**DOCUMENTATION**

1. **Application Onboarding**
2. **Description and Priority**
3. The landing page of the application.
4. **Stimulus/Response Sequences**
5. The application must prompt for user’s GPS to obtain user’s location
6. **Functional Requirements**
7. The system must display a map in the landing page.
8. The map displayed in the application must be interactive

1. **Preset Routes Recommendations**
2. **Description and Priority**
3. A list of recommended preset routes in the application.
4. **Stimulus/Response Sequences**
5. The system must allow users to select “Select Preset route” from the landing page.
6. **Functional Requirements**
7. The application must have an overlay.
8. The overlay must display a list of preset routes.
9. The preset routes must include a start point.
10. The preset routes must include an end point.
11. The preset routes must include total route length.
12. The preset routes must include an estimate calorie burned.
13. The routes must be enclosed by a button.
14. Clicking on the button must register as the user’s selected route.
15. The application must display user’s selected route on the map.
16. The route’s details must be displayed to the user
17. The route’s details must include the total distance of the route.
18. The route’s details must include the estimated calories burn of the route.
19. The application must have access to the user’s GPS module.

1. **Custom Route Planner**
2. **Description and Priority**
3. A route planner that can generate a route based on the user’s input such as: starting point, ending point and places of interest.
4. **Stimulus/Response Sequences**
5. The application must have a button to allow users to select “Plan route” from the landing page.
6. The application must allow users to input their intended starting point.
7. The application must have auto-complete for the starting point.
8. The application must allow users to input their intended ending point.
9. The application must have auto-complete for the ending point.
10. The application must allow users to add point of interest along the route.
11. The route will be displayed on the map.
12. **Functional Requirements**
13. The application must have a button for users to plan a custom route.
14. The application must allow users to input their intended starting point.
15. The application must have auto-complete for the starting point.
16. The system must allow users to input their intended ending point.
17. The application must have auto-complete for the ending point.
18. The application must have a button for users to add point of interest (POI) along the route.
19. The application must offer users a range of categories as a point of interest.
20. The categories must include dining options, such as:
21. Restaurants.
22. Food courts.
23. Hawker centers.
24. The categories must include activities, such as:
25. Recreational sports.
26. Tourist Attractions.
27. The categories must include scenic view.
28. Clicking on a category must register as the user’s selection for categories.
29. The application must display the markers for selected category on the route to the user.
30. Each marker must represent one place of interest recommendation.
31. The application must show details of the markers to the users
32. The details must include the POI’s location.
33. The details must include the POI’s opening hours. (where applicable)
34. The details must include the POI’s closing hours. (where applicable)
35. The application must have a button “Add Stop” on the markers.
36. The application must register the user’s selection of marker.
37. The application must display the selected marker on the user’s route.
38. Once the POI is added, the application must generate the route that goes through the point of interest.
39. The route’s details must be displayed to the user.
40. The route’s details must include the total distance of the route
41. The route’s details must include the estimated calories burn of the route
42. The route’s detail must include the specified marker selected by the user.
43. The application must have access to the user’s GPS module.

**NON-FUNCTIONAL REQUIREMENT**

1. When user has chosen a starting point, the list of suggestions for the ending point must be generated and displayed to the user within 2 seconds.
2. When user has chosen an ending point, the list of suggestions for the starting point must be generated and displayed to the user within 2 seconds.
3. The application must have a tutorial button in the landing page to introduce the application to user.
   1. The application must show user how to create a custom route.
   2. The application must show user where to select a preset route.
   3. The application must show user how to add, select and delete point of interest.
   4. The application must be displayed in the local language according to the user’s locale.
4. The application must display a route within 5 second after the user have chosen a start and end point.
5. Upon a failure, the application must take less than 1 minute to recover and restart the application.
6. The application must have at least 99.99% uptime.
7. The application must be able to support at least 50 concurrent users.
8. Upon a failure, the application must be able to display the error in the backend.
9. The application must have a multi-level logging system.
10. The application must not store any plain-text sensitive information.
11. The application must not recommend any routes that involve any pathways that prohibit cycling.

**DATA DICTIONARY**

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| **Term** | **Description** |
| Route | A path that leads the user to cycle from the starting point to the ending point |
| Preset Route | A route pre-populated with point of interest, starting point, and ending point prior to the user visiting the site |
| Custom Route | A route that was generated based on the user’s starting point, ending point and selected point of interests |
| Starting point | Point where the route starts. |
| Destination point | Point where the route ends. |
| Landing page | The default page shown when the user visits the website. |
| Point of interest (POI) | Point where user might be interested to stop by along the route. It could be tourist attraction, restaurant, dessert place, etc. |