Program to show the Location. (Longitude, Latitude):

Code:

MainActivity.java:

```java
package com.example.assignment15;

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

import android.Manifest;
import android.annotation.SuppressLint;
import android.content.pm.PackageManager;
import android.location.Address;
import android.location.Geocoder;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;

import java.util.List;
import java.util.Locale;

public class MainActivity extends AppCompatActivity implements LocationListener {

    TextView tvlat, tvlon, tvlock;
    Button btnlock;

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

        tvlat = findViewById(R.id.tvlat);
        tvlon = findViewById(R.id.tvlon);
        btnlock = findViewById(R.id.btnloc);
        tvlock = findViewById(R.id.tvloc);

        if (ContextCompat.checkSelfPermission(MainActivity.this,
Manifest.permission.ACCESS_FINE_LOCATION)
                != PackageManager.PERMISSION_GRANTED) {
            ActivityCompat.requestPermissions(MainActivity.this,
                new String[]{Manifest.permission.ACCESS_FINE_LOCATION}, 100);
        }

        btnlock.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                getLocation();
```

```java
            }
        });
    }

    @Override
    public void onLocationChanged(@NonNull Location location) {
        try {
            Geocoder geo = new Geocoder(MainActivity.this, Locale.getDefault());
            List<Address> addresses = geo.getFromLocation(location.getLatitude(),
                    location.getLongitude(), 1);
            String address = addresses.get(0).getAddressLine(0);
            tvlock.setText("Address: " + address);
            double lat = location.getLatitude();
            double lon = location.getLongitude();
            tvlat.setText("Latitude: " + lat);
            tvlon.setText("Longitude: " + lon);
        } catch (Exception e) {
            e.printStackTrace();
        }
    }

    private void getLocation() {
        if (ContextCompat.checkSelfPermission(MainActivity.this,
Manifest.permission.ACCESS_FINE_LOCATION)
                == PackageManager.PERMISSION_GRANTED) {
            try {
                @SuppressLint("ServiceCast")
                LocationManager mgr = (LocationManager) getSystemService(LOCATION_SERVICE);
                mgr.requestLocationUpdates(LocationManager.GPS_PROVIDER, 5000, 10, this);
            } catch (Exception e) {
                e.printStackTrace();
            }
        } else {
            ActivityCompat.requestPermissions(MainActivity.this,
                    new String[]{Manifest.permission.ACCESS_FINE_LOCATION}, 100);
        }
    }

    @Override
    public void onStatusChanged(String provider, int status, Bundle extras) {
        // Not used but required to override
    }

    @Override
    public void onProviderEnabled(@NonNull String provider) {
        // Not used but required to override
    }

    @Override
    public void onProviderDisabled(@NonNull String provider) {
        // Not used but required to override
    }
}
```

activity_main.xml:

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
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:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/tvlat"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.178"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.257" />

    <TextView
        android:id="@+id/tvlon"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.155"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.557" />

    <Button
        android:id="@+id/btnloc"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Button"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.677" />

    <TextView
        android:id="@+id/tvloc"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="TextView"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.178"
        app:layout_constraintStart_toStartOf="parent"
```

```
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.424" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

AndroidManifest.xml:

```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.INTERNET"/>
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
    <uses-permission
android:name="android.permission.ACCESS_COARSE_LOCATION_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.Assignment15"
        tools:targetApi="31">
        <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>
```