

Functional Requirements

1. UC001 Account Registration

- 1.1. Users must be able to create a new user account if they do not possess one at the application's login page.
 - 1.1.1. Users must input a unique username.
 - 1.1.1.1. The username must be of string data type containing alphanumeric characters.
 - 1.1.1.2. The username must have at least 6 characters and less than 20 characters.
 - 1.1.1.3. If the username is already registered, the application will prompt a message: "Username is already taken."
 - 1.1.2. Users must input their first names.
 - 1.1.2.1. The first name must be of string data type containing alphabetic characters.
 - 1.1.2.2. The first name must be of at least 1 character and less than 99 characters.
 - 1.1.3. Users must input their last names.
 - 1.1.3.1. The last name must be of string data type containing alphabetic characters.
 - 1.1.3.2. The last name must be of at least 1 character and less than 99 characters.
 - 1.1.4. Users must input their password.
 - 1.1.4.1. The password must meet the following requirements:
 - 1.1.4.1.1. The password must be of minimum 8 characters.
 - 1.1.4.1.2. The password must include at least 1 capital letter (A-Z).
 - 1.1.4.1.3. The password must include at least 1 number (0-9).
 - 1.1.4.1.4. The password must include at least 1 special character (~, !, @, etc).
 - 1.1.4.2. If the password does not meet all the requirements of 1.1.4.1., the application will prompt a message: "Password does not meet the requirements."
 - 1.1.5. Users must input their email address.
 - 1.1.5.1. The email address must be of string data type.
 - 1.1.5.2. The email address must include "@".
 - 1.1.5.3. If the email address is already registered, the application will prompt a message: "Email address is already registered."
 - 1.1.6. The application must allow users to register for an account upon pressing the **<Sign Up>** button.
 - 1.1.6.1. If there are input fields left blank, the application will prompt a message: "Please fill in the required blanks."
 - 1.1.6.2. If conditions 1.1.2. to 1.1.5. are met and there are no empty input fields, the application must store the user's login details into the cloud database.
 - 1.1.6.2.1. The user must be given a default profile picture.
 - 1.1.6.2.2. The application will prompt a message: "Account successfully created."
 - 1.1.6.2.3. The application must redirect users to the application's home page.

2. UC002 Login Account

- 2.1. Users must be able to log into their accounts which they have previously registered by inputting a registered username and its associated password at the application's login page.
 - 2.1.1. The application must check the validity of the username and password.
 - 2.1.1.1. If the username and password are valid, the user will be directed to the application's home page.
 - 2.1.1.2. If either the username or password is invalid, the application will prompt a message: "Login failed. Invalid username or password."

3. UC003 Reset Password

- 3.1. Users must be able to reset the password of their previously registered account by inputting a registered email.
 - 3.1.1. The application must check the validity of the email.

- 3.1.1.1. If the email is valid, the user must be sent an email with a link to reset their password.
 - 3.1.1.1.1. The user must input a new password that meets requirements stated in 1.1.4.1.
 - 3.1.1.1.2. The application must update the user's login details into the cloud database.
 - 3.1.1.1.3. The user must be redirected to the login page.
- 3.1.1.2. If the email is invalid, the application will prompt a message: "Invalid email. Please enter a valid email."

4. UC004 Manage Profile

- 4.1. Users must be able to manage their personal details at the application's profile page.
- 4.2. The application's profile page must display the following information about the user:
 - 4.2.1. Profile picture
 - 4.2.2. Username
 - 4.2.3. First name
 - 4.2.4. Last name
 - 4.2.5. Email
 - 4.2.6. Total distance traveled (in kilometers, to 2 decimal points of accuracy) in all sessions
 - 4.2.7. Total hours used to travel (in HH:MM) in all sessions
- 4.3. Users must be able to edit their account details at the application's edit profile page.
 - 4.3.1. Users must be able to edit their profile picture.
 - 4.3.2. Users must be able to edit their username.
 - 4.3.2.1. Username provided must meet condition 1.1.2.
 - 4.3.3. Users must be able to edit their first name.
 - 4.3.3.1. First name provided must meet condition 1.1.3.
 - 4.3.4. Users must be able to edit their last name.
 - 4.3.4.1. Last name provided must meet condition 1.1.4.
 - 4.3.5. Users must be able to edit their email.
 - 4.3.5.1. Email provided must meet condition 1.1.6.
 - 4.3.6. The application must allow users to save their edited account details.
 - 4.3.6.1. The user must be redirected to the application's profile page.
 - 4.3.6.2. The application must update the user's account details on the cloud database.
 - 4.3.7. The application must allow users to cancel the current changes to their account details.
 - 4.3.7.1. The user must be redirected to the application's profile page.

5. UC005 Display Map

- 5.1. Users must be able to view a map display on the application's home page using Google Maps API.
- 5.2. The user's current location must be centralized on the map display by default.
- 5.3. The application must allow users to zoom in, zoom out and pan around the map.

6. UC006 Manage Session

- 6.1. Users must be able to track their current session on the application's session page.
 - 6.1.1. The application's session page must display and continuous update the following information:
 - 6.1.1.1. The user's current location on the map.
 - 6.1.1.2. The route from the initial start point of the user to the user's current location on the map.
 - 6.1.1.3. Total distance traveled (in kilometers, to 2 decimal points of accuracy) during the current session.
 - 6.1.1.4. Time taken (in HH:mm:ss format) since start of current session.

- 6.1.1.5. The average speed (in minutes per kilometer, to 2 decimal points of accuracy) of the current session.
- 6.1.2. Users must be able to pause their current session.
 - 6.1.2.1. The information in 7.1.1. must stop updating.
- 6.1.3. Users must be able to resume a paused current session.
 - 6.1.3.1. The information in 7.1.1. must continue updating.
- 6.1.4. Users must be able to stop a current session.
 - 6.1.4.1. The information in 7.1.1. must be stored in the cloud database.
 - 6.1.4.2. The session must be added to the user's history.
 - 6.1.4.3. The user must be redirected to the application's home page.

7. UC007 Manage Community

- 7.1. The application must allow users to interact with posts on the application's community forum page.
 - 7.1.1. The application's community forum must display all posts shared and undeleted by the users.
 - 7.1.1.1. The user can choose whether to display the posts by recency or popularity.
 - 7.1.2. Users must be able to post on the community forum.
 - 7.1.2.1. Any posts must display the following details:
 - 7.1.2.1.1. Profile picture of the sender
 - 7.1.2.1.2. Username of the sender
 - 7.1.2.1.3. Time when messages was sent (in 12 hour format)
 - 7.1.2.1.4. Content of the message
 - 7.1.2.1.5. Total number of likes
 - 7.1.2.2. The user must be allowed to post their past sessions.
 - 7.1.3. Users must be able to delete their past posts on the community forum.
 - 7.1.4. Users must be able to comment under posts.
 - 7.1.4.1. Any comments must display the following details:
 - 7.1.4.1.1. Profile picture of the sender
 - 7.1.4.1.2. Username of the commenter
 - 7.1.4.1.3. Time when messages was sent (in 12 hour format)
 - 7.1.4.1.4. Content of the message
 - 7.1.4.1.5. Total number of likes
 - 7.1.5. Users must be able to delete their past comments.
 - 7.1.6. Users must be able to like each post and comment at most once.
 - 7.1.7. Users must be able to remove their likes for a post or comment.

8. UC008 View History

- 8.1. Users must be able to view the details of their past sessions at the application's session history page.
- 8.2. The application must sort the past sessions by recency (from newest to oldest session).
- 8.3. The application must display the following details of past sessions on the application's session history page:
 - 8.3.1. The date of the session (in DD/mm/yyyy)
 - 8.3.2. The start time of the session (in 12 hour format)
 - 8.3.3. Distance traveled (in kilometers, to two decimal points of accuracy)
 - 8.3.4. The timing of the session (in HH:mm:ss)
 - 8.3.5. The average speed (in minutes per kilometer, to two decimal points of accuracy) of the session.
- 8.4. The user must be able to click on the session to view the following additional information:

8.4.1. The route, traced on a map

9. UC009 Set Goal

9.1. The application must allow users to set monthly goals at the application's session history page.

9.1.1. Users must input the following information:

9.1.1.1. Monthly goal (in kilometers, to zero decimal points of accuracy)

9.1.1.1.1. The monthly goal value must not exceed 999.

9.1.2. The user goal must display the following information:

9.1.2.1. Monthly goal (in kilometers, to zero decimal points of accuracy)

9.1.2.2. Current monthly distance of sessions (in kilometers, to two decimal points of accuracy)

9.1.2.3. Total monthly time spent on sessions (in HH:mm)

9.1.3. Users must be able to edit their monthly goal.

Non-Functional Requirements

1. Performance Requirements

- 1.1. The application requires a device that supports a stable network connection.
- 1.2. The application must be able to continue a session in the background.
- 1.3. The application must be able to track the user's location in the background.
- 1.4. The application must be able to continuously update the information in 7.1.1.
- 1.5. If network connection is lost, the application must be able to continue updating the session once network connection is up.
 - 1.5.1. The application must pause the session when there is no network connection.
 - 1.5.2. The application must resume the session when the network connection is re-established.
- 1.6. The application must meet or exceed 99% uptime.
- 1.7. 80% of users must be able to start recording a session in less than 3 seconds.
- 1.8. 80% of users must be able to login in less than 3 seconds.

2. Safety Requirements

- 2.1. The application must not prompt user interaction, including notifications, during a session.

3. Security Requirements

- 3.1. Data must be protected in accordance with PDPA.
- 3.2. Users must not be able to see the following information about other users:
 - 3.2.1. First name
 - 3.2.2. Last name
 - 3.2.3. Email
 - 3.2.4. Password
- 3.3. Users must not be allowed to view other users' past sessions if these sessions are not shared.

4. Usability Requirements

- 4.1. The application must be available in english.
- 4.2. The application must notify users of new updates when new updates are available.
- 4.3. The application must give first-time users a quick and intuitive tutorial.
 - 4.3.1. Each instruction must not exceed 20 words.
 - 4.3.2. 90% of users must be able to complete the tutorial in less than 2 minutes.
- 4.4. The map display in 6.1 will make use of Google Maps API.
- 4.5. The application must display up-to-date information about the user.