

Functional Requirements

1. Upon start, users must press either the “Register” or the “Login” button
 - 1.1. No/Null Response from the user will not change the current state of the mobile application.
2. The user is directed to the Registration Screen, the user must input their full name, age, gender, email address, height, weight, username, and password.
 - 2.1. Full Name must be of string(text) data type.
 - 2.1.1. If the Full Name input field is left blank/unanswered, the user is prompted to fill up the field.
 - 2.1.2. If the input in the Full Name field is not (string(text)) data type, the user is prompted to refill the field with the correct data type (string(text)) value.
 - 2.2. Age must be of integer data type.
 - 2.2.1. If the age input field is left blank/unanswered, the user is prompted to fill up the field.
 - 2.2.2. If the input value for age is not valid, the user is prompted to refill the field with the correct data type value.
 - 2.3. Gender must be chosen from a radio button group with the following options
- Male, Female and Others.
 - 2.3.1. If the Gender radio button is left unpicked, the user is prompted to pick an option and fill up the field.
 - 2.4. Email must be of string data type.
 - 2.4.1. User must input a valid email address.
 - 2.4.1.1. A valid email address must incorporate ‘@’
 - 2.4.1.2. A valid email address must not end with a text type character or string.
 - 2.4.2. If the email input field is left blank/unanswered, the user is prompted to fill up the field.

2.4.3. If the input in the Email field is not text/string data type, the user is prompted to refill the field with the correct data type (string) value.

2.5. Height must be of integer data type.

2.5.1. User must input a valid value for height.

2.5.1.1. A valid value of height is represented in centimeters.

2.5.1.2. A valid value of height is bounded between 50 centimeters and 300 centimeters, inclusive of 50 and 300.

2.5.2. If the Height field is left blank/unanswered, the user is prompted to fill up this field.

2.6. Weight must be of integer data type.

2.6.1. User must input a valid value for weight.

2.6.1.1. A valid value for weight is represented in kilograms.

2.6.1.2. A valid value for weight is bounded between 20 kilograms and 500 kilograms, inclusive of 20 and 500.

2.6.2. If the Weight field is left blank/unanswered, the user is prompted to fill up this field.

2.7. Username must be of string data type.

2.7.1. User must input a valid username.

2.7.1.1. A valid username must be minimum 6 characters.

2.7.1.2. A valid username cannot contain characters other than text and integer datatype and the two special characters (., @).

2.7.2. If the username field is left blank/unanswered, the user is prompted to fill up this field.

2.7.3. If the input value of username does not meet requirements 2.7.1.1 and 2.7.1.2, the user is prompted to refill this field with the correct requirements.

2.8. Password must be of string data type.

2.8.1. User must input a valid password.

2.8.1.1. A valid password must be minimum 8 characters.

2.8.1.2. A valid password must contain at least 1 capital letter (A-Z)

2.8.1.3. A valid password must contain at least 1 number (0-9)

2.8.1.4. A valid password must contain at least 1 of the following characters - (‘.’, ‘_’, ‘-’)

2.8.2. If the password field is left blank/unanswered, the user is prompted to fill up this field.

2.8.3. If the input value of password does not meet the requirements of 2.8.1.1, 2.8.1.2, 2.8.1.3, 2.8.1.4, the user is prompted to refill this field with the correct requirements.

2.9. The user must press the “Register” button to proceed with the registration.

2.9.1. If the “Register” button does not receive input from the user, the state of the application does not change.

2.9.2. If even 1 of the 8 requirements are not fulfilled (2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8) the user is not permitted to proceed.

2.9.3. If all the requirements stated in 2.9.2 are satisfied, the user is redirected to the Home Screen.

3. When the user is redirected to the Login Screen, the user is prompted to input their email and password

3.1. The user must enter a valid email.

3.1.1. A valid email is one that was input by the user in the Registration Screen (Functional Requirement 2.4)

3.1.2. A valid email must exactly match the one that was registered by the user in the Registration Screen.

3.1.2.1. If the input email does not match the email that was used to register, the user is prompted to refill the username field.

3.1.3. If the email field is left blank/unanswered, the user is prompted to fill up the field.

3.2. The user must enter a valid password.

3.2.1. A valid password is one that was input by the user in the Registration Screen (Functional Requirement 2.8)

3.2.2. A valid password must exactly match the one that was registered by the user in the Registration Screen.

3.2.2.1. If the input password does not match the password that was used to register, the user is prompted to refill the password field.

3.2.2.2. If the user forgets the password, the user must click on the “Forgot username/password” button to retrieve login information. (More in Functional Requirement 3.3)

3.2.3. If the password field is left blank/unanswered, the user is prompted to fill up this field.

3.3. When password is forgotten, the user must press the ‘Forgot password’ button.

3.3.1. In the email field the user must input a valid email address.

3.3.1.1. A valid email address is one that matches exactly as the one input during registration.

3.3.2. If the email address is invalid, the user is prompted to refill the field with the valid address.

3.3.3. If the email field is left blank/unanswered, the user is prompted to fill up the field.

3.3.4. If the requirements 3.3.1, 3.3.2 and 3.3.3 are satisfied, the system sends an email to the input email address, containing a password reset link.

3.3.5. The user must go back to the login page and fill in the contents of the email in the username and password fields.

3.4. The user must press the “Login” button to proceed with the login.

3.4.1. If the “Login” button does not receive input from the user, the state of the application does not change.

3.4.2. If even 1 of the 2 requirements are not fulfilled (3.1, 3.2) the user is not permitted to proceed.

3.4.3. If all the requirements stated in 3.4.2 are satisfied, the user is redirected to the Home Screen.

4. The Home Screen has the following components

4.1. When the “My Account” button is clicked, the user is redirected to the My Account Screen. (Section 6.0)

4.2. When the Settings button is clicked, the user is redirected to the Settings Screen (Section 7.0)

4.3. When the Discover New Trails button is clicked, the user is redirected to the Discover New Trails Screen (Section 8.0)

4.4. When the My Trails button is clicked, the user is redirected to the My Trails Screen (Section 9.0)

4.5 When the Active Trail button is clicked, the user is redirected to the Active Trails Screen. (Section 10.0)

5. When the user is redirected to the Emergency SOS Screen, the user can place an emergency call to call for help.

5.1. The user must select the “Emergency/SOS” button from the home page.

5.2. When the “Emergency/SOS” button is clicked by the user, a call is placed to help services from the user’s phone number.

6. When the user is redirected to the My Account Screen, the user can view Personal Profile.

6.1. The details displayed are the username, password, full name, age, gender, email address, height, and the weight of the user.

6.1.1. The height of the user is displayed in cm.

6.1.2. The weight of the user is displayed in kgs.

7. When the user is redirected to the Settings Screen, the user can edit their personal profile.

7.1. The user can edit the height and weight data stored in the profile.

7.1.1. The user must input a valid height.

7.1.1.1. A valid value of height is represented in centimeters.

7.1.1.2. A valid value of height is bounded between 50 centimeters and 300 centimeters, inclusive of 50 and 300.

7.1.2. If the Height field is left blank/unanswered, the user is prompted to fill up this field.

7.1.3. If the input value of height is not an integer, the user is prompted to refill the field with the correct data type (integer)

7.1.4. The user must input a valid weight.

7.1.4.1. A valid value for weight is represented in kilograms.

7.1.4.2. A valid value for weight is bounded between 20 kilograms and 500 kilograms, inclusive of 20 and 500.

7.1.6. If the Weight field is left blank/unanswered, the user is prompted to fill up this field.

7.1.7. If the input value of weight is not an integer, the user is prompted to refill the field with the correct data type (integer)

7.2. The user can change the gender by editing the Gender field.

7.2.1. If the Gender field is left empty, the user is prompted to pick an option and fill up the field.

7.3. The user can change the password by editing the password field.

7.3.1. The new password entered must be valid.

7.3.1.1. A valid password must be minimum 8 characters.

7.3.1.2. A valid password must contain at least 1 capital letter (A-Z)

7.3.1.3. A valid password must contain at least 1 number (0-9)

7.3.1.4. A valid password must contain at least 1 of the following characters - ('.', '_', '-')

8. When the user is redirected to the Discover New Trails screen, the user can view 2 buttons: “Trail by distance” and “Trail by type”.

8.1. The “Trail by distance” button redirects the user to a new screen which prompts the user to enter a distance. The total distance entered is in kilometers. On entering the distance, a list of available trails with distance approximately equal (with a difference of not more than 1 kilometer) to the user’s input is displayed.

8.1.1. The user must enter a valid numeric distance, between 0 to 50.

8.1.1.1. If the input is invalid, the user is prompted to re-enter a numeric value.

8.2. The “Trail by type” button redirects the user to a new screen that contains 2 buttons: “Nature Trail” and “City Trail”. The user is prompted to select one of these two options.

8.2.1. If the user selects “Nature trail”, the name of a randomly selected nature trail is displayed.

8.2.2. If the user selects “City trail”, the name of a randomly selected city trail is displayed.

8.2.3. The user can start one of these trails by clicking “Start Trail” which redirects the user to the Active Trails Screen.

9. When the user is directed to the My Trails Screen, the following information is presented: name of the trail and snapshot of the trail route.

9.1. If the user has not completed any trail, this section states that the user has not completed any trail.

10. When the user is redirected to the Active Trails Screen, the user can view the following sections:

10.1. The route map of the trail

10.1.1. The user can interact with the map for better understanding of the route as well as their location.

10.2. The user can either listen to preloaded songs on an in – built music player or play music from YouTube while on an active trail (furthered in Section 11.0)

10.2.1. The user must press the “Music” button at the bottom of the screen to access the available music streaming options.

10.3. The user can get live information on weather at their location on the day of their active trail.

10.3.1 The weather information is displayed in the form of an image.

10.4. The trail information section gives the user the following information on current session.

10.4.1. Step count section since the beginning of the trail.

10.4.2. Time elapsed in HH:MM:SS format

10.4.3. Calories burned in kcal.

10.4.4. Pause, Play, and END controls for users to control the pace according to their comfort.

10.4.4.1. When user presses pause, the timer is paused.

10.4.4.2. Pressing play resumes the timer.

10.4.4.3. END button allows user to end the active trail and saves the name and snapshot of the trail to the history.

10.4.4.3.1. This trail must then be found in the future from the My trails Screen.

11. If a user wishes to play songs while on the trail, he or she will be able to play music in-app or on YouTube.

11.1. If the user chooses YouTube, he/she gets redirected to the YouTube Application where they can play music.

11.2. If the user chooses in-app music, he or she can listen to the music available in the *TrailX* app.

11.2.1. In the In-App Music Screen, the following functions are performed by the user.

11.2.1.1. When the user clicks the “Pause” button, the song pauses.

11.2.1.2. When the user clicks the “Play” button, the song starts playing.

11.2.1.3. When the user clicks the “Forward” button, the next song in the queue starts playing.

11.2.1.3.1. If the user is at the end of the queue, the song at the start of queue starts playing.

11.2.1.4. When the user clicks the “Rewind” button, the previous song in the queue starts playing.

11.2.1.4.1. If the user is at the beginning of the queue, the last song at the end of the queue starts playing.

11.3. If the user does not press any of the options or take any actions, the page in which the user is will remain still and wait for an input to be entered.