Use Cases

for

Biker-X

Version 1.06 approved

Prepared by <Lee Xuan Hua, Lek Jie Kai, Fabrianne Effendi, Loh Yi Ze, Liau G Wayne>

<leexuanhua>

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Revision History

Name	Date	Reason For Changes	Version
Liau G Wayne	29/1/2022	Add Use Case 1.3	1.00
Lek Jie Kai	3/2/2022	Add Use Case 1.2	1.01
Loh Yi Ze	3/2/2022	Add Use Case 1.5	1.02
Lee Xuan Hua	4/2/2022	Add Use Case 1.1 & 1.6	1.03
Fabrianne Effendi	4/2/2022	Add Use Case 1.4	1.04
Liau G Wayne	18/2/2022	Updated Use Case 1.3	1.05
Lee Xuan Hua	18/2/2022	Updated Use Case 1.1 (Replaced Facebook SSO with email sign-in)	1.06

Use Case 1.1

Use Case ID:	1.1		
Use Case Name:	Login to Biker-X		
Created By:	Lee Xuan Hua	Last Updated By:	Lee Xuan Hua
Date Created:	4/2/22	Date Last Updated:	18/2/22

Actor:	User, Google SSO, Firebase
Description:	User will have to login to use the functionalities in the mobile app. User will be able to login using a Google account or register with their email.
Preconditions:	User must have a valid Google account or email.
Postconditions:	The app will display <Home Page>.
Priority:	High
Frequency of Use:	Low - Each time the user logs out of their account.
Flow of Events:	1. User clicks on the "Continue with Google" or "Continue with email" button 2. App will communicate with the Google Single Sign-On (SSO) client and display the sign-in interfaces 3. User will interact with the SSO sign-in interfaces 4. App will receive the status code and response from the SSO 5. App will navigate to <Home Page> and display the user's Display Name
Alternative Flows:	AF1: Initial launch of the mobile app 1. App will prompt user permission to access GPS 2. User selects "Allow" or "Don't Allow"
Exceptions:	EX1: If Google SSO returns an error status code

	App will display an error message "Single Sign-On failed. Please try again."
Includes:	1.2 View Home Page and Recommended Routes
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.2

Use Case ID:	1.2		
Use Case Name:	View Home Page and Recommended Routes		
Created By:	Lek Jie Kai	Last Updated By:	Lek Jie Kai
Date Created:	3/2/22	Date Last Updated:	4/2/22

Actor:	User, Weather API, Huawei Cloud
Description:	User will be able to view and access the following functionalities on the home page of the application 1. "View map" button shows the <Full Map Display Page> displaying an interactive map of Singapore with bicycle routes, amenities and bicycle rental places. 2. "View Goals" button shows the <Goal Tracking Page> where the user can view, set and edit their monthly and weekly cycling goals. It also shows their current cycling progress. 3. "Recommended Routes" which suggest cycling routes the user can take. User can also search for a recommended route using the search bar. 4. "Weather icon" which shows an icon indicating the current weather forecast (sunny, rainy or cloudy) of the day
Preconditions:	User logged into their account. Device is connected to internet
Postconditions:	The app will display the relevant pages depending on the user choice of the functionality 1,2,3 or 4 as stated in the "Description"
Priority:	High
Frequency of Use:	High - Each time the user opens the app

Flow of Events:	1. App will retrieve the current weather from the Weather API 2. App will retrieve and display recommended routes from Huawei Cloud. 3. User scrolls through the recommended routes or search for a desired route via the search bar 4. User selects one of the recommended routes 5. App will display the \<Start Cycling Page\>

Alternative Flows:	AF1: User clicks on the "View map" button.
	    1. App will display the \<Full Map Display Page\>
	
	AF2: User clicks on the "View Goals" button.
	    1. App will display the \<Goal Tracking Page\>
	
	AF3: User clicks on the search bar
	    1. App will filter and display routes by search input.

Exceptions:	EX1: If app unable to access the Weather API:
	    1. App will grey out the weather icon.
	EX2: If device is not connected to internet:
	    1. Display error message, "Unable to retrieve routes"

Includes:	1.3: Track Cycling Session 1.4: View Nearby Amenities 1.5: View Cycling History And Goals
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.3

Use Case ID:	1.3		
Use Case Name:	Track Cycling Session		
Created By:	Liau G Wayne	Last Updated By:	Liau G Wayne
Date Created:	29/1/2022	Date Last Updated:	4/2/2022

Actor:	User, Google Location API, Data.gov API, Huawei Cloud
Description:	User will use the app to track their cycling session using Google location services. The application will display amenities near the user on the map view. User will be able to view a session summary at the end of the session, and nearby bicycle racks.
Preconditions:	1. User has allowed location permissions on the app. 2. The app must be on the <Start Cycling Page>. 3. Device has internet access.
Postconditions:	The app will display <Session Summary Page>.
Priority:	High
Frequency of Use:	High - Each time the user uses the app to track their cycling session.
Flow of Events:	1. User clicks on "Start" button. 2. App will retrieve and display user's current location using Google Location API. 3. App will track and display distance travelled during cycling session using Google Location API. 4. App will track and display time elapsed of cycling session. 5. App will calculate and display average speed of cycling session. 6. User clicks on "Stop" button. 7. App will store cycling session data in Huawei Cloud 8. App navigate to <Session Summary Page>.

	9. App will display time elapsed and distance travelled during the cycling session. 10. App will display nearby bicycle racks using Data.gov API and Google Location API.

Alternative Flows:	AF2. If user selected a route recommendation
	     1. App will display recommended route on the map
	
	 AF8. If user selected a route recommendation
	     1. App will prompt user to rate the selected route.
	     2. User selects rating.
	     3. App stores route rating on Huawei Cloud.

Exceptions:	EX1: If App unable to access Google Location API.
	     1. App will disable the "Start" button
	     2. App will display error message "Location tracking unavailable" above the "Start" button

Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.4

Use Case ID:	1.4		
Use Case Name:	View Nearby Amenities		
Created By:	Fabrianne Effendi	Last Updated By:	Fabrianne Effendi
Date Created:	4/2/2022	Date Last Updated:	4/2/2022

Actor:	User, Data.gov API, Google Maps API, Google Location API
Description:	User will be able to view the full map including various amenities (bicycle racks, bike rental locations, fitness areas, playground, toilets, water coolers, F&B eateries and hawker centres). User is able to filter the relevant amenities and locations they would like to display through ticking the dropdown checklist available.
Preconditions:	1. User is logged into his/her account 2. User has selected 'View Map' on \<Home Page\> or clicked the map icon at the bottom 3. User has allowed location permissions on the app
Postconditions:	The app will display the relevant amenities filtered or searched by user
Priority:	High
Frequency of Use:	High - Each time user wants to view the full map.

Flow of Events:	1. App will retrieve and display user's current location using Google Location API
	2. App will retrieve amenities using Data.gov API
	3. \<Full Map Display Page\> displays all amenities nearby user's location
	4. User ticks relevant amenities in dropdown list
	    a. Bicycle racks
	    b. Bicycle rental shops
	    c. F&B eateries
	    d. Fitness areas

	e. Hawker centres
	     f. Playground
	     g. Toilets
	     h. Water coolers
	5. Map displays relevant amenities ticked nearby user's location using data.gov API and Google location API

Alternative Flows:	AF2: User searches for specific location on map using search bar 1. Map displays amenities in that specific location

Exceptions:	EX1: If App is unable to access data.gov API
	  1. App will display an error message "Viewing of Amenities Unavailable" at the top of the map
	
	EX2: If App is unable to access Google location API
	  1. Map displays zoomed out Singapore map with displayed amenities
	  2. App will display an error message "Unable to retrieve current location" at the top of the map, with subsequent pop-up "Turn on location permissions to view nearby amenities"

Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.5

Use Case ID:	1.5
Use Case Name:	View Cycling History And Goals

Created By:	Loh Yi Ze	Last Updated By:	Loh Yi Ze
Date Created:	3/2/2022	Date Last Updated:	3/2/2022

Actor:	User, Huawei Cloud
Description:	Each user will be able to track their cycling history and cycling goals in the \<Cycling History\> page. The app will store user's cycling data such as distance, moving time data and their goals. Users will be able to set their weekly and monthly cycling goals in the Biker-X app. Users can also choose to edit their goals after setting them.
Preconditions:	1. User is logged into his/her account 2. Device has internet access
Postconditions:	1. The app will display the user's cycling history and goals
Priority:	Medium
Frequency of Use:	Medium - Dependent on how active each user is.
Flow of Events:	1. User clicks on \<Cycling History\> page 2. User's relevant data will be retrieved from Huawei Cloud and displayed onto the page

Alternative Flows:	AF1: User clicks on "View Goals" button in \<Home Page\>
	    1. User's relevant data will be retrieved from Huawei Cloud and displayed onto the page
	
	AF2: User clicks on "Edit goal"
	    1. User enters monthly goals and clicks on "Submit"
	    2. Data will be stored in Huawei Cloud

	3. User's relevant data will be retrieved from Huawei Cloud and displayed onto the page 4. User enters weekly goals and clicks on "Submit" 5. Data will be stored in Huawei Cloud 6. User's relevant data will be retrieved from Huawei Cloud and displayed onto the page
Exceptions:	EX1: If user device is not connected to the internet 1. Error message "Unable to connect to Huawei Cloud" will be displayed.
Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.6

Use Case ID:	1.6		
Use Case Name:	Chat Forum		
Created By:	Lee Xuan Hua	Last Updated By:	Lee Xuan Hua
Date Created:	4/2/2022	Date Last Updated:	4/2/2022

Actor:	User, Huawei Cloud
Description:	User will be able to follow the latest community trends and discussion, share messages and connect with like minded individuals through a forum.
Preconditions:	1. User is logged into his/her account 2. Device has internet access 3. User clicks on the "Forums" icon.
Postconditions:	The app will display <Chat Forum Page>.
Priority:	Medium
Frequency of Use:	Medium - Each time the user wishes to read the forum or connect with other users.
Flow of Events:	1. App will navigate to the <Forum Front Page> 2. App will retrieve the existing forum thread title from Huawei Cloud and display on the page 3. User clicks on a forum thread 4. App will navigate to the <Chat Forum Page> 5. App will retrieve the existing forum thread comments from Huawei Cloud and display on the page 6. User types and sends a message 7. App will store the data in Huawei Cloud 8. Step 6 will be repeated, and the display is updated

Alternative Flows:	NIL
Exceptions:	EX1: If the user device is not connected to the internet 1. A drop-down error message "No internet detected. Please refresh this page." will be displayed
Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL