Cyberdyne Systems

Iteration Report 3

CTFastrak Application

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I. System Functionalities:

At this stage of development, the buses are displayed in real time along a selected route. The bus routes are also highlighted in different colors to help the user tell them apart. Once the route is selected the route becomes a thicker line. The bus stops are also showing routes for the current day opposed to the entire schedule of the week. A center on user location button was added along with a circle that displays the user on the map. Significant improvements to the search bar have been made. The search bar features autocomplete so the user does not have to match the string of the bus stop name. When a bus stop from the search bar is entered, a marker of that bus stop location is shown on the map. A progress bar was added to the start of the application that lets the user know that the application is loading up. To find a route to a marker location, the user can use the toolbar to open Google Maps to find a route to the selected marker.

II. User Stories Implemented:

The user stories implemented in this iteration are numbers 1, 2 and 3, and 4. Real time information has been added for use stories 1 and 2, and stories 1 and 3 were improved. User stories 5 and 6 are only partially implemented. The user can select a bus stop from the info box as a departure or arrival location, but there is no logic connecting the two bus stops. The user must find a route using the implemented Google Maps toolbar when a marker is selected.

1. As a commuter, I want to view bus route information so that I may be able to view where a bus will stop along its route.
    a. Precondition: Color highlighted bus routes are visible on the map
    b. Post-condition: The selected bus route is accentuated along with the bus stops along the selected route.
2. As a commuter, I want to view a bus stop schedule so that I will be able to view the approaching buses that will arrive at a specific stop
    a. Precondition: The bus stop is selectable on the map.
    b. The system tells the user the bus schedule for that stop and the next arriving bus.
3. As a commuter, I want to scroll and zoom in and out on the map so that I can examine points of interest on the map

      a. Precondition: The current section of the map is fully loaded into the system

      b. Post-condition: The app displays the new section of the map

4. As a commuter, I want to search for a specific bus stop so that I can quickly see its arrival and departure times for incoming or outgoing buses or search for a route.

      a. Precondition: The search bar for bus stop or route must exist in the system

      b. Post-condition: The user is taken directly to the bus stop on the map and is shown its list of arrival and departure times or is shown the highlighted route

III.   User Story Changes:

This iteration contained overall improvements to loading times and quality of life to the user. There were no new user stories added because we were focused on improving the ones we already have planned for our application, but we could think of something during the maintenance cycle.

IV.   Lessons Learned:

This project was difficult to work on, but all of us learned not to underestimate the time it takes to implement user stories while satisfying the functional and non-functional requirements, in addition to developing experience with Android Studio and programming for Android. We failed to fully implement a couple of remaining user stories. We have learned to communicate more frequently what we were going to do, but we didn't discuss fully how we would like the user story to look like when implemented. What one member thought was fine, the other changed it slightly that the other person was confused on why did that happen. It did eliminate some bugs it just wasn't clear how the team wanted to it to look like. It's probably because most of us lack experience in extensive collaborative projects, so this is a relatively new experience for us, so our communication was limited in the way of "I'll do this, you do that", and checking up on everyone's progress. If we were to do another project like this, we'd be able to communicate more effectively and use our new knowledge of Android to implement the user stories more quickly, leaving more time to figure out the most complex user stories. We made the mistake of not dealing with some of the complex stories in the middle of the iterations, and we became overwhelmed in the last iteration. It could be both positive and negative, because we could cut down on a lot of loading time of the app and make the overall changes more user friendly, but the last user stories were left out due to our situations.

V.   Incomplete User Stories:

5. As a commuter, I want to input my destination so that the app can calculate the nearest bus stop to take.

   a. Precondition: Destination must be a real location along CTFastrak routes

   b. Post-condition: App generates route to bus stop based on user location and user preferences

6. As a commuter, I want to select which bus stop to depart from because the one the app recommends might not be preferred.

   a. Precondition: Bus stop must still have an incoming bus for the day

   b. Post-condition: The route is updated to show the user's new arrival time

7. As a commuter, I want to select a calendar date so that I may see scheduled routes and bus arrival or departure times for another date.

   a. Precondition: The user enters a date within the date interval specified in the GTFS calendar feed.

   b. Post-condition: GTFS feed is parsed again for the given date, and all route and bus stop information is redrawn on the map.

User Story Sizes:

Size 3:

Input departure

Size 5:

Input destination

Input calendar date

VI. Iteration Summary:

There are a couple of user stories left that are unimplemented that could add on a lot of functionality to the current application. The user would be able to select a date that would show the schedule for that day without the app having to list all of them. It'd be maybe simpler if the user could select days of the week, but there are special holidays that the busses may not be on the

streets. The other user stories involve a functionality that could find the closest bus stop to the user location that would transport the user to the selected location. Transfers would be also required to reach the destination, so it seems complicated overall with the biggest size of 8, with both user stories combined.