Ex no:06 SIMPLE APPLICATION TO DISPLAY CURRENT LOCATION INFORMATION USING AN ALERT MESSAGE

AIM:

To develop a simple application that displays the current location information (Latitude and Longitude) using an alert message.

PROCEDURE:

Step 1: Start the process.
Step 2: Create a new android application project.
Step 3: Select Empty Activity and click next.
Step 4: Give the application name ,project name,package name and click next.
Step 5: In Java file, set the GPS provider and ask for permission to access the user's location information.
Step 6: Write the coding in activity_main.xml and save the file.
Step 7: Add the dependencies in gradle module.
Step 8: Set emulator as Android 8.0 and run the application.
Step 9: Stop the process.

PROGRAM:

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:gravity="center">

    <Button
        android:id="@+id/btn_get_location"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Get Current Location"
        tools:ignore="HardcodedText" />

</LinearLayout>
```

AndroidManifest.xml:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
```

```
package="com.example.myapplication">
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION" />

<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/AppTheme">
    <activity android:name=".MainActivity">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

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

MainActivity.java:

```
package com.example.myapp6;

import android.Manifest;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.Button;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;

public class MainActivity extends AppCompatActivity {
    private static final int PERMISSION_REQUEST_CODE = 100;


    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btnGetLocation = findViewById(R.id.btn_get_location);
        btnGetLocation.setOnClickListener(view -> {
            if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION)
                    != PackageManager.PERMISSION_GRANTED &&
```

```
                ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION)
                        != PackageManager.PERMISSION_GRANTED) {
            ActivityCompat.requestPermissions(this,
                    new
String[]{Manifest.permission.ACCESS_FINE_LOCATION,
Manifest.permission.ACCESS_COARSE_LOCATION},
                    PERMISSION_REQUEST_CODE);
        } else {
            getLocation();
        }
    });
  }

  private void getLocation() {
    LocationManager locationManager = (LocationManager)
getSystemService(LOCATION_SERVICE);
    if (locationManager != null) {
        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) !=
PackageManager.PERMISSION_GRANTED &&
ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) !=
PackageManager.PERMISSION_GRANTED) {
            // TODO: Consider calling
            //    ActivityCompat#requestPermissions
            // here to request the missing permissions, and then overriding
            //   public void onRequestPermissionsResult(int requestCode,
String[] permissions,
            //                                          int[] grantResults)
            // to handle the case where the user grants the permission. See the
documentation
            // for ActivityCompat#requestPermissions for more details.
            return;
        }
        Location location =
locationManager.getLastKnownLocation(LocationManager.GPS_PROVIDER)
;
        if (location != null) {
            double latitude = location.getLatitude();
            double longitude = location.getLongitude();
            String message = "Latitude: " + latitude + "\nLongitude: " +
longitude;
            Toast.makeText(this, message, Toast.LENGTH_LONG).show();
        } else {
            Toast.makeText(this, "Unable to retrieve location",
Toast.LENGTH_LONG).show();
        }
    }
  }
```

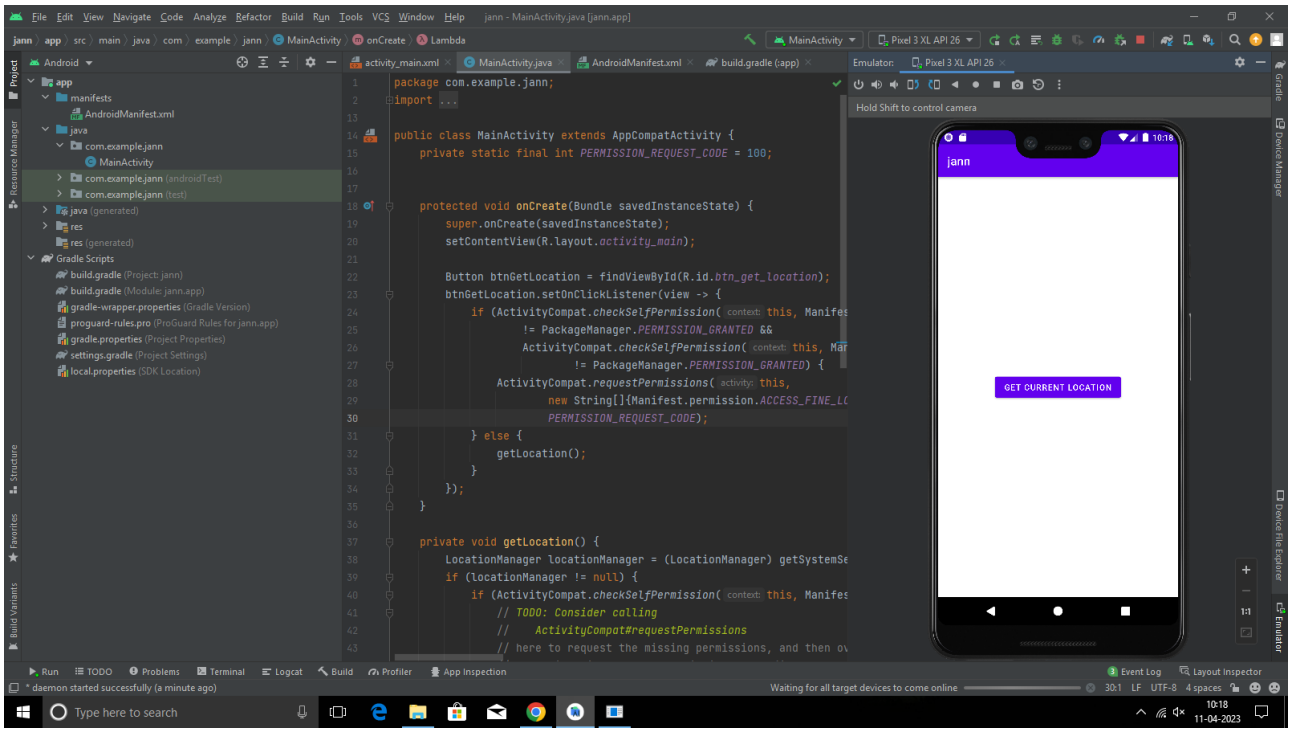
```
    public void onRequestPermissionsResult(int requestCode, @NonNull
String[] permissions, @NonNull int[] grantResults) {
        super.onRequestPermissionsResult(requestCode, permissions,
grantResults);
        if (requestCode == PERMISSION_REQUEST_CODE) {
            if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
                getLocation();
            } else {
                Toast.makeText(this, "Permission denied",
Toast.LENGTH_LONG).show();
            }
        }
    }
}
```

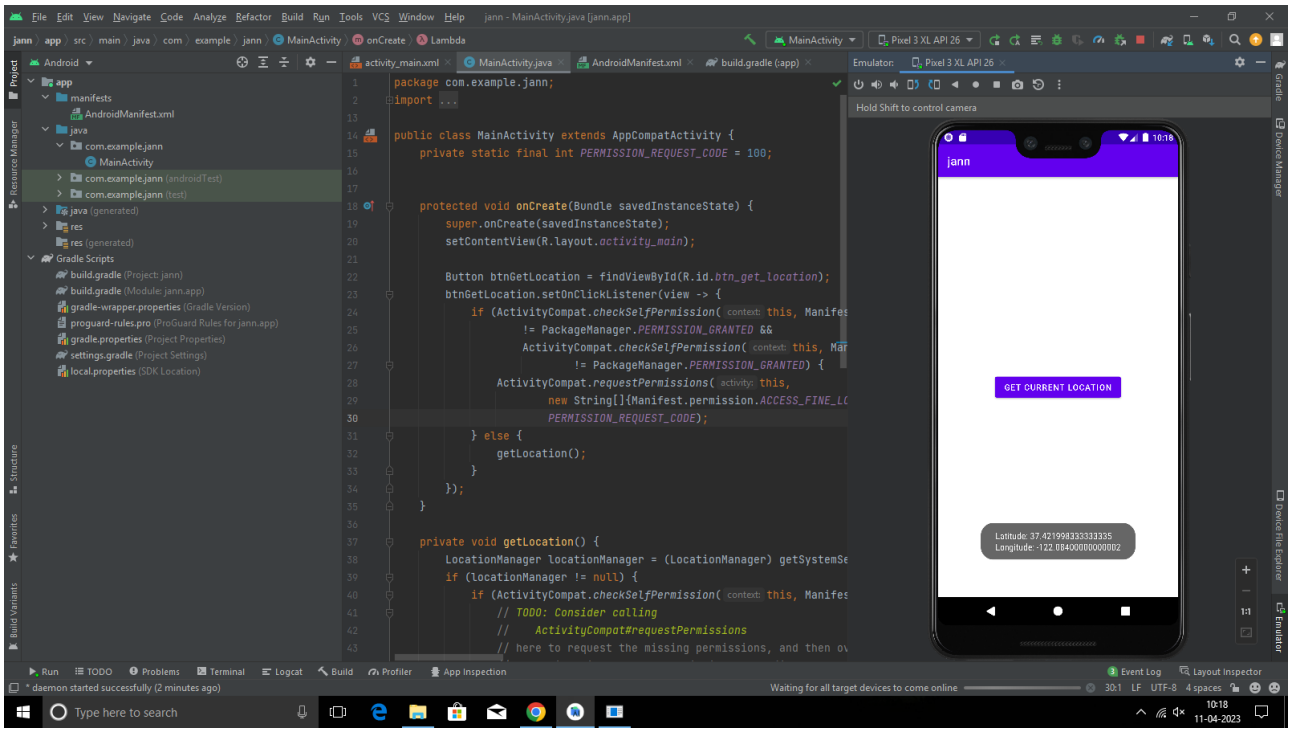
BUILD GRADLE:

```
apply plugin: 'com.android.application'

android {
    compileSdkVersion 29
    buildToolsVersion "29.0.2"
    defaultConfig {
        applicationId "com.example.myapplication"
        minSdkVersion 21
        targetSdkVersion 29
        versionCode 1
        versionName "1.0"
        testInstrumentationRunner "androidx.test.runner.AndroidJUnitRunner"
    }
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android-optimize.txt'), 'proguard-
rules.pro'
        }
    }
}

dependencies {
    implementation fileTree(dir: 'libs', include: ['*.jar'])
    implementation 'androidx.appcompat:appcompat:1.0.2'
    implementation 'androidx.constraintlayout:constraintlayout:1.1.3'
    implementation 'com.google.android.gms:play-services-location:21.0.1'
    testImplementation 'junit:junit:4.12'
    androidTestImplementation 'androidx.test.ext:junit:1.1.0'
    androidTestImplementation 'androidx.test.espresso:espresso-core:3.1.1'
```

}

OUTPUT:


jann
GET CURRENT LOCATION


jann
GET CURRENT LOCATION
Latitude: 37.421998333333335
Longitude: -122.084000000000002

RESULT:

Thus the implementation of Simple application to display the current location and send an alert message has been executed and verified successfully.