Experiment-7

Aim: Develop a native application that uses GPS location information

Creating a New project:

- Open Android Studio and then click on File -> New -> New project.
- Then select the Map Activity and click Next.
- Then type the Application name as “MapsActivity″, select the Minimum SDK and select language as Java then click Finish

Designing layout for the Android Application:

- Click on app -> res -> layout -> activity_maps.xml and write the following code

Activity_maps.xml

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity" >
    <TextView
        android:id="@+id/textview1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_centerHorizontal="true"
        android:layout_centerVertical="true"
        android:text="hello" />
</RelativeLayout>
```

So now the designing part is completed.

Adding permissions in Manifest for the Android Application:

- Click on app -> manifests -> AndroidManifest.xml

- Now include the ACCESS_FINE_LOCATION, ACCESS_COARSE_LOCATION, INTERNET permissions in the AndroidManifest.xml file as shown below

Code for AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.garima.mapactivity"
    android:versionCode="1"
    android:versionName="1.0" >
    <uses-sdk
        android:minSdkVersion="8"
        android:targetSdkVersion="17"        />
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />
    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION"/>
    <uses-permission android:name="android.permission.INTERNET"/>
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme" >
        <activity
            android:name="com.garima.mapactivity.MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
```

```
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
  </application>
</manifest>
```

So now the Permissions are added in the Manifest.

Java Coding for the Android Application:

- Click on app -> java -> com.garima.mapactivity -> MainActivity.

Code for MainActivity.java:

```
package com.garima.mapactivity;
import android.os.Bundle;
import android.app.Activity;
import android.content.Context;
import android.location.Location;
import  android.location.LocationListener;
import android.location.LocationManager;
import android.widget.TextView;
import android.util.Log;

public class MainActivity extends Activity implements LocationListener{
   protected LocationManager locationManager;
   protected LocationListener locationListener;
   protected Context context;
   TextView txtLat;
```

```
    String lat;
    String provider;
    protected String latitude,longitude;
    protected boolean gps_enabled,network_enabled;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_maps);
        txtLat = (TextView) findViewById(R.id.textview1);
        locationManager = (LocationManager)getSystemService(Context.LOCATION_SERVICE);
        locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, 0, 0, this);
    }
    @Override
    public void onLocationChanged(Location location) {
        txtLat = (TextView) findViewById(R.id.textview1);
        txtLat.setText("Latitude:" + location.getLatitude() + ", Longitude:" +
location.getLongitude());
    }
    @Override
    public void onProviderDisabled(String provider) {
        Log.d("Latitude","disable");
    }
    @Override
    public void onProviderEnabled(String provider) {
        Log.d("Latitude","enable");
```

```
    }
    @Override
    public void onStatusChanged(String provider, int status,
        Bundle extras) {Log.d("Latitude","status");
    }
}
```

Output: