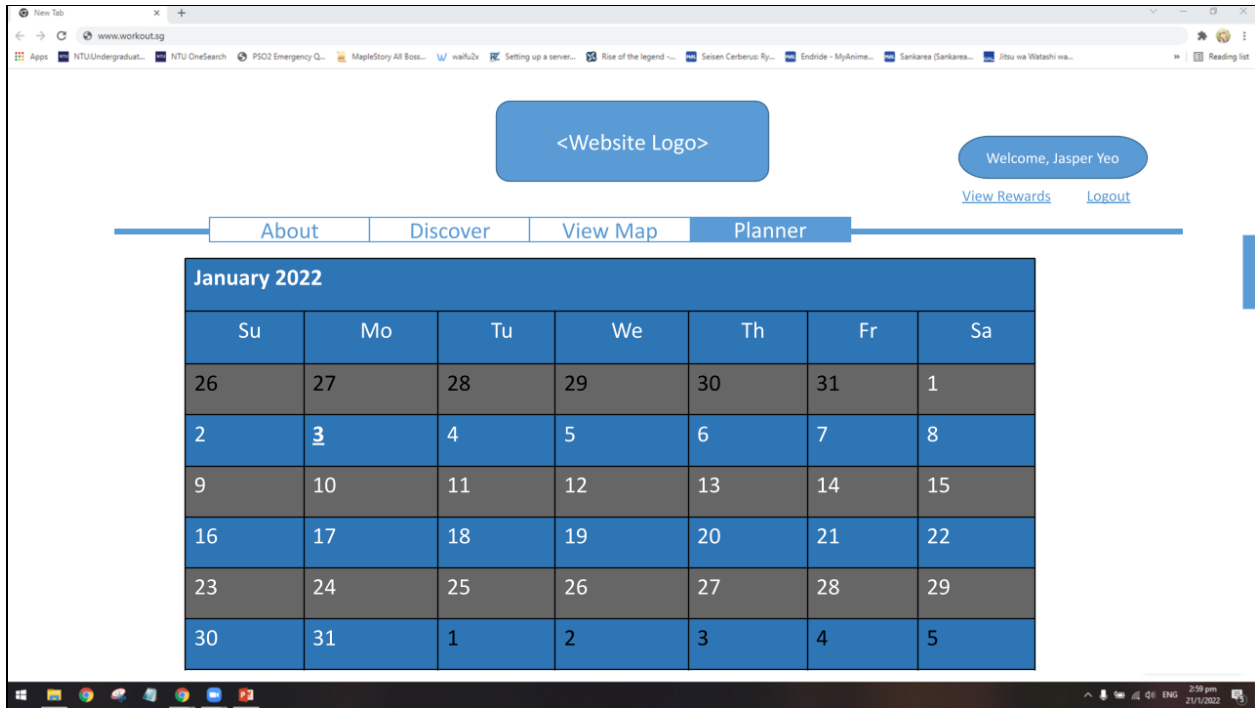


Figure 6a: Planner Screen (View Schedule)

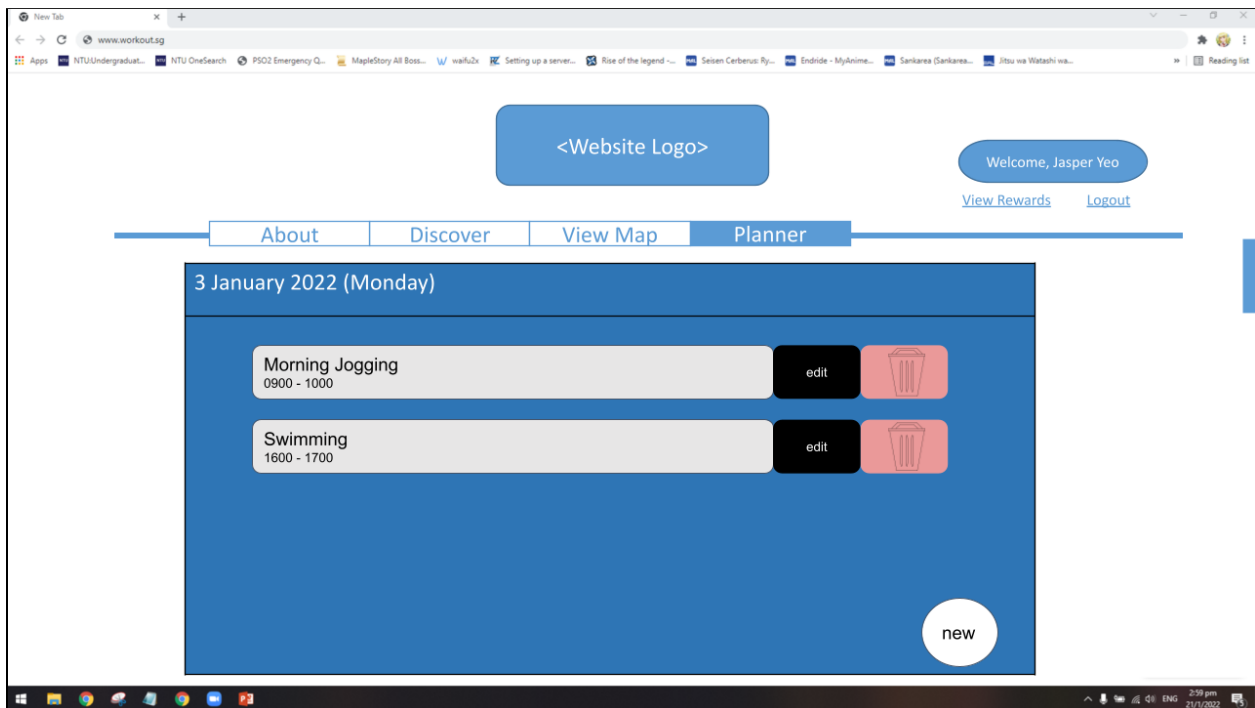
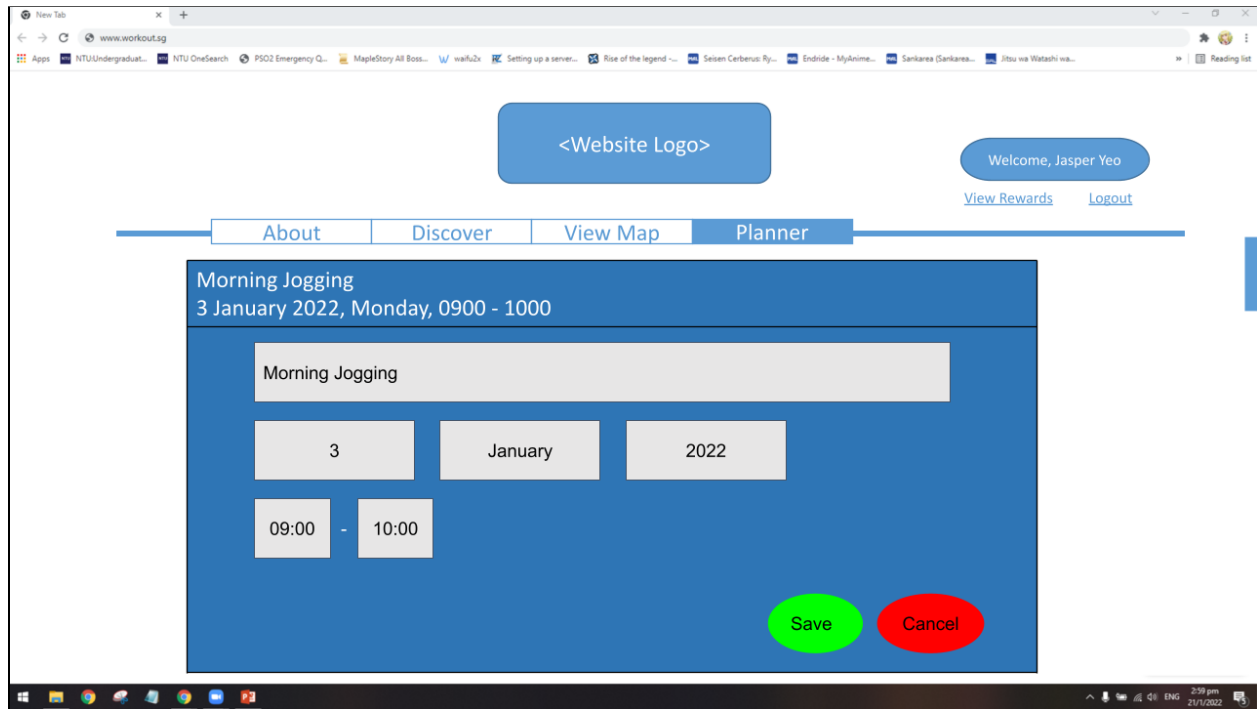


Figure 6b: Planner Screen (View Activities)

Figure 6a shows the user interface for the activity planner. It is in the form of a monthly calendar, and the dates will be bolded and underlined to indicate that there are activities planned for that day.

Upon clicking a cell in the planner, a new tab can be seen with the activities planned for that day(Figure 6b). The user can add new activities with the “+” button at the bottom right of the screen.

Furthermore, the user can edit or delete a planned activity with the black or red button respectively, found on each activity.



The screenshot shows a web browser window with the URL www.workout.sg. The page has a navigation bar with links: About, Discover, View Map, and Planner (which is active). A blue header bar contains the text "<Website Logo>" and a welcome message "Welcome, Jasper Yeo" with links for "View Rewards" and "Logout". Below the navigation bar, a modal form titled "Morning Jogging" is displayed. The form shows the date "3 January 2022, Monday, 0900 - 1000". Inside the form, there are input fields for the activity name "Morning Jogging", the date "3 January 2022", and the time "09:00 - 10:00". At the bottom right of the form are two buttons: a green "Save" button and a red "Cancel" button. The browser's taskbar at the bottom shows the time as 2:59 pm on 21/1/2022.

Figure 7: Plan new activity (Add Activity)

Figure 7 is the user interface when a user creates a new activity to add into their planner. The user inputs the activity title, date and time. The user can save the new record which will be added into their planner or cancel the creation of new activity.

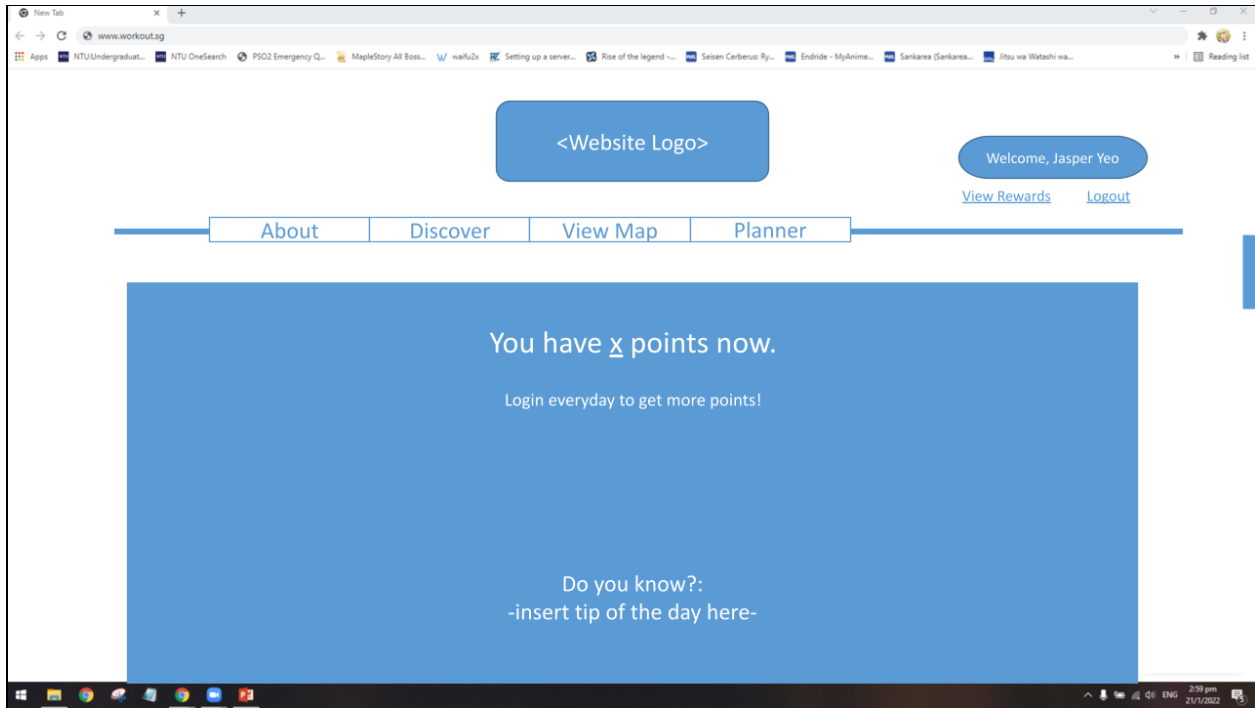


Figure 8: Rewards Screen

Figure 8 is the user interface which shows how many reward points a user has currently. 1 reward point will be awarded everyday when a user login into the website. At the bottom of this tab, a healthy lifestyle tip will be displayed and will change everyday.

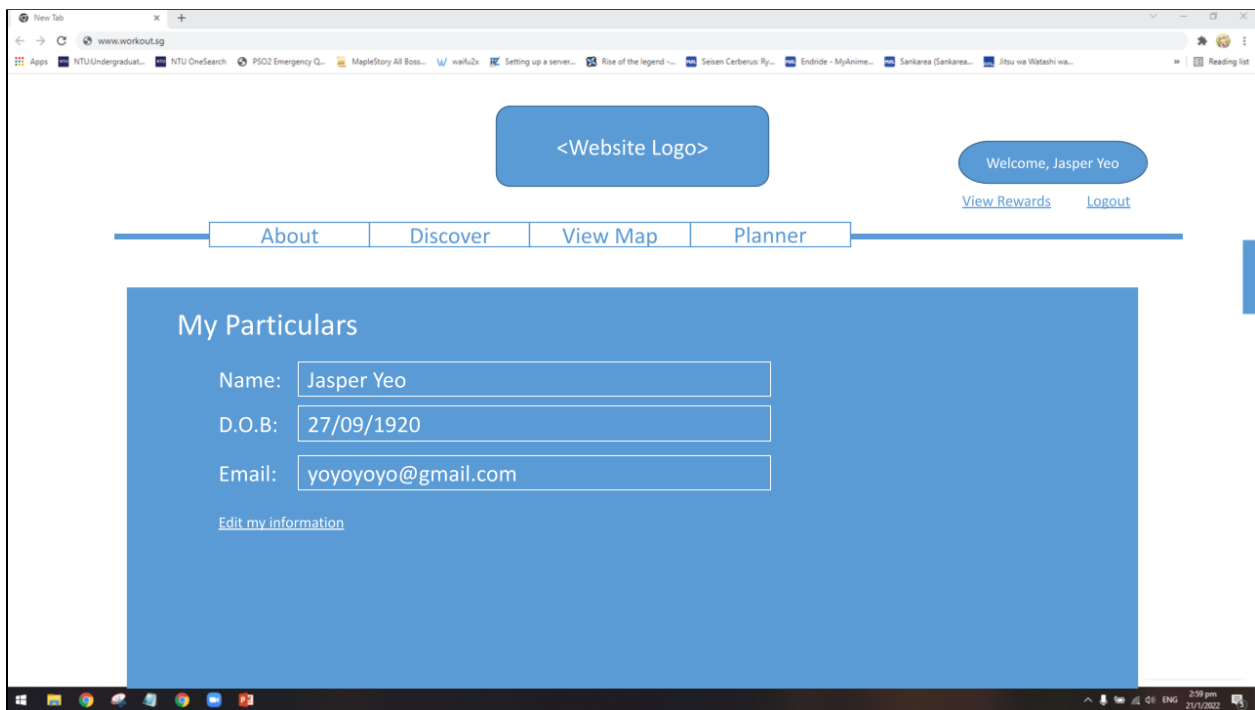


Figure 9a: Profile Screen

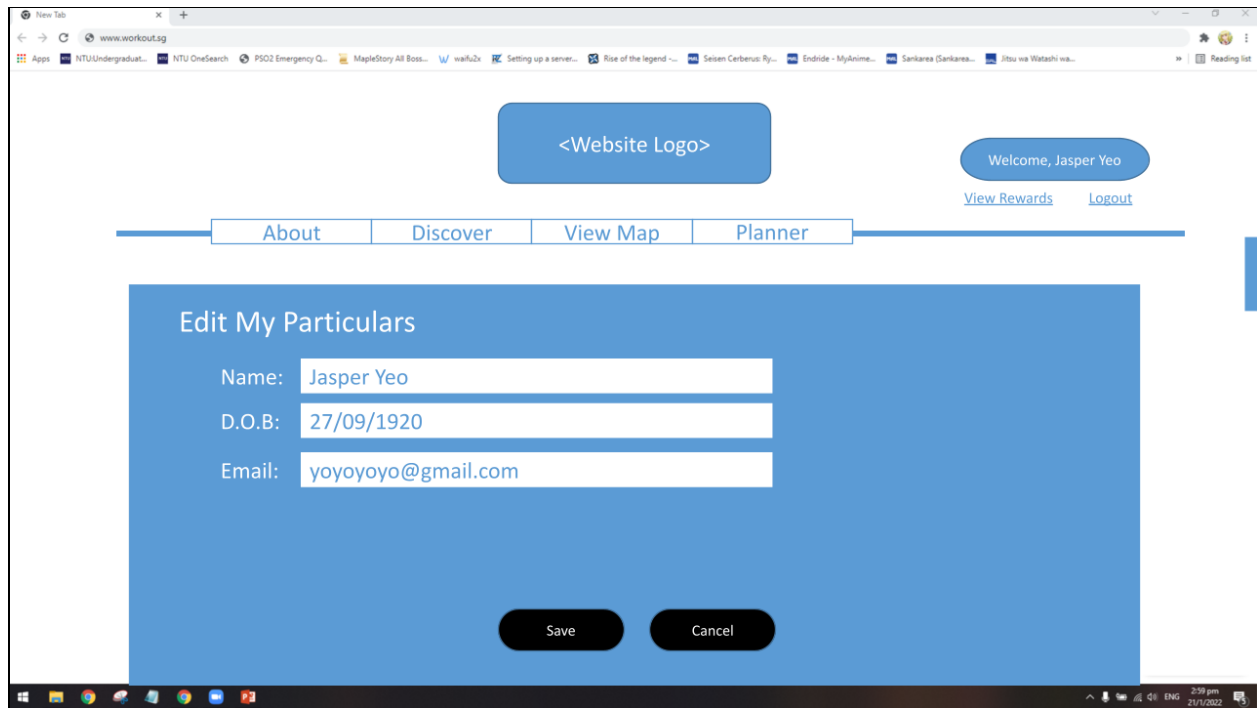
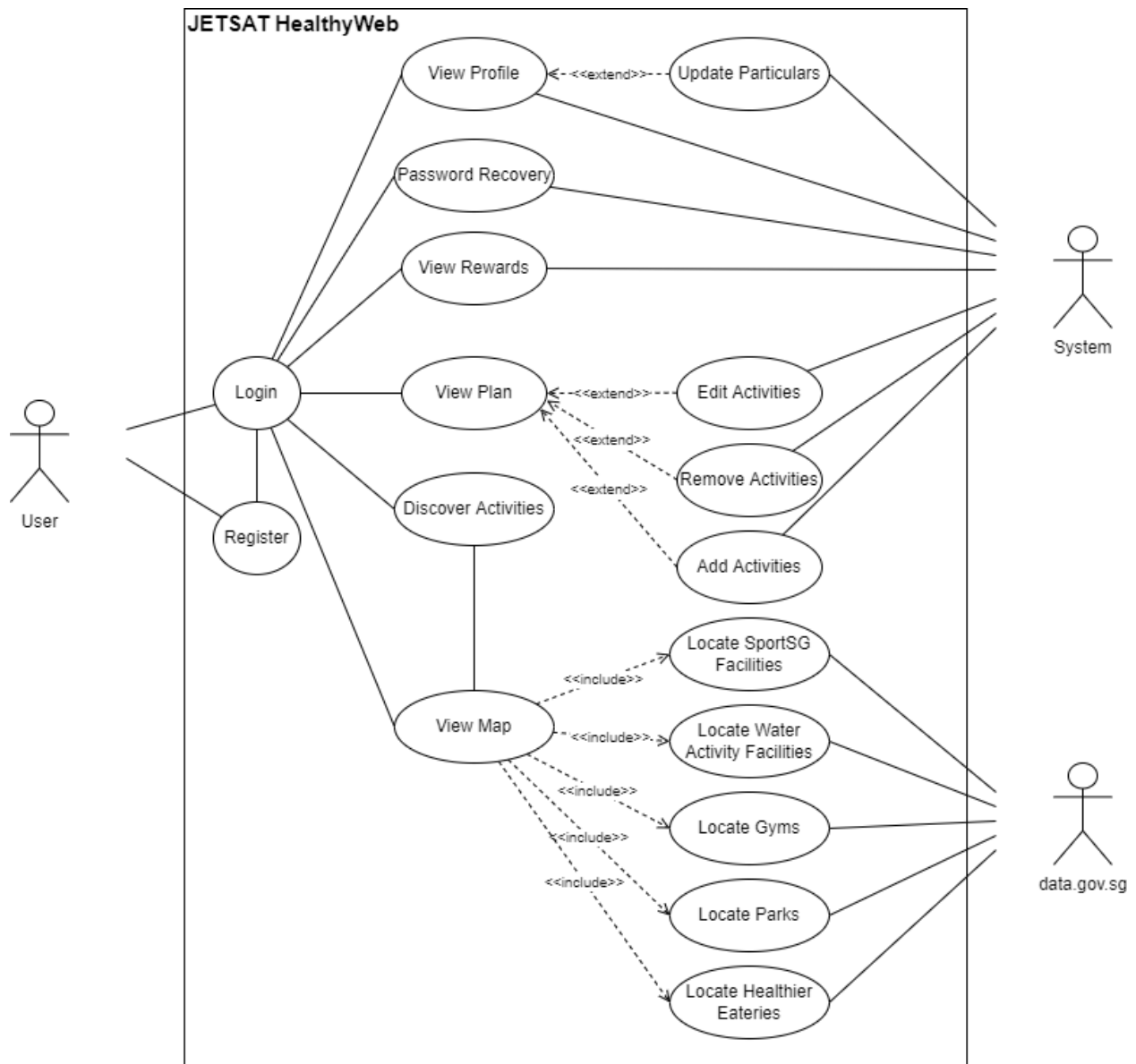


Figure 9b: Profile Screen

Figure 9a/9b depicts the page on the website that displays the profile of a user. It contains certain particulars of the users that were input at the time of account creation. From here, the user has an option to edit his information, allowing him to change his particulars, and login details such as his email.

6. Use Case Model:



7. Use Case Description:

Use Case ID:	U0001		
Use Case Name:	Register		
Create By:	Chang Tze Chuan	Last Updated By:	Eugene Lim
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	User registers for an account.
Preconditions:	1. User account must not already exist in the database.
Postconditions:	1. User account is created in the database.
Priority:	-
Frequency of Use:	1 - 2 times per lifetime.
Flow of Events:	<ol style="list-style-type: none">1. User clicks the Sign Up button.2. User keys in a username and password to create an account.3. User clicks the Register button.4. System validates that the username is unique, password has 1 uppercase, 1 lowercase character and is 8 characters long.5. System creates the account in the database.
Alternative Flows:	<p>AF-S3: Username already exists.</p> <ol style="list-style-type: none">1. If a username already exists, the website displays the message "Username already exists" on the page.2. Return to primary flow step 2. <p>AF-S4: Password does not match requirements.</p> <ol style="list-style-type: none">1. If a password does not match the requirements, the website displays the message "Your password does not meet the requirements" on the page.2. Return to primary flow step 2.
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0002		
Use Case Name:	Log In		
Create By:	Ravi Soundhariya	Last Updated By:	Eugene Lim
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	User logs into his/her account.
Preconditions:	1. User account must already exist in the database.
Postconditions:	1. User is able to log in successfully.
Priority:	-
Frequency of Use:	0 - 5 times per day.
Flow of Events:	<ol style="list-style-type: none"> 1. User clicks the Login button. 2. User keys in username and password. 3. User clicks the Login button. 4. System validates that the account exists in the database. 5. System authenticates the user to login successfully.
Alternative Flows:	<p>AF-S3: System detects empty username or password fields.</p> <ol style="list-style-type: none"> 1. Website displays an error message "Username or password fields cannot be empty." on the page. 2. Return to primary flow Step 2. <p>AF-S3: User enters invalid account username or password.</p> <ol style="list-style-type: none"> 1. Website displays an error message "Invalid username or password" on the page. 2. Return to primary flow Step 2.
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0003		
Use Case Name:	Password Recovery		
Create By:	Ravi Soundharya	Last Updated By:	Eugene Lim
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	Recovery of password linked to the username using email account.
Preconditions:	1. User is on the Login page.
Postconditions:	1. User is able to change their password to a new one. 2. User is able to log into the website using the username and the new password.
Priority:	-
Frequency of Use:	1 - 2 times per account lifetime.
Flow of Events:	<ol style="list-style-type: none"> 1. User enters their LoginID and registered email account to request for a password recovery email. 2. User clicks on the Reset button. 3. System sends a password recovery email to the registered email account. 4. Website displays a message "A recovery email has been sent to your email!" 5. User clicks on the link provided in the password recovery email. 6. User enters a new password and re-enters the new password. 7. User clicks on the Reset button. 8. System updates the registered account's new password.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0004		
Use Case Name:	View Rewards		
Create By:	Tanya Banerjee	Last Updated By:	Chang Tze Chuan
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	View rewards - The user can view how many points they have collected so far.
Preconditions:	1. The user must be logged in.
Postconditions:	1. The user is able to view his/her reward points.
Priority:	-
Frequency of Use:	1 - 2 times per day.
Flow of Events:	1. User clicks on the 'View rewards' button. 2. The user can see his/her current amount of reward points.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0005		
Use Case Name:	View Profile		
Create By:	Eugene Lim	Last Updated By:	Eugene Lim
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	Allows the user to view their profile details.
Preconditions:	1. The user must already be logged into an account.
Postconditions:	1. System successfully displays user profile.
Priority:	-
Frequency of Use:	1 - 2 times per day.
Flow of Events:	<ol style="list-style-type: none"> 1. User clicks Profile Button. 2. System retrieves the user's profile information. 3. Website displays the profile page.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0006		
Use Case Name:	Update Particulars		
Create By:	Eugene Lim	Last Updated By:	Eugene Lim
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	Allows the user to change their date-of-birth, username and account email.
Preconditions:	<ol style="list-style-type: none"> 1. The user must already be logged into an account. 2. The user must be at the Profile page.
Postconditions:	<ol style="list-style-type: none"> 1. The system successfully updates and saves the user's particulars.
Priority:	-
Frequency of Use:	1 - 3 times per account lifetime.
Flow of Events:	<ol style="list-style-type: none"> 1. The user clicks on the Edit my information button. 2. The user can edit their date-of-birth, username and account email fields. 3. The user clicks on the Save button. 4. The system saves changes to the user's particulars to the database. 5. The website returns to the user's profile page.
Alternative Flows:	AF-S1: User exits the Edit page without editing particulars. <ol style="list-style-type: none"> 1. The user clicks on the Cancel button. 2. Return to primary flow Step 5.
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0007		
Use Case Name:	View Plan		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user plans their activities here
Preconditions:	1. The user must be logged in.
Postconditions:	1. User can view his/her current planned activities.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	1. The user selects the "View Plan" button. 2. The user can see his/her planned activities.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0008		
Use Case Name:	View Map		
Create By:	Yeo Kai Liang, Jasper	Last Updated By:	Chang Tze Chuan
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can view locations of healthy eateries, sport facilities, water facilities, gyms and parks. He/she can also choose to add activities here.
Preconditions:	1. User must be logged in
Postconditions:	1. The user is able to have a geographic view of sports and water activity facilities, gyms, parks, and healthy eateries. 2. The user is able to add activities that he/she is interested in.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	<ol style="list-style-type: none"> 1. The user selects the "View Map" button. 2. System will display a geographic view of sports and water activity facilities, healthy eateries, parks and gyms in all of Singapore. 3. The user selects "North"/"South"/"East"/"West"/"Nearby Me" to magnify the geographic view. 4. System will display a magnified view of location. 5. Once the user has decided, he/she can choose to add activities at the chosen facility or fitness zones.
Alternative Flows:	AF-S2: User selects "Locate SportSG Facilities/Locate Water Activity Facilities/Locate Parks/Locate Gyms/Locate Healthier Eateries" button <ol style="list-style-type: none"> 1. System will display geographic view of the chosen facility or fitness zone above in all of Singapore 2. Return to primary flow step 3.
Exceptions:	-
Includes:	<ol style="list-style-type: none"> 1. Add Activities 2. Locate SportSG Facilities 3. Locate Water Activity Facilities 4. Locate Gyms 5. Locate Parks 6. Locate Healthier Eateries
Special Requirements:	-
Assumptions:	-

Notes and Issues:	-
-------------------	---

Use Case ID:	U0009		
Use Case Name:	Add Activities		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can add activities that he/she is interested in after viewing the list of activities shown and locations of the facilities and fitness zones.
Preconditions:	1. User must be logged in.
Postconditions:	1. Activity is successfully added and updated to the user's plan.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	<ol style="list-style-type: none"> 1. The user selects the "Add Activities" button and adds the activity that he/she wants to participate in. 2. The website returns to the "Discover Activities" page.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0010		
Use Case Name:	Locate SportSG Facilities		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can view the locations of all SportSG facilities around Singapore.
Preconditions:	1. User must be logged in.
Postconditions:	1. The user is able to have a geographic view of all SportSG facilities.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	1. The user selects the "Locate SportSG Facilities" button and a geographical view of all SportSG facilities will be shown.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0011		
Use Case Name:	Locate Water Activity Facilities		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can view the locations of all water activity facilities around Singapore.
Preconditions:	1. User must be logged in.
Postconditions:	1. The user is able to have a geographic view of all water activity facilities.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	1. The user selects the "Locate Water Activity Facilities" button and a geographical view of all water activity facilities will be shown.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0012		
Use Case Name:	Locate Gyms		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can view the locations of gyms around Singapore. .
Preconditions:	1. User must be logged in.
Postconditions:	1. The user is able to have a geographic view of all gyms.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	1. The user selects the "Locate Gyms" button and a geographical view of all gyms will be shown.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0013		
Use Case Name:	Locate Parks		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can view the locations of parks around Singapore. .
Preconditions:	1. User must be logged in.
Postconditions:	1. The user is able to have a geographic view of all parks.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	1. The user selects the "Locate Parks" button and a geographical view of all parks will be shown.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0014		
Use Case Name:	Locate Healthier Eateries		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can view the locations of healthier eateries around Singapore.
Preconditions:	1. User must be logged in.
Postconditions:	1. The user is able to have a geographic view of all healthier eateries.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	1. The user selects the "Locate Healthier Eateries" button and a geographical view of all healthier eateries will be shown.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0015		
Use Case Name:	Discover Activities		
Create By:	Yeo Kai Liang, Jasper	Last Updated By:	Chang Tze Chuan
Date Created:	28/01/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can choose to edit, remove or add activities here.
Preconditions:	1. User must be logged in
Postconditions:	1. Any activity that is edited, removed or added will be updated to the user's plan.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	<ol style="list-style-type: none"> 1. The user selects the "Discover Activities" button 2. System will display many different kind of activities that can be participated in sports or water facilities and fitness zones. 3. The user can choose to select "Edit Activities"/"Remove Activities"/"Add Activities" based on his/her plans. 4. After an activity is edited, removed or added, the website returns to the "Discover Activities" page.
Alternative Flows:	-
Exceptions:	-
Includes:	<ol style="list-style-type: none"> 1. Edit Activities 2. Remove Activities 3. Add Activities
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0016		
Use Case Name:	Edit Activities		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can edit activities that he/she is already participating in.
Preconditions:	1. User must be logged in.
Postconditions:	1. Activity is successfully updated to the user's plan.
Priority:	-
Frequency of Use:	1 - 3 times per day.
Flow of Events:	<ol style="list-style-type: none"> 1. The user selects the "Edit Activities" button and he/she can modify any activities that are added. 2. The website returns to the "Discover Activities" page.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

Use Case ID:	U0017		
Use Case Name:	Remove Activities		
Create By:	Chang Tze Chuan	Last Updated By:	Chang Tze Chuan
Date Created:	08/02/2022	Date Last Updated:	08/02/2022

Actor:	User
Description:	The user can remove activities that he/she is already participating in.
Preconditions:	2. User must be logged in.
Postconditions:	2. Activity is successfully added and updated to the user's plan.
Priority:	-
Frequency of Use:	1 - 2 times per day.
Flow of Events:	<ol style="list-style-type: none"> 1. The user selects the "Remove Activities" button and he/she can remove any activities that are added. 2. The website returns to the "Discover Activities" page.
Alternative Flows:	-
Exceptions:	-
Includes:	-
Special Requirements:	-
Assumptions:	-
Notes and Issues:	-

8. Identification of Key Objects

Upon further analysis of the use-case descriptions, and each term in the data dictionary, these are the key boundary, control and entity objects that have been identified. These key objects will be used in the Stereotype class diagram, and Sequence diagrams later.

Boundary Objects:

1. Script
2. RegUI
3. LoginUI
4. ProfileUI
5. MapUI

Control Objects:

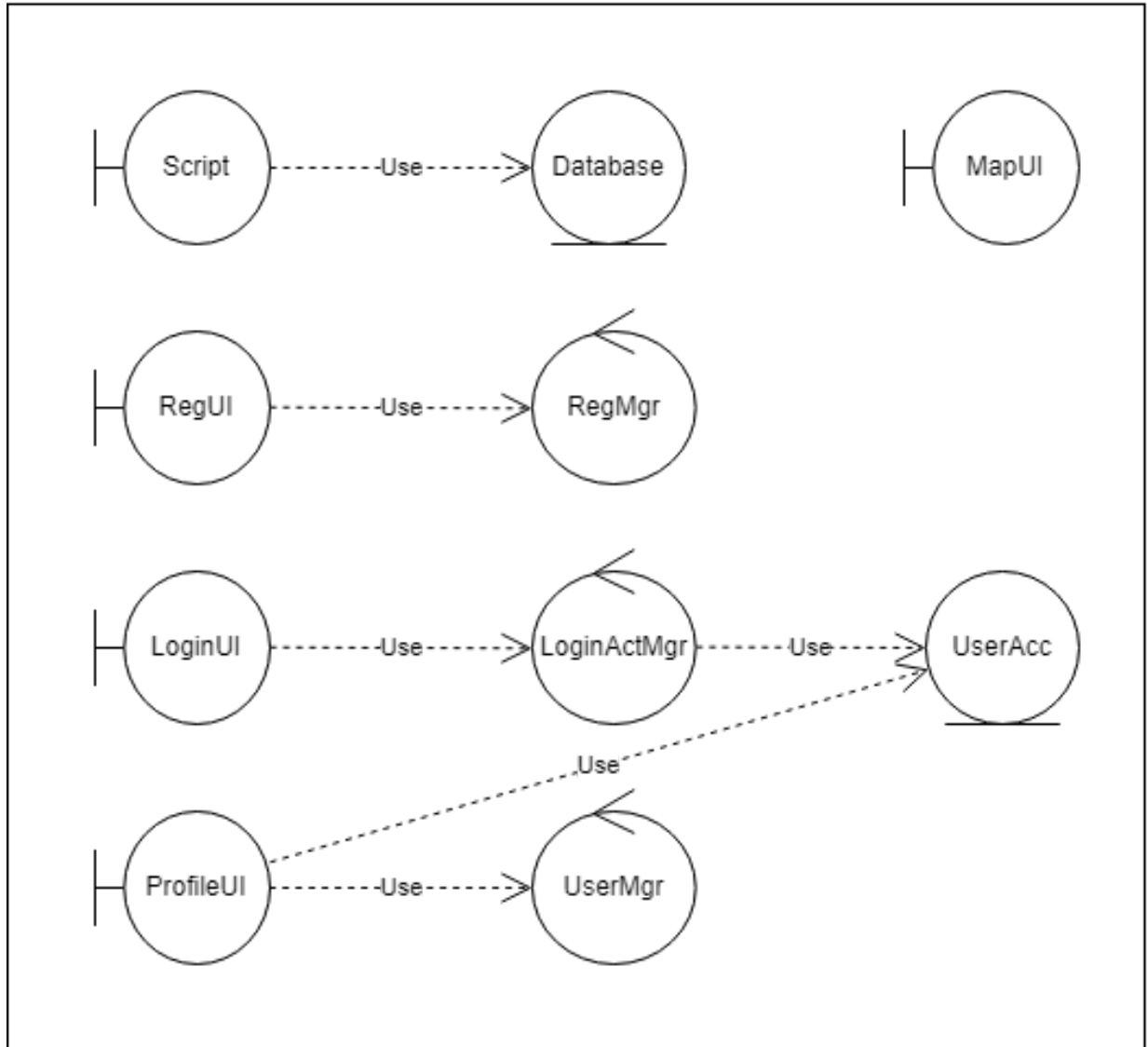
1. RegMgr
2. LoginActMgr
3. UserMgr

Entity Objects:

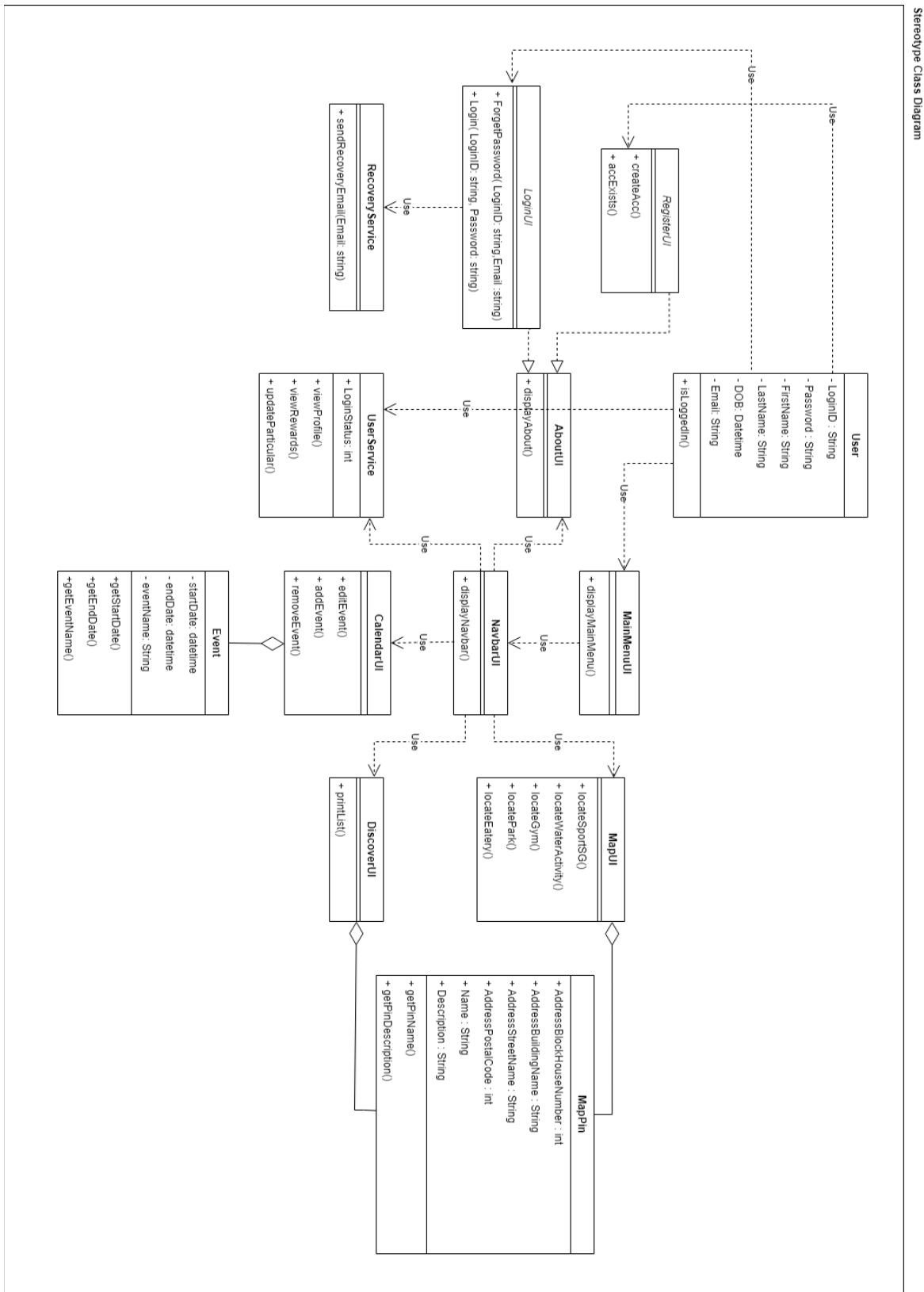
1. Database
2. UserAcc

9. Stereotype Class Diagram

Stereotype Class Diagram



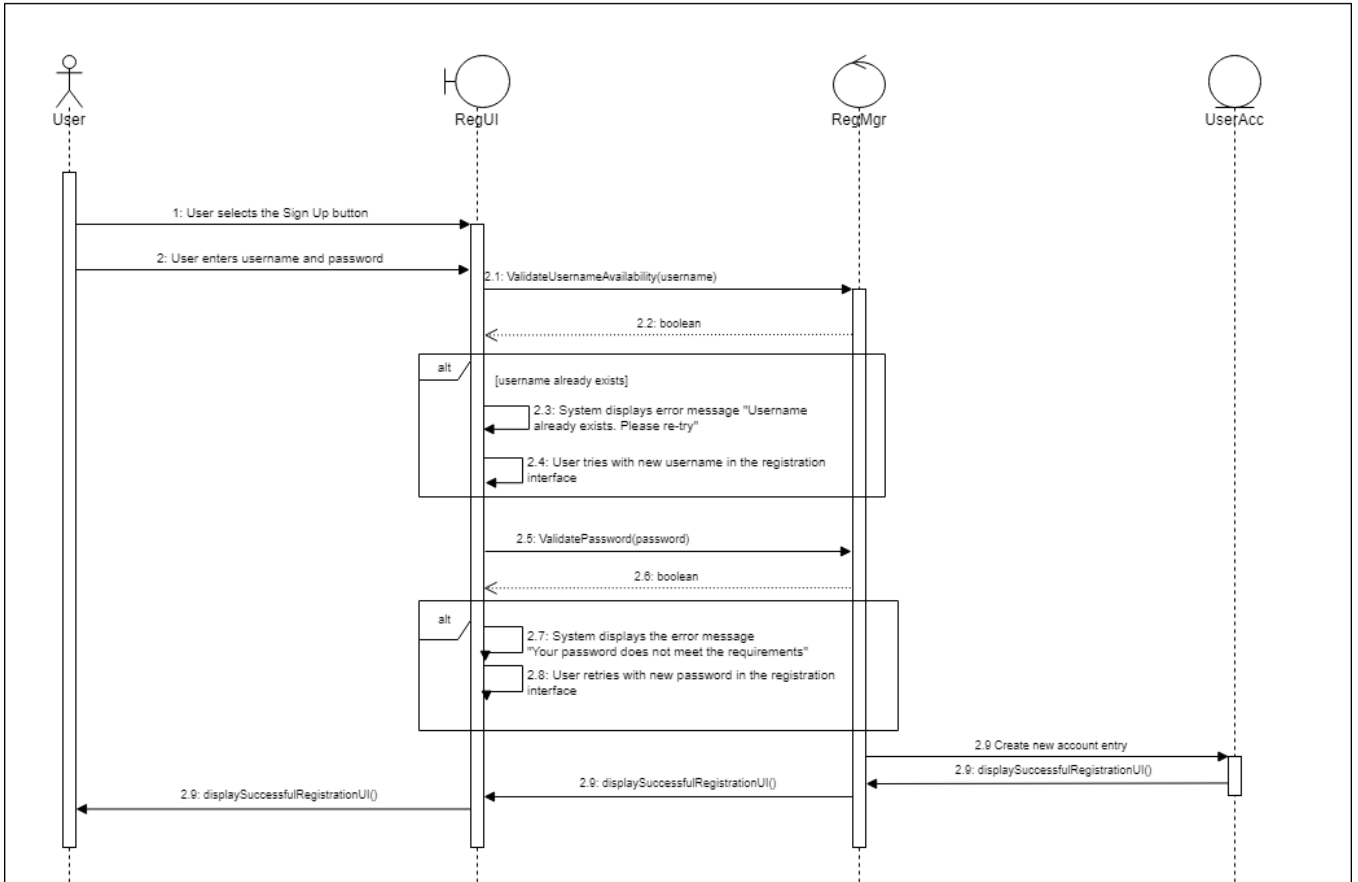
10. UML Class Diagram



11. Sequence Diagrams

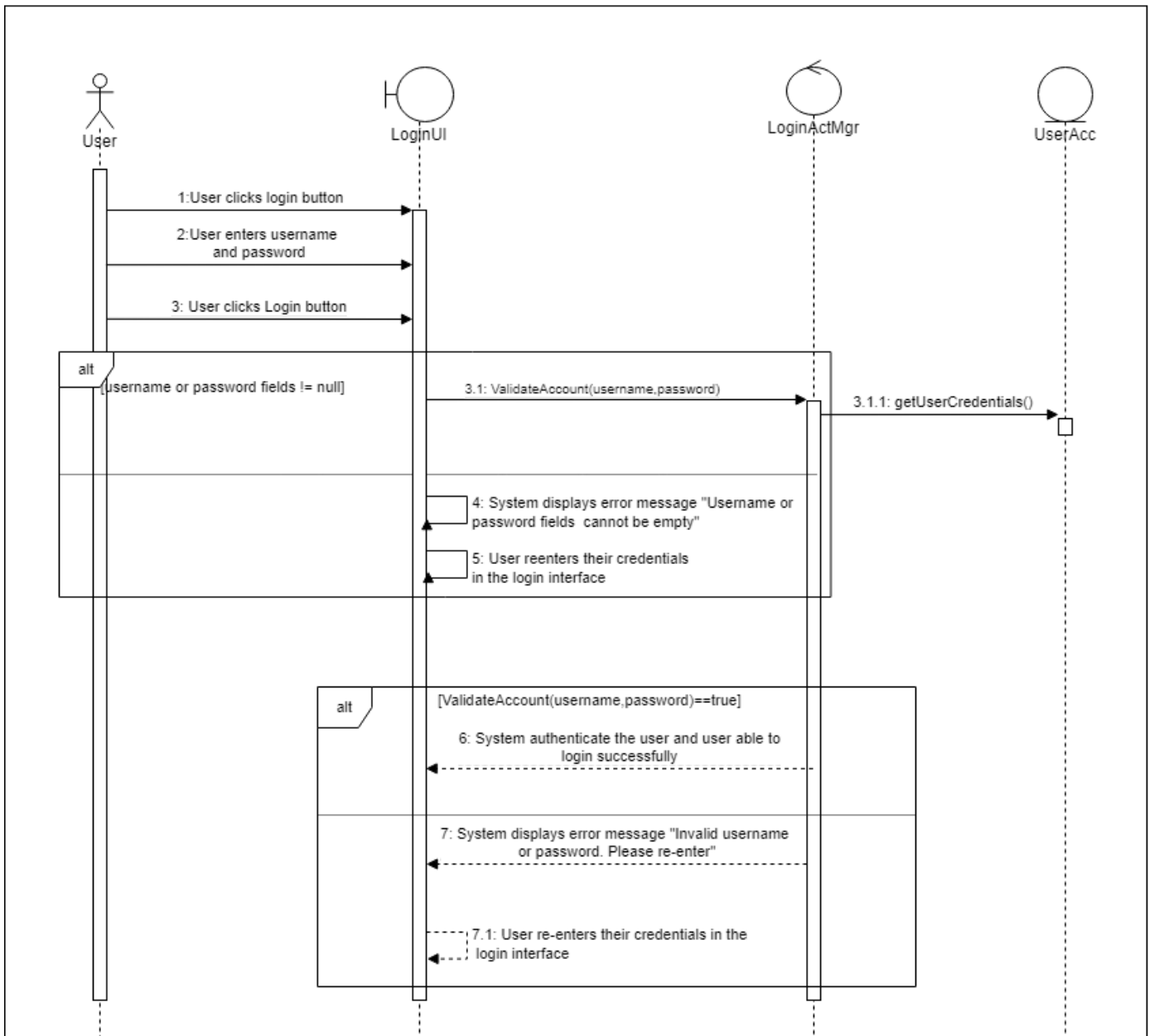
1. New Account

Sequence Diagram - New Account



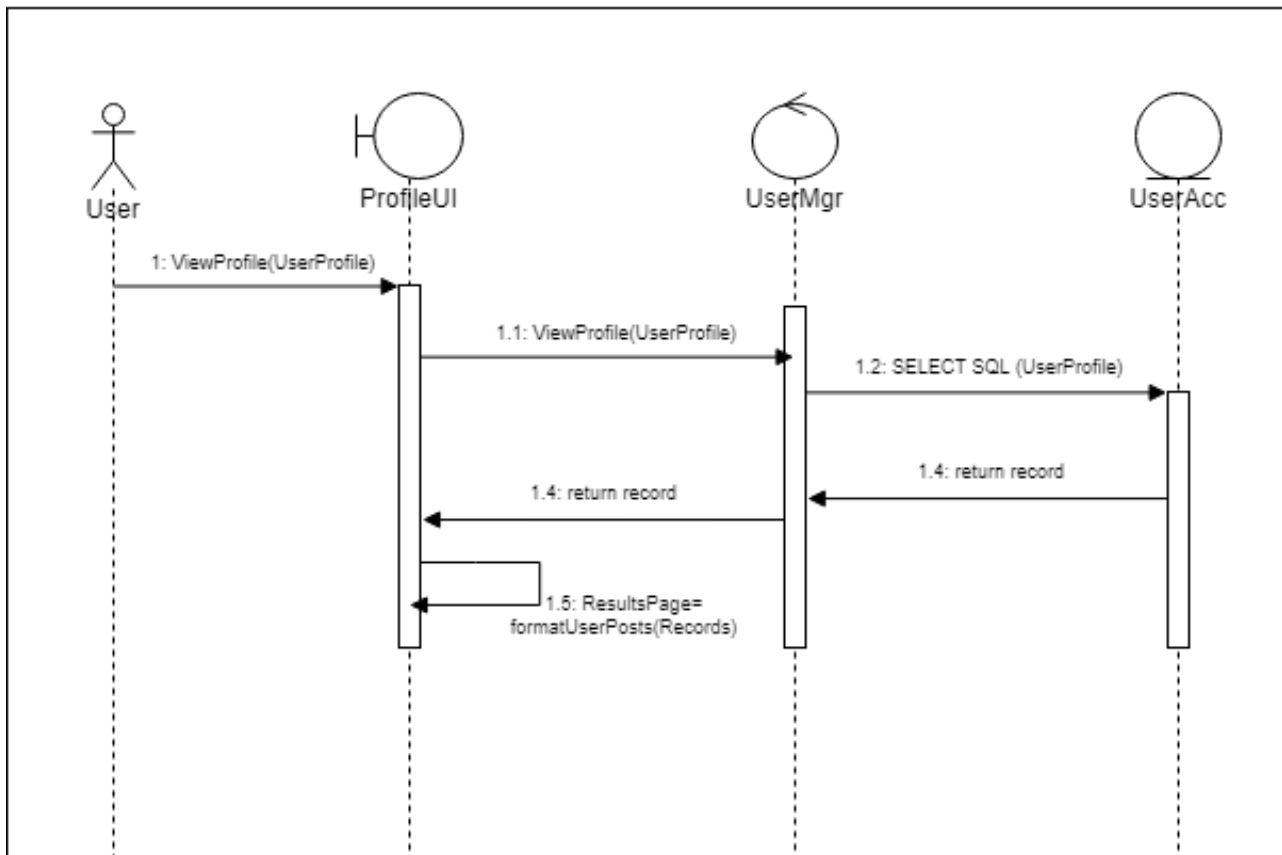
2. Login Credential

Sequence Diagram - Login Credential



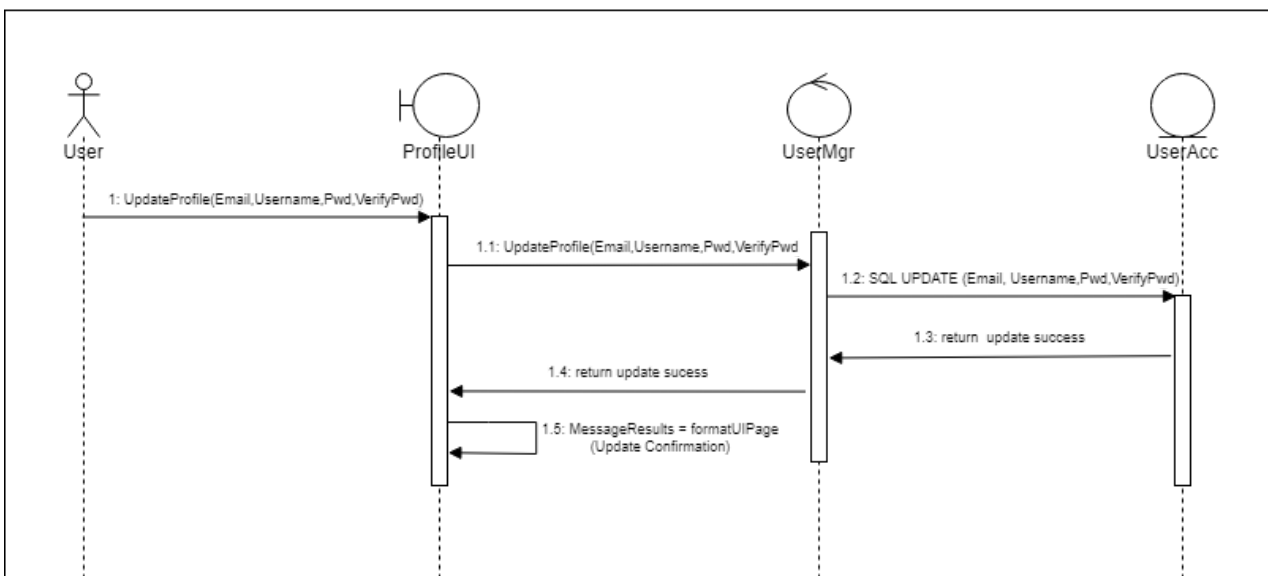
3. View Profile

Sequence Diagram - ViewProfile



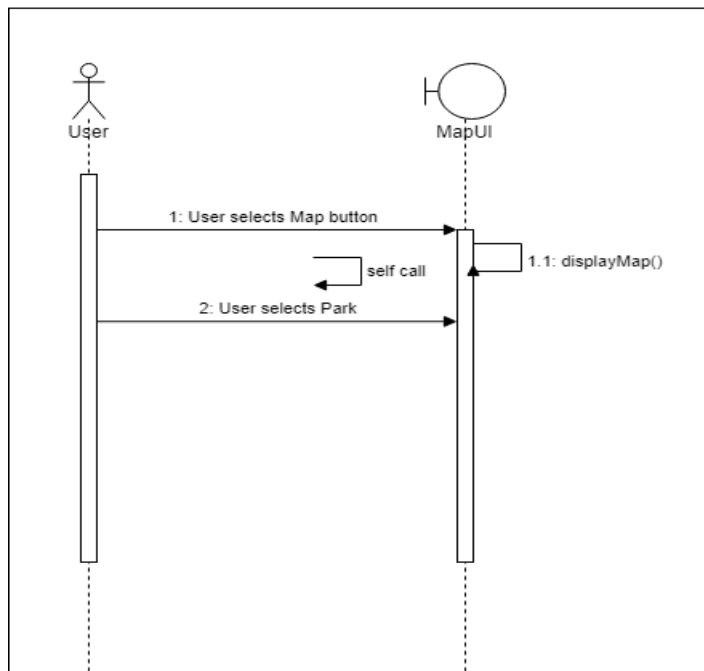
4. Update Profile

Sequence Diagram - UpdateProfile



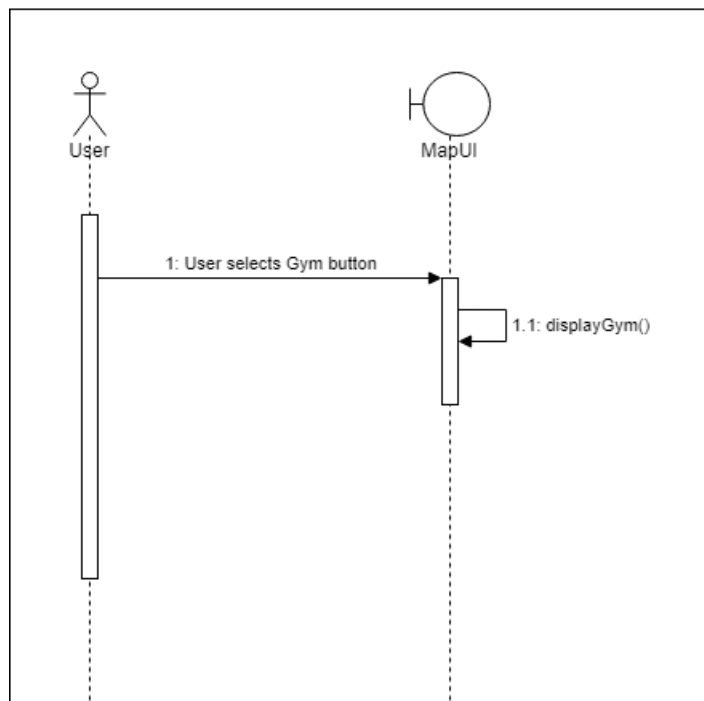
5. View Map

Sequence Diagram - View Map



6. Locate Gym

Sequence Diagram - Locate Gym



12. Initial Dialog Map

