**1.Write a program to locate user’s current location.**

**MapsActivity.java:**

package com.example.mad\_pr31;  
  
import androidx.fragment.app.FragmentActivity;  
import android.location.Location;  
import android.os.Bundle;  
import android.util.Log;  
import com.google.android.gms.location.FusedLocationProviderClient;  
import com.google.android.gms.location.LocationServices;  
import com.google.android.gms.maps.CameraUpdateFactory;  
import com.google.android.gms.maps.GoogleMap;  
import com.google.android.gms.maps.OnMapReadyCallback;  
import com.google.android.gms.maps.SupportMapFragment;  
import com.google.android.gms.maps.model.LatLng;  
import com.google.android.gms.maps.model.MarkerOptions;  
import com.example.mad\_pr31.databinding.ActivityMapsBinding;  
import com.google.android.gms.tasks.OnSuccessListener;  
import com.google.android.gms.tasks.Task;  
  
public class MapsActivity extends FragmentActivity implements OnMapReadyCallback {  
  
 private GoogleMap mMap;  
 private ActivityMapsBinding binding;  
 private FusedLocationProviderClient client;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
  
 binding = ActivityMapsBinding.*inflate*(getLayoutInflater());  
 setContentView(binding.getRoot());  
 client = LocationServices.*getFusedLocationProviderClient*(this);  
   
  
 @Override  
 public void onMapReady(GoogleMap googleMap) {  
 mMap = googleMap;  
  
 LatLng sydney = new LatLng(-34, 151);  
 mMap.addMarker(new MarkerOptions().position(sydney).title("Marker in Sydney"));  
 mMap.moveCamera(CameraUpdateFactory.*newLatLngZoom*(sydney, 10));  
  
 Task<Location> task = client.getLastLocation();  
 task.addOnSuccessListener(new OnSuccessListener<Location>() {  
 @Override  
 public void onSuccess(Location location) {  
 if (location != null) {  
 LatLng latLng = new LatLng(location.getLatitude(), location.getLongitude());  
 MarkerOptions markerOptions = new MarkerOptions().position(latLng).title("Your Location");  
 googleMap.addMarker(markerOptions);  
 googleMap.animateCamera(CameraUpdateFactory.*newLatLngZoom*(latLng, 15));  
 } else {  
 Log.*e*("MapsActivity", "Location is null!");  
 }  
 }  
 });  
 }  
}

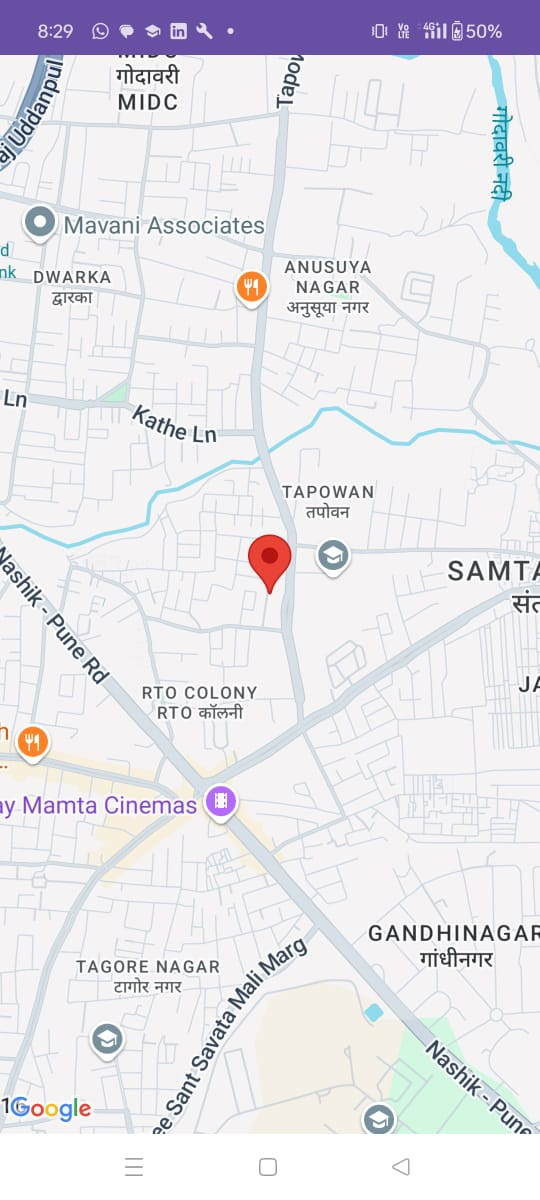
**activity\_maps.xml:**

<?xml version="1.0" encoding="utf-8"?>  
<fragment xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:map="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/map"  
 android:name="com.google.android.gms.maps.SupportMapFragment"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MapsActivity" />

**AndroidMnifest.xml:**

<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:tools="http://schemas.android.com/tools">  
 <uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION"/>  
 <uses-permission android:name="android.permission.ACCESS\_COARSE\_LOCATION"></uses-permission>  
  
 <application  
 android:allowBackup="true"  
 android:dataExtractionRules="@xml/data\_extraction\_rules"  
 android:fullBackupContent="@xml/backup\_rules"  
 android:icon="@mipmap/ic\_launcher"  
 android:label="@string/app\_name"  
 android:roundIcon="@mipmap/ic\_launcher\_round"  
 android:supportsRtl="true"  
 android:theme="@style/Theme.MAD\_pr31"  
 tools:targetApi="31">  
  
 <meta-data  
 android:name="com.google.android.geo.API\_KEY"  
 android:value="AIzaSyAA1NHAK3hppLR7E9LEkkReUDxRLNVqgoM" />  
  
 <activity  
 android:name=".MapsActivity"  
 android:exported="true"  
 android:label="@string/title\_activity\_maps">  
 <intent-filter>  
 <action android:name="android.intent.action.MAIN" />  
  
 <category android:name="android.intent.category.LAUNCHER" />  
 </intent-filter>  
 </activity>  
 <activity  
 android:name=".MainActivity"  
 android:exported="true">  
 <intent-filter>  
 <action android:name="android.intent.action.MAIN" />  
  
 <category android:name="android.intent.category.LAUNCHER" />  
 </intent-filter>  
 </activity>  
 </application>  
  
</manifest>

**Output:**

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**2.Write a program to draw root between two locations.**

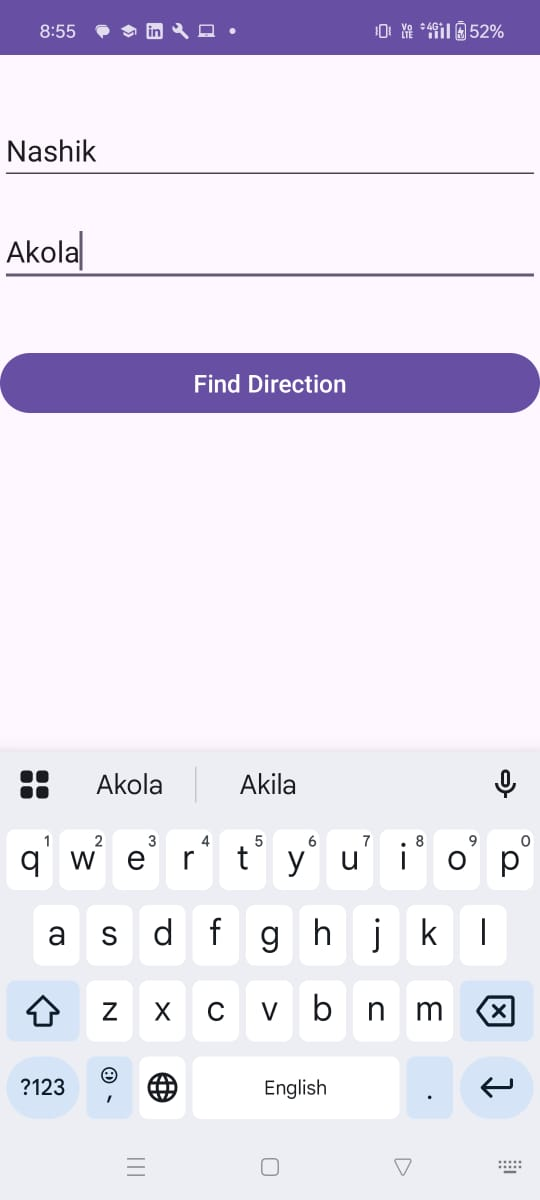
**Activity\_main.xml:**

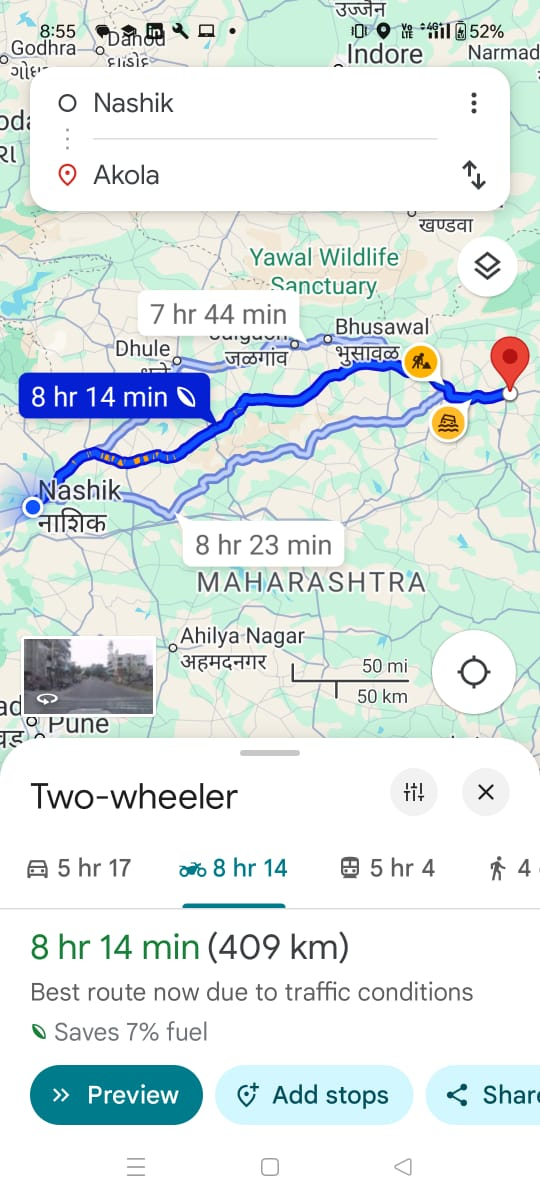
<?xml version="1.0" encoding="utf-8"?>  
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:id="@+id/main"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 android:orientation="vertical"  
 tools:context=".MainActivity">  
  
 <EditText  
 android:id="@+id/startPoint"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter Starting Point"  
 android:layout\_marginTop="40dp"/>  
  
 <EditText  
 android:id="@+id/destination"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:hint="Enter Destination"  
 android:layout\_marginTop="20dp"/>  
  
 <Button  
 android:id="@+id/find"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Find Direction"  
 android:layout\_marginTop="40dp"/>  
  
</LinearLayout>

**MainActivity.java:**

package com.example.mad\_pr32;  
  
import android.content.Intent;  
import android.net.Uri;  
import android.os.Bundle;  
import android.widget.Button;  
import android.widget.EditText;  
  
import androidx.activity.EdgeToEdge;  
import androidx.appcompat.app.AppCompatActivity;  
import androidx.core.graphics.Insets;  
import androidx.core.view.ViewCompat;  
import androidx.core.view.WindowInsetsCompat;  
  
public class MainActivity extends AppCompatActivity {  
 EditText startPoint, destination;  
 Button find;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 startPoint = findViewById(R.id.*startPoint*);  
 destination = findViewById(R.id.*destination*);  
 find = findViewById(R.id.*find*);  
  
 find.setOnClickListener(v -> {  
 String start = startPoint.getText().toString();  
 String dest = destination.getText().toString();  
 Uri IntentUri = Uri.*parse*("https://www.google.com/maps/dir/?api=1&origin=" + start + "&destination=" + dest);  
 Intent mapIntent = new Intent(Intent.*ACTION\_VIEW*, IntentUri);  
 mapIntent.setPackage("com.google.android.apps.maps");  
 startActivity(mapIntent);  
 });  
 }  
}

**Output:**

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