ITIS/ITCS 4180/5180 Mobile Application Development
Homework 10

Basic Instructions:

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. Only the group leader is supposed to submit the 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. Please download the support files provided with this assignment and use them when implementing your project.
5. Create a zip file of your Framework 7 project with its related files.
6. Submission details:
   a. Only a single group member is required to submit on moodle for each group.
   b. The file name is very important and should follow the following format: **Group#_HW10.zip**
   c. You should submit the assignment through Moodle: Submit the zip file.
7. **Failure to follow the above instructions will result in point deductions.**

Homework 10 (100 Points)

In this assignment you will develop a google maps and places based application. The App search nearby places according to user query by place type. The app will show the map with markers of the places that are returned from the API call. In this assignment you will use custom markers and do on click event on info window.

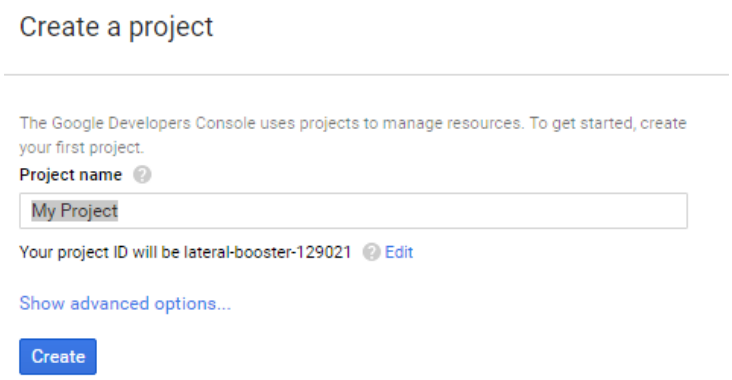
Google Maps and Places Android API

In this assignment you need to create map objects and also get google places for a particular place type for the current location. In order to do that you need to first get the google maps android API and places android API key.

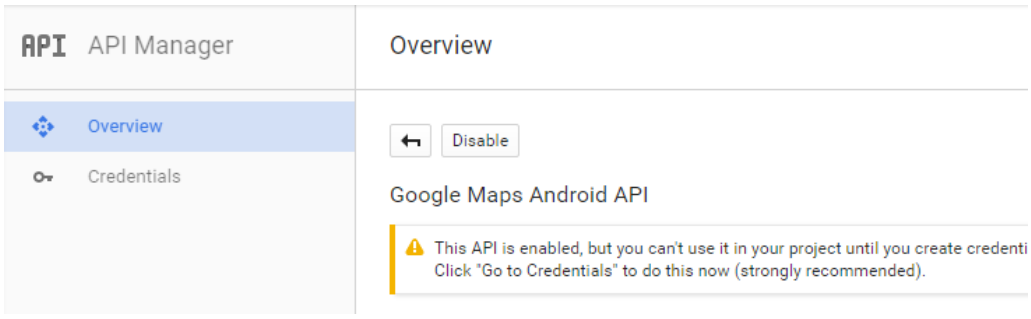
Get API Key:

Please follow the below steps to get the API key for both maps and places. Note that both maps and places share the same API key.

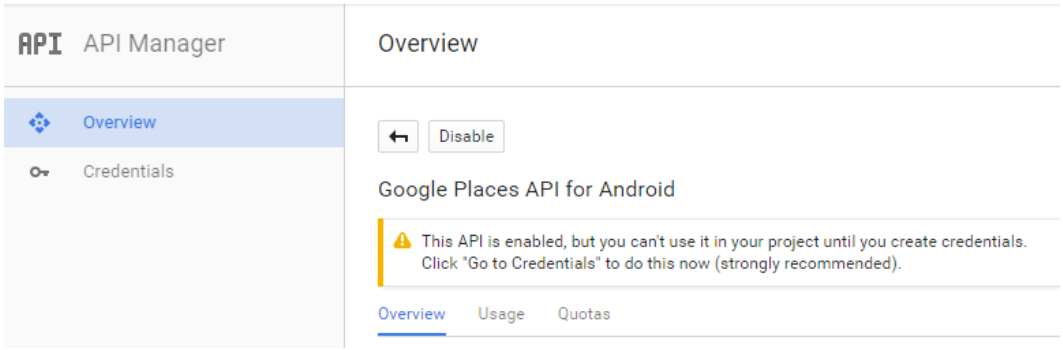
1. Sign in to your google account and create a project in the developer's console. Please use the link https://console.developers.google.com to do this.
2. Create a project with name.



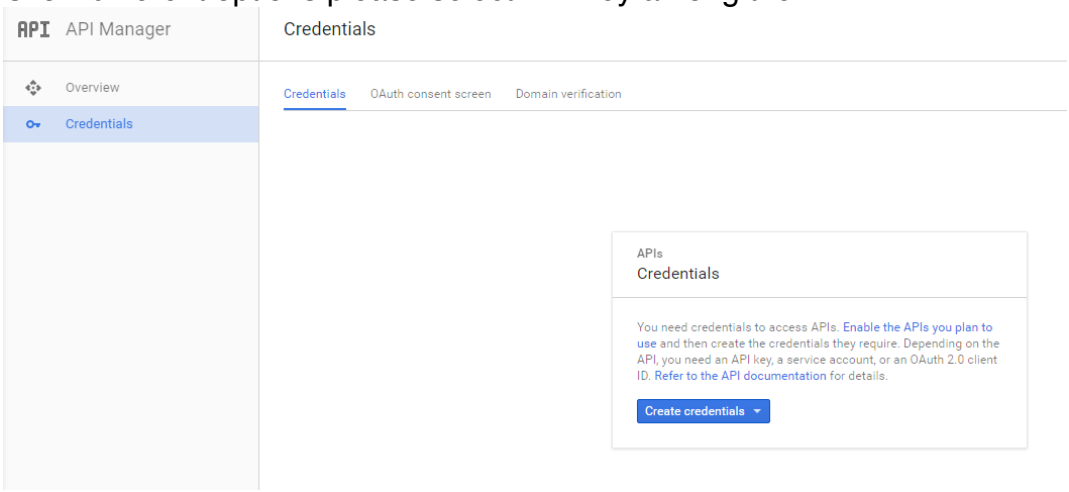
3. Now select Google Maps Android API from the products list and enable the API by clicking on Enable button in the Overview section.



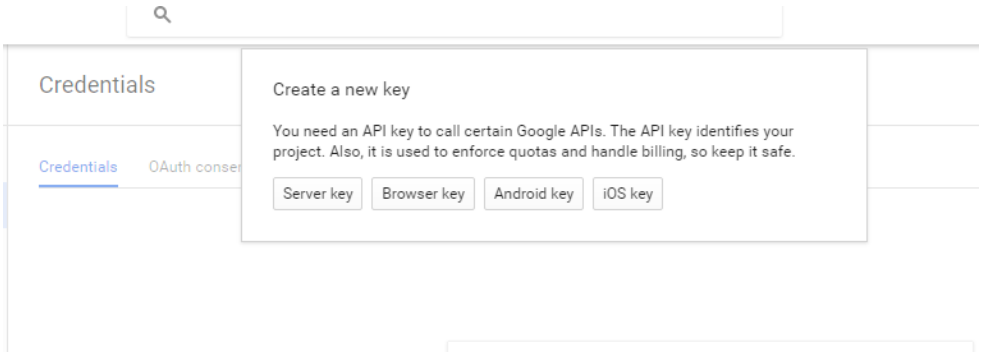
4. Likewise, Select the Google Places API for android from the products list and enable the API .



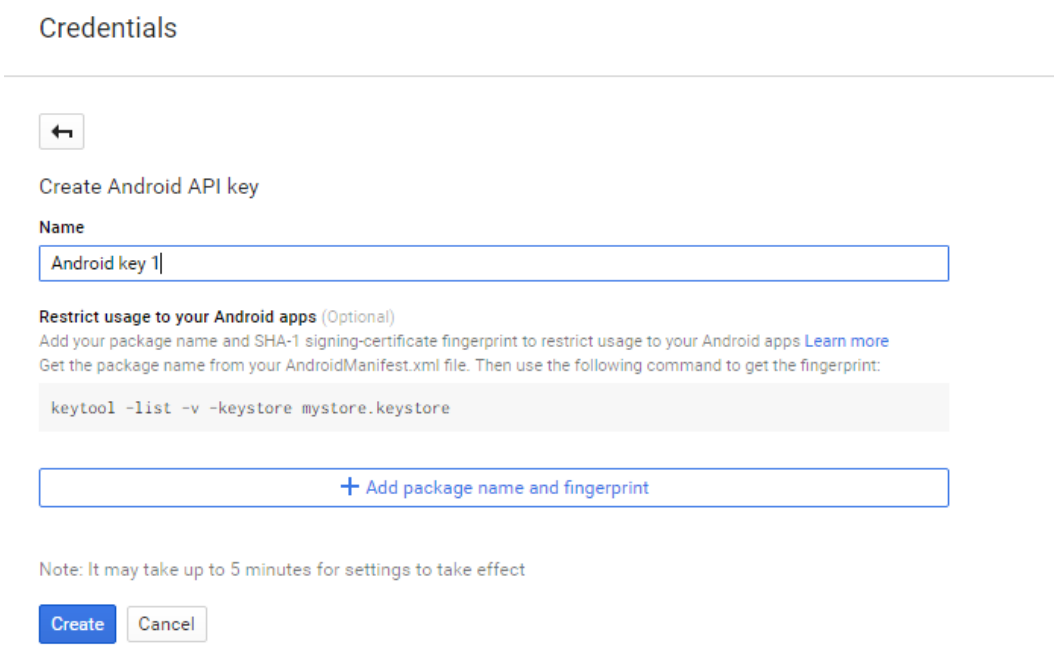
5. After this go the Credentials section in the same page to create credentials by clicking on Create credentials button as shown in the below figure. This will show different options please select API key among them.



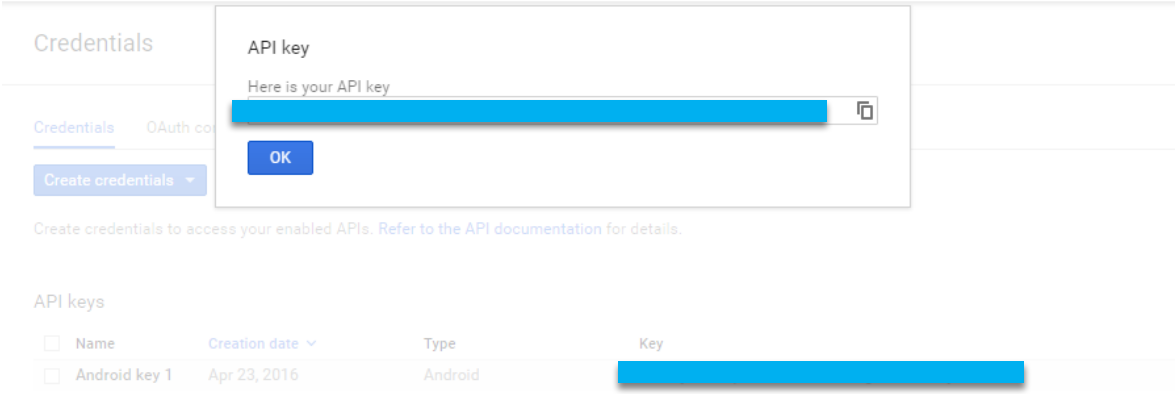
6. Click on the Android key.



7. Create the Android API key with proper name and click on the create button.



8. Please copy the create API key and use it in you manifest



AndroidManifest:

```
<meta-data
        android:name="com.google.android.geo.API_KEY"
        android:value="YOUR_API_KEY"/>
```

9. Please find the documentation for places API https://developers.google.com/places/android-api/start here.

10. Also Please find the documentation for maps API https://developers.google.com/maps/documentation/android-api/start here

11. Find the location and maps documentation here http://developer.android.com/training/building-location.html

12. Setup your project and required library dependencies. Import google play services into your project and then add it as a library to your project. Please follow the documentation here https://developers.google.com/android/guides/setup#add_google_play_services_to_your_project

13. Setup the required permissions and settings in AndroidManifest.

Part A: Maps Activity (70 Points)

The Map activity displays a map containing markers of the places returned by the API call. The app should implement the following functionalities.

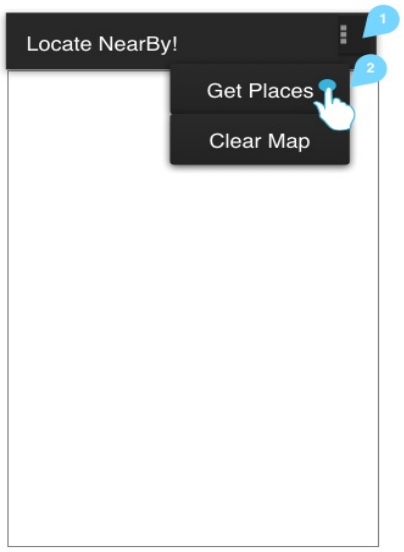


Figure 2(a) Maps Activity menu items

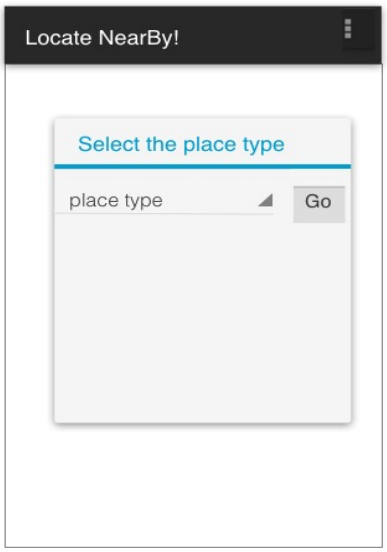


Figure 2(b) custom alert

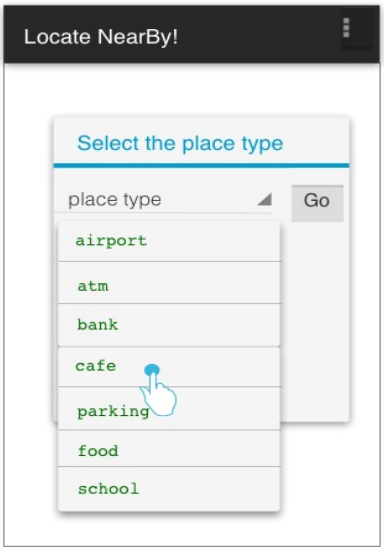


Figure 2(c) items in spinner

1. Maps Activity should have two menu items “Get Places” and “Clear Map” as shown in the figure 2(a)
2. Clicking on “**Get Places**” menu item will open a custom alert dialog as shown in the figure 2(b).
3. Place Type can be selected by choosing from spinner in alert dialogue. You are required to use only this set of places types (airport, atm, bank, cafe, parking, food, school) as shown in the figure 2(c).
4. Search Button should get the places with place filter as the selected place type. This will display the map with search result. You should use an AsyncTask to retrieve and parse the data from the Google Places API for android. Please check the documentation https://developers.google.com/places/android-api/current-place
5. On clicking on the go button should display the progress dialog before loading the map as shown in the figure 2(d).

6. Google Map: Display a map containing markers of all places returned from API call. Map should be properly zoomed so that all markers are displayed properly. Please check the documentation here https://developers.google.com/maps/documentation/android-api/views#updating_the_camera_view

7. Markers: Add marker on each place returned. Use the custom marker (red marker) for the place which is near to users current location.
8. Info Window: **Clicking on a marker** should display a customized info window that displays:
    - icon
    - place name : colored green if the place likelihood is between 0.5 to 1.0, red otherwise.
    - Address of the place.
    - You can read more about Info Window/ Customized on this link: https://developers.google.com/maps/documentation/android/infowindows#showhide_an_info_window
9. **Long Clicking on the marker** should open the View Pictures activity passing place id as an extra.
10. Clicking on “Clear Map” will clear the markers in the map.

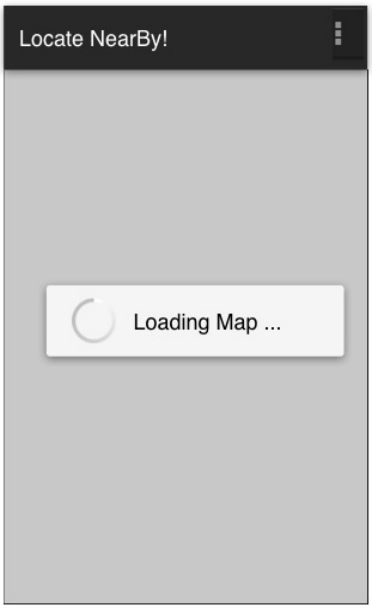


Figure 2(d) progress dialog

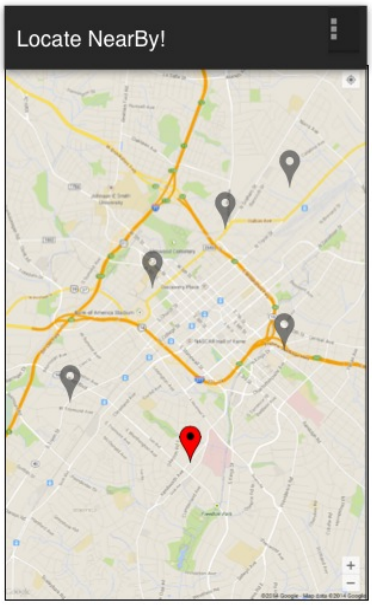


Figure 2(e) markers for near by places of the place type

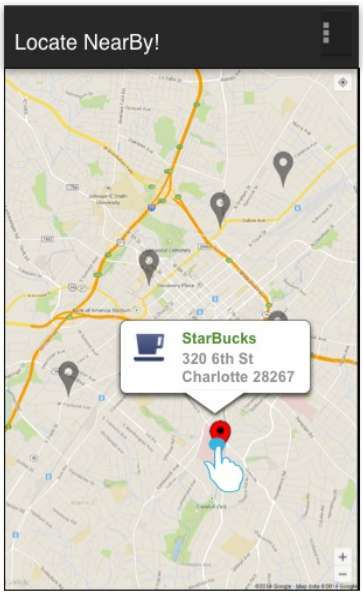


Figure 2(f) info window of the marker

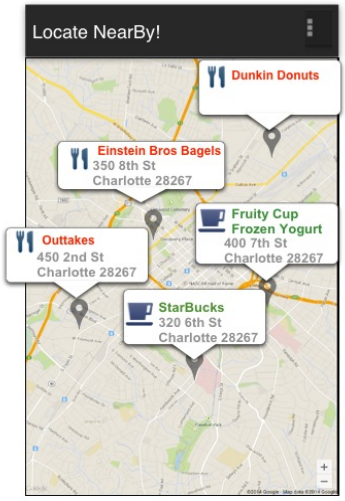


Figure 2(g) place name colored based on likelihood

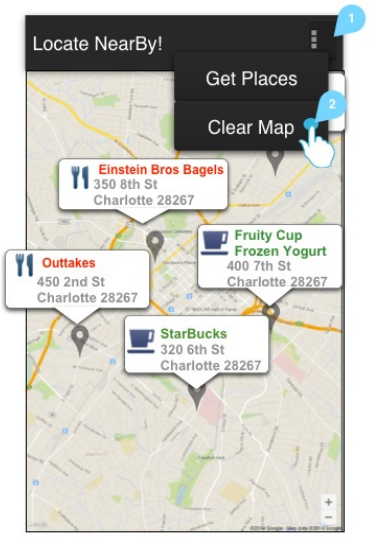


Figure 2(h) Clear map menu item

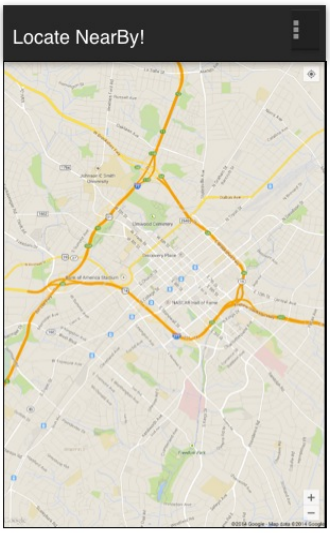


Figure 2(i) markers should be cleared from maps

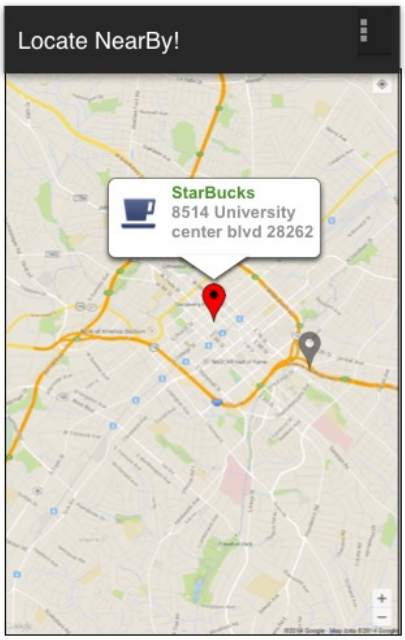


Figure 2(j) On location changed show new markers with the current location for the place type

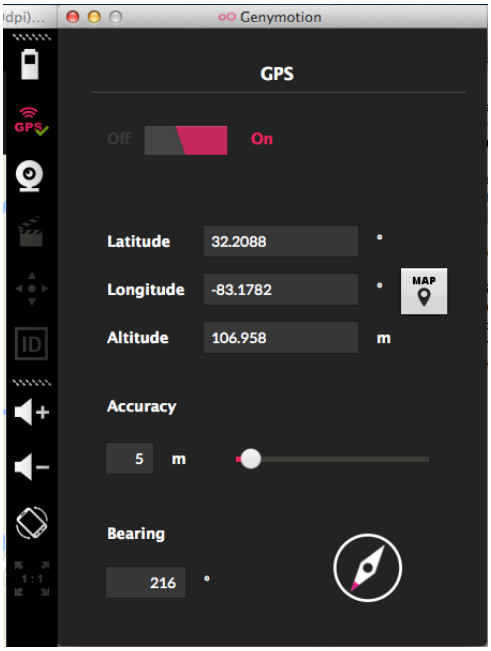


Figure 2(k) Change location with map button in GPS in genymotion

11. On location changed (change the latitude and longitude manually or click on map button in genymotion) call the places api to get the places for the recently changed location.

Part B: View Pictures Activity (30 Points)

View Pictures activity should show the photos uploaded by the users for the particular place. Please follow the documentation https://developers.google.com/places/android-api/photos.The activity should implement the following functionalities:

1. Activity should get the list of photos for the place id provided as extras from maps activity.
2. Please use frame layout for this activity.
3. Photos should be changed from left and right using swipe gestures.