Use Cases

for

CyclingSG

Version 1.0 approved

Prepared by Ng Yi Xian Bryan

Team A

3rd September 2020

Revision History

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| **Name** | **Date** | **Reason For Changes** | **Version** |
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# Use Case Identification

## Use Case ID

Give each use case a unique numeric identifier, in hierarchical form: X.Y. Related use cases can be grouped in the hierarchy. Functional requirements can be traced back to a labeled use case.

## Use Case Name

State a concise, results-oriented name for the use case. These reflect the tasks the user needs to be able to accomplish using the system. Include an action verb and a noun. Some examples:

1. View part number information.
2. Manually mark hypertext source and establish link to target.
3. Place an order for a CD with the updated software version.

## Use Case History

### Created By

Supply the name of the person who initially documented this use case.

### Date Created

Enter the date on which the use case was initially documented.

### Last Updated By

Supply the name of the person who performed the most recent update to the use case description.

### Date Last Updated

Enter the date on which the use case was most recently updated.

# Use Case Definition

## Actor

An actor is a person or other entity external to the software system being specified who interacts with the system and performs use cases to accomplish tasks. Different actors often correspond to different user classes, or roles, identified from the customer community that will use the product. Name the actor(s) that will be performing this use case.

## Description

Provide a brief description of the reason for and outcome of this use case, or a high-level description of the sequence of actions and the outcome of executing the use case.

## Preconditions

List any activities that must take place, or any conditions that must be true, before the use case can be started. Number each precondition. Examples:

1. User’s identity has been authenticated.
2. User’s computer has sufficient free memory available to launch task.

## Postconditions

Describe the state of the system at the conclusion of the use case execution. Number each postcondition. Examples:

1. Document contains only valid SGML tags.
2. Price of item in database has been updated with new value.

## Flow of Events

Provide a detailed description of the user actions and system responses that will take place during execution of the use case under normal, expected conditions. This dialog sequence will ultimately lead to accomplishing the goal stated in the use case name and description. This description may be written as an answer to the hypothetical question, “How do I <accomplish the task stated in the use case name>?” This is best done as a numbered list of actions performed by the actor, alternating with responses provided by the system.

## Alternative Flows

Document other, legitimate usage scenarios that can take place within this use case separately in this section. State the alternative course, and describe any differences in the sequence of steps that take place. Number each alternative course using the Use Case ID as a prefix, followed by “AC” to indicate “Alternative Course”. Example: X.Y.AC.1.

## Exceptions

Describe any anticipated error conditions that could occur during execution of the use case, and define how the system is to respond to those conditions. Also, describe how the system is to respond if the use case execution fails for some unanticipated reason. Number each exception using the Use Case ID as a prefix, followed by “EX” to indicate “Exception”. Example: X.Y.EX.1.

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| --- | --- | --- | --- |
| Use Case ID: | 1 | | |
| Use Case Name: | Plan Route | | |
| Created By: | Bryan Ng | Last Updated By: | - |
| Date Created: | 03/09/20 | Date Last Updated: | - |

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| --- | --- |
| Actor: | User, Google Maps API, HTML5 Geolocation API |
| Description: | Allow users to plan a custom route according to the user’s specified starting and ending point. Any point of interest they might want to go for during their trip are optional and can be added. Point of interest along the route will be recommended to users according to their specified category. |
| Preconditions: | 1. User has navigated to the ‘Plan Route’ page. |
| Postconditions: | 1. A route consisting of user’s defined start and end point along with every point of interests (if any) must be generated and displayed in map view. |
| Flow of Events: | 1. User selects a start and end point for their route. 2. System generates a route in the map view accordingly. 3. User selects to add a point of interest. 4. System display all point of interest filtered by user selected category. 5. User selects a point of interest and adds it to their route. 6. System generates a new path from the start to the end point through the selected point of interest. |
| Alternative Flows: | 1.AC.1. At step 3, if user did not select to add a point of interest, this use case ends there.  1.AC.2. At the end of step 6, if user choose to add an additional point of interest, the use case will continue from step 3. |
| Exceptions: | 1.EX.1. At step 4, if the system could not find any point of interest along the user-defined route, it would prompt the user and the use case ends there.  1.EX.2. If the use case execution fails for some unanticipated reason, the user will be prompted and navigated to the home page. |
| Includes: | Display Map View |

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| Use Case ID: | 2 | | |
| Use Case Name: | Select Preset Route | | |
| Created By: | Bryan Ng | Last Updated By: | - |
| Date Created: | 03/09/20 | Date Last Updated: | - |

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| Actor: | User, HTML5 Geolocation API |
| Description: | Allow users to choose from a list of pre-defined route based on user’s GPS determined/ user entered location. |
| Preconditions: | 1. User has navigated to the ‘Select Preset Route’ page. |
| Postconditions: | 1. Route consisting of pre-defined start and end point along with every point of interests (if any) must be displayed in map view. |
| Flow of Events: | 1. System tries to get user’s geolocation through the HTML5 Geolocation API. 2. Based on user’s geolocation, the system will display a list of preset routes that are around the vicinity. 3. User selects a preset route. 4. System displays the route from the start to the end point through the selected point of interest based on the selected preset route. |
| Alternative Flows: | 2.AC.1. At step 3, users can choose to manually input their location or a location of their liking to view the available preset route. The use case will continue from step 4. |
| Exceptions: | 2.EX.1. At step 1, if the system fails to obtain user’s geolocation, the user will have to manually input their location and continue from step 3.  2.EX.2. If the use case execution fails for some unanticipated reason, the user will be prompted and navigated to the home page. |
| Includes: | Display Map View |

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| Use Case ID: | 3 | | |
| Use Case Name: | Display Map View | | |
| Created By: | Bryan Ng | Last Updated By: | - |
| Date Created: | 03/09/20 | Date Last Updated: | - |

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| Actor: | Google Maps API, openrouteservice API |
| Description: | Present an interactive map showing user-defined route and allows filtering of point of interests through a series of selections. |
| Preconditions: | 1. User has navigated to the map view after selecting a preset route, or from the ‘Plan Route’ page. |
| Postconditions: | 1. A route from the start to the end point linking every point of interest (if any) must be displayed in the map view. |
| Flow of Events: | 1. System generates a map using Google Maps API. 2. System checks for user-defined route. 3. System checks for users filter option for point of interest. 4. Using users filter option, system finds every point of interests along the route and displays it. 5. System generates a path from the start to the end point linking every point of interest (if any) using the openrouteservice API. |
| Alternative Flows: | 3.AC.1. At step 2, if no user-defined route is found, the use case ends there.  3.AC.2. At step 3, if no filter option selected, system will use the default filter option and the use case continues. |
| Exceptions: | 3.EX.1. If the use case execution fails at step 5, the user will be prompted and the use case ends there. Generated map will be displayed without the user-defined route.  3.EX.2. If the use case execution fails at step 1, or for some unanticipated reason, the user will be prompted. No map will be displayed. |
| Includes: | - |

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| Use Case ID: | 4 | | |
| Use Case Name: | Run Tutorial | | |
| Created By: | Bryan Ng | Last Updated By: | - |
| Date Created: | 03/09/20 | Date Last Updated: | - |

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| Actor: | User |
| Description: | Run the user through a step-by-step tutorial which teaches them how to use the web application. |
| Preconditions: | 1. It is the first time a user launches the web application from that device or, the user selected the option to run the tutorial. |
| Postconditions: | - |
| Flow of Events: | 1. System prompts user through a series of actions. 2. User follows the prompts through a series of actions. |
| Alternative Flows: | 4.AC.1. At step 2, users can choose to skip the tutorial. The use case ends there. |
| Exceptions: | 4.EX.1. If the use case execution fails for some unanticipated reason, the user will be prompted and navigated to the home page. |
| Includes: | - |