Use Cases

for

Biker-X

Version 1.06 approved

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28 / 03 / 2022

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 1.4	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 1.5	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
Lee Xuan Hua	28/02/2022	Added Use Case 1.2	1.07
Loh Yi Ze	28/02/2022	Updated Use Case 1.4	1.08
Liau G Wayne	28/02/2022	Updated Use Case 1.6 Added Use Case 1.7	1.09
Fabrianne Effendi	01/03/2022	Added Use Case 1.8 & 1.9	1.10
Lek Jie Kai	01/03/22	Added Use Case 1.3	1.11

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 either with a Google account or with an account registered with Biker-X.
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 "Sign in failed. Please try again."
Includes:	1.3 View and Search Recommended Routes
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Sequence Diagram:

Use Case 1.2

Use Case ID:	1.2		
Use Case Name:	Register Biker-X Account		
Created By:	Lee Xuan Hua	Last Updated By:	Lee Xuan Hua
Date Created:	28/2/22	Date Last Updated:	28/2/22

Actor:	User, Firebase
Description:	User who wish to login with a Biker-X account can register for an account using their email.
Preconditions:	User must have a valid email address.
Postconditions:	The app will display <Login Page>.
Priority:	High
Frequency of Use:	Low - When a user is creating a Biker-X account via email.
Flow of Events:	1. User clicks on the "Continue with email" button 2. App will prompt user for "Sign In" or "Register Account" 3. User clicks on the "Register Account" button 4. User input the email address and password 5. App will communicate with Firebase to create a password-based account 6. App will forward a verification email to the registered email address 7. App will navigate to <Login Page> and prompt user to "Sign In"
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	1.1: Login to Biker-X

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

Use Case 1.3

Use Case ID:	1.3		
Use Case Name:	View and Search Recommended Routes		
Created By:	Lek Jie Kai	Last Updated By:	Lek Jie Kai
Date Created:	3/2/22	Date Last Updated:	1/3/22

Actor:	User, Weather API, FireBase
Description:	The user can view all recommended cycling routes or search for a particular route from the list of recommended routes. The user can then select a route to start cycling. In addition, there will be a "Weather icon" on the home page 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 recommended routes for the user to select or search from.
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 4. User selects one of the recommended routes 5. App will display the \<Start Cycling Page\>
Alternative Flows:	AF3: User searches for a specific route using search bar

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:	1.6B: Track Cycling Session (with recommended route)
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.4

Use Case ID:	1.4		
Use Case Name:	View & Edit Goals		
Created By:	Loh Yi Ze	Last Updated By:	Loh Yi Ze
Date Created:	3/2/2022	Date Last Updated:	28/2/2022

Actor:	User, Firebase
Description:	User can set and view his/her cycling goals. User can also choose to edit his/her cycling 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 goals
Priority:	Medium
Frequency of Use:	Medium - Dependent on how often user checks his/her cycling goals
Flow of Events:	1. User clicks on <View Goals> button in the <Home Page> 2. User's relevant data is retrieved from Firebase 3. User's cycling goals is displayed

Alternative Flows:	AF3: User clicks on <Submit> button to edit goal (Weekly)
	   1. User enters weekly goals and clicks on "Submit"
	   2. System verifies new weekly goal is less than monthly goal
	   3. If new weekly goal is less than monthly goal, user input will be stored in Firebase
	   4. User's weekly goals is updated and displayed
	
	AF3: User clicks on <Submit> button to edit goal (Monthly)
	   1. User enters monthly goals and clicks on "Submit"
	   2. User input will be stored in Firebase
	   3. User's monthly goals is updated and displayed

Exceptions:	EX1: If user device is not connected to the internet 1. Error message "Unable to connect to Firebase" will be displayed.
Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.5

Use Case ID:	1.5
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 1.6A

Use Case ID:	1.6A		
Use Case Name:	Track Cycling Session (no recommended route)		
Created By:	Liau G Wayne	Last Updated By:	Liau G Wayne
Date Created:	29/1/2022	Date Last Updated:	28/2/2022

Actor:	User, Google Location API, Firebase
Description:	User will use the app to track their cycling session using Google location services.
Preconditions:	1. User has allowed location permissions on the app. 2. The app must be on the <Home 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 "Cycling on my own route today!" button. 2. App will navigate to <Start Cycling Page> 3. User clicks on "Start" button. 4. App will retrieve and display user's current location using Google Location API. 5. App will track and display distance travelled during cycling session using Google Location API. 6. App will track and display time elapsed of cycling session. 7. App will calculate and display average speed of cycling session. 8. User clicks on "Stop" button. 9. App will store cycling session data in Firebase. 10. App will navigate to <Session Summary Page>.

Alternative Flows:	AF5: User clicks on "Pause" Button 1. App stops tracking distance and time travelled until User clicks on "Resume" Button

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:	1.7: View Cycling Session Summary
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.6B

Use Case ID:	1.6B		
Use Case Name:	Track Cycling Session (with recommended route)		
Created By:	Liau G Wayne	Last Updated By:	Liau G Wayne
Date Created:	29/1/2022	Date Last Updated:	28/2/2022

Actor:	User, Google Location API, Data.gov API, Firebase
Description:	User will use the app to track their cycling session using Google location services.
Preconditions:	1. User has allowed location permissions on the app. 2. The app must be on the <Home Page> or <Recommendations 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 any Recommended Route. 2. App will navigate to <Start Cycling Page> 3. User clicks on "Start" button. 4. App will retrieve and display user's current location using Google Location API. 5. App will display recommended route on the map 6. App will track and display distance travelled during cycling session using Google Location API. 7. App will track and display time elapsed of cycling session. 8. App will calculate and display average speed of cycling session. 9. User clicks on "Stop" button.

	11. App will store cycling session data in Firebase. 12. App will navigate to <Session Summary Page>.
Alternative Flows:	AF6: User clicks on "Pause" Button 1. App stops tracking distance and time travelled until User clicks on "Resume" Button

Exceptions:	EX2: 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:	1.7: View Cycling Session Summary
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.7

Use Case ID:	1.7		
Use Case Name:	View Cycling Session Summary		
Created By:	Liau G Wayne	Last Updated By:	Liau G Wayne
Date Created:	28/2/2022	Date Last Updated:	28/2/2022

Actor:	User, Data.gov API
Description:	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 click "Stop" button from the \<Live Cycling Progress Page>. 3. Device has internet access.
Postconditions:	The app will display \<Session Summary Page>.
Priority:	High
Frequency of Use:	High - Each time the user tracks their cycling session.
Flow of Events:	1. App will display time elapsed and distance travelled during the cycling session. 2. App will display nearby bicycle racks using Data.gov API and Google Location API.
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	1.8: Rate Cycling Session
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.8

Use Case ID:	1.8		
Use Case Name:	Rate Cycling Session		
Created By:	Fabrianne Effendi	Last Updated By:	Fabrianne Effendi
Date Created:	01/03/2022	Date Last Updated:	01/03/2022

Actor:	User, Firebase
Description:	If user selects a route recommendation, user is able to rate the cycling session at the end of each cycling session.
Preconditions:	1. User selected a recommended route for cycling session 2. User has started and ended the cycling session 3. Device has internet access
Postconditions:	The app will allow the user to rate cycling session on <Session Summary Page>.
Priority:	Medium
Frequency of Use:	Medium - depends on whether user cycled a recommended route
Flow of Events:	1. App displays rating prompt on <Session Summary Page> 2. User selects rating 3. App stores route rating in Firebase
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.9

Use Case ID:	1.9		
Use Case Name:	View Cycling History		
Created By:	Fabrianne Effendi	Last Updated By:	Fabrianne Effendi
Date Created:	01/03/2022	Date Last Updated:	01/03/2022

Actor:	User, Firebase
Description:	User will be able to track their cycling history in the \<Cycling History\> page.
Preconditions:	1. User is logged into his/her account 2. Device has internet access 3. User clicks Cycling History icon
Postconditions:	The app will display the user's cycling history in the \<Cycling History\> page.
Priority:	Medium
Frequency of Use:	Medium - Dependent on how active each user is.
Flow of Events:	1. User clicks on \<Cycling History\> icon 2. App will retrieve user's cycling history for the latest month and weekly goal from Firebase and display on page 3. User clicks on a particular month on \<Cycling History\> page 4. App will retrieve user's cycling history for that particular month from Firebase and display on the page
Alternative Flows:	
Exceptions:	EX1: If user device is not connected to the internet 1. Error message "No internet detected. Please refresh this page." will be displayed.

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

Use Case 1.10

Use Case ID:	1.10		
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, Firebase
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 Firebase 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 Firebase and display on the page 6. User types and sends a message 7. App will store the data in Firebase 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