Use Cases

for

Biker-X

Version 1.15 approved

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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 1.4	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	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
Lek Jie Kai	07/04/22	Updated Use Case 1.2	1.12
Lek Jie Kai	08/04/22	Updated Use Case 1.4	1.13
Lek Jie Kai	08/04/22	Updated Use Case 1.1	1.14
Fabrianne Effendi	09/04/22	Updated Use Case 1.5	1.15

Use Case 1.1

Use Case ID:	1.1		
Use Case Name:	Google Login		
Created By:	Lee Xuan Hua	Last Updated By:	Lek Jie Kai
Date Created:	4/2/22	Date Last Updated:	8/4/22

Actor:	User, Google API, Firebase
Description:	User will have to login to use the functionalities in the mobile app. User will be able to login with a Google account
Preconditions:	1. User must have a valid Google account 2. Device has internet access
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” button 2. App will communicate with the Google API client and display the sign-in interfaces 3. User will interact with the API sign-in interfaces 4. App will receive the status code and response from Firebase 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 API returns an error status code, the user will not be signed in.
Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL

Use Case 1.2

Use Case ID:	1.2		
Use Case Name:	Email Register and Login		
Created By:	Lee Xuan Hua	Last Updated By:	Lek Jie Kai
Date Created:	28/2/22	Date Last Updated:	7/4/22

Actor:	User, Firebase
Description:	User new to Biker-X can register for an account using a valid email address. User with an email account registered with Biker-X will be able to log in.
Preconditions:	1. User must have a valid email address. 2. User must verify their email account (by clicking on the verification link sent to their email address) when they first register an account before they are able to log in into their account 3. Device has internet access
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 allow the user to select the “Login” or “Register” button. 3. User clicks on the “Register” button to register for an account (for first time users) 4. User input their name, 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 the user input his email address and password used to register for the account. 8. User selects the “Login” button and app will navigate to <Home Page>
Alternative Flows:	AF2: User already has an account registered with Biker-X 1. User input their email address and password 2. App will navigate to <Home Page> if login credentials entered are correct. AF7: User enters a wrong password. 1. User selects the “Forgot Password” button. 2. User inputs his email address and selects the “Reset Password” button. 3. App will send an email with a link to the registered email address for the user to reset his password.
Exceptions:	EX1: If email entered is invalid, an error message will be displayed EX 2: If any textbox is left empty, an error message will be displayed to prompt the user to input values.
Includes:	NIL
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:	1. User logged into their account. 2. Device has internet access
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 Firebase 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:	NIL
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 and Edit Goals		
Created By:	Loh Yi Ze	Last Updated By:	Lek Jie Kai
Date Created:	3/2/2022	Date Last Updated:	8/4/2022

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 their account 2. Device has internet access
Postconditions:	1. The app will display the user's cycling goals 2. The app will display a progress bar indicating the proportion of monthly cycling distance goals achieved
Priority:	Medium
Frequency of Use:	Medium - Dependent on how often user checks or updates his/her cycling goals
Flow of Events:	1. User clicks on <View Goals> button on the <Home Page> 2. User’s relevant data is retrieved from Firebase 3. User’s cycling goals is displayed
Alternative Flows:	AF3: User edits his monthly cycling distance goal 1. User enters monthly distance goals and clicks on the “Submit” button. 2. System verifies the new monthly distance goal input is in the valid range of 0 to 9999.

	3. If the new monthly distance goal is in the valid range, user input will be stored in Firebase. 4. User's monthly distance goal is updated and displayed. 5. Monthly distance goal progress bar is updated to indicate to the user how much of his monthly cycling distance goal is achieved. AF3: User edits his monthly cycling duration (time) goal 1. User enters monthly cycling duration (time) goals and clicks on "Submit" 2. System verifies the new monthly duration(time) goal input is in the valid range of 0 to 744. 3. If the new monthly duration(time) goal is in the valid range, user input will be stored in firebase. 4. User's monthly duration(time) goals is updated and displayed
Exceptions:	NIL
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:	9/4/2022

Actor:	User, Firebase, 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 etc.). User is able to filter the relevant amenities and locations to be displayed through selecting the available dropdown checklist.
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 from Firebase 3. <Full Map Page> initialises markers to display all amenities 4. User checks the relevant amenities in dropdown list a. Access points

	b. Bicycle racks c. Bicycle rental shops d. F&B eateries e. Fitness areas f. Playground g. Shelter h. Toilets i. Water coolers 5. Map displays the relevant amenities checked by making the relevant amenities markers visible
Alternative Flows:	AF2: User searches for specific location on map using search bar 1. Map zooms in to that specific location 2. A location marker will be added at that location
Exceptions:	EX1: User searches for a non-existent location in search bar 1. App will display an error message “Location does not exist” EX2: If App is unable to access Google location API 1. Displays world map, but with Singapore map showing all the 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 the “Start” button. 4. App will retrieve and display the user's current location using Google Location API. 5. App will track and display distance travelled during cycling sessions using Google Location API. 6. App will track and display time elapsed of cycling session. 7. App will calculate and display the average speed of cycling sessions.

	8. User clicks on the “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:	NIL
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 the “Start” button. 4. App will retrieve and display the 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 sessions using Google Location API. 7. App will track and display time elapsed of cycling session.

	8. App will calculate and display the average speed of cycling sessions. 9. User clicks on the “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:	NIL
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 user must click the “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 the user selects a route recommendation, the 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 the 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:	NIL
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:	View and Send Chat Messages		
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 5 will be repeated, and the display is updated
Alternative Flows:	NIL
Exceptions:	NIL
Includes:	NIL
Special Requirements:	NIL
Assumptions:	NIL
Notes and Issues:	NIL