MetroBike - Use Cases

Formal Use Case #1

Primary Actor: Biker (app user)
Goal In Context: Get transit and cycling directions to a specific destination
Scope: MetroBike Android App
Level: User goal
Stakeholders and Interests:

Biker - wants to know the bike+bus combined directions from a starting point to a destination.

Transit agency - wants potential riders to connect with operating busses

Precondition: User has working Internet connection and has loaded the app to the start screen.
Minimal Guarantee: MetroBike does not crash, reports any problems to the user.
Success Guarantee: User gets currently available transit and bicycle directions from Google Maps.
Trigger: User opens MetroBike and navigates to the start screen, if necessary.

Main Success Scenario:

1. User enters origin, destination, and travel options, including time of departure or arrival.
2. MetroBike checks travel options for validity.
3. MetroBike requests directions from Google Maps servers. Requests may include multiple transit and/or bicycle requests.
4. MetroBike displays directions as a summary of route information and a formatted list of steps.

Extensions:

2a. Travel options are invalid (ex: in the past)

2a1. MetroBike displays an error message identifying the incorrect setting.

2a2. User is returned to the search area, where data remains as entered.

3a. A communication error occurs while making requests

3a1. MetroBike attempts to retry the request.

3a2. If retries are unsuccessful, MetroBike displays a message indicating that a communication error has occurred.

3a3. User is returned to the search area, where data remains as entered.

3b. A response of ‘ZERO_RESULTS’ is received from Google Maps (indicates impossible route, invalid origin, or invalid destination)

3b1. MetroBike displays a message indicating that no results were found, also suggesting possible causes (incorrect locations, etc).

3b2. User is returned to the search area, where data remains as entered.

Formal Use Case #2

Primary Actor: Biker (app user)
Goal In Context: Following transit/cycling directions to destination
Scope: MetroBike Android App
Level: User goal
Stakeholders and Interests:

Biker - wants to follow directions and make all connections.
Transit agency - wants potential riders to connect with operating busses

Precondition: User has already used the app to calculate directions.
Minimal Guarantee:
MetroBike application does not crash. The latest calculated directions will be kept in memory.
Success Guarantee:
The direction information will lead the biker to the destination.
Trigger: User tells the app to navigate.

Main Success Scenario:
1. Our system displays each step of the trip.
2. As the user completes each leg, they indicate completion to the system.
3. MetroBike then shows the next leg including direction and time.
4. Steps 2 and 3 repeat until all legs are complete

Extensions:
1a. The internet connection gets disconnected.

1a1. Keep the current leg showing on the screen.
1a2. New maps may not load, but the text description for each leg will still be shown.

2a. The biker misses the leg and tells the system.

2a1. Biker can manually recalculate new directions, with current location as the starting point.

3a. Biker wants to recalculate the direction to a different destination

3a1. Biker can manually recalculate new directions with a new starting point and a destination

Informal Use Case

Goal: User does not just want an optimal (fastest) route, they care about the distance they will be biking and the time they will be waiting at bus stops and certain areas they want to travel through or avoid. Our system should display the two fastest routes (possibly more) on the screen. The system will only display routes that are close in total travel time to the optimal route.

The user can select one direction to follow. If the user choose to recalculate the direction, or change the destination, the system will find multiple routes again. If there is only one available route, only one route will be displayed.