Assignment - 7

Title: Google Maps App

Problem statement:
Design a mobile app using Google maps and GPS to trace the location.

Objective:
- To implement a mobile app to trace the location.
- To understand basic of android studio
- To understand basic of Google map and GPS.

Outcome:
After successfully completing this assignment, student should be able to understand and implement mobile app to trace the location

Requirement:
Adroid Studio IDE, emulator

Theory:
Google maps is a web mapping service developed by google. It offers a satellite imagery, ariel photography, street

maps, 360° interactive panoramic views of streets, real-time traffic conditions, and route planning for travelling by foot, car, bicycle, air and public transportation.

GPS:
The Global Positioning System (GPS), originally NAVSTAR GPS is a satellite based radionavigation system owned by the United States government and operated by the United States Space Force. It is one of the Global Navigation Satellite Systems (GNSS) that provides geolocation and time information to a GPS reciever anywhere on or near Earth where there is an unobstructed line of sight to four or more GPS satellites. Obstacles such as mountains and buildings block the relatively weak GPS signals.

Google Map layout file

```
<fragment
  android:id="@+id/maps"
  android:layout_width="matchparent"
  android:layout_height="matchparent" />
```

Manifest file:
We have to add the following permissions along with google map API key to android manifest.

- ACCESS_FINE_LOCATION:
  For accessing GPS location

- ACCESS_COARS_LOCATION:
  For accessing network previder location

Syntax:

```
<user_permission android:name = " android
  permission: permission_type " />
<!---- Google API Key ---->
<metadata
  android:name = " package_path "
  android:value = " Google API key " />
```

Customizing Google Maps:

- Adding marker:

```
addMarker
MarkerOptions mo = new MarkerOptions().
  position(new LatLng(0,0)).title(" mylocation ");

GoogleMap mMap = goole Map;
mMap.addMarker(mo);
```

- Changing map type:

GoogleMap.setMapType(GoogleMap.MAPTYPE);

- Enable / disable zoom:

GoogleMap.getVisitThings().setZoomGestures-Enabled(true);

- To get g. current location:

requestLocation().

- To zoom a particular area:

map.moveCamera(CameraUpdate.UP);

Conclusion:
Thus, after successfully completing this assignment, students should be able to understand and implement mobile app to trace the location.