Functional Requirement Documentation

1. Initialization of the product (Description of User Interface)
   1. UI description

The sections 3-7 each stand for a relatively independent subsection of the application.

* 1. Each section shall be accessed by clicking a button representing itself on a bar containing all the icons of the sections at the left side of the application.
  2. The user shall be directed to discover section once the user has launched the application and logged in.

1. User Registration
   1. User Registration Process
      1. Upon initialization of the application, the user shall be asked to create his/her own account by providing required information.
      2. The following information shall be collected, and the completeness of the information shall be tested to ensure an account to be created successfully:
         1. Username can be a string of lowercase English letters or an email-address.
         2. The string shall only contain English letters with length between 6 – 18.
         3. If the user decides to use email-address as the user name, the user input shall be checked to ensure the format is correct.
         4. Password: shall contain as least one lowercase letter, one uppercase letter, one special character (!@#$%^&\*) and with a length of 6 – 18 characters.
      3. The Layout of the registration page will be as following:
         1. Each type of information (Username, password etc.) shall be followed by an input box with width same as the screen.
         2. The submit button shall be placed at the bottom-centre of the screen.
      4. If any portion of the information inputted by the user does not match the format requirements mentioned above, a warning message will be displayed above the corresponding input box.
      5. The Information provided by users shall be protected and not accessible by other users. (Privacy Protection)

1. Workout Section
   1. Record functions

The section shall provide the user his/her workout records, exercise type, duration, and calories burnt.

* + 1. In this section, the system shall provide three kinds of activities to be recorded, running, walking, and cycling.
    2. All three activities can by selected on a toolbar at the top, and each shall be having an independent page.
    3. The user must be able touch the corresponding button to select the function the user wants to use.
    4. The system shall use GPS for location and distance records.
    5. If GPS is not available for user or the signal is not enough for the GPS tracking to function properly, then the vibration censor in the phone shall be used instead to estimate the distance, location is omitted.
    6. When the user clicks “Start” button, the recording shall start and the time, the distance, and the calories burnt shall be displayed on the screen.
    7. When the user clicks “End” button, the recording shall end. The time will stop running and distance shall stop growing.
    8. The calories burnt will be synchronized with “daily calories burnt” function in the health section.
    9. The user shall see a bar chart displaying the duration, distance and calories burnt information of exercises on a daily, weekly or monthly basis.
    10. The record of this exercise will be stored in database.
  1. After the user has finished the exercise, the application will suggest a suitable water intake according to the exercise intensity (the detailed algorithm shall be developed later)
  2. Extensions
     1. Cycling Paths (Cycling Path Network && LTA Bicycle Rack)
        1. When the user starts a cycling exercise, a map of Singapore’s available cycling path shall be displayed along with the distance and duration etc. information. The data shall be extracted from Cycling Path Network.

1. Body Health Section
   1. User Input Body Information
      1. The login status of the user will be checked when the user intends to use the functionality in this section. If the user is not logged in, the user will be directed to the login page.
      2. To use the functions in this section, the user shall be asked to input the body weight, height, and expected body weight to the system. And the system will recommend daily calories intake based on BMI, age, and gender.
   2. Calorie Tracker
      1. User shall be able to input the weight and type of food to record the calorie intake.
      2. A button with text “+” will be displayed at the bottom-right corner of the application.
      3. Once clicked on the button, the user shall be directed to a page asking the user to choose the type of food and input the weight of the food.
      4. There will be a search bar to search food names on the top of the page.
      5. Foods will be listed by alphabetical order under the search bar.
      6. When user clicked on the food name, an input box asking for the weight will pop up, with a “ok” button and “cancel button” at the bottom.
      7. The user can click “ok” to confirm adding a record.
      8. When user input the weight and type for one kind of food, the records shall be added to the daily consumption data and corresponding calorie will be accumulated.
      9. The input shall be restricted to only integer number.
      10. If a non-integer number is entered, the system will display an error message saying “Invalid Input”.
      11. User must be able to see how much calories he/she have intake for the day.
   3. At the end of the day, by comparing the recommended calorie intake and actual calorie data, the application shall notify the user whether he/she has fulfilled the daily goal.
   4. Weight Tracker
      1. User shall be able to input the body weight at any point of time, and a line-chart demonstrating the body weight trend shall be displayed.
      2. User can choose to display weekly, monthly or yearly trend.
   5. Water Consumption Recommendation
      1. The application shall suggest the suitable water intake based on a certain algorithm regarding temperature, exercise intensity, age, and body weight.
      2. The application shall remind the user to drink enough water to stay hydrated for a designated period of time.
2. Discover Section
   1. After the user entering the Discover Section, After the user entering the Discover Section, the application shall display two main tiles: Sports Activity (refer to Section 5.1-5.4) and Healthy Eateries (refer to Section 5.5).
      1. The Sports Activity tile shall suggest to the user on what sports activity the user could engage in by displaying the name and a picture of the sports activity.
      2. A list of possible sports activities shall be stored in the application’s database. The list of activities is as the following:

|  |  |
| --- | --- |
| Outdoor | Indoor |
| Jogging | Running (On treadmill) |
| Swimming | Yoga |
| Single tennis | Jump rope |
| Basketball | Cardio workout |
| Soccer |  |
| Walking |  |
| Cycling |  |

* 1. The sports activity recommended shall be based on data from weather forecast, Ultraviolet Index and Pollutant Standard Index.
     1. The data used for criteria mentioned in 5.1.1. shall be taken from data.gov.sg.
     2. The suggested sports activity shall be selected based on the following guideline:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Outdoor Temperature | Rain Prediction | Ultraviolet Index | Pollutant Standard Index |
| Outdoor Activity | Temperature < 35℃ | No rain in next 2 hours | UVI < 8 | PSI < 100 |
| Indoor Activity | Nil | Rain in next 2 hours | Nil | Nil |

* 1. There shall be a button named “Recommended Venue”. By tapping on the button, the application shall suggest a venue according to the activity recommended.
     1. The type of facilities/venues recommended should follow the following guideline:

|  |  |
| --- | --- |
| Facilities/Venue | Activity |
| Gym | Running (On treadmill), Yoga, Jump Rope, Cardio Workout |
| Park | Jogging, Cycling, Walking |
| Sports Field | Single Tennis, Basketball, Soccer |
| Swimming Complex | Swimming |

* + 1. The facility/venue suggested to the user shall be the one that is the nearest to their current location.
  1. The user could swipe left on the screen if he dislikes this activity. After swiping left, display of the current sports activity will disappear.
     1. If there are multiple suitable sports activities (refer to guidelines in 5.1.2 and 5.2.1), the application shall display information about another sports activity randomly chosen from the list of suitable activities.
  2. On the main page of Discover Section, there shall be a tile named “Recommended Eateries”.
     1. By tapping on the button, the application shall display a map that marks the locations of healthy eateries around the user’s current location.
     2. The information of healthy eateries shall come from data.gov.sg.
  3. Event Section
  4. UI design.
     1. The event section shall contain a filter section that contains buttons indicating various categories at the upper half of the screen.
     2. The event section shall have a scroll view consisting of rows of events information presented to the user.
     3. Each event shall be presented in a rectangle view.
        1. Within the rectangle view, there shall be an image of the event on the left side.
        2. Within the rectangle view, there shall be text information displayed that includes name, time, location of the event on the right side.
     4. The events shall be displayed in an order of popularity.
        1. The popularity indicator of each event is
     5. The filter section shall contain eight round buttons, each representing a type of sports (i.e. basketball, football etc.)
        1. There shall be a “see all” hyperlink on the top-right of the filter section.
        2. When the user taps on the “see all” hyperlink, the system shall direct them to another page that lists all filter buttons each linking to a different sports activity category.
     6. When the user clicks on one of the buttons in the filter section, the system shall direct the user to a new page consisting of events of the category accordingly.
     7. A round button with text “+” shall be placed at the bottom right corner of the screen.

6.1.7.2. When the user clicks on the “+” button, the user shall be directed to a new page of event creation (refer to following sections).

* 1. View an event
     1. When the user clicks on an event, the user shall be directed to a new page containing detailed information of the event.
        1. The detailed information shall include the name, time, location, estimated budget, maximum participants, and estimated duration of the event.
     2. Under the name of the event, there shall be two buttons – “Interested” and “Going”.
        1. The user shall click on “Interested” button to indicate that he is interested in the event (but may not be going).
        2. The “Interested” button shall be a white-colour heart shape.
        3. Once the user has clicked the white-colour heart shape, it shall change to red colour.
        4. The user shall click on “Going” button to indicate that he will be going for this event.
        5. The “Going” button shall be a round button with a white-colour tick.
        6. Once the user has clicked on the round button, the white-colour tick shall become green.
     3. If the user clicked the “Going” button, the event’s available slots shall decrement by one.
        1. If there’s no available slots for an event, the system shall not display the event.
     4. The user can click both buttons.
        1. The user can click on the activated button again to deactivate it.
        2. If the button has been deactivated, the button colour will change to white colour accordingly.
  2. Event Creation
     1. When the user clicks on the “+” button, the user will be directed to a new page of event creation.
     2. The page shall ask the user to input name, time, location, estimated budget, maximum participants, and estimated duration of the event.
     3. The user can click the “submit” button or “cancel button” at the bottom of the event creation page.
        1. If the user clicks on the “submit” button, the event shall be recorded and sent to application admin for approval.
        2. If the user clicks on the “cancel” button, the user shall be directed back to the page he/she is viewing previously.
     4. When the admin has approved the event, the event shall be seen by other people in the event section.
  3. Event Management (Might be placed in ME section instead)
     1. Under ME section, there shall be one bar reading “my events”.
        1. By clicking on the bar, the events created by the user shall be listed, ranked by time with the earliest on top.
        2. By tapping on one of the listed events, the user shall be able to view the details of the event: name, time, location, estimated budget, number of participants signed up / maximum number of participants, and estimated duration of the event.
        3. The user shall be able to delete the events by tapping on the “delete” button at the bottom of the page.
     2. Under ME section, there shall be one bar reading “Interested&Going Event”.
        1. By tapping on the “Interested&Going Event” bar, the user shall enter a page where there will be a bar on top of the page with two section, “Interested” and “Going”.
        2. The default display after the user has entered this page shall be a list of events that he will be going to, ranked by time with the earliest on top.
        3. By swiping the screen left, the displayed events will be switched to a list of events that the user is interested in, ranked by time with the earliest on top.
        4. When the displayed events are a list of interested events, by swiping right on the screen, the displayed events shall change back to the listed of events that the user will be going to.
        5. By tapping on one of the listed events, the user shall be able to view the details of the events: name, time, location, estimated budget, number of participants signed up / maximum number of participants, and estimated duration of the event.
     3. There shall be two buttons indicating “interested” and “going” in each of the event detail page as stated in section 6.2.
        1. When the user has activated or deactivated the button, the event shall appear in or disappear from the “interested” event list or “going” event list accordingly.

1. ME section
   * 1. The user shall be able to choose or upload their photo as Avatar.
        1. If the user does not want to upload their photo, they shall be able to choose an avatar from a list default avatars.
     2. The user shall be able to manipulate their basic personal information(name, gender, weight, height, BMI), user preferences, workout purposes, activity level
     3. The user shall be able to allow the user to check the exercise records of the user, for instance the duration and distance of a running/cycling/walking exercise.
     4. The information of energy consumed can be shared with other sections of the application, for example the workout section.
     5. There should be a button to allow the user to logout of the app.
     6. The section shall be separated in to three categories. The order of the categories shall be Avatar, Workout Data, Body Information.
   1. Workout Data
      1. The user shall be able to check all of his completed workout.
         1. There should be a “My Workout Data” button to allow the user to check his completed workout.
         2. The user shall be able to check his exercise records, for instance the duration and distance of a running/cycling/walking exercise.
         3. The user shall be able to check his water consumption, track his calorie change.
         4. A Calories-time graph is generated based on the changes in calories from workout.
            1. The graph shall be a histogram graph, with Time as X-axis and Calories as Y-axis.
            2. The unit for time is day, and the unit for calories is kCal.
            3. The maximum number on X-axis is 30 days or one month depending on the number of days in a month, with intervals of 1 day.
            4. The maximum number on Y-axis is 10,000kCal, with intervals of 100kCal.
         5. All the data in this category shall be shared with other sections of the application, for example the workout section.
   2. Body Information
      1. The user shall be able to modify his weight, height in this category.
   3. Logout
      1. The user shall be able to logout of the app
         1. There shall be a “Logout” button at the bottom of the section.
         2. Upon pressing on the “Logout” button, the user shall be able to return to login page.
2. Administration
   1. The administrator shall login the system with specific user name and password.
      1. The admin’s username shall be “Admin”
      2. The admin’s password shall be “BO55man”
   2. Upon authentication of administrator’s account, the admin shall enter a page with two buttons: “Approved Events” and “Events to be Approved”.
   3. By tapping on the “Approved Events” button, the admin shall see a list of events that has been approved and displayed on the users’ Event section, ranked by time with the latest on top.
      1. By tapping on one of the listed events, the admin shall be able to see the details of the event: name, time, location, estimated budget, number of participants signed up / maximum number of participants, and estimated duration of the event.
      2. At the bottom of the page, there shall be a button named “Delete”.
      3. By tapping on the “Delete” button, the admin shall be able to remove the event from the approved list of events.
      4. After one event is being deleted by the admin, it shall be removed and disappear from the users’ Event section and ME section.
   4. By tapping on the “Events to be Approved” button, the admin shall see a list of events that has yet to be approved, ranked by time with the latest on top.
      1. By tapping on one of the listed events, the admin shall be able to see the details of the event: name, time, location, estimated budget, maximum number of participants, and estimated duration of the event.
      2. At the bottom of the page, there shall be a button named “Approve”.
      3. By tapping on the “Approve” button, the event approved shall be added to the “Approved Events” list and appear in users’ Event section and ME section.