

SmartBite

Part A: Business

Purpose and Problems Addressed:

The awareness and need to maintain a healthy lifestyle has significantly increased in recent times. Over [sixty-six](#) percent of Australians are overweight and [1 in 2](#) Australians do not meet the recommended physical activity guidelines. Some reasons as to why people do not exercise include the lack of: comfort and convenience, knowledge, motivation, facilities and equipment. However, with the rapid increase of people using technology, applications that encourage physical activity and healthier eating could prove beneficial in promoting healthy living.

Existing applications such as [My FitnessPal](#), [Daily Burn](#), and [HappyScale](#) include insightful features to:

- [Manage a food diary](#): The user is able to log in their food intake and calories, as well as receive a nutritional breakdown of each meal.
- [Log physical activity](#): The user can enter in data on the type of exercise they performed alongside the duration.
- [Set up meal reminders](#): Users are able to set up reminders that would notify them of when their next meal is.
- [Suggest relevant workouts and recipes](#): The workouts can be sorted by type and different categories such as beginner, intermediate and advanced. The recipes can be sorted by time taken to prepare and dietary requirements such as vegan, vegetarian, gluten-free etc.
- [Provide an overview of goals achieved and insightful predictions](#): The user is able to view a history of their goals achieved such as weight progression, and also receive predictions of how long it would take to achieve their next goal.

However, researchers have discovered that the majority of current applications have failed to engage and [motivate](#) users in the long term. Many users lost interest overtime, failed to stick to their fitness and diet routines and eventually gave up utilising the application. A [study](#) done in Northern Illinois University that examined the long-term effectiveness of fitness applications showed that users tend to lose interest in using the apps due to:

1. Attitude shifts due to lack of motivation for continual usage of the fitness application
2. Lack of peer influence/ support on exercising and keeping track of dietary intake

3. Difficulty perceiving exercises available
4. Difficulty to use the application increasing over time

Additionally, due to principles such as [anchoring and loss aversion](#), it has been shown that many users get discouraged to use a particular app when there is a price associated with its installation and usage over time. SmartBite aims to address all of these problems so our application is affordable, motivational and engaging to all users in their fitness and diet journeys.

Extended features of our application

Thus, SmartBite hopes to extend these features to:

1. Include a point system which encourages users to log data.
Each user would be allocated points for inputting data such as a meal, amount of water and food consumed or daily weight. These points are then accumulated and displayed on the 'Leaderboard page'.
2. Display a community leaderboard of points so users are motivated to follow their regime.
This feature is used to gamify the user's experience and to encourage them to frequently input and update their data. The community leaderboard will display the position of the user amongst all the users of SmartBite.
3. Allow users to exchange their points for rewards such as discounts at our partner businesses.
Users can accumulate their points and later redeem points for incentives at our partner businesses. The rewards include discounts and vouchers to purchase meals, clothes, equipment etc, and can be used as a source of motivation for users to engage with the application.
4. Provide a community forum where users can post or answer questions.
The forum can be utilised by users to post and answer questions, view tips and to interact with other users. The forum could allow users to feel a sense of community and togetherness, especially those that feel alone in their fitness and diet journey.
5. Show progression bars that display:
 - Daily water intake
 - Daily calorie intake
 - Weight management goals

The progression bars are displayed to provide a general overview to the users of their current progress vs their customised goals. The visual representation would encourage the users to strive for their daily and long term goals.

6. Schedule meals ahead of time, and allow users to view them in their personalised calendar.

Users can schedule all their meals ahead of time so they are more likely to adhere to their schedule. Additionally, users also get notifications reminding them to when to eat their meals or to drink water, hence allowing them to achieve their goals.

7. Provide all functionalities with no premium cost.

All features of the application are provided with no extra costs for users as SmartBite's income is from partnerships. Our partner companies are displayed and advertised in the 'Rewards page' of the application.

Summary of Problem Statements:

1. The majority of current fitness/diet applications do not possess gamification wherein users are presented with leaderboards and points correlating with their achievements.
2. There are a few fitness/diet applications which enrich the user experience by providing motivation and incentives.
3. Many fitness/diet applications lack community and behavioural support for users.

System Purpose:

The purpose of our system is to provide an affordable and engaging platform such that users are motivated to pursue healthy eating and frequent physical activity for the entirety of their fitness journey. The system aims to promote balanced living, whilst incentivising fitness and diet routines that can be easily incorporated into the user's lifestyle. Additionally, the system integrates a leaderboard, community forums and social media mechanisms to support and unite all users.

Features:

Completely implemented

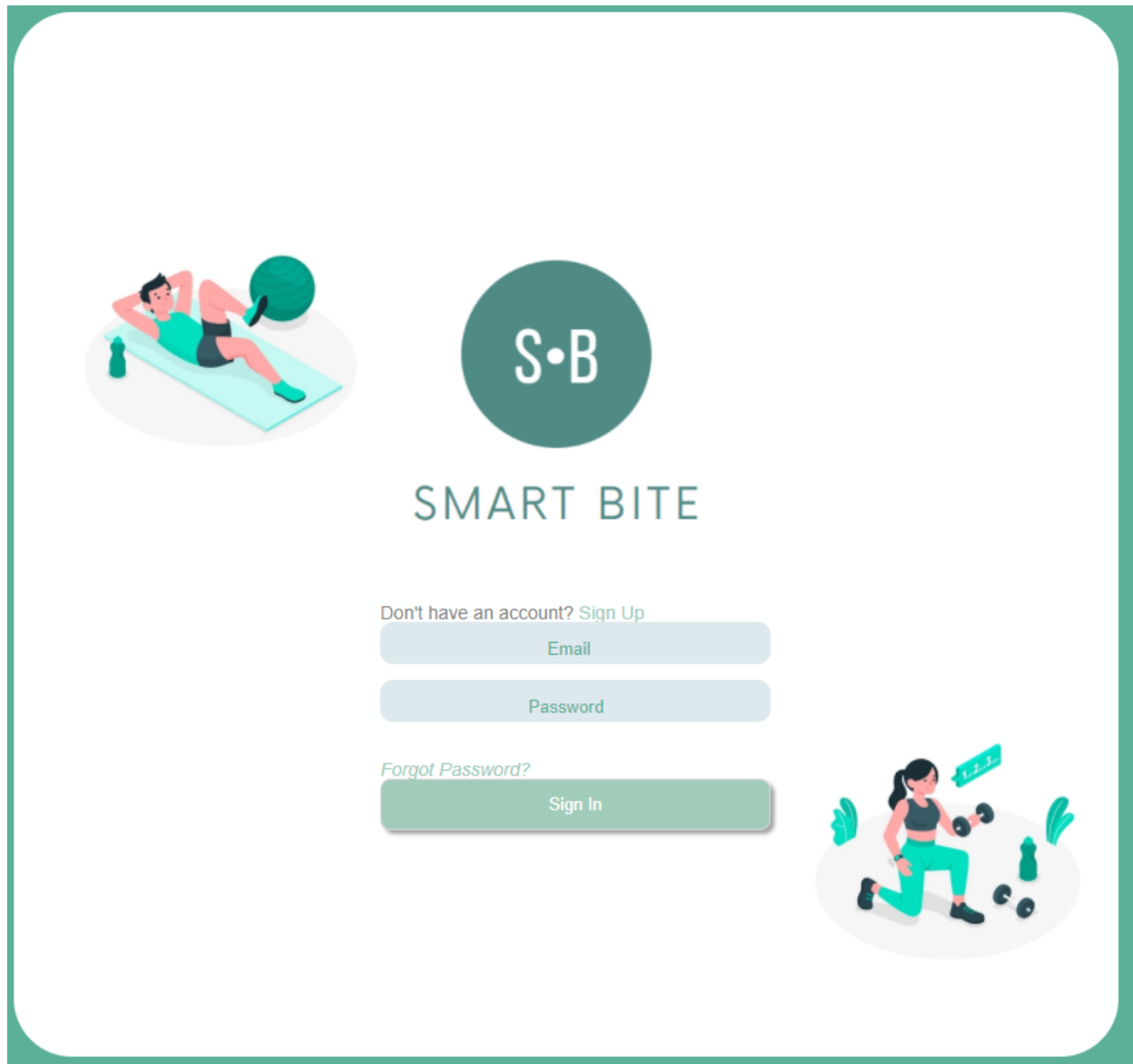
- Users can sign up
- Users can login
- Users can logout
- Users can reset password

- Main Menu Tab
- Water Progression Bottle
- Water Reminders
- Calorie Progression Apple
- Calorie Reminders
- Weight Progression Bar
- Food Search Bar
- Recommended Exercises Tab
- Recommended Recipes Tab
- Rewards
- Users can change their goal weight
- Users can update their current weight
- Users can update their height
- Users can change their age
- Users can view their BMI
- Users can change their username
- Users can change their email
- Users can change their password

Partially Implemented

- Meal Reminder
- Exercise Reminder
- Users can sort through exercises
- Users can sort through recommended recipes
- Leaderboard
- Users can view a food diary consisting of consumed food and planned food in a calendar format
- Users can select any future date in the calendar and plan a meal in advance
- Users can view posts in a community forum
- Users can create posts in the community forum
- Authors can edit their own posts in the community forum
- Authors can delete their own posts in the community forum
- Users can like posts in the community forum
- Users can dislike posts in the community forum
- Users can sort through posts in the community forum (popularity/recent)
- Users can find posts in the community forum through a search by title
- Users can find posts in the community forum through a search by author
- Users can follow other profiles to view the posts they have created
- Users can change their profile pictures

Final Interface Screenshots:





SMART BITE

Coming Back? [Sign In](#)





S•B



SMART BITE

Registration

Age

Height





Gender

Current Weight

Goal Weight

Done



SMART BITE



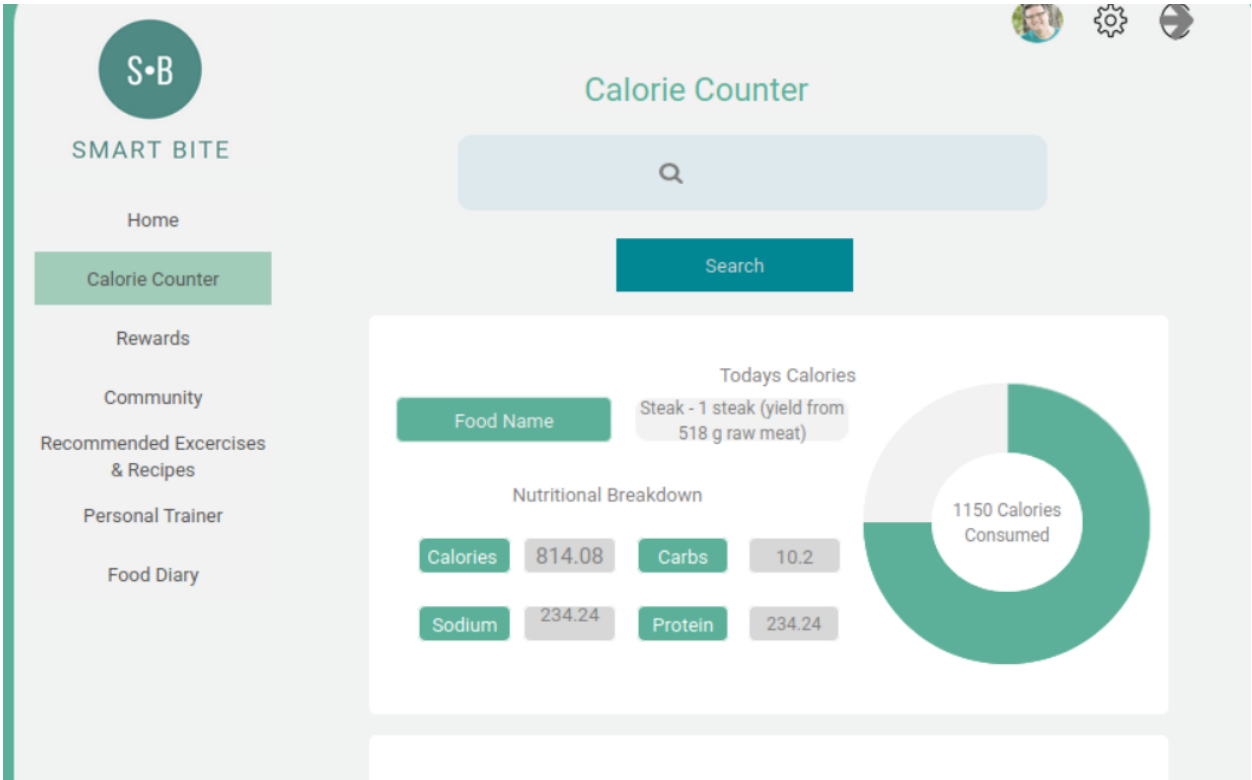
WELCOME TO SMART BITE

YOUR FITNESS JOURNEY BEGINS

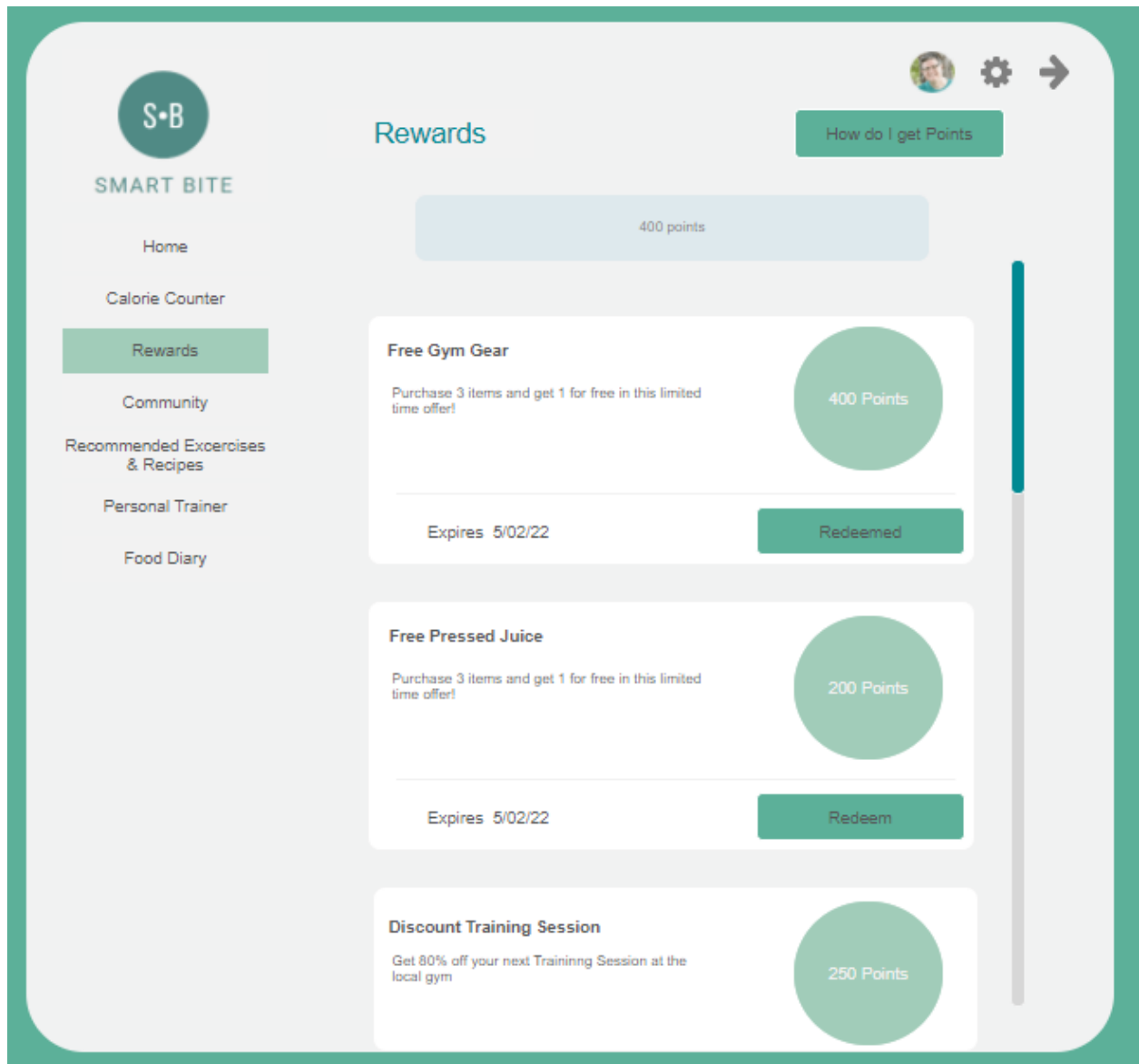
[Here](#)



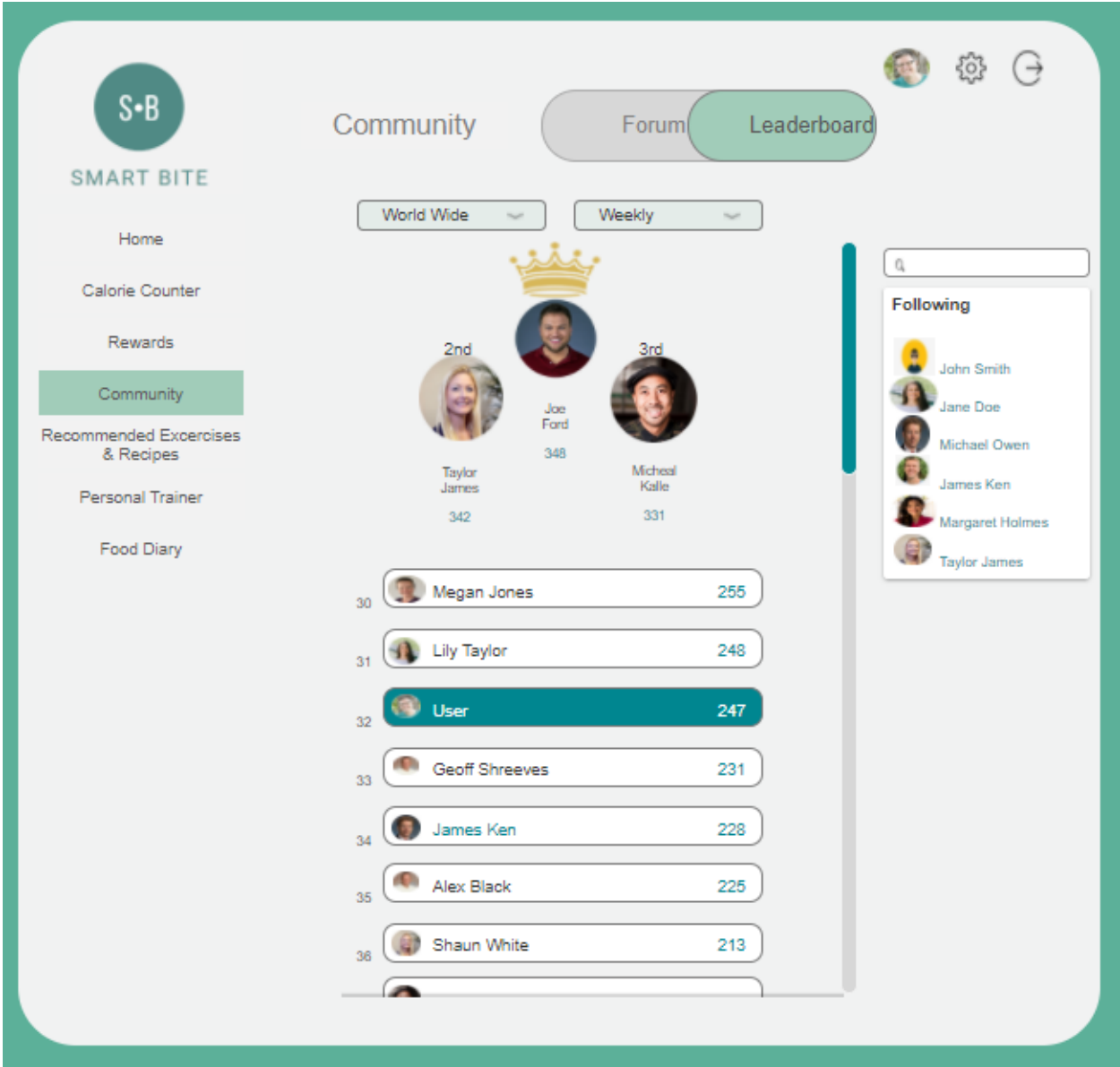


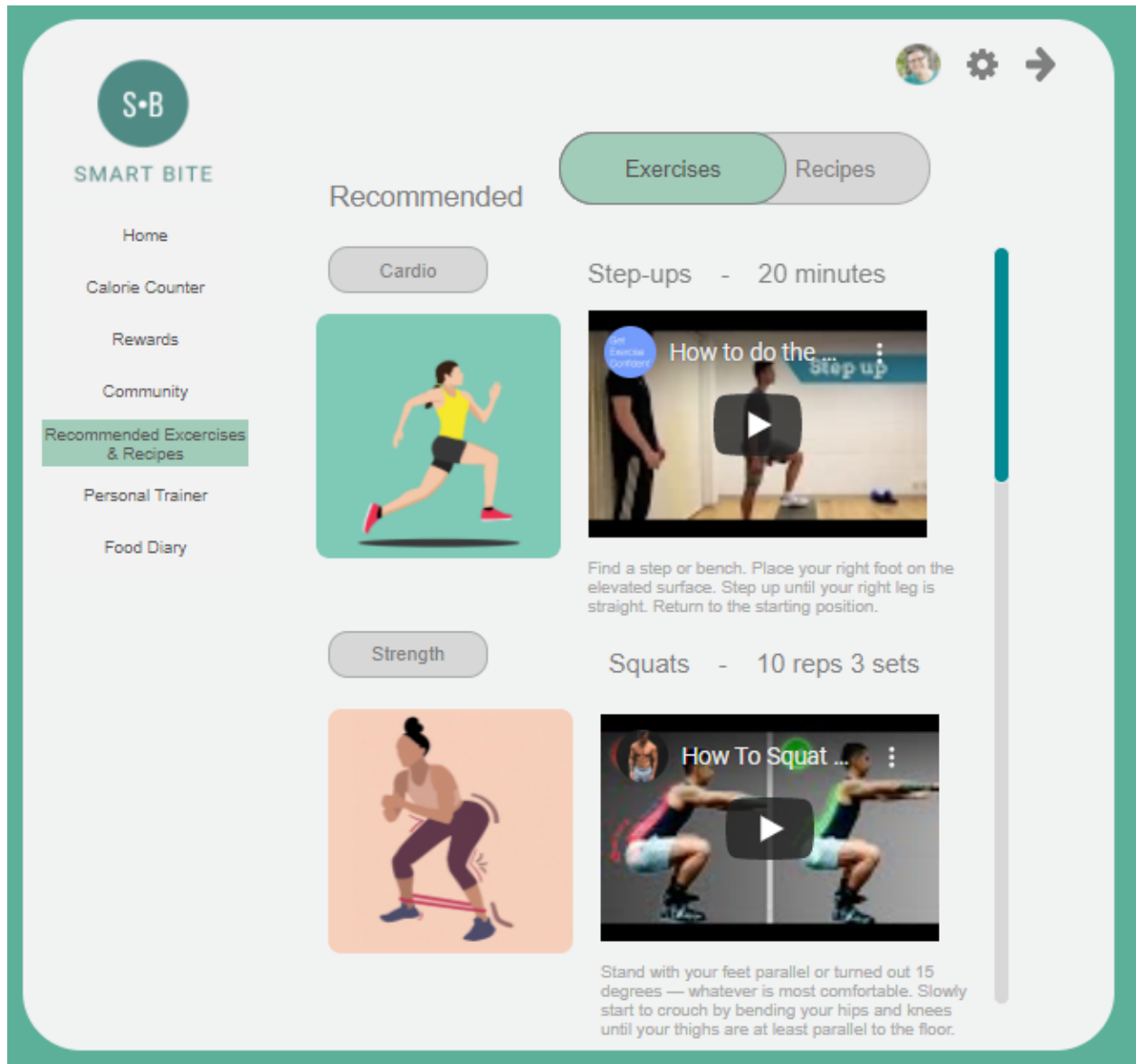


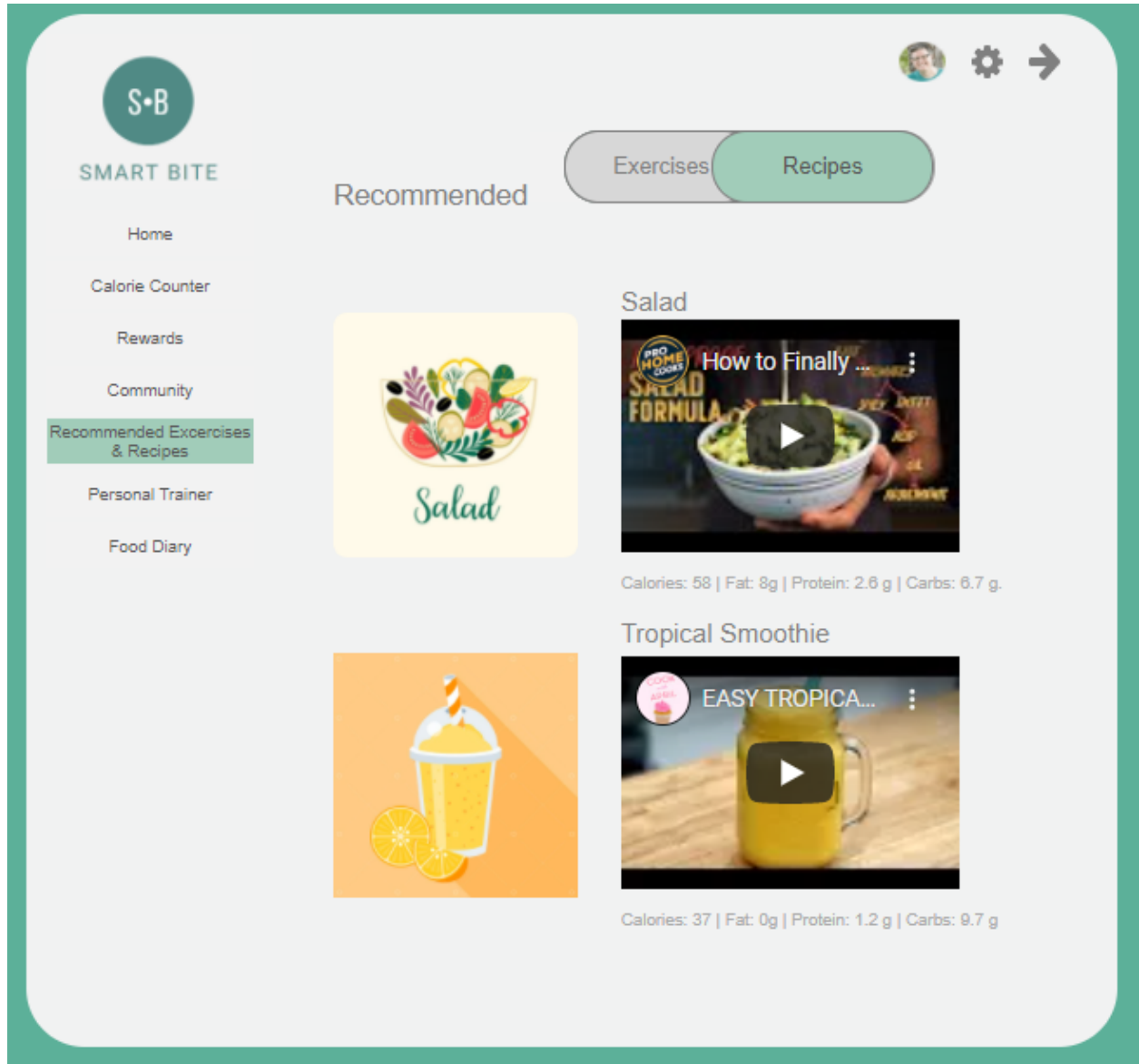


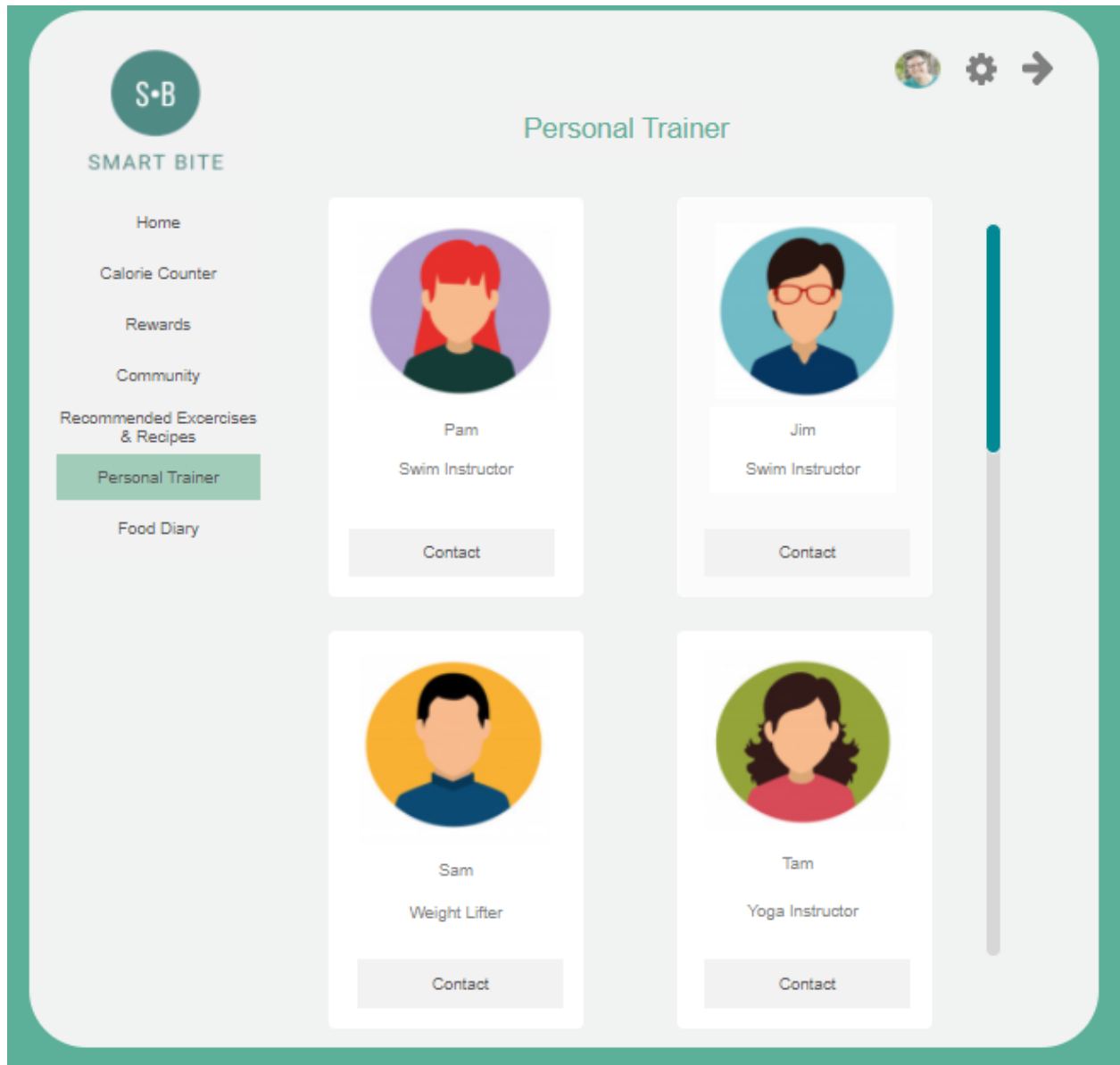


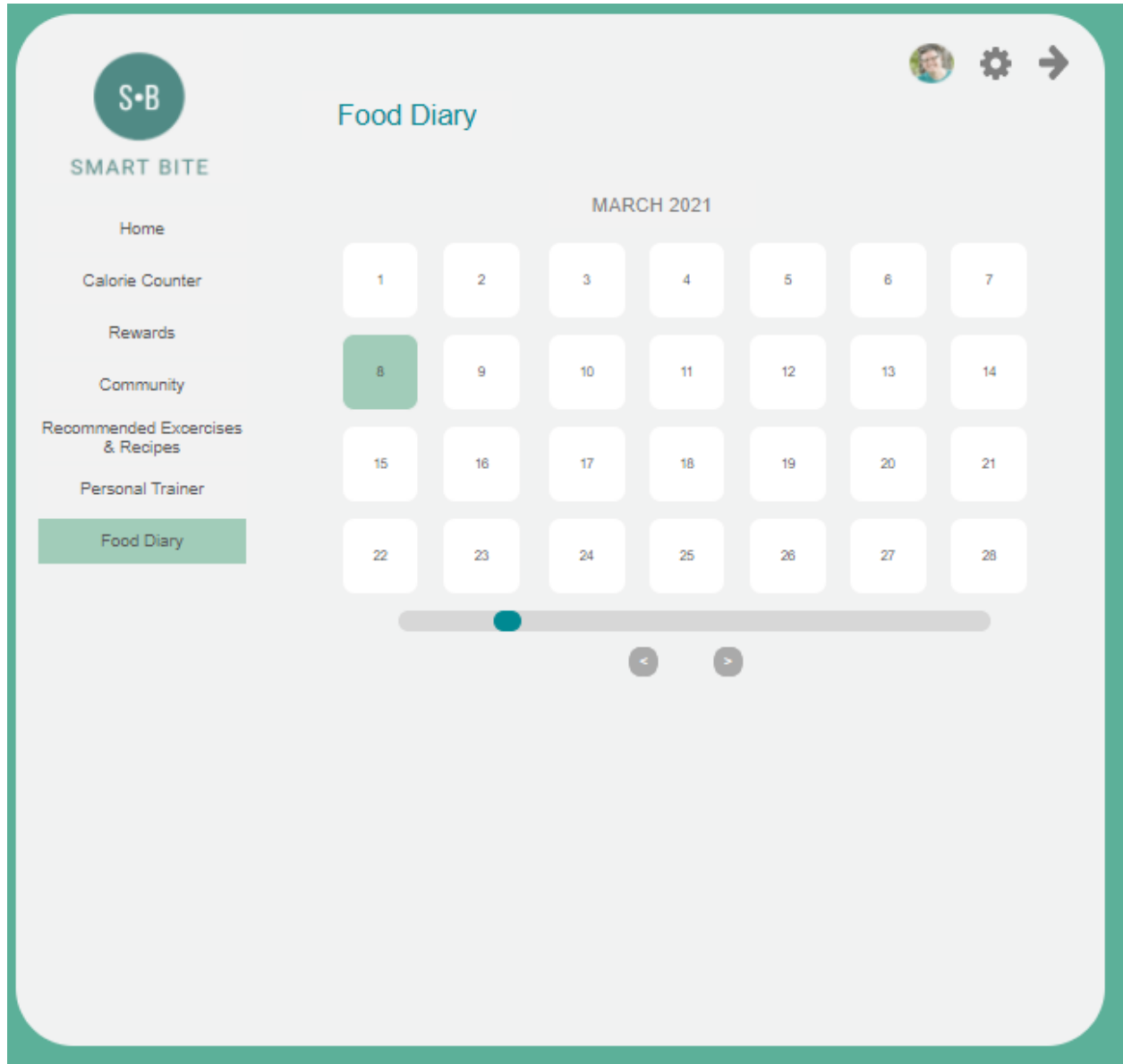












Part B: Design:

Updated Design and Prototype Implementation:

External Data Sources:

The external data sources that we will be using are APIs and a website for web scraping.

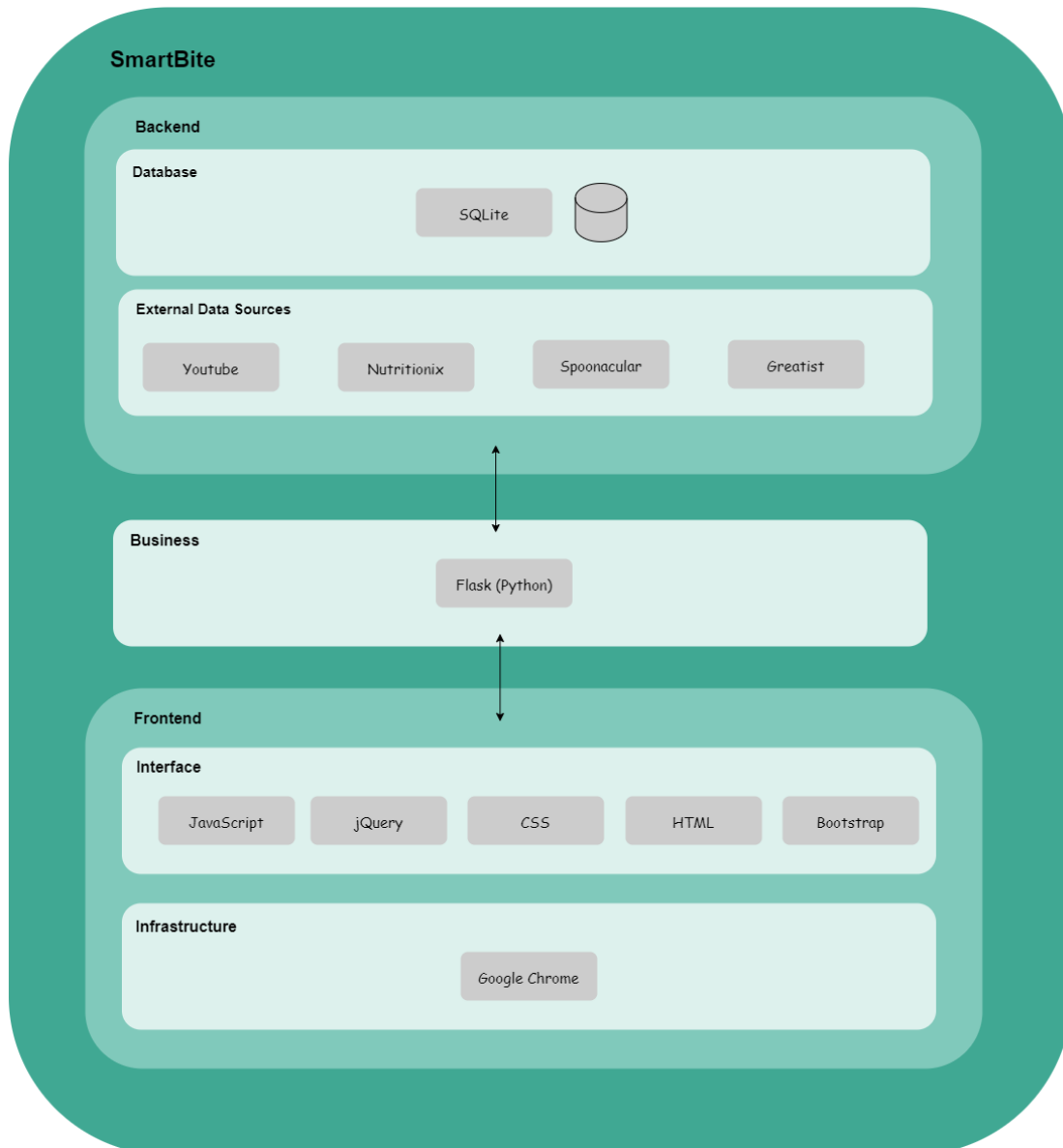
External Data Source	Explanation
https://www.nutritionix.com/database	The Nutritionix API was implemented in the 'Calorie Counter' page as part of the 'Food Search' function. This API allows access to the amount of calories as well as the nutritional panel for each type of food. It contains over 1 million food items including grocery, restaurant and common foods.
https://spoonacular.com/	The Spoonacular API was not implemented, but was to be implemented in the 'Recommended Recipes' page. It contains over 365,000 recipes which can be sorted based on dietary requirements. It also automatically calculates the amount of calories and the nutritional panel for each recipe. There are more than 330,000 recipes that can be accessed.
https://greatist.com/fitness/50-bodyweight-exercises-you-can-do-anywhere	This website contains 50 exercises including clear explanations for each. Web scraping was used to extract the data and to output it to the 'Recommended Exercises' page of our application. The exercises are also split into different categories such as beginners, full body, legs etc so it would be useful for users to sort them. Additionally, the exercises are designed to be done anywhere therefore it would be suitable in terms of convenience for the users of our application.
https://developers.google.com/youtube/v3	The Youtube API was utilised in the 'Recommended Recipes/Exercises' page of the application. For example, a video tutorial of a relevant exercise or recipe was displayed alongside the text. This allows users to have clear instructions and a visual depiction to aid them in the process.

Final software architecture:

Our webstack will consist of

- A backend that is implemented using Python
- A Flask web application framework
- A frontend interface that is implemented using Javascript, HTML and CSS

- A database using SQLite
- APIs and web scraping as mentioned in the above table
- Compatibility with the Web browser - Google Chrome



The above diagram depicts the Software Architecture for the SmartBite application. In a layered architecture, each layer has a particular responsibility it must complete in order for the application to run. These include the presentation, business and data access layers. These layers form an abstraction from the layer below and the work that needs to be done in order for a request to be handled correctly. Thus, the abstractions ensure there is loose coupling between the layers in order to prevent

maintenance difficulties and allow for updates of various components to be done with minimal impacts on other components.

The presentation layer is the layer that the client interacts with (the frontend), which provides a user-friendly interface, while the data access layer (the backend) is where the server handles the data and responds to the user's actions appropriately. The business layer connects the backend and frontend components together using the Flask framework. This is where the majority of the application's processing takes place as it takes requests from the frontend, collects required data from the backend and uses logic to tackle the problem in order to provide the appropriate solution.

Within the presentation layer and the data access layer, there are further abstractions. The frontend consists of the Infrastructure and Interface layer. Through the usage of HTML, (which determines what a website has), CSS (which controls how each component looks like) and JavaScript (ensures interactivity of the website), a well-functioning web page can be created and displayed in the browser that the client is accessing it from. Similarly, the data access layer contains the external data sources and the database itself. This layer is closely connected to the business layer as this layer should know what data is needed to be retrieved for a particular logic.

Communication between layers is essential in order for a web application to function. We are utilising JSON to convey information between the presentation and business layers. Since JSON is easy to read and simple for web browsers to parse it is relatively efficient and fast.

Relating Choices to Components

<u>Component</u>	<u>Language/ Choice</u>	<u>Advantages</u>	<u>Disadvantages</u>
Backend	Python	<ul style="list-style-type: none"> • All members of our group are familiar and fluent with Python. • simple language with high readability • relatively easier syntax compared to languages such as C and Java. • flexible data types. • is a platform independent language, 	<ul style="list-style-type: none"> • In a run-time environment Python is slower compared to languages such as Java and C. • Although Python is flexible with its data types, there is a high amount of memory that is consumed due to this; hence it is not suitable for memory intensive tasks.

		<p>so our backend can be compatible with many different operating systems.</p> <ul style="list-style-type: none"> • An abundance of libraries and frameworks that support Python, that can be utilised to automate tasks in our application. 	<ul style="list-style-type: none"> • Since Python is dynamically typed there are design restrictions as a high use of design elements could prevent smooth operation of the application. • Python does not allow for executing more than one thread at a time due to its Global Interpreter Lock.
Frontend	JavaScript	<ul style="list-style-type: none"> • Since JavaScript is able to run immediately on a browser, it is extremely fast. • JavaScript can be inserted into any web page whereas languages such as PHP cannot be. • The demand on servers is reduced as JavaScript is run on the client's side of the application. • Javascript is extremely powerful in terms of enriching user interactivity. Javascript has the capability to include "events" such as clicking and can respond to them by communicating with the application's backend. This consequently enables rich user interface components such as tabs, image sliders, menus and pop-ups to be implemented. • Webpages can also dynamically update themselves as a response to user 	<ul style="list-style-type: none"> • There is a possibility that different browsers can interpret javascript differently. This makes it difficult to guarantee a uniform output. • The frontend code is visible to others. • If an error occurs in JavaScript, the webpage may stop rendering. • Debugging JavaScript is not as easy as other languages such as Python. • It only includes single heritage so cannot support object oriented characteristics. • If JavaScript is disabled on the browser, the code for the whole application would not run.

		<p>activity without the page having to reload.</p> <ul style="list-style-type: none"> • Additional functionality that cannot be achieved using HTML and CSS alone can be achieved with Javascript. 	
	HTML	<ul style="list-style-type: none"> • HTML is simple and easy to use compared to languages such as PHP. • HTML can be easily integrated with languages such as JavaScript • HTML is beneficial in implementing the foundational structure and content of the page. • HTML is also simple and a platform independent language that is supported by all browsers. 	<ul style="list-style-type: none"> • Using HTML alone can result in a lot of code even for very simple pages. • HTML is static in nature and implementing dynamic web pages are extremely difficult compared to PHP and JavaScript. • It is difficult to make aesthetic designs using HTML.
	CSS	<ul style="list-style-type: none"> • CSS allows for greater control of the aesthetic of the webpage as it has more formatting options compared to HTML. • Using CSS means that there would be less code per web page allowing for faster download times. • CSS would also save time since the code can be written once, and reused for different pages. • It also allows for the ease of maintenance as a simple change in 	<ul style="list-style-type: none"> • There are different levels of CSS e.g CSS 1, 2, 3 which could cause confusion on which one to choose. • CSS is not compatible with all browsers, so extra testing would be needed to ensure compatibility.

		the style would allow for all elements in the page to be updated automatically.	
Framework	Flask	<ul style="list-style-type: none"> • Lightweight WSGI (Web Server Gateway Interface). • Minimal dependencies on external libraries. • Written in Python. • Has the ability to scale up when needed. • Beginner friendly. • Flexible. • Developers can manipulate the application to do as they like, thus allowing technical experimentation. • Members of the team have experience using flask. • More compatible with new technologies. • Great for small projects. 	<ul style="list-style-type: none"> • Only handles requests one at a time, so serving multiple requests can take unfeasible amounts of time. • Higher maintenance costs for more complex systems. • May need to install lots of modules to gain more tools to use. This could impose major security risks and expensive maintenance. • Not as suitable for business needs as python-based frameworks such as Django. • Does not have ready-made solutions that can be used that Django has. • Django has a wider community support to solve debugging problems and maintenance costs.
Database	SQLite	<ul style="list-style-type: none"> • Contains features that can also be found in higher-end databases. • Single standalone binary file, so it's easy to deploy and move it with the app. • No configuration is needed. 	<ul style="list-style-type: none"> • Not as suited to handle multiple concurrent users and cannot provide clustered and scale-out solutions. • Does not support certain relational database features. • Has relatively few data types, so enforcing this will

		<ul style="list-style-type: none"> • Self contained, so it is suitable for any environment. • works great for most low to medium traffic websites (which is most websites). • Uses standard SQL syntax with minor changes. • Easy to use. 	<p>have to be handled by the application.</p> <ul style="list-style-type: none"> • Does not have an inbuilt authentication mechanism, so the database can be accessed by anyone, whereas databases such as MySQL comes with a lot of inbuilt security features, including authentication with a username, password, and SSH. • Not suited for large databases, as data grows, the memory needed also increases.
Browser	Google Chrome	<ul style="list-style-type: none"> • Available on both mobile devices and desktop and can be used on both Mac and PC. • Easy to use and customisable (through the utilisation of extensions). • Free to both download and usage. • Has pretty good marks on the JetStream 2 benchmark (speed test that checks a range of web technologies). • Is the top browser on the HTML5test website test (tests browser compatibility with web standards). The max score possible is 555 and chrome scores 528. 	<ul style="list-style-type: none"> • Doesn't contain features like built-in VPN, cryptocurrency locker, screenshot tool, these have to be accessed using chrome extensions. • Features such as reading mode and share have to manually be enabled.

		<ul style="list-style-type: none"> • Good protection against malware. 	
--	--	--	--

Choice of platform + Libraries

The choice of platform for the final system is any platform that is able to run a Python interpreter. The two libraries that we used were the urllib and the smtplib. The urllib was used when implementing web scraping to open and capture information from 'The Greatist' website on different exercises. The smtplib was used to send a user an email containing the details of vouchers, when they redeemed their points on the 'Rewards' page.

Summary of key benefits/achievements

Backend:

For the backend, we have chosen to use Python. Everyone in the group is extremely familiar with Python and its simple nature allows for more focus on application development as opposed to learning the language or debugging. Additionally, Python is supported by an abundance of libraries and frameworks making it advantageous to use in our application. Although Python is slower than other languages such as C, our application is not performing extremely memory intensive tasks therefore we have deemed Python suitable for our backend.

Frontend:

In terms of frontend, we have decided to use a combination of Javascript, HTML and CSS. The interaction capabilities of JavaScript alongside the robust foundations of HTML and the design elements of CSS prove beneficial in creating interactive yet aesthetic web pages. JavaScript and HTML can also be easily integrated together, whilst CSS would ease the uniformication and maintenance of the webpage.

Framework:

We have chosen to utilise flask in our web framework as it provides a wide range of tools, libraries and mechanics for web application development that is beginner friendly. As it is a micro-framework, it does not have any dependencies to external libraries, thus ensuring long term stability and viability of the web application. It is also one of the most commonly used web frameworks for Python and our group members have experience using it. Though it may have some disadvantages when

compared to other web frameworks such as Django, for the scale requirements of this project, it is more than adequate.

Database:

SQLite is known to be easy to install due to minimal configurations and tuning options and the resultant database does not take too much space. It is used in a wide variety of platforms, and there is no restriction on what language the applications using it should be in. It is also less likely to cause corruption of the database as it allows for transactions and atomic behaviours. As the database required for our project does not have highly extensive requirements (in terms of needing all relational database features and requiring lots of space) and as listed above, SQLite is great for low to medium traffic websites such as our own, we have chosen to implement this in our project.

Browser:

Chrome is a well-known web browser that is used by many users, both on Mac and PC. It is free, easy to use and customisable. It also prevails as one of the top browsers after performing speed and compatibility tests and has good protection against malware. As the disadvantages listed above don't affect the user experience of our website as such, we believe our choice on the Chrome browser is the best option.

Updated User Stories and UML Sequence Diagrams:

COMPLETELY IMPLEMENTED

Feature: Users can sign up

As a user,

So that I can create an account to use the functionalities of this website,

I want to sign up

Scenario: User wants to create an account on the website

Given that I have clicked on the link to this website,

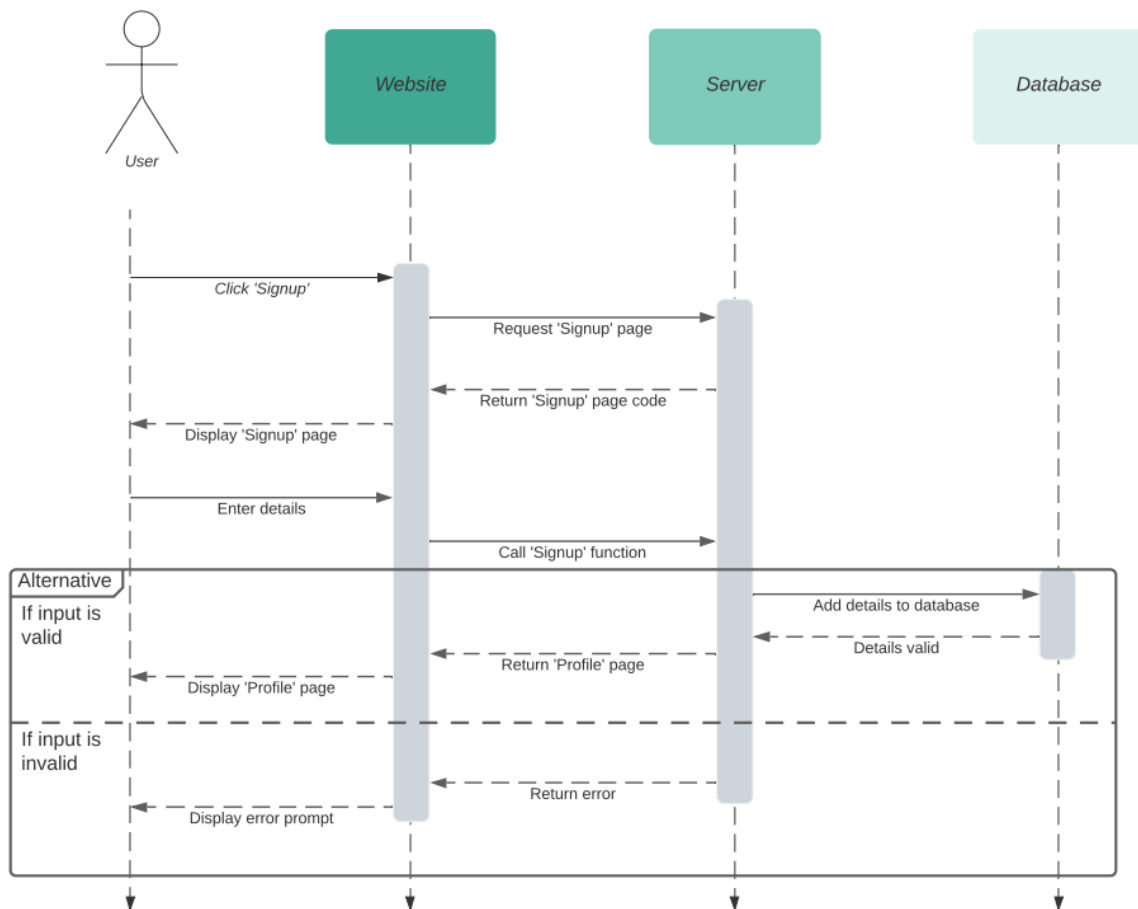
Then I will be directed to a page that will ask me to either login or sign up.

When I fill in my name, email and password, agree to the terms and conditions and click the 'Sign Up' button,

Then I will be redirected to a page that asks for my age, height, gender, current weight and goal weight.

When I have filled out all the fields and click done,

Then I should be redirected to my profile page with all the given details stored and I am logged in.



Feature: Users can login

As a user,

So that I can assess my profile in order to store information about my diet and get regular updates on how my progression is going,

I want to login into my personal profile

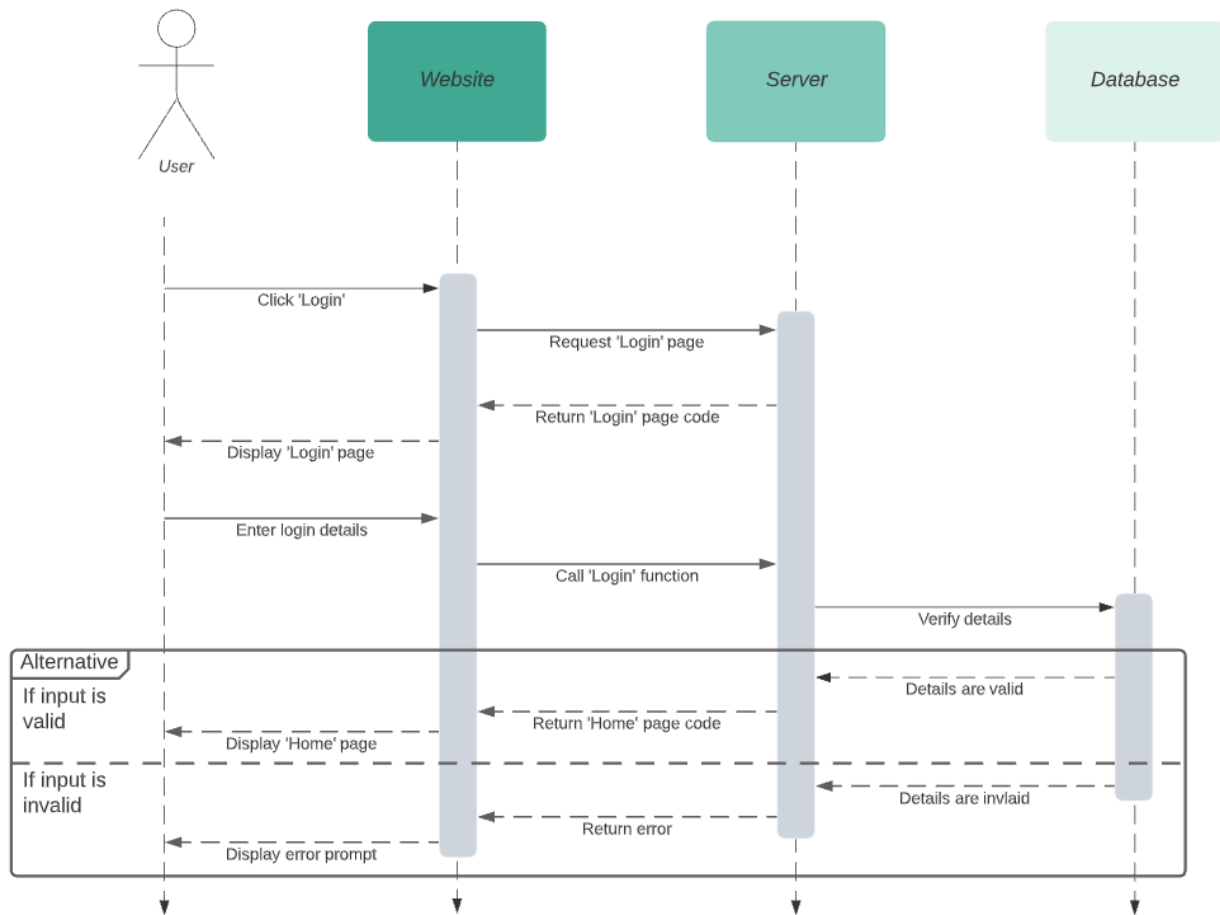
Scenario: user has an account and would like to login to access their website

Given that I have clicked on the link to this website,

Then I will be directed to a page that will ask me to enter my details to login.

When I type in my email and password correctly in the appropriate fields and click login,

Then I will be redirected to the home page



Feature: Users can logout

As a user,

So that I can ensure that I am able to maintain my privacy by preventing any individuals from gaining access to my details, progression and goals,

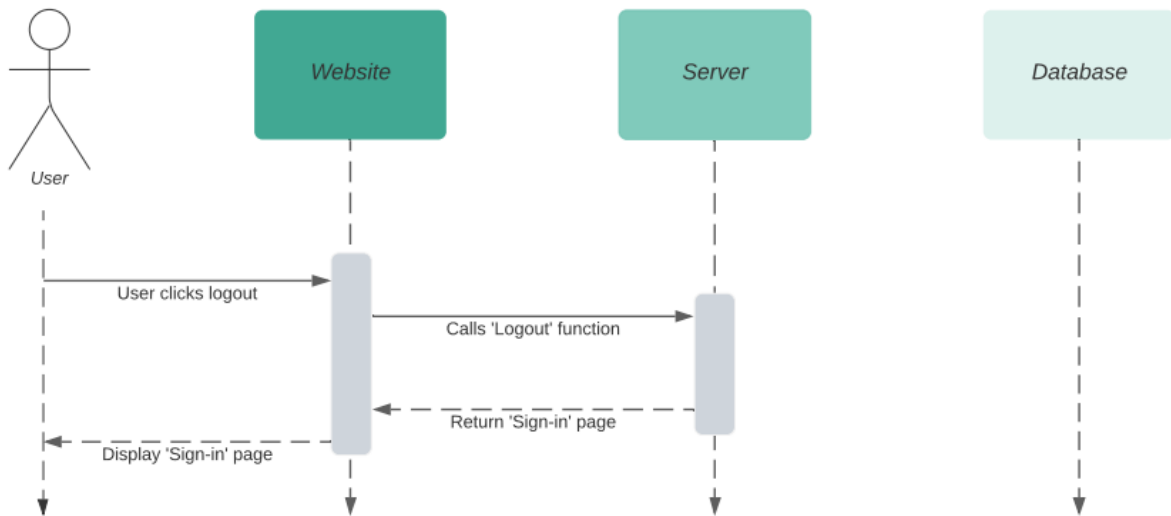
I want to be able to log out when I see fit.

Scenario: The user is logged in already and would like to leave the page completely by logging out

Given that I have logged on as a user on this website

When I click the logout button that is next to the setting button,

Then I should be redirected back to the page the page which requests me to either login or sign up



Feature: Users can reset password

As a user,

So that I can still access my profile when I do not remember the current password,

I want to reset my password.

Scenario: When a user is trying to login, but has forgotten the password

Given that I have clicked on the link to this website, and I have failed to login,

When I click the 'Forgot Password?' button,

Then I should be redirected to a new page that will ask for my personal email.

When I correctly input my email,

And I click the link sent to me from the website,

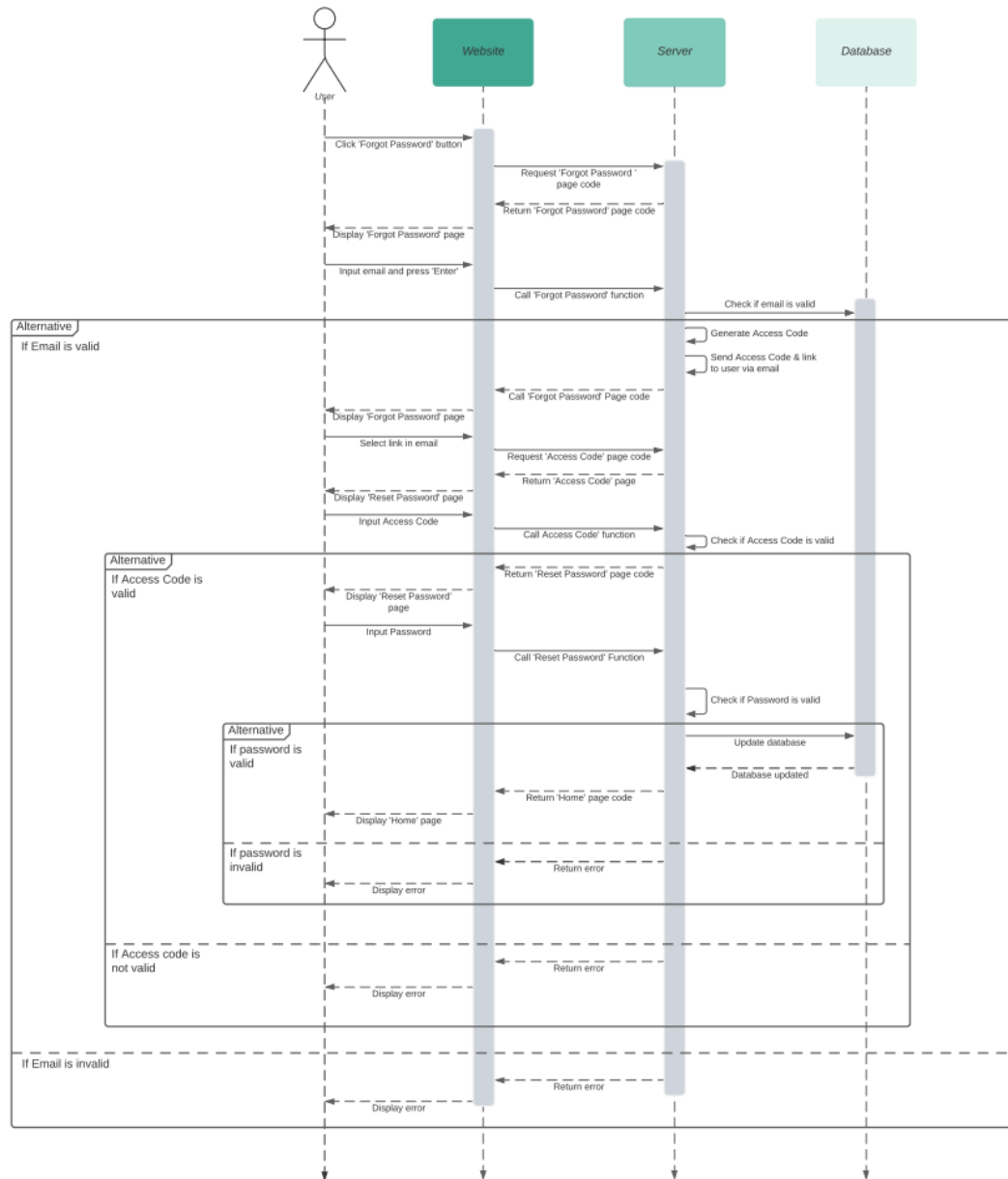
Then I enter the access code which was emailed to me.

When I successfully enter the access code,

Then I will be redirected to a 'Reset Password' page,

And when I enter a new password,

Then my password will be reset



Feature: Main Menu Tab

As a user,

So that I am able to access any page that I am interested in from the current page that I am on,

I want a main menu tab on the side with links to all the other pages of the website.

Scenario: User wants to go from home page to another page

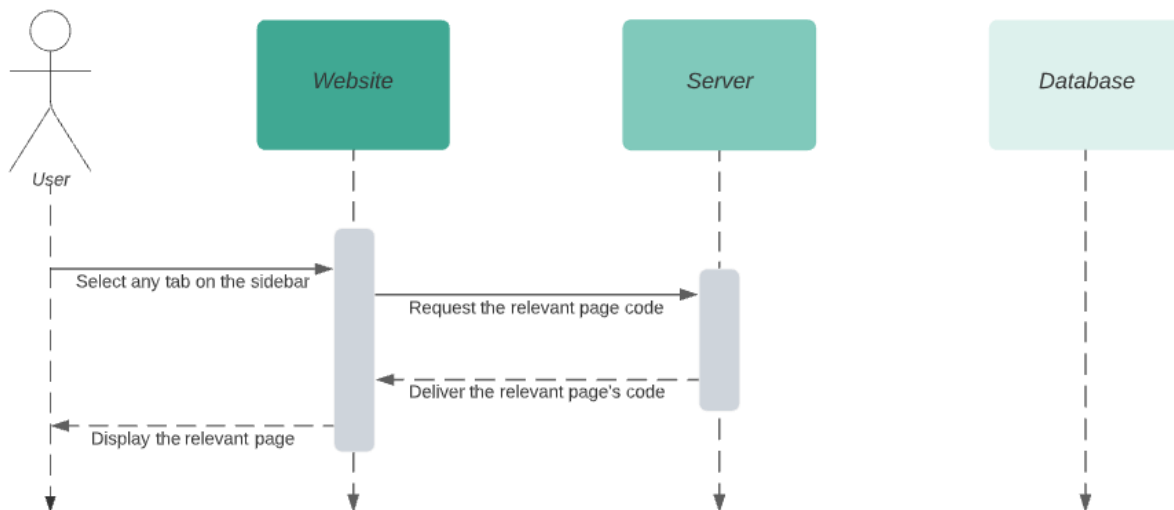
Given that I am already logged in,

When I would like to go to another page,

Then I should locate this on the main menu tab displayed on the left hand side.

When I click on the appropriate tab,

Then I should be redirected to that page.



Feature: Water Progression Bottle

As a user,

So that I can keep track of how much water I have drank in order to reach my set goal in a fun and interactive manner,

I want a bottle shape icon that displays my water progression.

Scenario: User would like to input the amount of water they had throughout the day

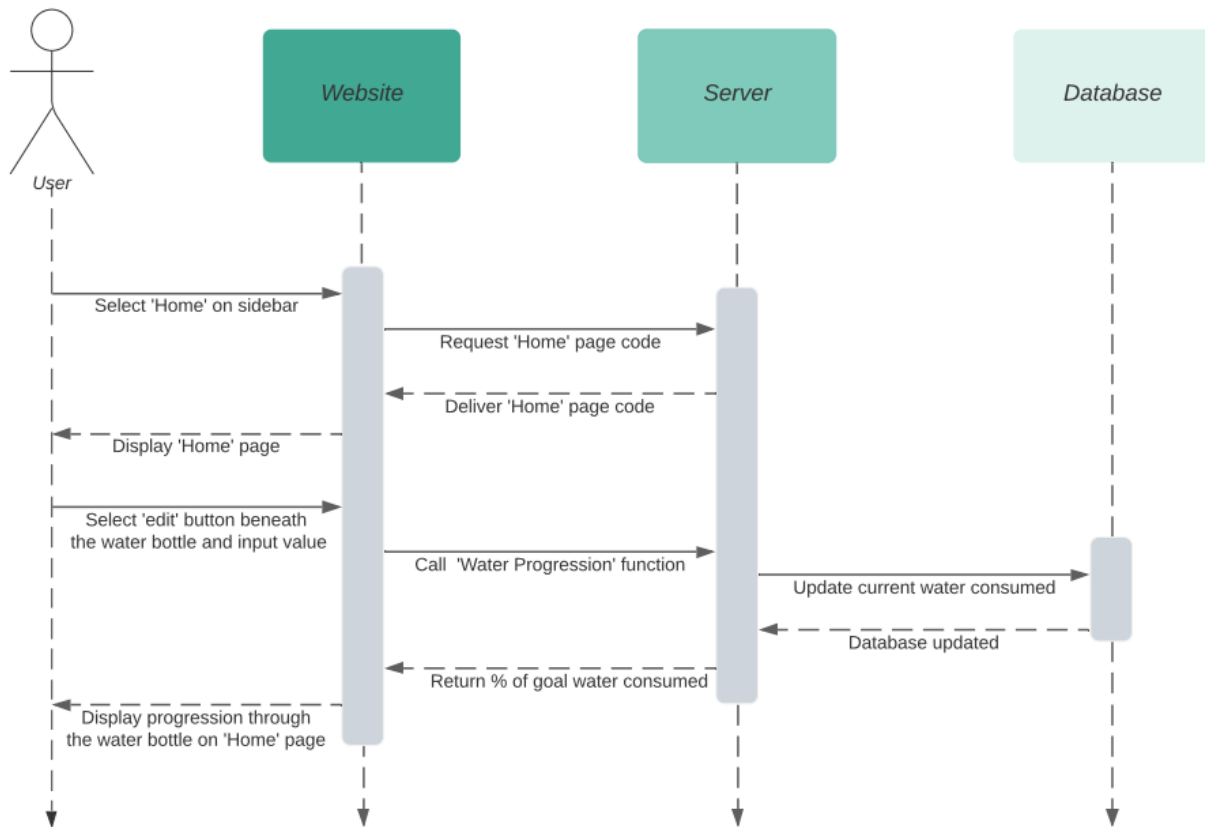
Given that I have already inputted my water goals/requirement per day,

When I input how much water I drank at a given time,

Then the water bottle should appropriately increase such that it looks like the bottle is being filled up.

When the bottle is completely filled,

Then a pop-up will be displayed, showing that I have reached my goal



Feature: Water Reminders

As a user,

So that I get reminded to input water intake, and thus be remind me to drink water periodically throughout the day,

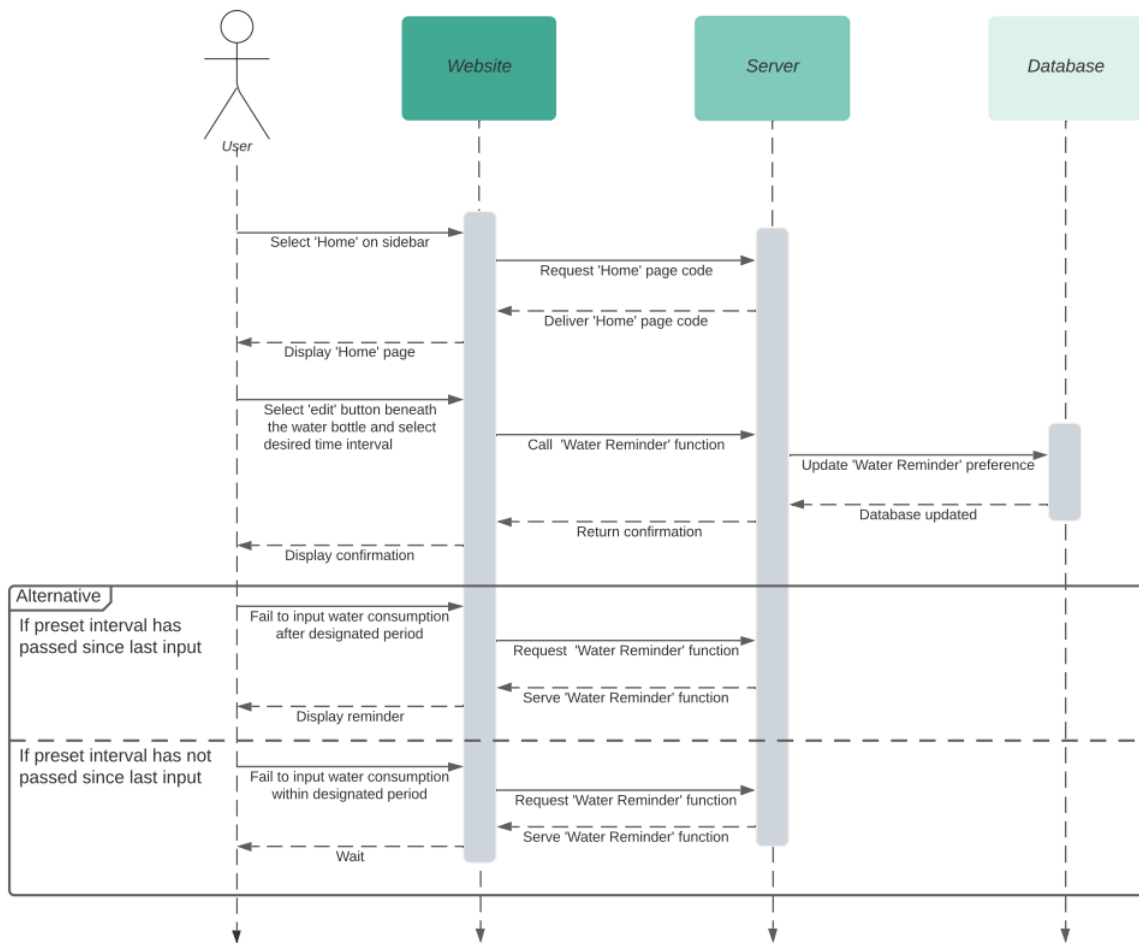
I want a pop-up notification on my desktop reminding me to do so.

Scenario: User is logged in, but hasnt inputted any water intake

Given that I have already inputted my water goals/requirement per day,

When a certain time that the user has selected has gone by without any input of water taken,

Then a small pop-up message should appear to remind the user to input their water intake through-out the day.



Feature: Calorie Progression Apple

As a user,

So that I can keep track of how much calories I have taken in order to reach my required goal in a fun and interactive manner,

I want a bar that displays my water progression.

Scenario: User would like to input the calories they have taken throughout the day

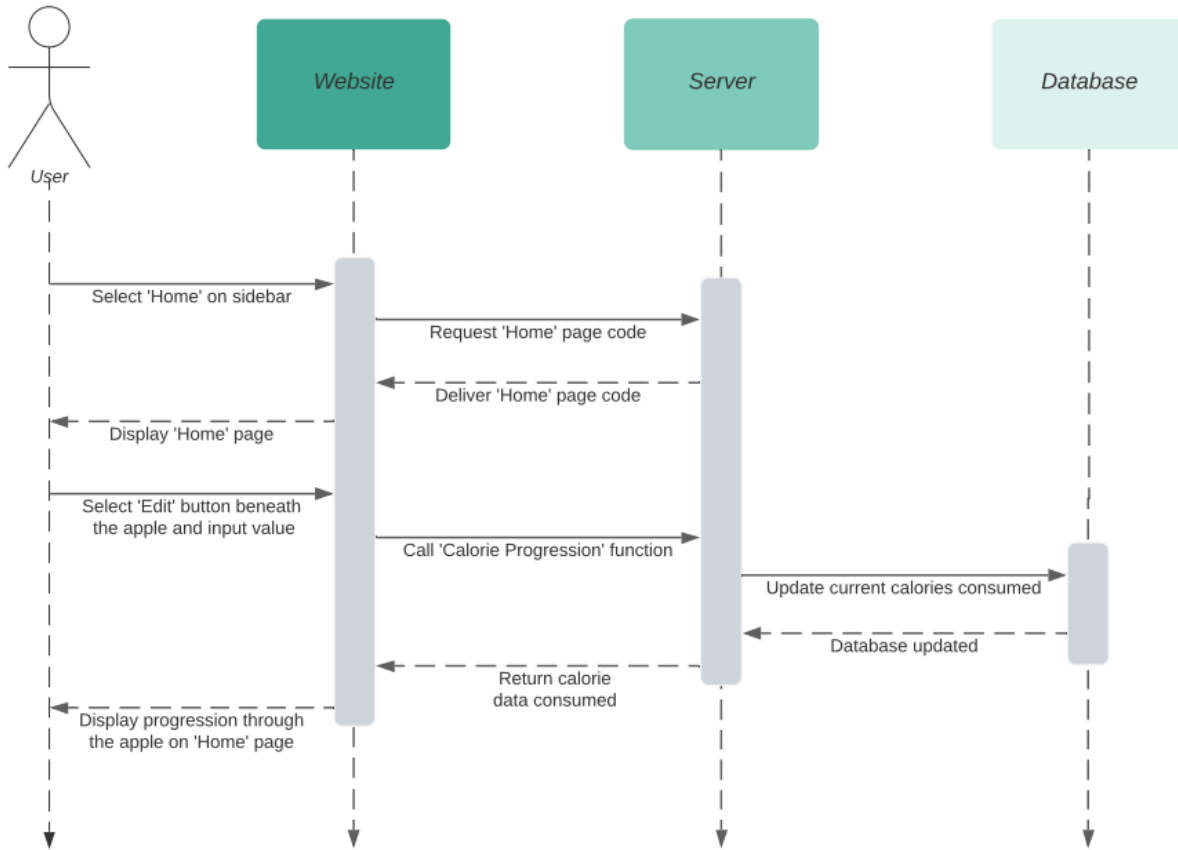
Given that I have already inputted my calorie goals/requirement per day,

When I input the food I have consumed at a given time,

Then the calorie progression bar should appropriately increase

When the bar is completely filled,

Then a pop-up will be displayed, showing that I have reached my goal



Feature: Calorie Reminders

As a user,

So that I get reminded to input calorie intake periodically throughout the day,

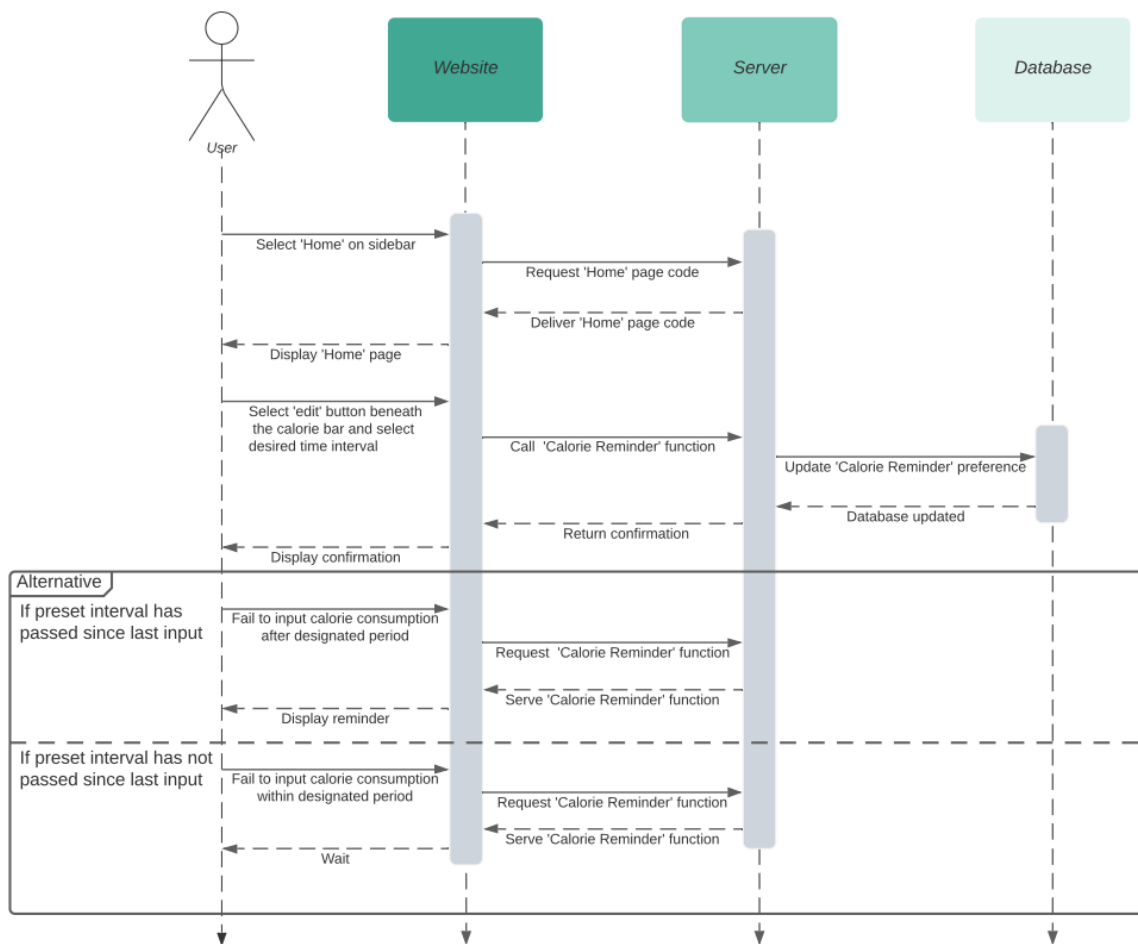
I want a pop-up notification on my desktop reminding me to do so.

Scenario: User is logged in, but hasnt inputted any calorie intake

Given that I have already inputted my calorie goals/requirement per day,

When a period of time (adjustable by the user) passes without any new inputs of calories consumed,

Then a small pop-up message should appear to remind the user to input their calorie intake through-out the day.



Feature: Weight Progression Bar

As a user,

So that I can keep track of my weight in a fun and interactive manner,

I want to be able to input my current weight.

Scenario: User would like to input their weight in order to see how far they are from their goal and work towards it

Given that I have already inputted my weight goals,

When I go click on the profile icon in the top right

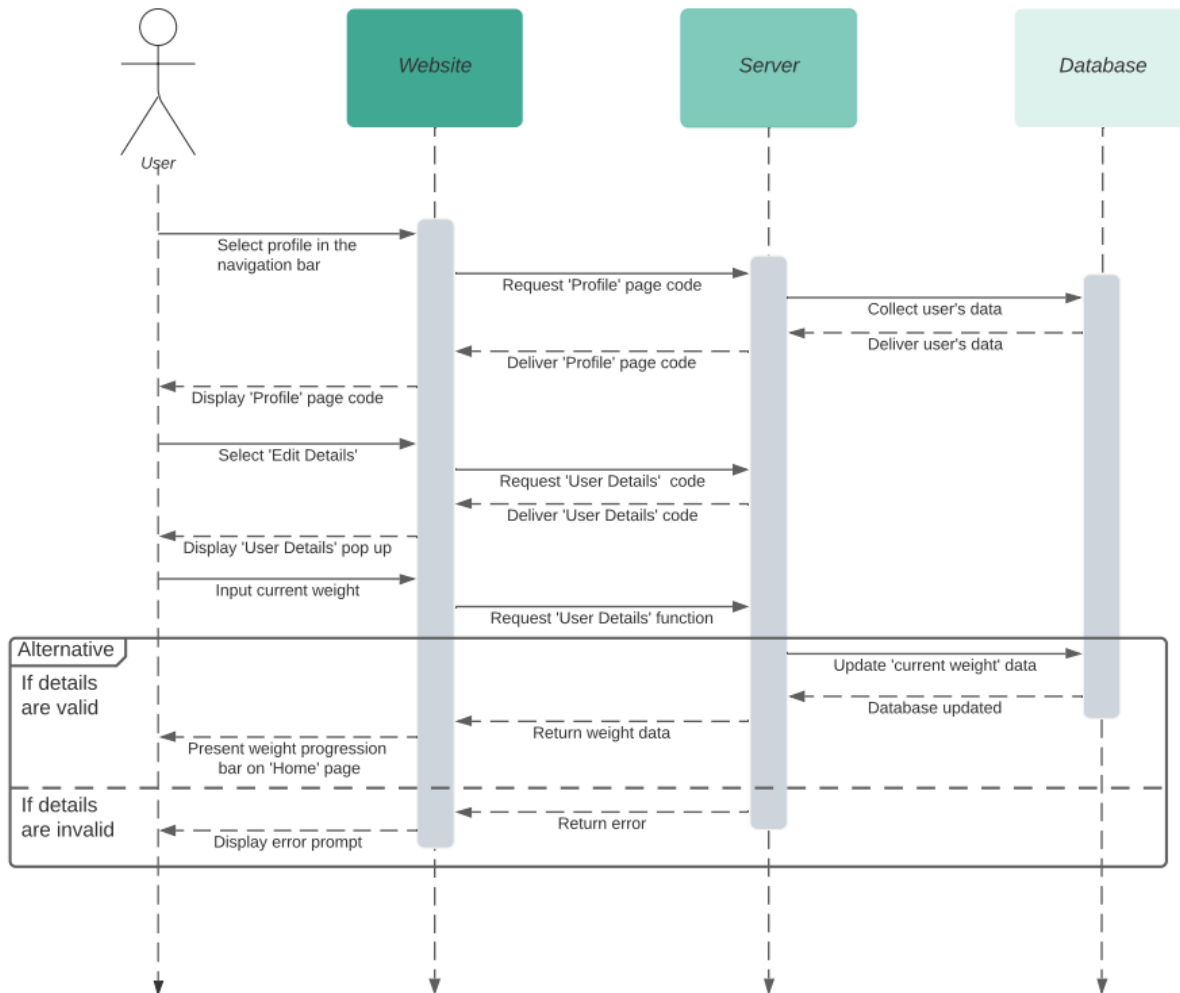
Then click the 'Edit Details' button,

And update my current weight,

Then the weight progression bar should appropriately increase

When the bar is completely filled,

Then the bar will show that the goal weight has been reached



Feature: Food Search Bar

As a user,

So that I am able to get more details and a nutritional breakdown of different types of foods,

I want a Food Search Bar.

Scenario: User would like to look at the different types of food and learn more about it

Given that I am already logged in,

When I click on the calorie counter tab,

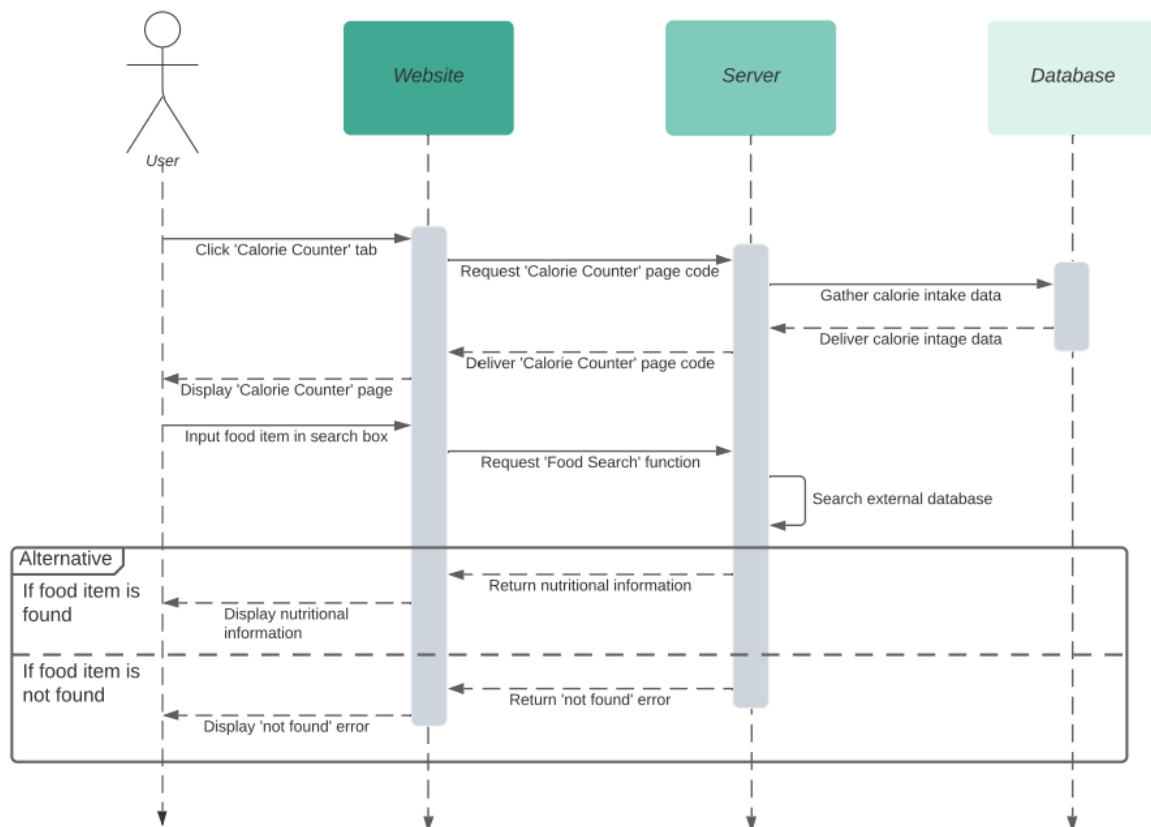
Then I will be redirected to the 'Calorie Counter' page.

When I click on the search bar at the top of the page and search for a particular type of food,

Then I will be given a nutritional breakdown on that specific type of food.

When I click the 'Add To Food Diary' button,

Then this will be noted in my food diary, and my calorie intake will increase accordingly.



Feature: Recommended Exercises Tab

As a user,

So that I am able to get access to different types of exercises available and can easily update my daily list of calories burned,

I want a recommended exercise tab that will allow me to browse through and see what kinds of exercise I can do.

Scenario: User would like to look at the different exercises available and update their caloric progression accordingly

Given that I am already logged in,

When I click on the “Recommended Exercise and Recipes” tab on the side bar,

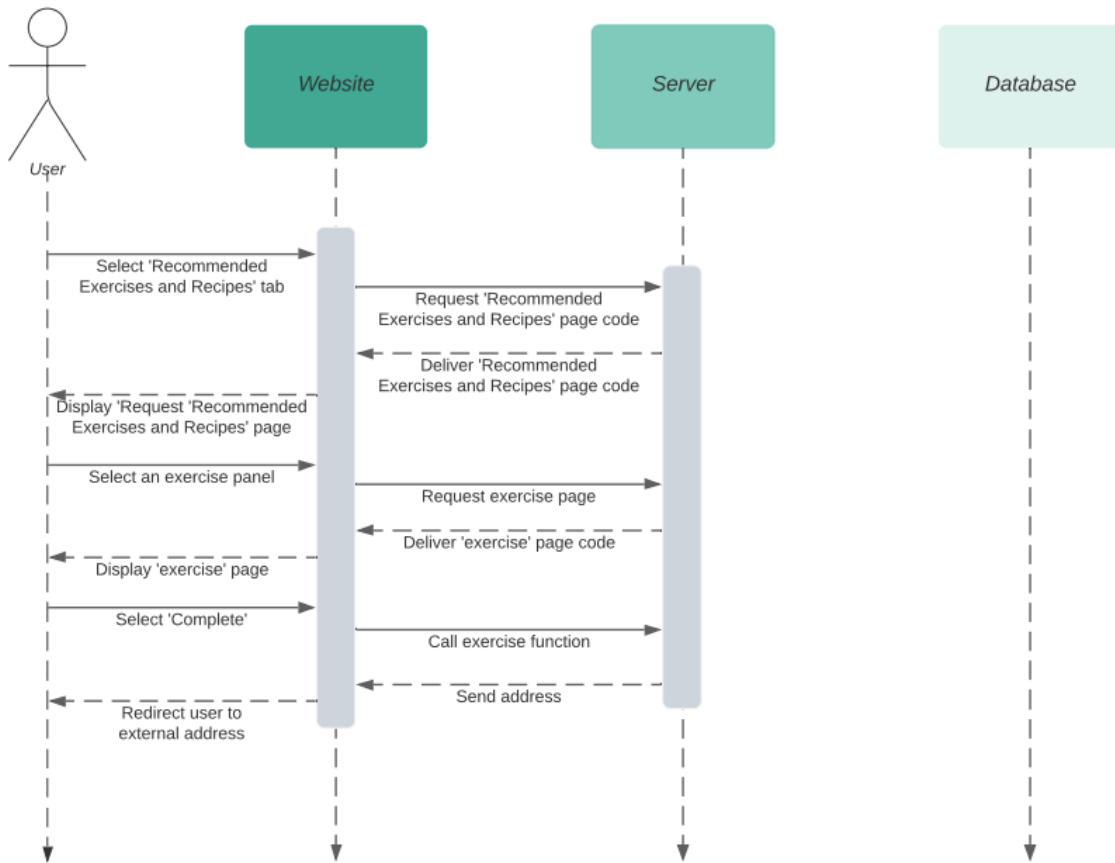
Then I would be redirected to this page with a list of exercises according to the type of exercise it is.

When I scroll through and click on a particular exercise,

Then I will be given a breakdown on the type of exercise it is, how much calories I will burn and how to properly do it.

When I click the “Complete” button,

Then this will direct me to a Youtube Video that shows how to do the particular exercise



Feature: Recommended Recipes Tab

As a user,

So that I am able to get access to a variety of healthy recipes,

I want an recommended recipes tab that will allow me to browse through options available

Scenario: User would like to look at different recipes available and follow it

Given that I am already logged in,

When I click on the “Recommended Exercise and Recipes” tab on the side bar,

Then I would be redirected to this page

When I click the ‘Recipes’ tab at the top of the page

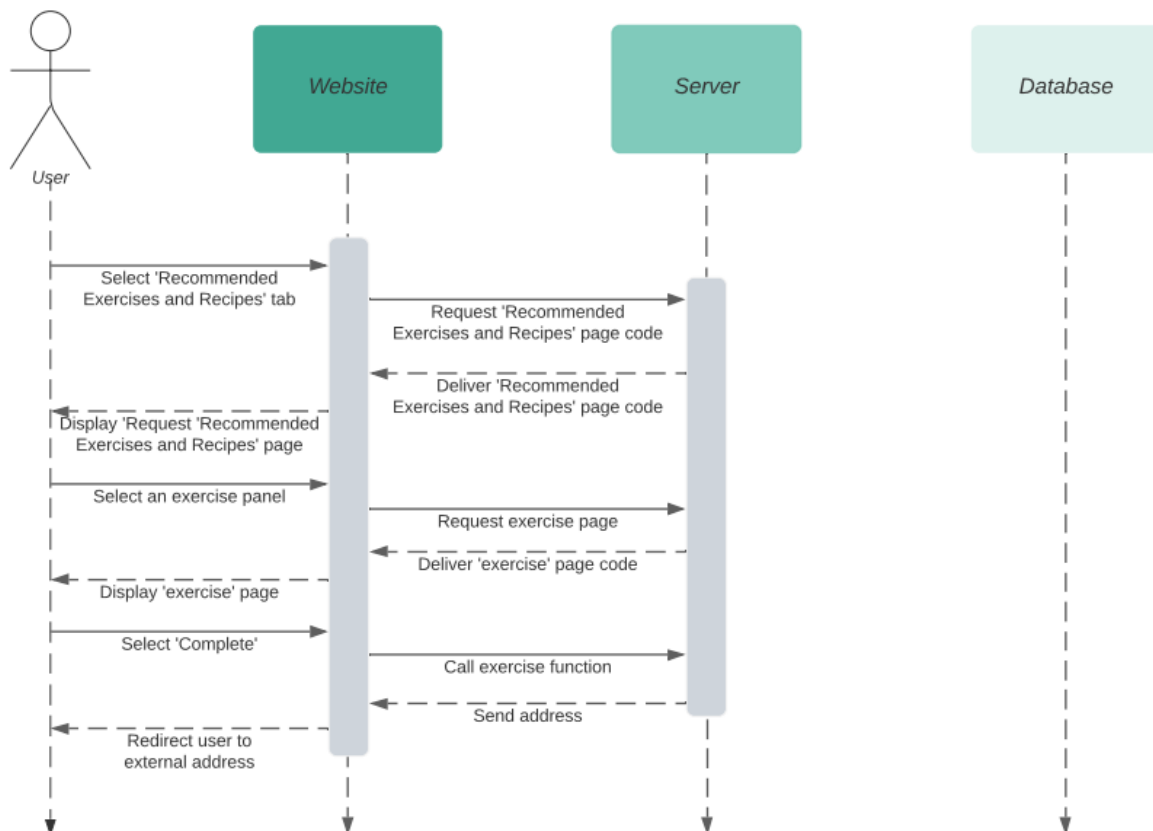
Then I would be redirected to recommended recipe page

When I scroll through and click on a particular recipe,

Then I will be given a breakdown on ingredients, steps and time it takes to make it

When I decide what to make and click the “Add to Food Diary” button,

Then it will take me to the food-diary page and be ready for me to choose a date & time for the meal.



Feature: Rewards

As a user,

So that I am motivated to maintain a healthy lifestyle

I want a gamified system which allows me to exchange points for 'real-life' rewards

Scenario: user would like to exchange points earned for external rewards

Given that I am already logged in,

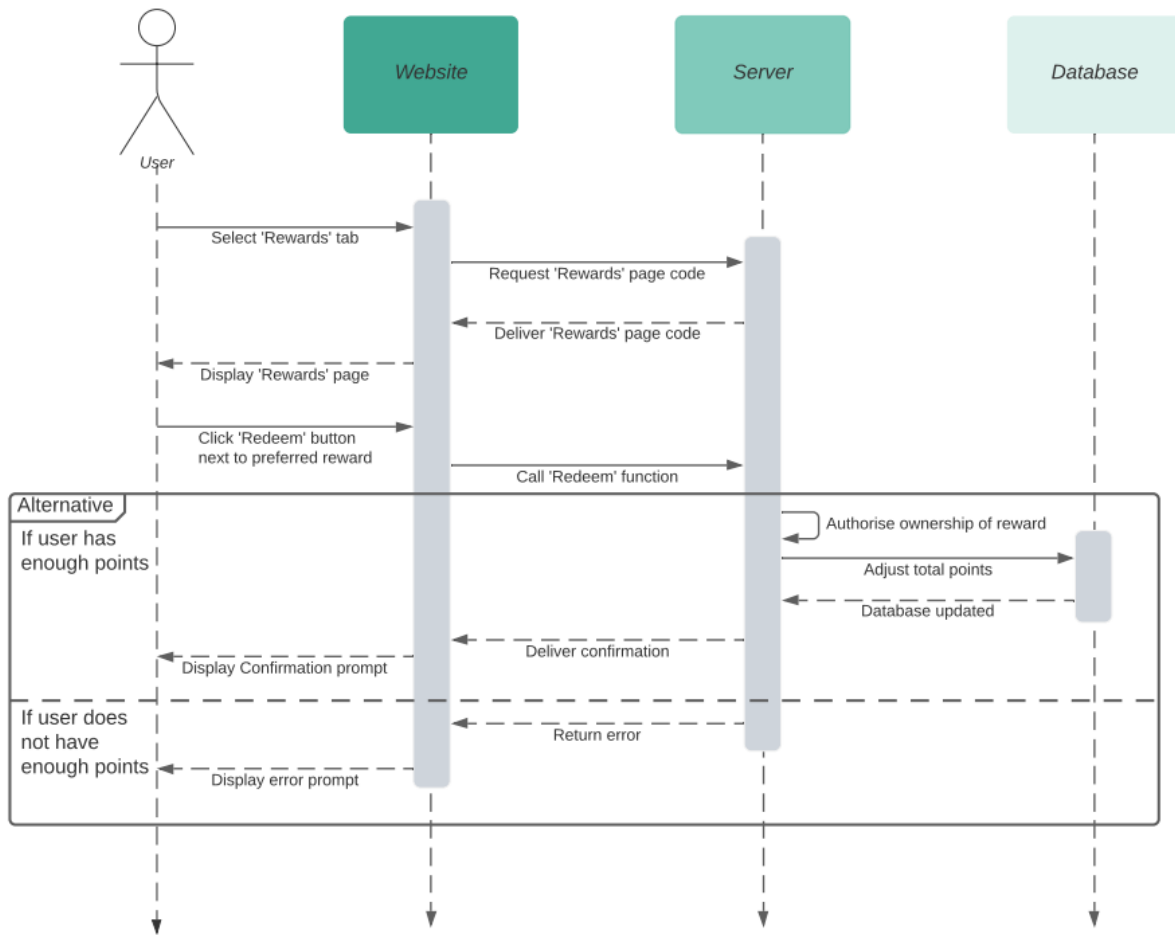
Then I click on the rewards tab on the side bar,

When I would be redirected to the 'Rewards' page

Then I click on a the redeem button next a reward

And I have enough points

Then I will now own the reward and my account will be updated to deduct the points that were spent.



Feature: Users can change their goal weight

As a user,

So that I can update my weight management objectives,

I want to change my goal weight.

Scenario: Users can change the weight they aim to progress towards

Given I am already logged in

When I click on the profile picture in the top right

Then I should be redirected to my profile page

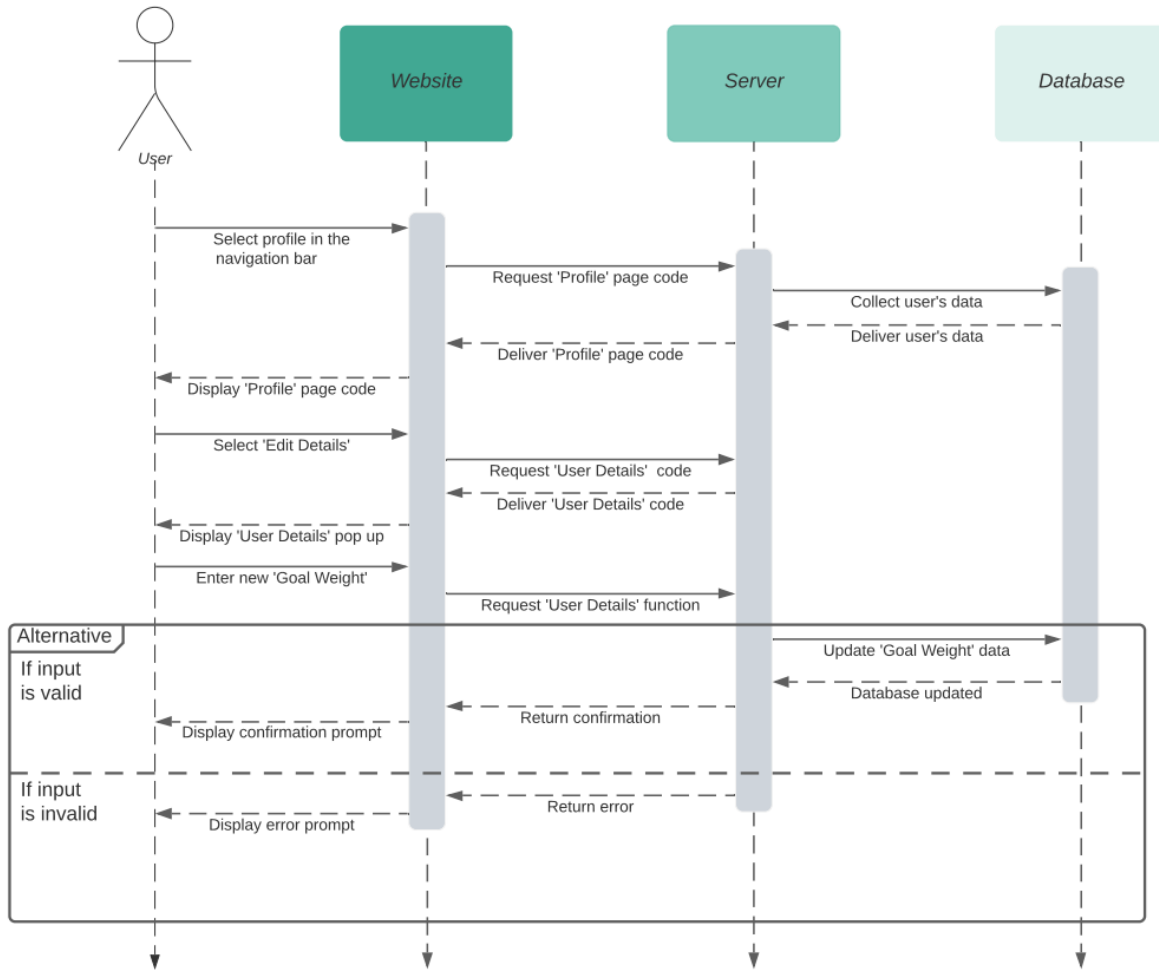
When I click on the pencil icon

Then I should see the 'Edit Details' pop-up menu

When I enter a new number in the 'Goal Weight' field

And click 'Done'

Then the goal weight displayed throughout the app will update



Feature: Users can update their current weight

As a user,

So that I can keep track of my weight management progress,

I want to update my current weight.

Scenario: Users can update the 'current weight' measurement

Given I am already logged in

When I click on the profile picture in the top right

Then I should be redirected to my profile page

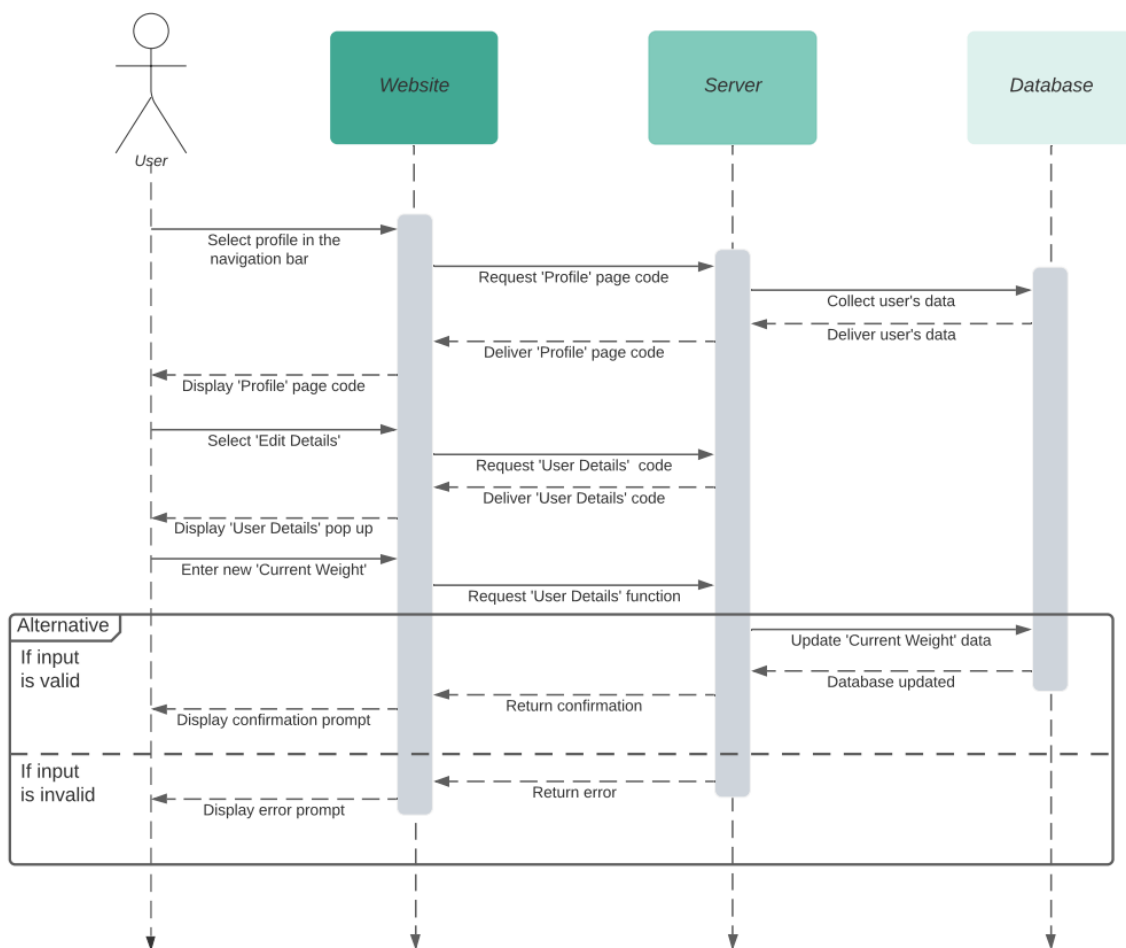
When I click on the pencil icon

Then I should see the 'Edit Details' pop-up menu

When I enter a new number in the 'Current Weight' field

And click 'Done'

Then the current weight displayed throughout the app will update



Feature: Users can update their height

As a user,

So that I can make sure the app has my accurate measurements,

I want to edit my height.

Scenario: User can change the 'height' measurement within the app

Given I am already logged in

When I click on the profile picture in the top right

Then I should be redirected to my profile page

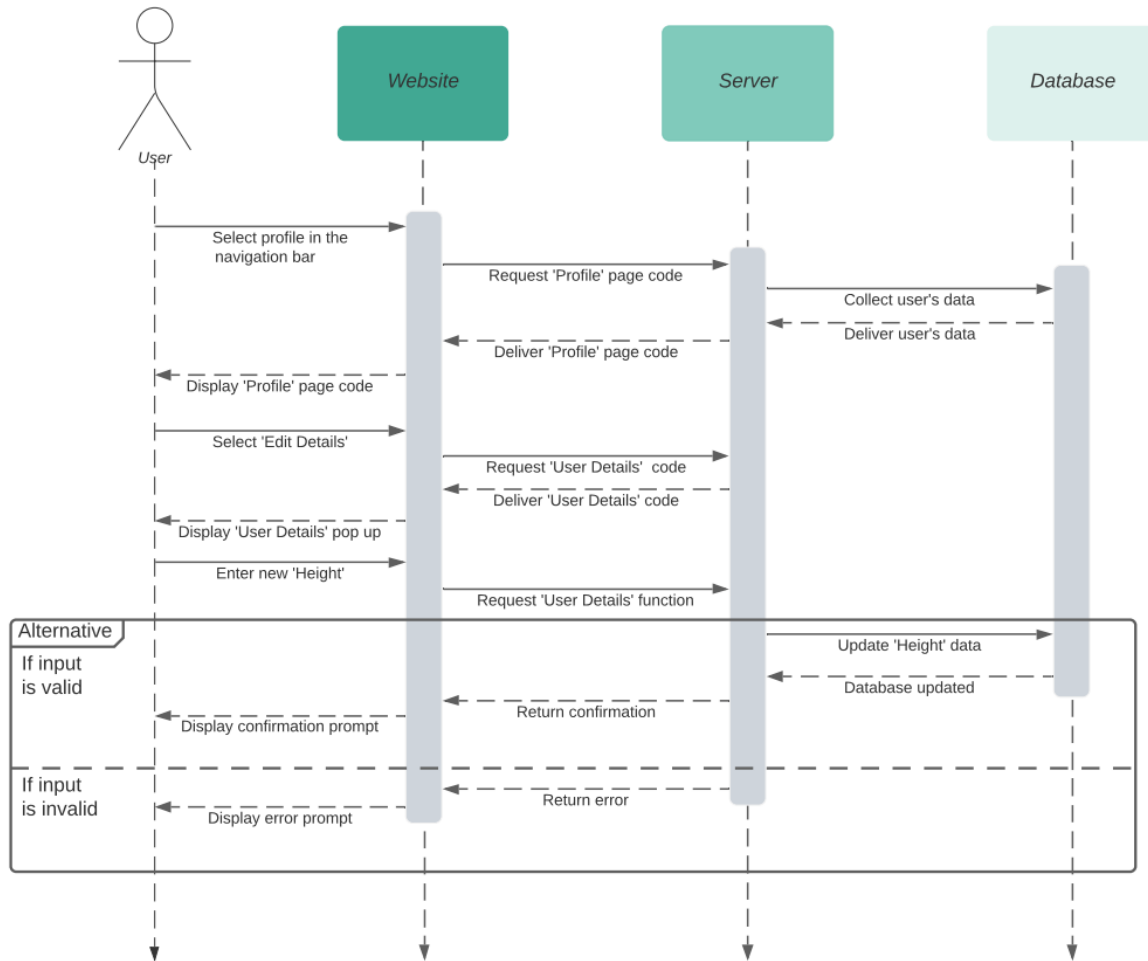
When I click on the pencil icon

Then I should see the 'Edit Details' pop-up menu

When I enter a new number in the 'Height' field

And click 'Done'

Then the height displayed throughout the app will update



Feature: Users can change their age

As a user,

So that I can resolve any mistakes made about my d.o.b. during the sign-up process,

I want to edit my date of birth.

Scenario: User can change the 'age' measurement within the app

Given I am already logged in

When I click on the profile picture in the top right

Then I should be redirected to my profile page

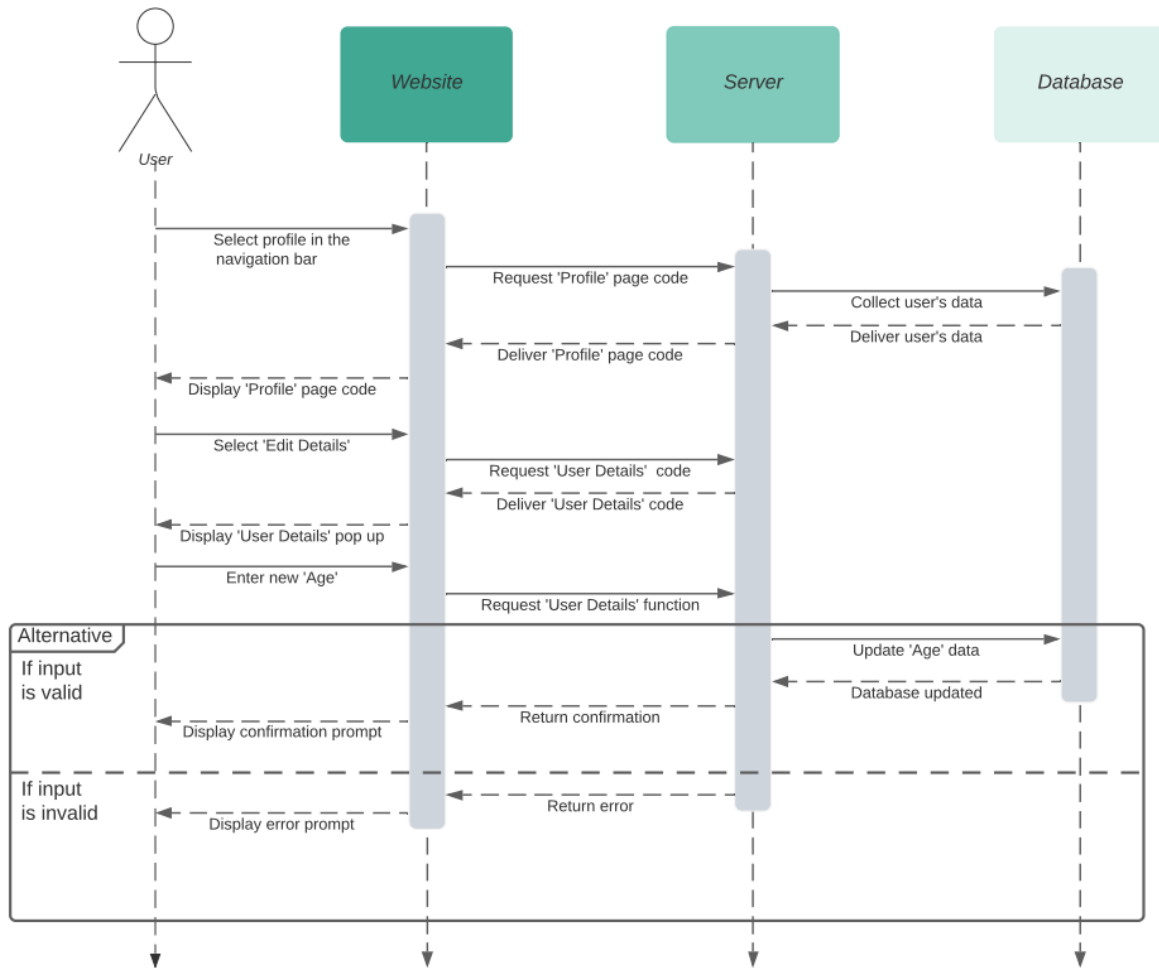
When I click on the pencil icon

Then I should see the 'Edit Details' pop-up menu

When I enter a valid birthday in the 'Date of Birth' field

And click 'Done'

Then the age displayed throughout the app will update



Feature: Users can view their BMI

As a user

So that I can assess my current health

I want to view my BMI

Scenario: A user will be able to view their current BMI

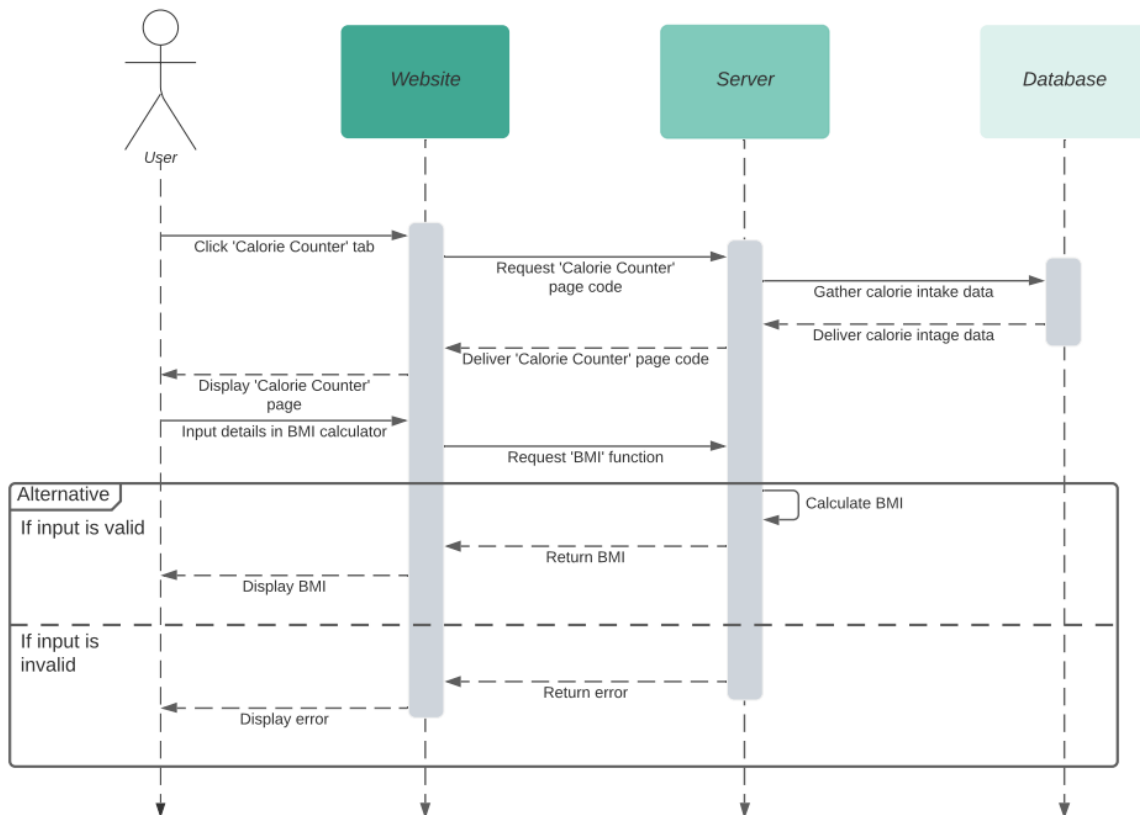
Given I am already logged in

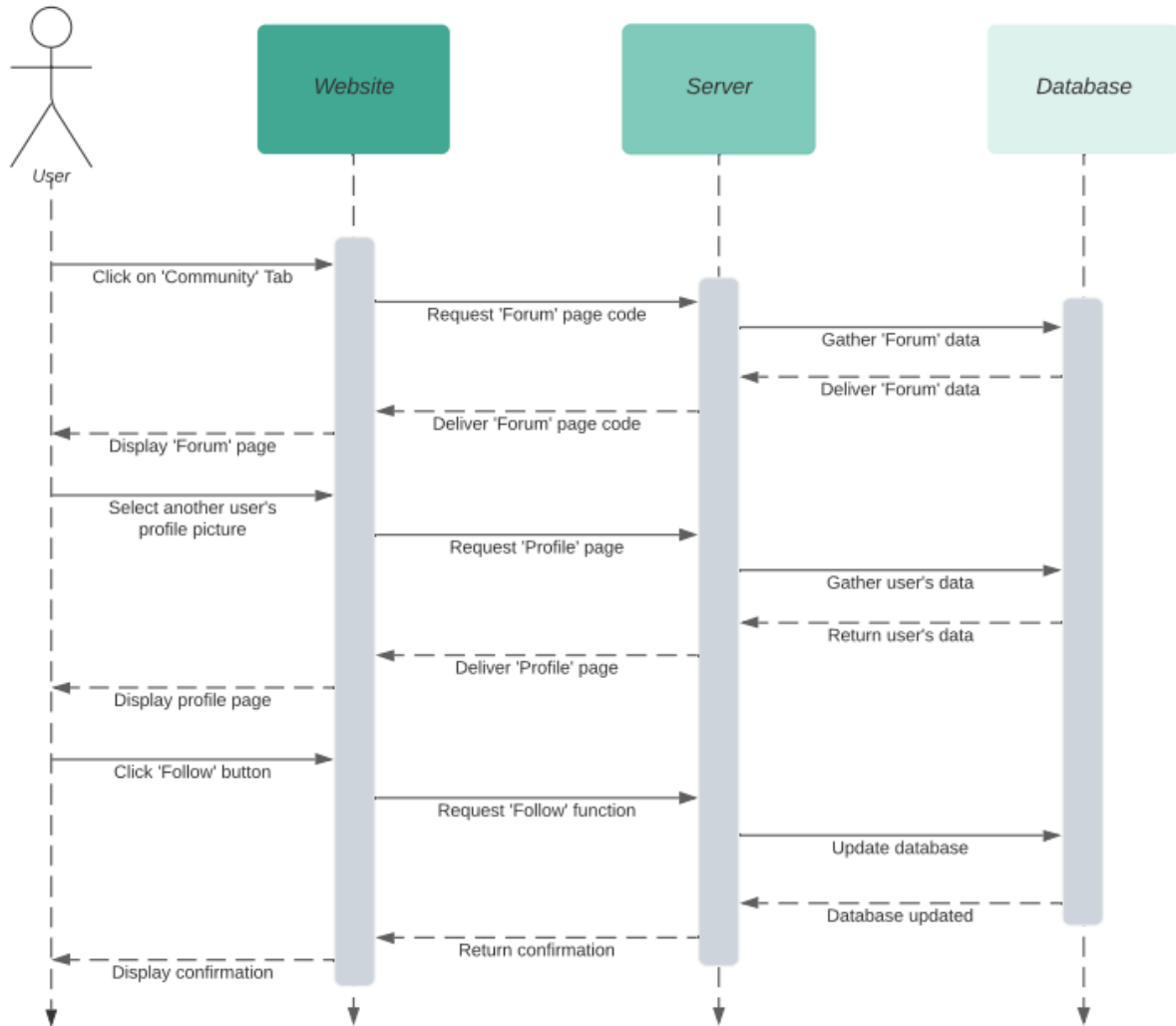
When I click on the 'Calorie Counter' tab

Then I will be redirected to the 'Calorie Counter' page

And If I fill out the 'BMI Calculator' with the relevant details

Then I should be presented with my BMI





Feature: Users can change their username

As a user,

So that I can change my online identity,

I want to edit my current username.

Scenario: User will be able to edit their username

Given I am already logged in

When I click on the settings icon,

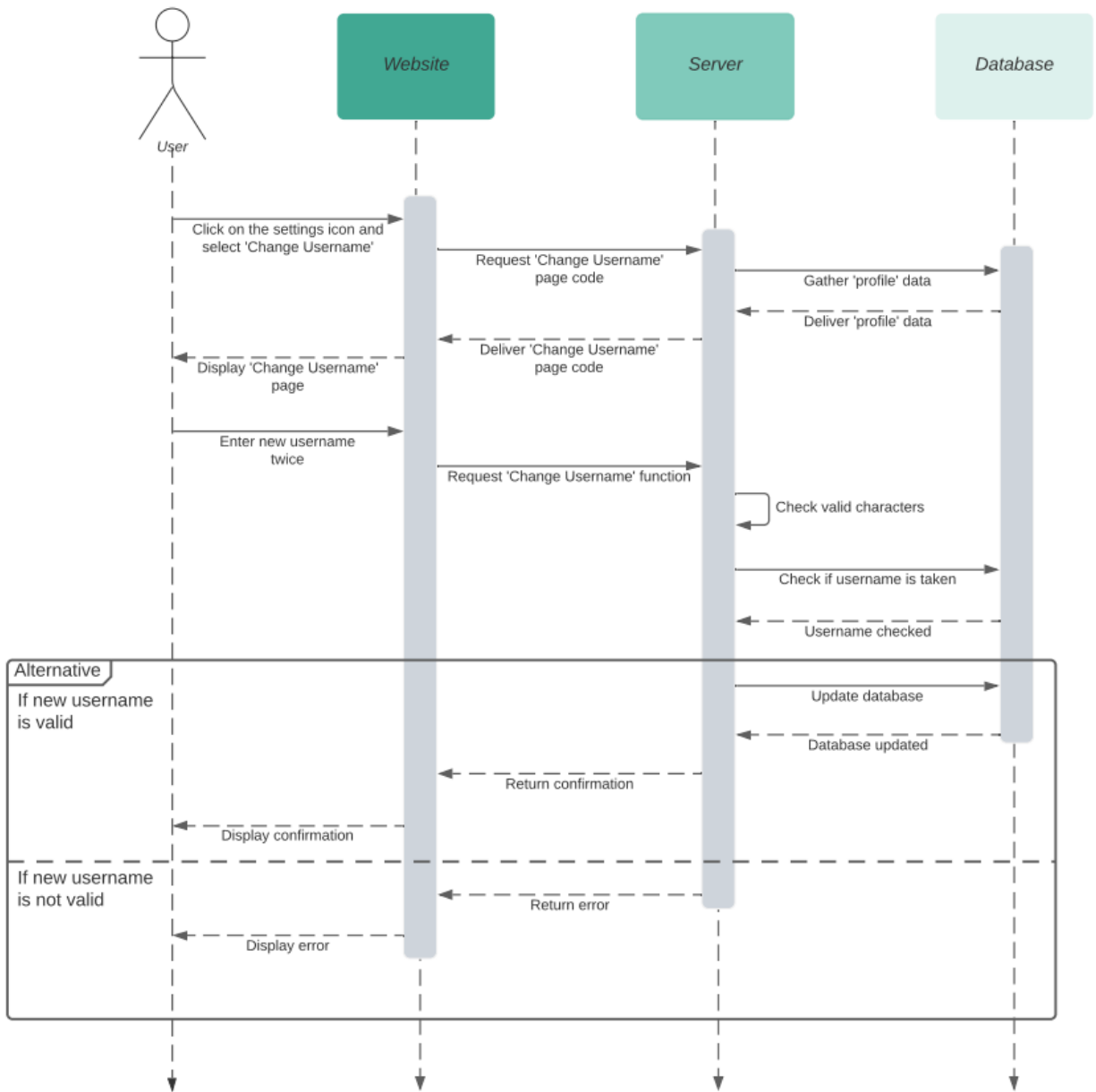
Then the setting bar will expand to show all the options available.

When I click “Change Username”,

Then I will be redirected to a new page.

When I fill my new username twice and they both match,

Then this should update my current username with the recently updated one and I would be prompted with a message notifying me that this has occurred successfully



Feature: Users can change email

As a user,

So that I am able to update my personal email that is saved in the database with the email that I desire,

I want to be able to reset my email.

Scenario: User's current personal email has changed, so they would like to use that one instead of the one they had initially used to register into our website

Given that I am already logged in,

When I click on the settings icon,

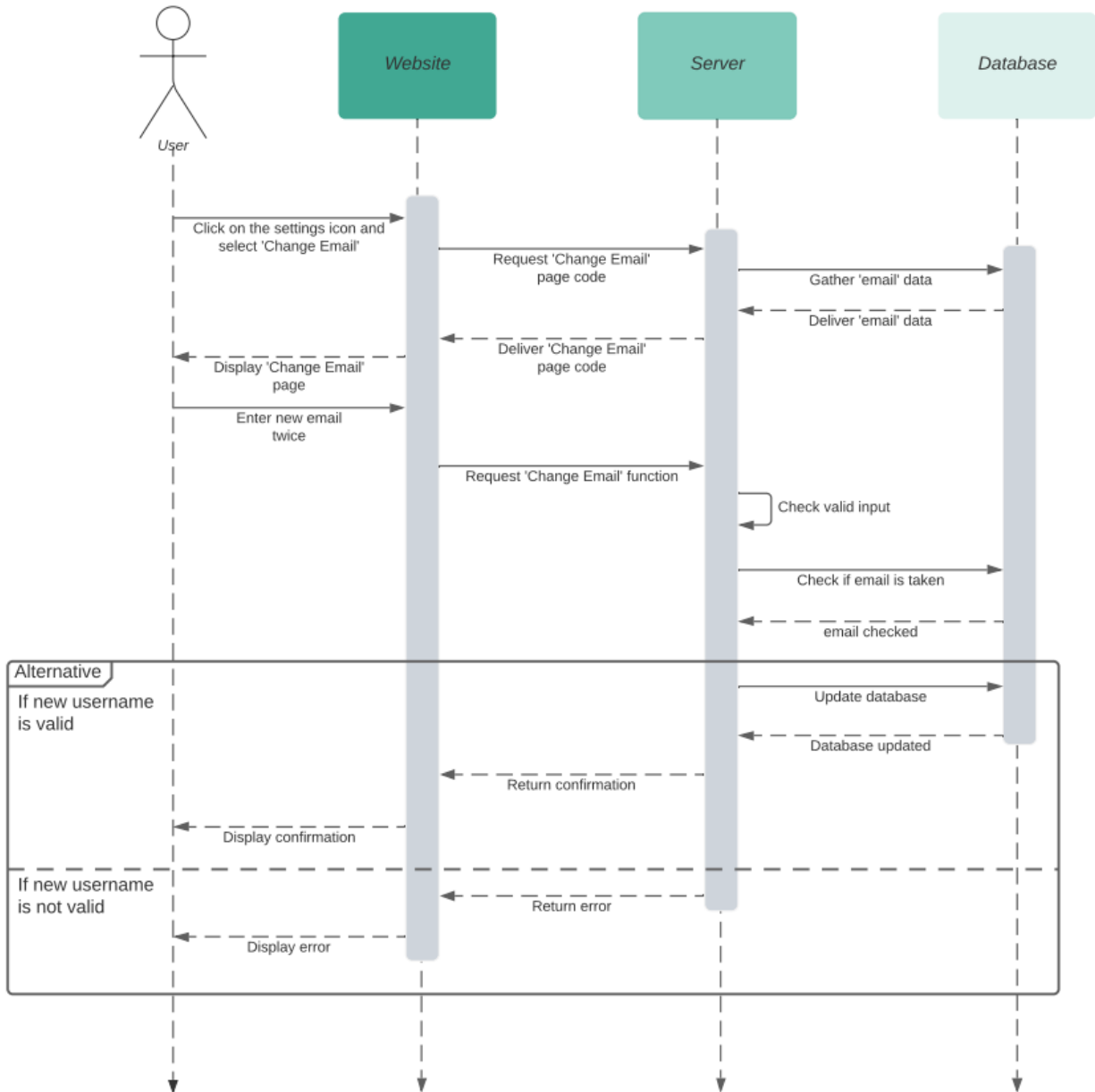
Then the setting bar will expand to show all the options available.

When I click "Change Email",

Then I will be redirected to a new page.

When I fill my new email twice and they both match,

Then this should update my current email with the recently updated one and I would be prompted with a message notifying me that this has occurred successfully



Feature: Users can change their password

As a user,

So that I can keep my account accessible and secure,

I want to change my password.

Scenario: User will change their password

Given I am already logged in

When I click on the settings icon,

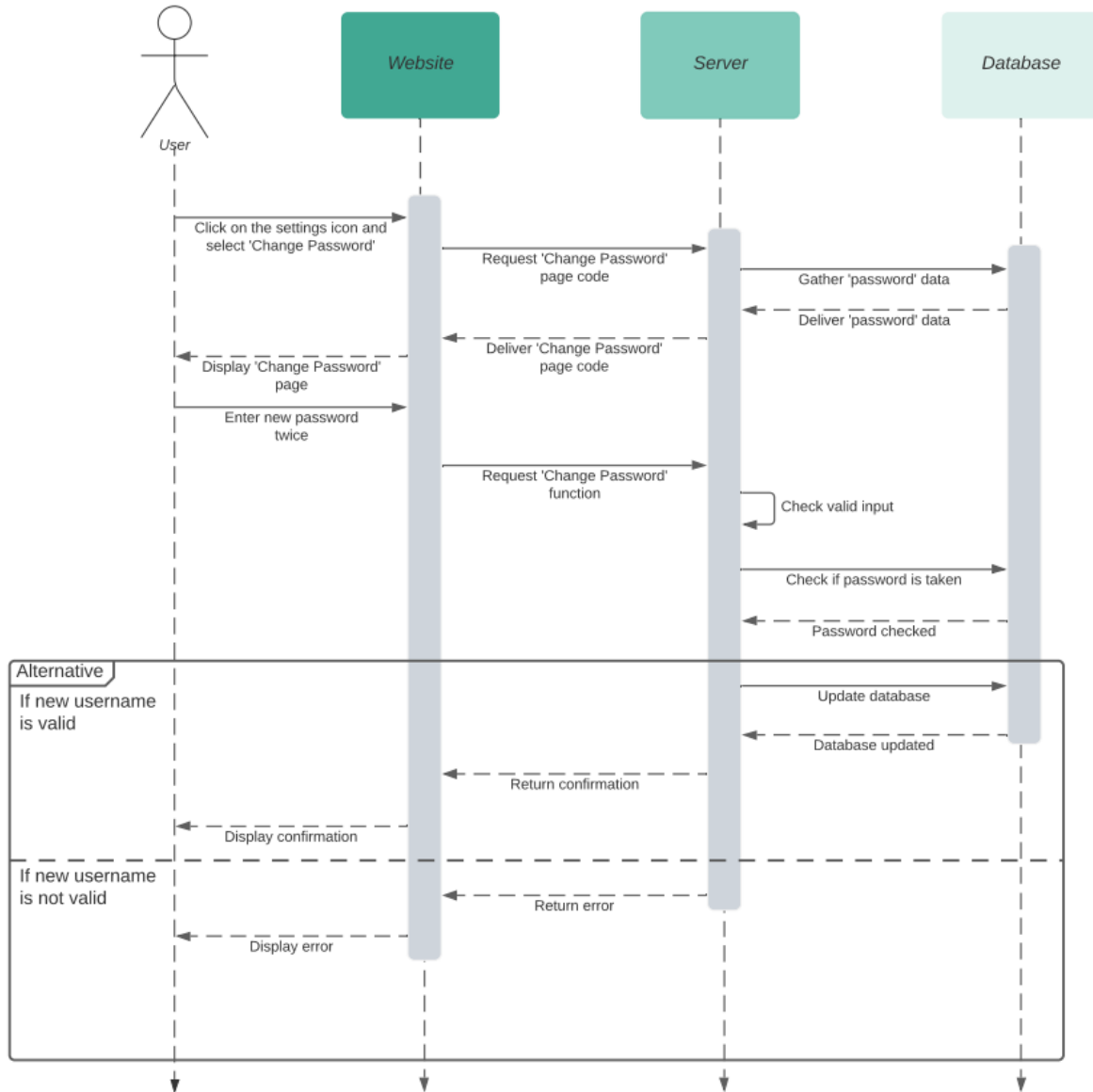
Then the setting bar will expand to show all the options available.

When I scroll down and click “Change Password”,

Then I will be redirected to a new page.

When I fill my new password twice and they both match,

Then this should update my current password and I would be prompted with a message notifying me that this has occurred successfully



PARTIALLY IMPLEMENTED

Feature: Meal Reminder

As a user,

So that I can keep track of my planned meal in a fun and interactive manner,

I want to be able to plan my next meal.

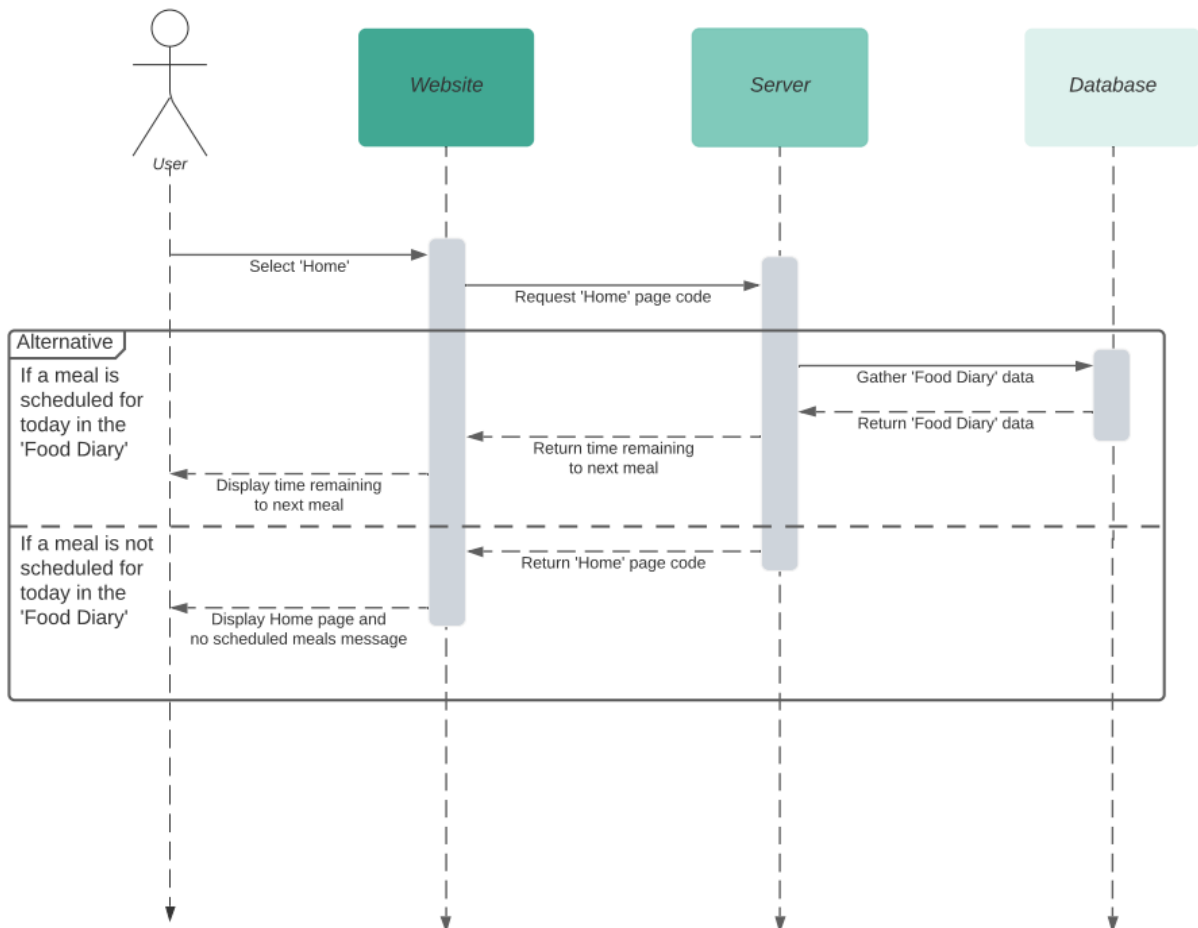
Scenario: User would like to plan out a meal and be reminded that they have a specific meal to eat, in order to achieve their weight goal or a healthy diet

Given that I have already planned my next meal,

Then at the scheduled time of that meal, a pop-up will be displayed, showing that I have a meal planned for that time

When I want to complete my task of eating a planned meal,

Then I click on the on 'Complete Meal' button in the bottom right of the home page, which will complete the task and show up your next planned meal.



Feature: Exercise Reminder

As a user,

So that I can keep track of my planned exercise in a fun and interactive manner,

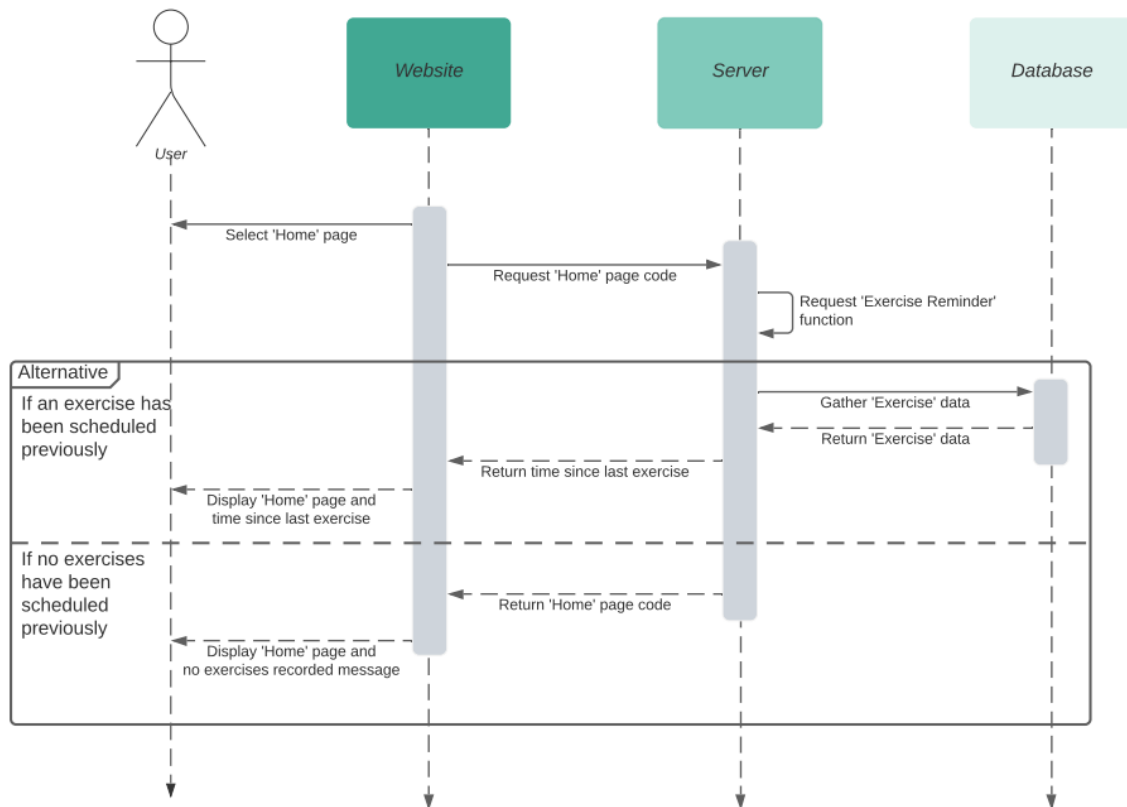
I want to be able to plan my next exercise.

Scenario: User would like plan out exercise routines and be reminded when they need to complete the exercise, in order to achieve their weight goal or a healthy lifestyle

Given that I have already completed an exercise,

When I click on the 'Home' tab on the navigation bar,

Then I will be able to see how much time has passed since my last exercise



Feature: Users can sort through exercises

As a user,

So that I am able to find exercises relevant to me,

I want to filter through the different types of exercises available.

Scenario: Users would like to find exercise relevant to their weight management journey.

Given that I am already logged in,

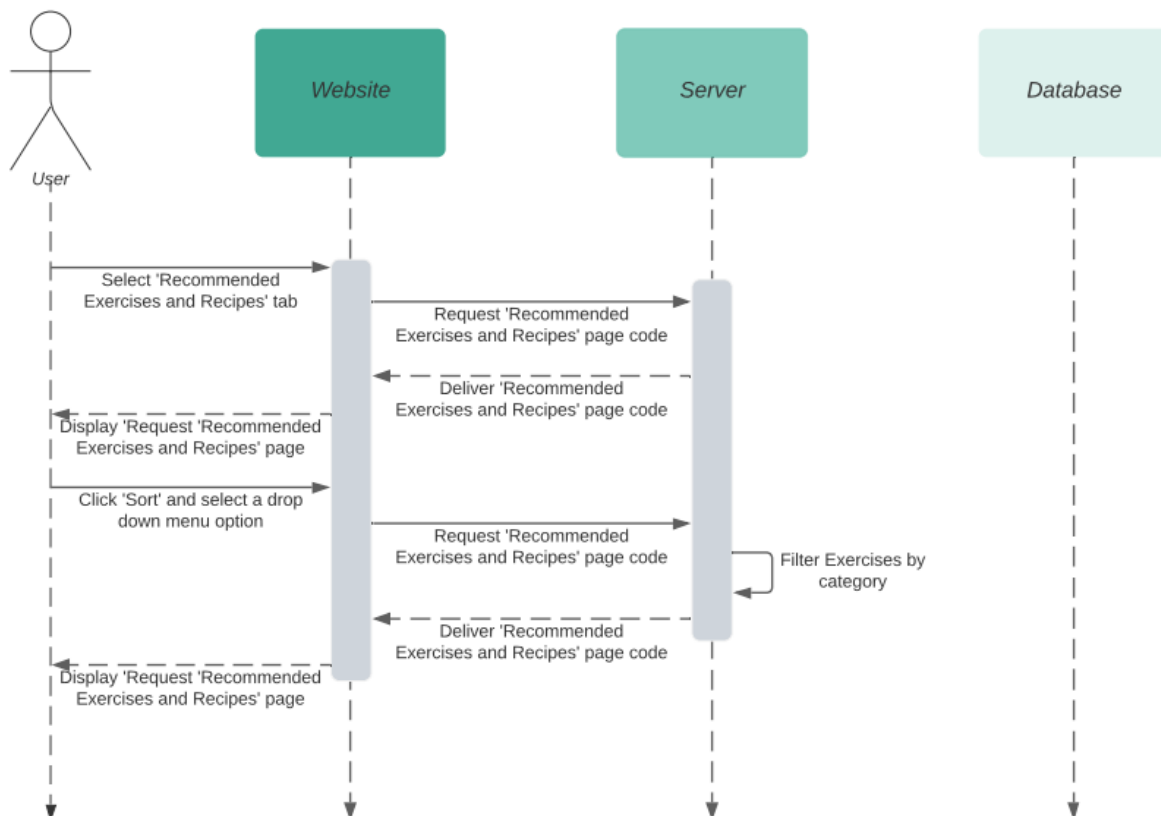
When I click on the “Recommended Exercise and Recipes” tab on the side bar,

Then I would be redirected to a new page with a list of exercises according to the type of exercise it is.

When I click on the ‘Sort’ button, a drop down menu will appear showing different categories of exercises

And If I select a category

Then the page will offer only exercises of that category



Feature: Users can sort through recipes

As a user,

So that I am able to get access to recipes that are relevant to me,

I want to be able to sort through the list of available recipes

Scenario: User would like to look at different recipes available and follow it

Given that I am already logged in,

When I click on the “Recommended Exercise and Recipes” tab on the side bar,

Then I would be redirected to this page

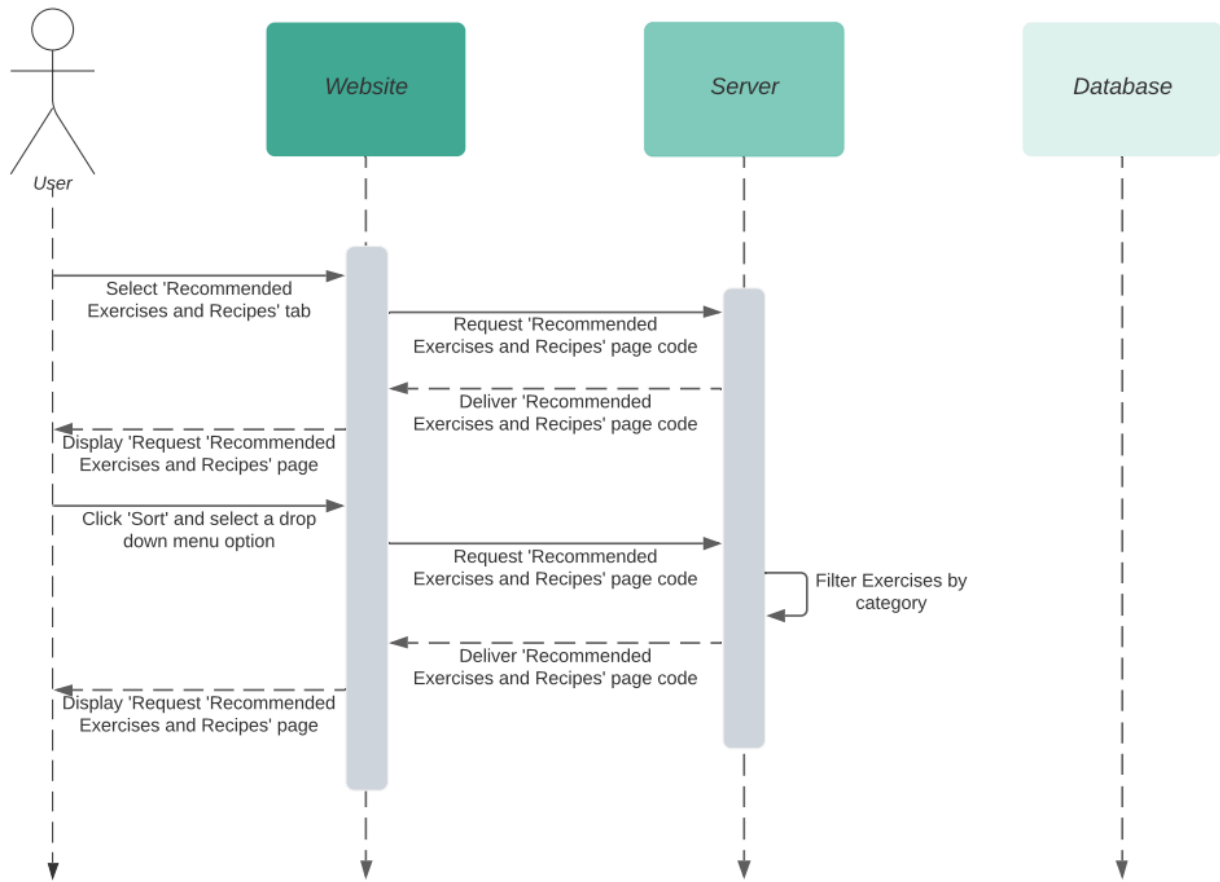
When I click the ‘Recipes’ tab at the top of the page

Then I would be redirected to recommended recipe page

When I click sort

And select an option in the drop down menu,

Then my feed of recommended recipes will be filtered to those relevant to me



Feature: Leaderboard

As a user,

So that I am motivated to continually input daily intake and weight progression,

I want a gamified leader board that shows how well I am performing in respect to the other users of the website

Scenario: user would like to browse through the leaderboard to see how the users are doing

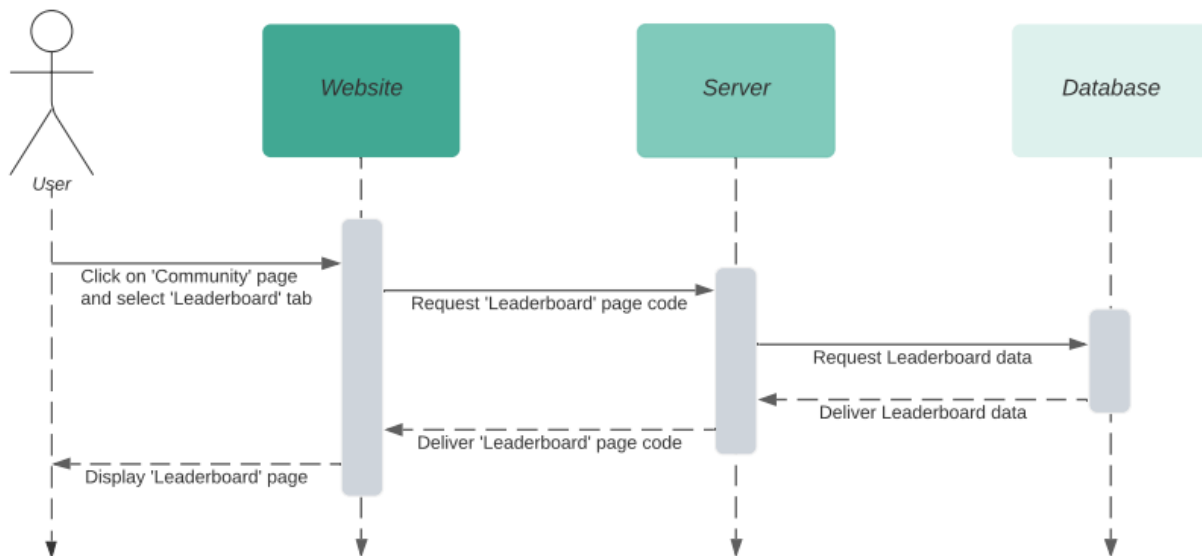
Given that I am already logged in,

When I click on the community tab on the side bar,

Then I would be redirected to the 'Leaderboard' page

When I select the 'Leaderboard' button

Then I would be redirected to this page which will display a leaderboard



Feature: Users can view a food diary consisting of consumed food in a calendar format

As a user,

So that I can keep track of my eating habits,

I want to view the contents of my diet on any day of my choosing.

Scenario: User can select any date in the past (on a calendar) and view the food consumed on that day

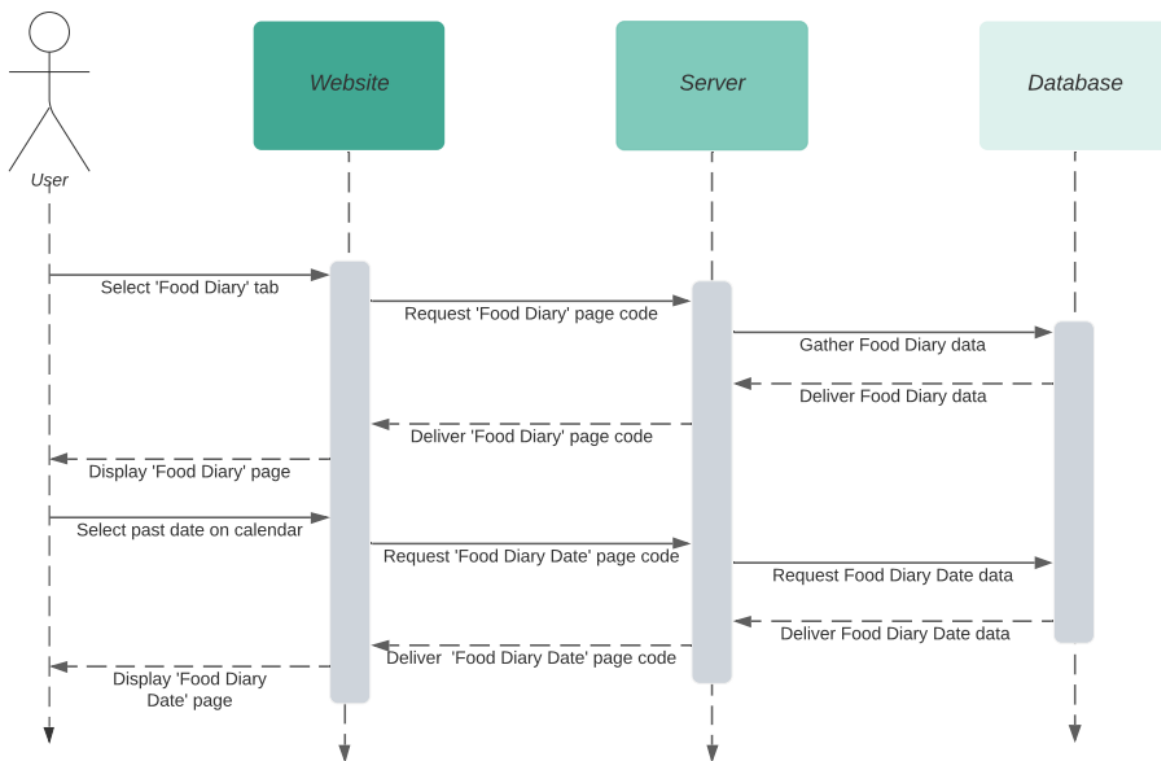
Given I am already logged in

When I click on the 'Food Diary' tab

Then I should be redirected to the 'Food Diary calendar'

When I select a past date

Then I will be able to view my diet for that specific date



Feature: Users can select any future date in the calendar and plan a meal in advance

As a user,

So that I can enforce better eating habits,

I want to pre-plan meals for future dates.

Scenario: User can select any date in the future (on a calendar) and plan a meal for that day

Given I am already logged in

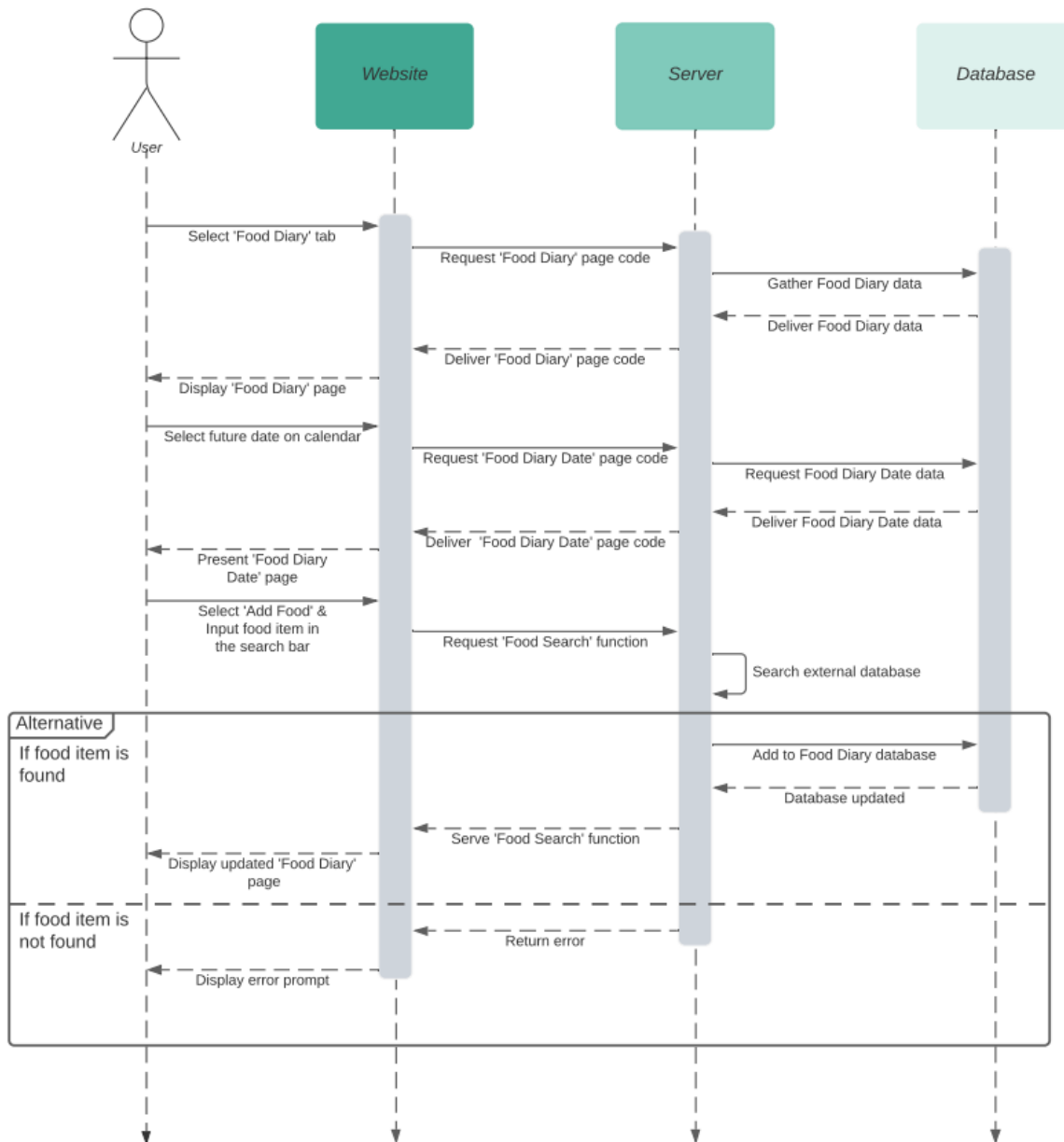
When I click on the 'Food Diary' tab

Then I should be redirected to the 'Food Diary calendar'

When I select a future date

And I select 'Add Food'

Then I can add that item to a planned meal for that day



Feature: Users can view posts in a community forum

As a user,

So that I can get tips and encouragement on my weight management,
I want to view the posts of like-minded users.

Scenario: A user can view a list of community posts by other users

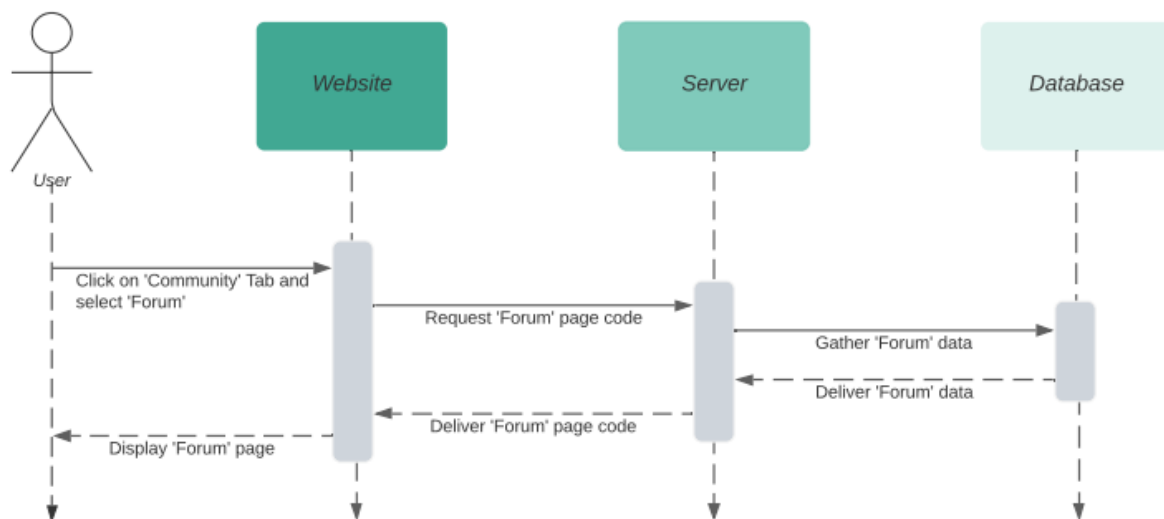
Given I am already logged in

When I click on the 'Community' tab

Then I should be redirected to the 'Community' page

And If I select the 'Forum' button

Then I can view a series of posts from users in the community



Feature: Users can create posts in the community forum

As a user,

So that I can help others by spreading my knowledge and experiences,

I want to create and post my insights in a text format to a public platform.

Scenario: A user can create a post (consisting of text) and share it with other members of the community

Given I am already logged in

When I click on the 'Community' tab

Then I should be redirected to the 'Community' page

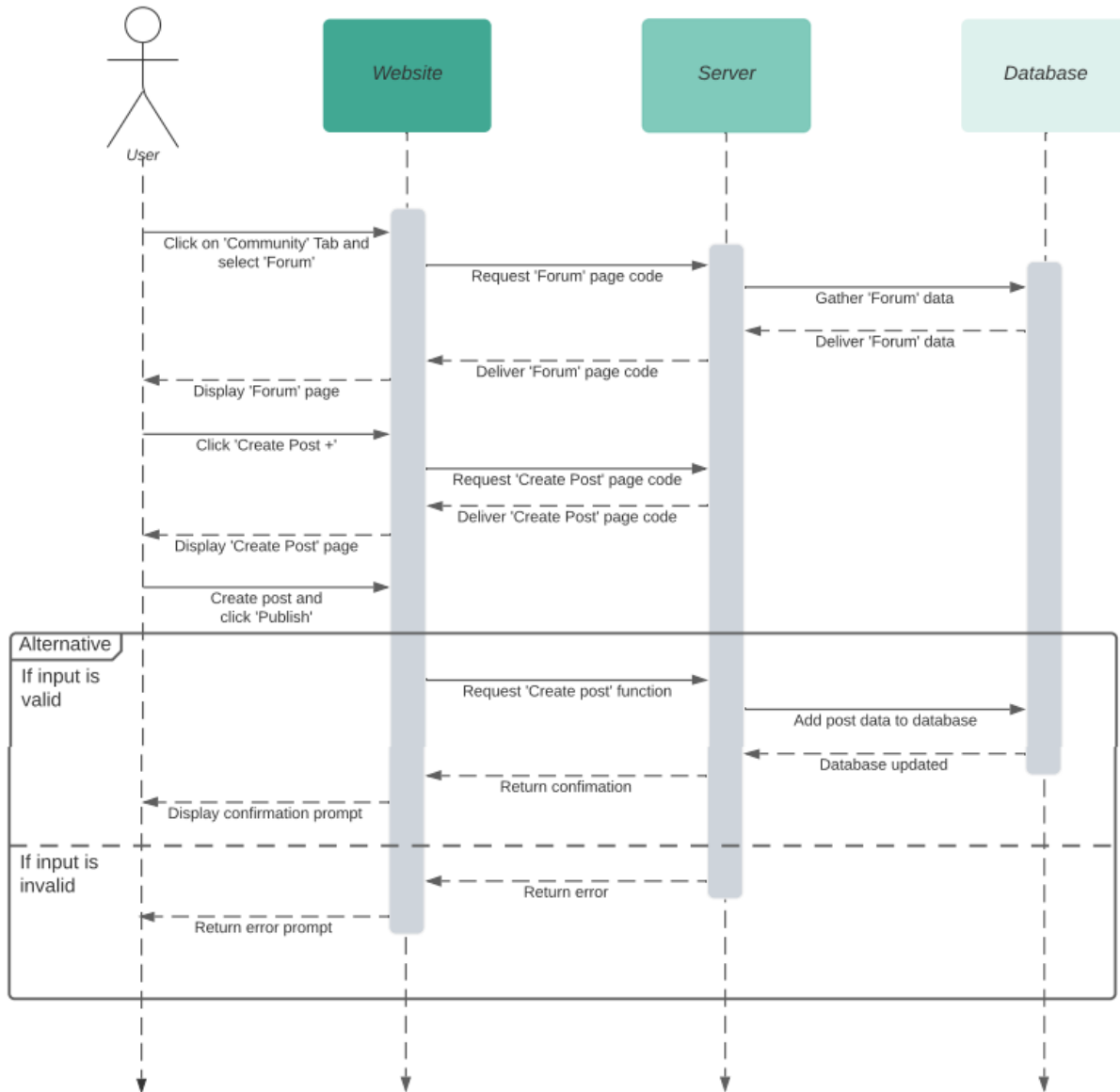
When I click on the 'Forum' button

And select the '+ Create Post' button

Then a pop-up should open

When I fill out the title, body and select 'Publish'

Then my post will have been created for the community to see



Feature: Authors can edit their own posts in the community forum

As an author,

So that I can rectify mistakes in my posts,

I want to edit posts I have created.

Scenario: User can modify the content of posts they have created

Given I am already logged in

When I click on the profile icon in the top right

Then I should be redirected to my profile page

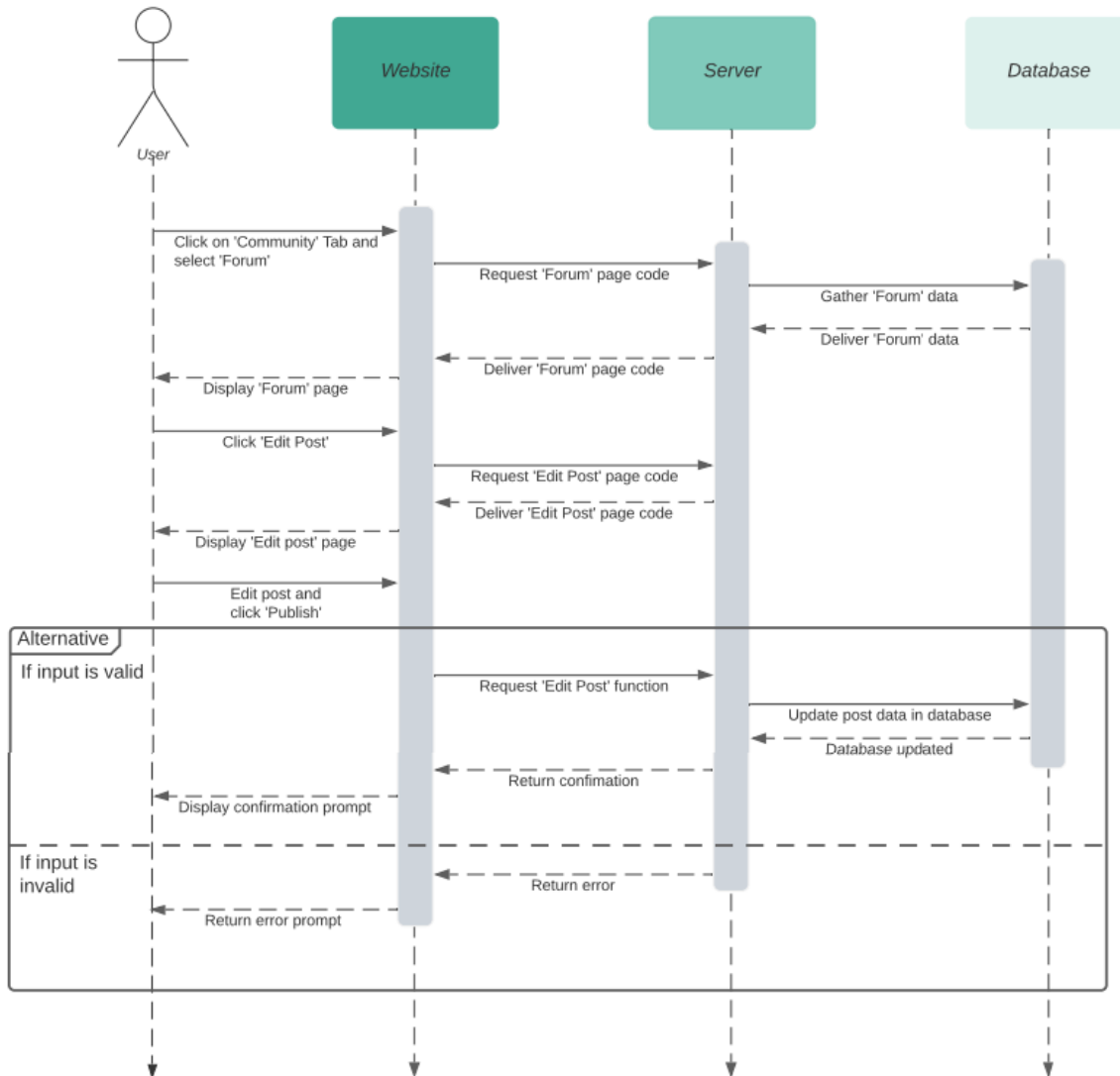
When I select the 'Posts' button

And I click on the 'Edit' button on a post

Then a pop-up will open

And If I modify the contents of the pop-up and select 'Done'

Then my post will have been edited



Feature: Authors can delete their own posts in the community forum

As an author,

So that I can remove my post from the public domain,

I want to delete a post I have previously created.

Scenario: User will delete a post they have previously created

Given I am already logged in

When I click on the profile icon in the top right

Then I should be redirected to my profile page

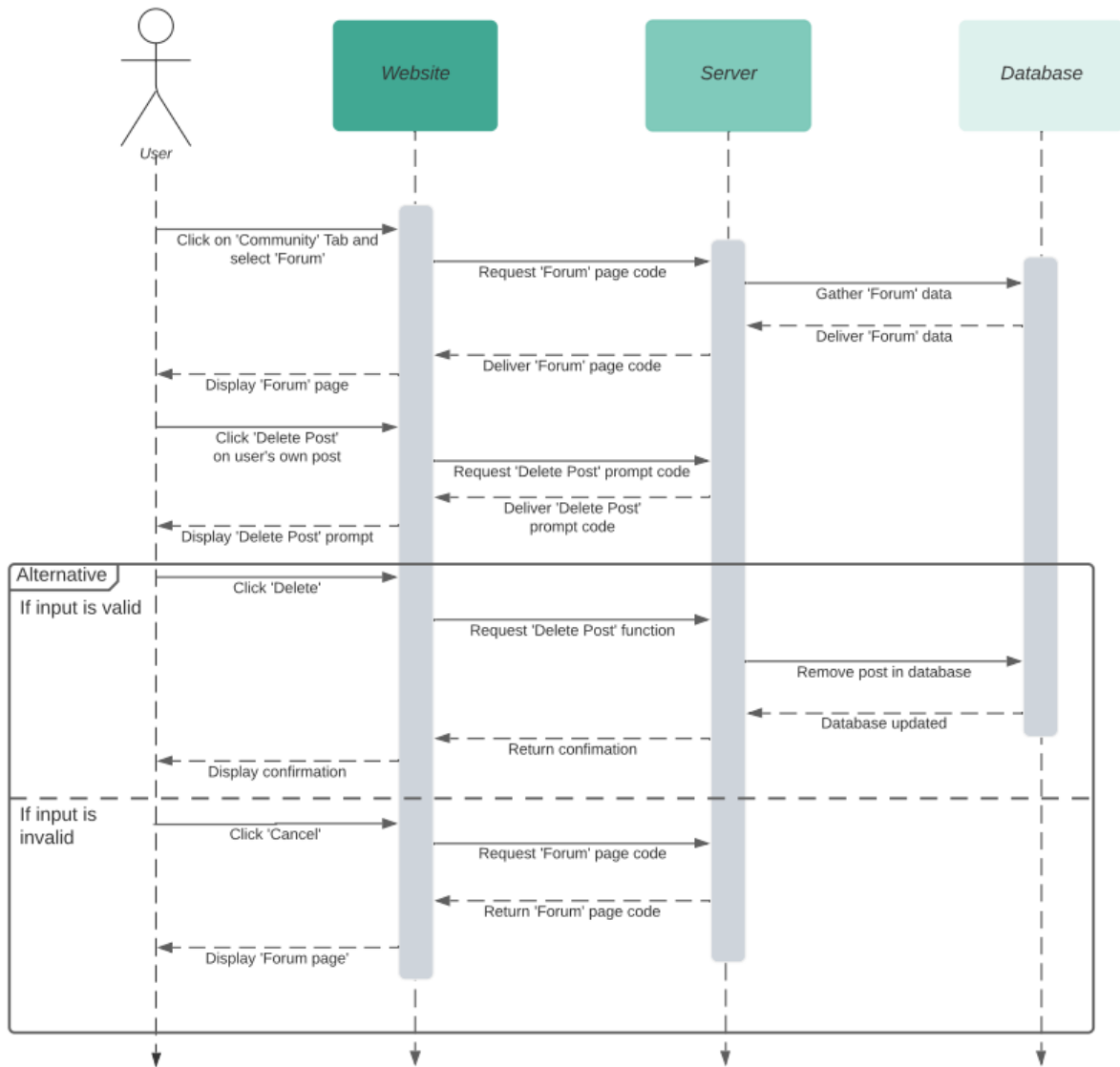
When I select the 'Posts' button

And I click on the 'Delete' button on a post

Then a pop-up will open

And If I select 'Yes'

Then my post will be deleted



Feature: Users can like posts in the community forum

As a user,

So that I can show my appreciation for another post,

I want to leave a like on their post.

Scenario: A user will be able to leave a 'like' underneath each post

Given I am already logged in

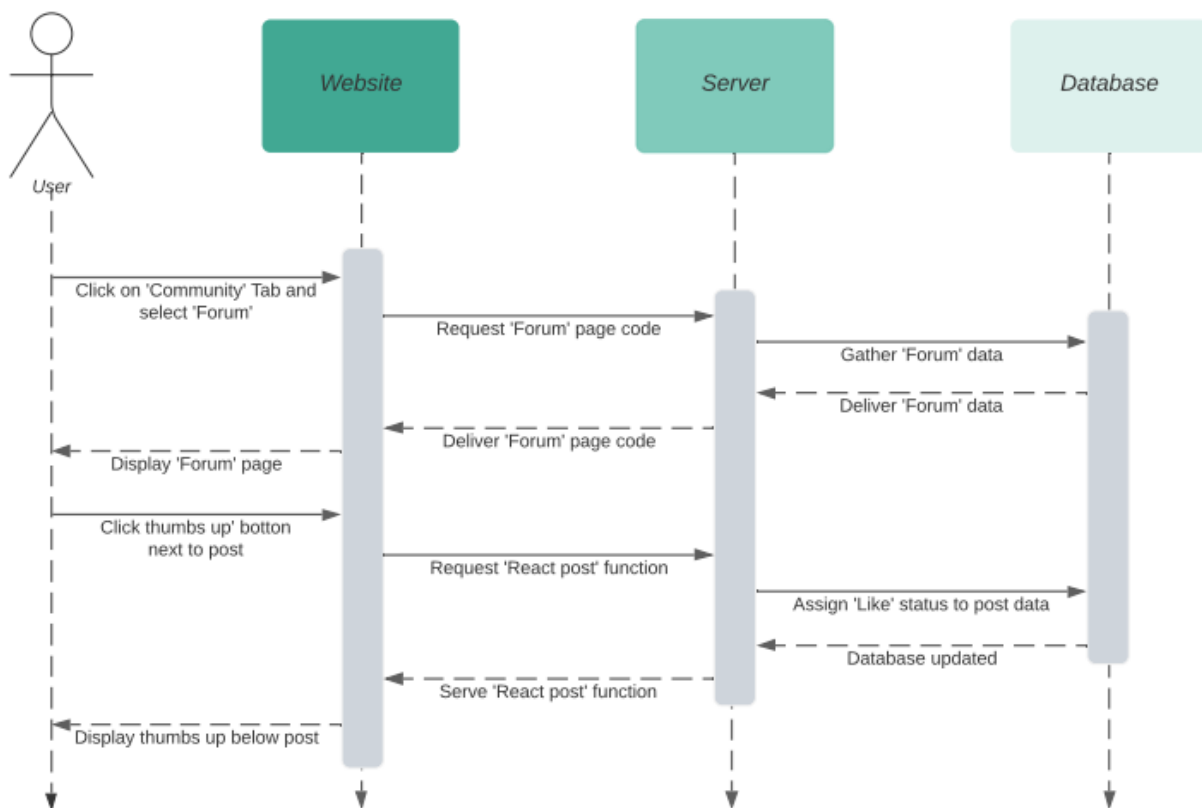
When I click on the 'Community' tab

Then I should be redirected to the 'Community' page

When I click on the 'Forum' button

And I select the Thumbs-up icon

Then I can leave a like on the post



Feature: Users can dislike posts in the community forum

As a user,

So that I can show my dissatisfaction for another post,

I want to leave a dislike on their post.

Scenario: A user will be able to leave a 'dislike' underneath each post

Given I am already logged in

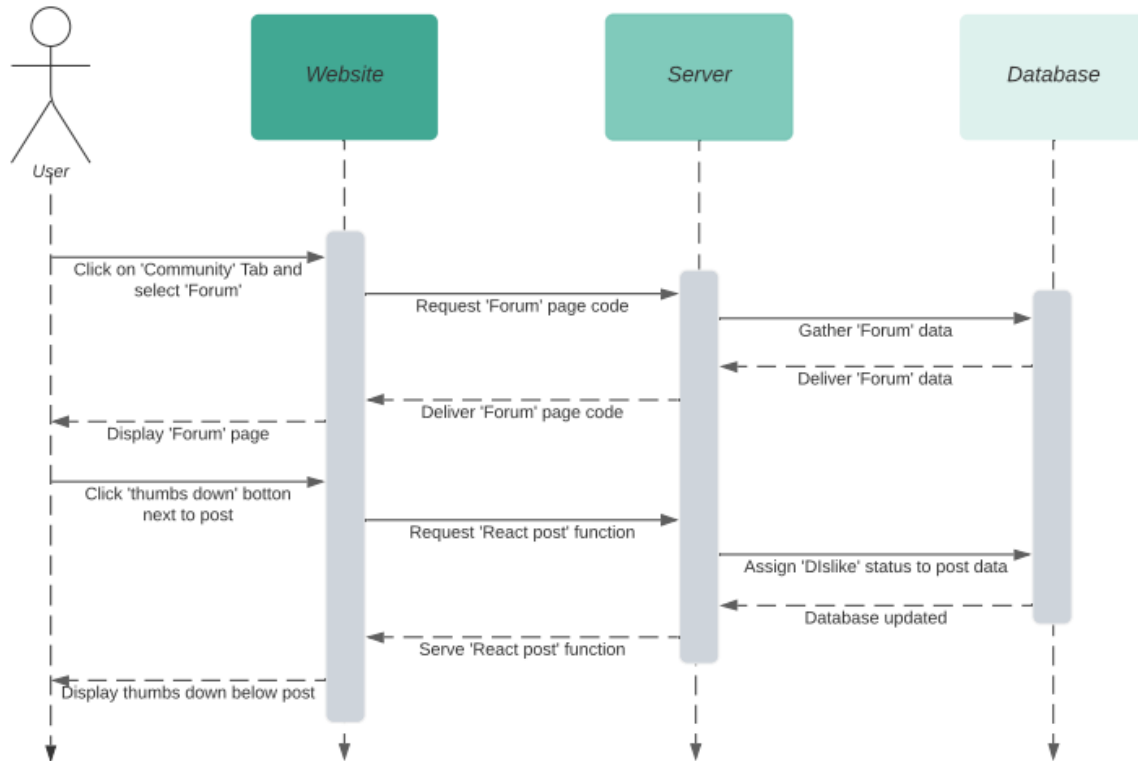
When I click on the 'Community' tab

Then I should be redirected to the 'Community' page

When I click on the 'Forum' button

And I select the Thumbs-down icon

Then I can leave a dislike on the post



Feature: Users can sort through posts in the community forum (popularity, recent)

As a user,

So that I can view different types of community posts,

I want to sort my community forum page with different criteria.

Scenario: A user will switch between sorting through popular and recent posts to get exposure to different posts

Given I am already logged in

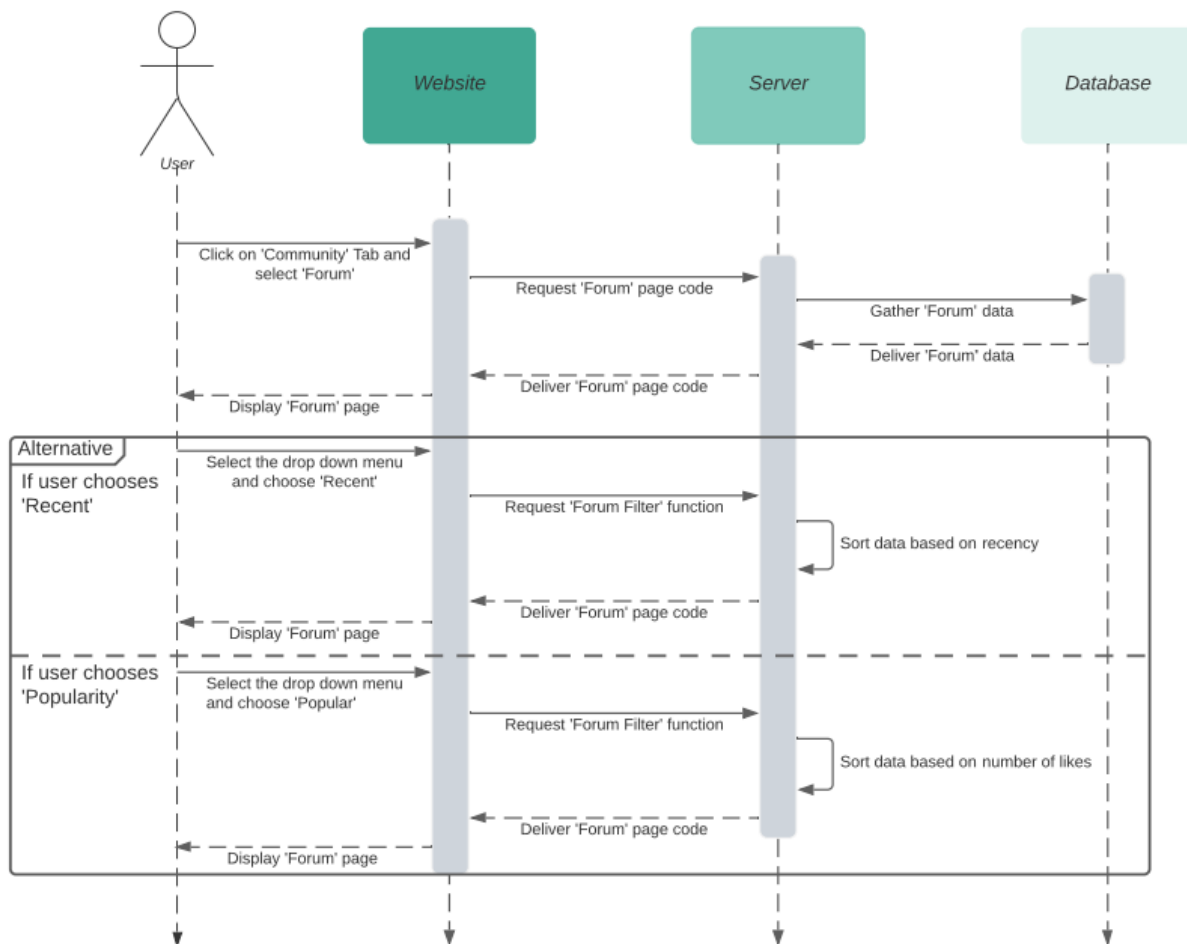
When I click on the 'Community' tab

Then I should be redirected to the 'Community' page

When I click on the 'Forum' button

And I select the ('Recent'/'Popular') sorting option

Then the posts on my forum feed will be sorted in order of (newest to latest /most-liked to least-liked)



Feature: Users can find posts in the community forum through a search by title

As a user,

So that I can find community posts relevant to me,

I want to search blogs by their title.

Scenario: Users will find relevant blogs through a search bar

Given I am already logged in

When I click on the 'Community' tab

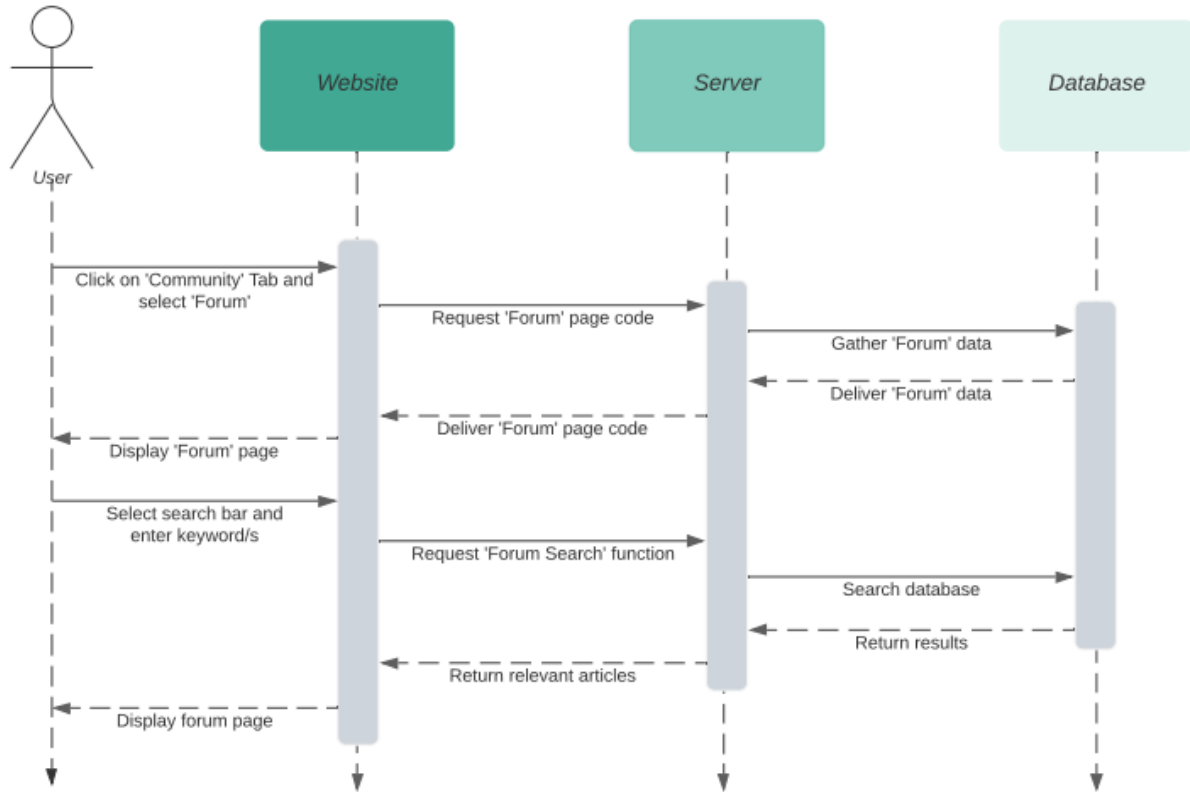
Then I should be redirected to the 'Community' page

When I click on the 'Forum' button

Then I fill out the search bar

And I click 'Enter'

Then I am presented with posts which have the searched word in the title



Feature: Users can find posts in the community forum through a search by author

As a user,

So that I can find posts from a specific author,

I want to search for blogs by their author.

Scenario: Users will find relevant blogs through a search bar

Given I am already logged in

When I click on the 'Community' tab

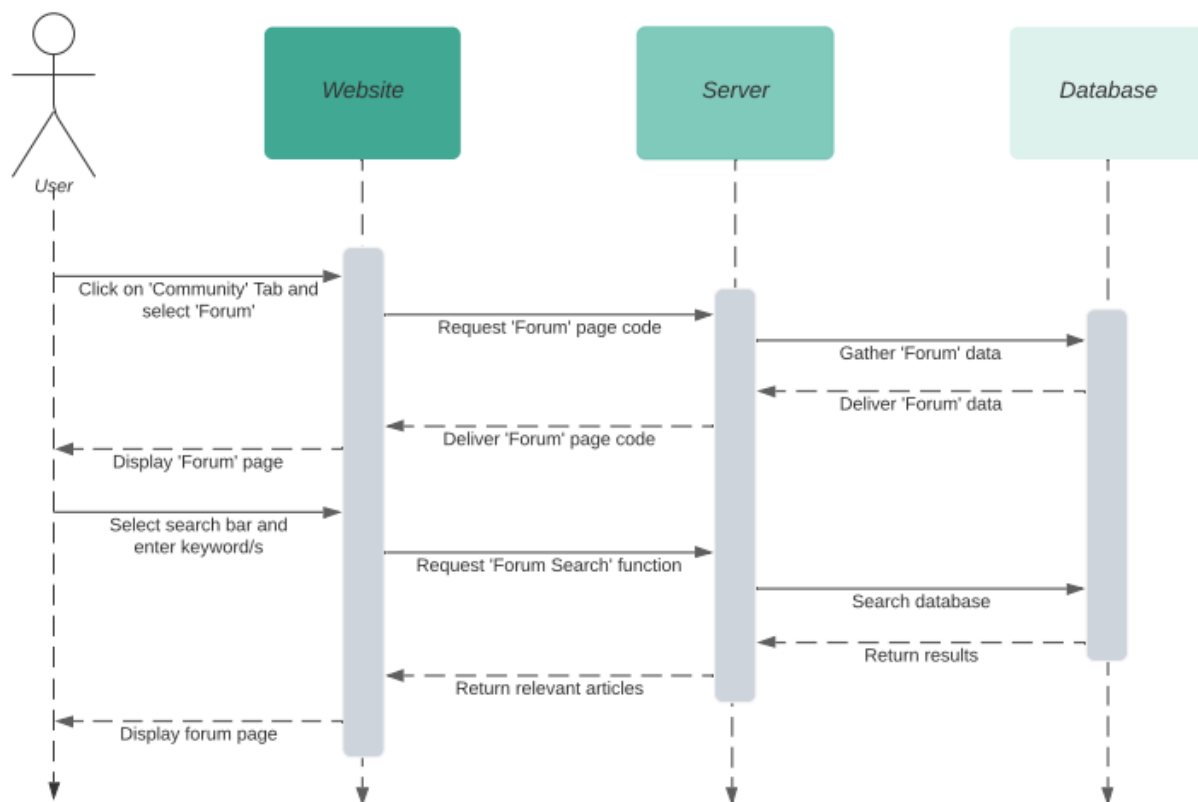
Then I should be redirected to the 'Community' page

When I click on the 'Forum' button

Then I fill out the search bar

And I click 'Enter'

Then I am presented with authors who have the searched word in their name



Feature: Users can follow other profiles to view the posts they have created

As a user,

So that I can keep up to date with my favourite authors,
I want to follow their profile.

Scenario: Users will be able to view the page of an author and see their other posts

Given I am already logged in

When I select the 'Community' tab

Then I should be redirected to the 'Community' tab

When I select a user other than myself

Then I will be redirected to their profile

And if I select the 'Follow' button

Then the user will be added to my 'Following' list

Feature: Users can change their profile pictures

As a user,

So that I can customise my online identity,

I want to change my profile picture.

Scenario: User will upload and set a new profile picture

Given I am already logged in

When I click on the settings icon,

Then the setting bar will expand to show all the options available.

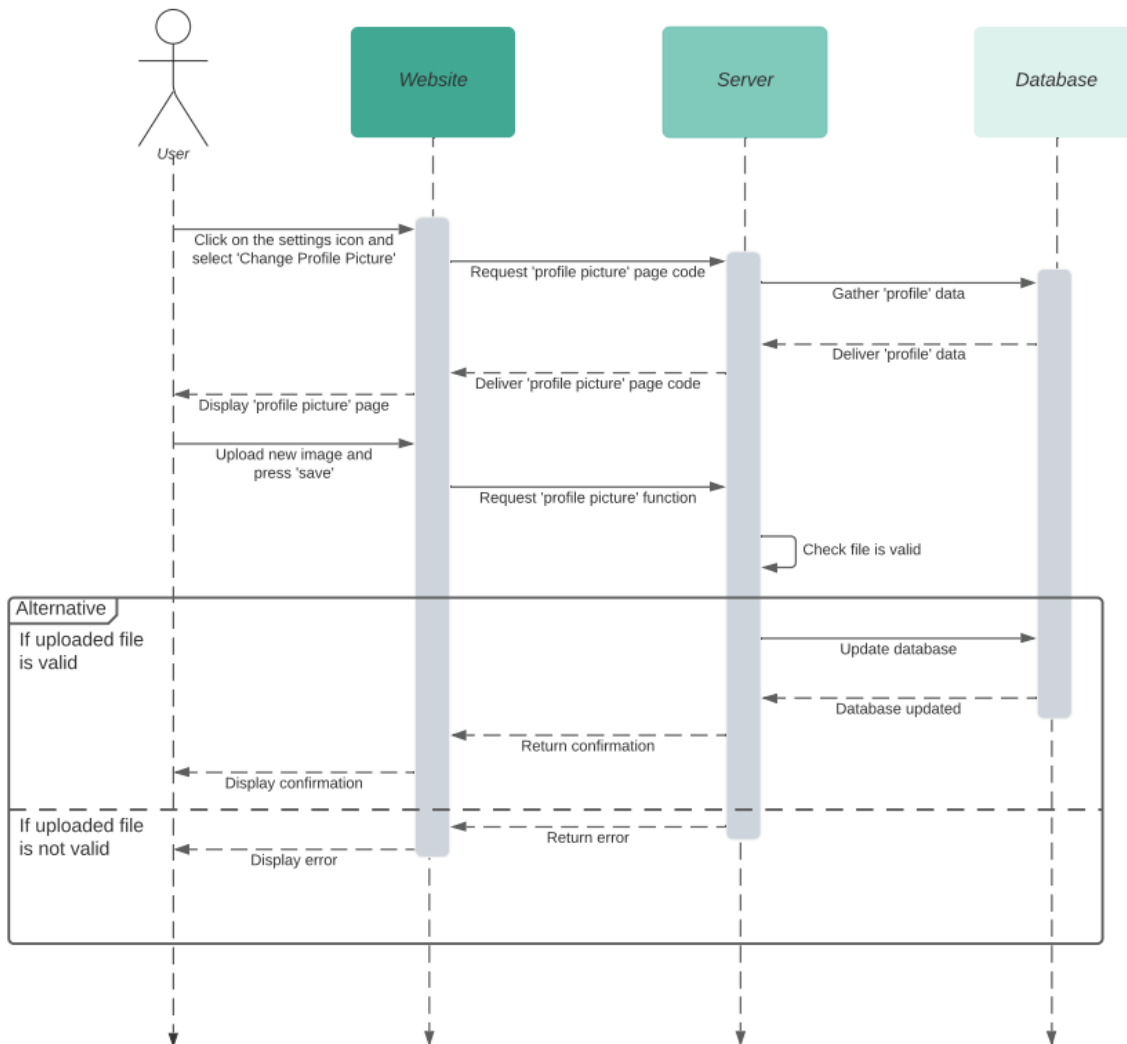
When I scroll down and click “Change Profile Picture”,

Then I will be redirected to a new page.

When I upload a new image

And I click save

Then I will have a new profile picture



Part C: Team Organisation and Appraisal

Responsibility and Roles

Name	Deliverable 1	Deliverable 2	Deliverable 3	Deliverable 4
Zixiang Lin (z5314168)	Providing project ideas Hifi Prototype in Axure	Frontend Style in Axure	Frontend HTML CSS Frontend page Interactions	Implementing Calorie Counter page using Nutritionix API.
Nitharshni C Kumaravel (z5255563)	Background research Problem statements and extended features	Researching system architecture, diagram of software components, description of software components + external data sources.	Creating Slides + presenting frontend demo	Implementing sqlite backend Implementing Youtube API, web scraping and email mechanism.
Eric Phung (z5234001)	Low-fi Prototype Hi-fi Prototype	Coding Frontend for Deliverable 3	Frontend HTML CSS for all pages Flask Server Javascript Navigating slides and website application during demo	Connecting frontend of specific pages to backend and database Fixing UI components Navigating website application during demo
Bavan Manamohan (z5208542)	User stories features list Developed several Hi-Fi prototypes	Created all the UML Sequence Diagrams	Editing frontend for specific' pages Presenting frontend demo	Implementing several backend functions Fixing UI in the community forum
Saalai	User Stories	Researching	Creating Slides	Presenting in

Kaaviya Salai Manimudian (z5260340)	Features list	<p>system architecture</p> <p>Description of software components</p> <p>Justification of components</p> <p>Summary of key benefits/achievements</p>	Presenting frontend demo	<p>Demo with final</p> <p>Collated information for final demo including business values, target audience and key features.</p>
--	---------------	---	--------------------------	--

Team Organisation:

- Team meetings over zoom at least once a week to set goals and identify responsibilities for each deliverable.
- Facebook group chat to discuss progress, set reminders and to consult with team members.

Saalai Kaaviya Salai Manimudian (z5260340)	<p>How did the project go in your opinion?</p> <p>I believe the project went great over the course of this term. I had the opportunity to work with a group of hardworking individuals who strived to give their best possible for all the deliverables. Their motivation and willingness to meet up at least one a week to keep track of where everyone is and aid anyone that was struggling with their assigned task is what resulted in our teams' success</p> <p>Any issues/problems encountered?</p>
---	--

	<p>The only issue our team experienced was in deliverable 4. We had not anticipated that the time required to connect the frontend and the backend would take as long as it did, thus resulting in us falling behind and only being able to implement certain functionalities in the web application.</p> <p>Would you do it any differently now?</p> <p>I would definitely ensure that we started the implementation of our web application as soon as we possibly could. Also, though we had implemented agile techniques in each of our meetings, if we had also had a daily update from every individual in our Facebook chat of what they had accomplished that day in between our meetings, it would have made our planning and time management ever more efficient and our tasks achievable.</p>
Bavan Manamohan (z5208542)	<p>How did the project go in your opinion?</p> <p>In my opinion the project went very well. We were able to maintain very effective communication which allowed us to coordinate and work towards the goals we set. Based on the feedback we received I believe we accomplish these goals of developing the prototype of a user-friendly web application. On an individual level I was able to gain valuable experience working in a team of committed individuals and also had the opportunity to practice and learn new skills such as frontend development.</p> <p>Any issues/problems encountered?</p> <p>There were very few problems encountered over the course of the project. One area where I struggled was</p>

	<p>in deliverable 4 where I was tasked with integrating the backend to the HTML and CSS files for both the community pages (forum & leaderboard). More specifically I struggled to implement the list of posts for the forum page. Additionally our time management for this final deliverable also put added strain on us and limited our progress.</p> <p>Would you do it any differently now? For the first 3 deliverables, I wouldn't change anything as I believe we were able to accomplish the goals we set for ourselves. In the final deliverable however, had I been given the chance to restart, I would begin working on the deliverable earlier.</p>
--	---

Eric Phung (z52340001)	<p>How did the project go in your opinion? Overall I believe the project went well and we were able to achieve most of the goals that we set in Deliverable 1 and the beginning of the course. In the final demo/Deliverable 4 we achieved a mostly functional web application with a clean UI which overall were the main goals we set upon formation of the team. By doing this with a team of like-minded members I was able to learn a variety of things, most notably being the importance of team meetings and communication and the different system interactions that go into making a website application functional.</p> <p>Any issues/problems encountered? The main issue that we encountered as a group was linking the backend python files to the frontend HTML files as all members of the team had no experience</p>
------------------------	---

	<p>doing this and the documentation found online was difficult to apply to the problems we were facing in our application. Personally I found the timeframes set for each Deliverable were a bit tight causing the days leading upto the due date to be stressful and requiring a lot of work.</p> <p>Would you do it any differently now? If I were to restart the course I would be more aware of the timeframes set for due dates and start working on the deliverables earlier. I would also put more focus on integration of the backend into frontend so that the final application would be fully functional by Deliverable 4 . Aspects that I think as a team we did well were completing our designated tasks and communicating progress and setting new goals as a team.</p>
--	--

<p>Nitharshni C Kumaravel (z5255563)</p>	<p>How did the project go in your opinion? I think the project was a great learning experience. I felt like it was unique to other courses because we had the complete freedom to form our own problem statement and use our creativity to design an application. I think the final application turned out well with a great UI design and addressed our problem statement.</p> <p>Any issues/problems encountered? The first 3 deliverables were great. However, we faced issues in deliverable 4. It took us a long time to figure out how to connect the frontend and backend of the application. As a result,</p>
--	---

	<p>we ran out of time and could not implement all pages of the application.</p> <p>Would you do it any differently now? I think that we should have started deliverable 4 much earlier so we had a bigger time frame to complete our work. I also think that instead of trying to tackle completing the community forum posts all at once, we could have broken it down into smaller tasks - so we could have achieved some functionality.</p>
--	---

Zixiang Lin (z5314168)	<p>How did the project go in your opinion? I think the project was a great experience of practicing teamwork, self-learning as well as time management. I also learnt a lot from team members and we managed to achieve what we aimed for. We had team meetings frequently which helped us in our working progress a lot, while we could work together and help each other out.</p> <p>Any issues/problems encountered? We found out the main features of our application were not very unique and it took us quite a bit of research on defining our problem statement. I think our time-management was a bit poor at the last deliverables since it was close to the end of the term that everyone has a lot of work to be done. We encountered the problem of connecting the backend to the frontend and it was a bit late when we found out what was going on. Hence we did not manage to complete all the frontend features so that they fully work. However, everyone</p>
------------------------	---

	<p>tried their best and we made a lot of progress.</p> <p>Would you do it any differently now?</p> <p>I would manage time better, set deadlines earlier and work harder for the project. Since some of our works were not very clear of who's doing what (e.g. the interfaces for deliverable 4, it would be better if we manage to assign everyone specific pages to each other and work more on the main features. Also, if we could figure out a more unique idea for the app would help us in defining our problem statement as well, since there are a lot of fitness applications and we had a hard time choosing what was the unique feature of our application.</p>
--	--