TIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 12

Basic Instructions:

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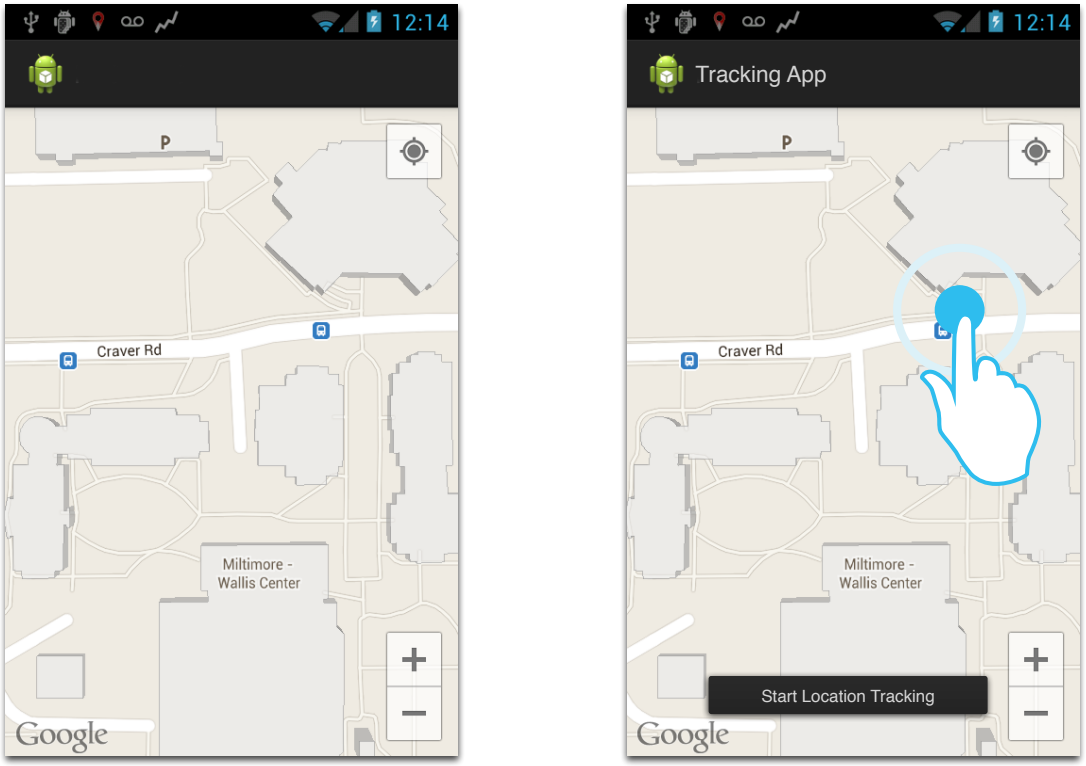
1. In every file submitted you MUST place the following comments:
   a. Assignment #.
   b. File Name.
   c. Full name of all students in your group.
2. Each group should submit only one assignment on behalf of all the other group members.
3. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will loose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
4. Export your Android project and create a zip file which includes all the project folder and any required libraries.Submission details:
   1. Compress the contents of your project folder and the **Executable APK File**. The file name is very important and should follow the following format: **Group#_InClass12.zip**
   2. You should submit the assignment through Canvas. Submit the zip file.
5. **Failure to follow the above instructions will result in point deductions.**

In Class Assignment 12

Important App Requirement:
You will have to install google play services on GenyMotion if you want to use GenyMotion as your emulator. In this assignment you will be implementing a simple location tracking application. The application tracks the user's current location using the device's GPS and draws the tracked user's path on a Google map using PolyLines.



(a) Displaying empty map (b) Location tracking started using long touch

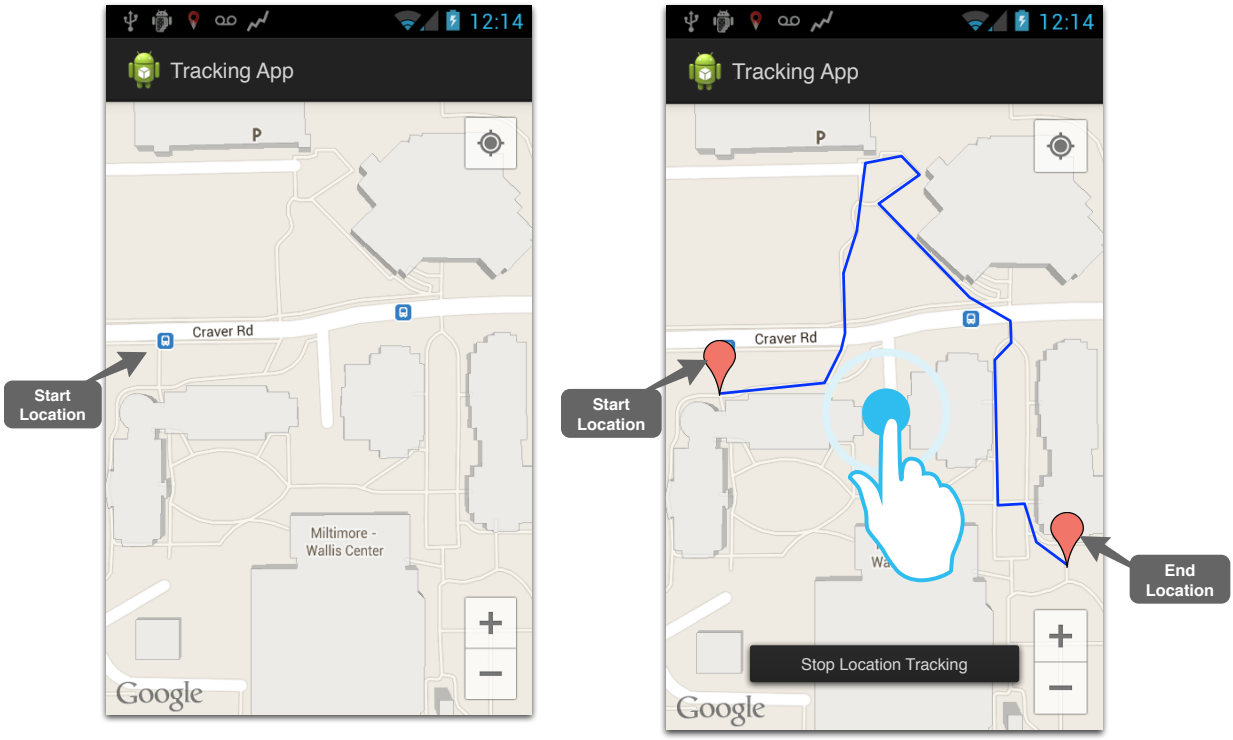
Figure 1: Main Activity

MainActivity:
This app is composed of a single activity. This activity should display a Google Map Fragment. The implementation requirements include:

1. A location manager should be used to retrieve your current location, through activating the location provider (GPS). Make sure to configure the location listener's minimum distance and time appropriately.
2. Location tracking includes the logic required to enable the location provider and listener, it also includes the logic required to draw the tracked locations on the Google Map. The location tracking is initially turned off when the app starts. Upon a long touch the location tracking should be started, a toast message should be shown to indicate that the tracking has started, see Figure 1(b). Finally if user long touches the map while tracking this should end the location tracking. A toast message should be started to indicate that the tracking has stopped.
3. A marker should be used to display the start and end locations on the google map.
4. Using PolyLine, display the paths on the map taken so far by the user. The path should be updated periodically when the user's location changes. For more information about

PolyLine, please visit: https://developers.google.com/maps/documentation/android-api/shapes

5. The map bounds should be automatically setup to include all the polylines created based on the user location updates. The map should auto zoom and automatically setup the bounds to include and show the polylines drawn so far. You should explore the use of LatLngBounds.Builder (https://developers.google.com/android/reference/com/google/android/gms/maps/model/LatLngBounds.Builder)
6. Generate an APK file for your app, and the APK file should be included in your submission.



(a) Start marker and PolyLine tracking location

(b) Location tracking stopped using long touch

Figure 2: Main Activity