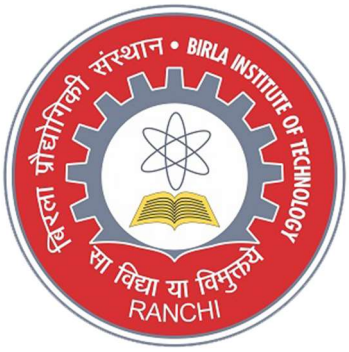
Birla Institute of Technology,Mesra, Patna Campus



MI-Assignment

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#Assignment-7

Problem Statement :

Develop a native application that uses GPS location information

Code :

MainActivity.java

```
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import android.Manifest;
import android.content.Context;
import android.content.pm.PackageManager;
import android.location.Criteria;
import android.location.Location;
import android.location.LocationListener;
import android.location.LocationManager;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements
LocationListener {

    public static final int MY_PERMISSIONS_REQUEST_LOCATION = 99;

    LocationManager locationManager;
    String provider;
```

```
    TextView tv_latitude, tv_longitude;

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


        tv_latitude = findViewById(R.id.tv_latitude);
        tv_longitude = findViewById(R.id.tv_longitude);

        locationManager = (LocationManager)
getSystemService(Context.LOCATION_SERVICE);
        Criteria criteria = new Criteria();
        provider = locationManager.getBestProvider(criteria, false);


        checkLocationPermission();

        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) !=
PackageManager.PERMISSION_GRANTED &&
ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) !=
PackageManager.PERMISSION_GRANTED) {
            return;
        }

        if (provider != null) {
            Location location =
locationManager.getLastKnownLocation(provider);
            locationManager.requestLocationUpdates(provider, 20000, 1, this);
            if (location != null) {
                onLocationChanged(location);
            } else
```

```
            Toast.makeText(this, "location not available",
Toast.LENGTH_SHORT).show();
        } else
            Toast.makeText(this, "No provider found",
Toast.LENGTH_SHORT).show();


    }

    @Override
    public void onLocationChanged(@NonNull Location location) {
        tv_latitude.setText("Latitude - " + location.getLatitude());
        tv_longitude.setText("Longitude -" + location.getLongitude());
    }


    public boolean checkLocationPermission() {
        if (ContextCompat.checkSelfPermission(this,
                Manifest.permission.ACCESS_FINE_LOCATION)
                != PackageManager.PERMISSION_GRANTED) {

            ActivityCompat.requestPermissions(this,
                    new
String[]{Manifest.permission.ACCESS_FINE_LOCATION},
                    MY_PERMISSIONS_REQUEST_LOCATION);

            return false;
        } else {
            return true;
        }
    }

    @Override
    public void onRequestPermissionsResult(int requestCode,
                                           String[] permissions, int[] grantResults) {
```

```
        super.onRequestPermissionsResult(requestCode, permissions,
grantResults);
        if (requestCode == MY_PERMISSIONS_REQUEST_LOCATION) {// If
request is cancelled, the result arrays are empty.
            if (grantResults.length > 0
                    && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {

                // permission was granted, yay! Do the
                // location-related task you need to do.
                if (ContextCompat.checkSelfPermission(this,
                        Manifest.permission.ACCESS_FINE_LOCATION)
                        == PackageManager.PERMISSION_GRANTED) {

                    //Request location updates:
                    updateLocationToUI();

                }
            }
            else
                Toast.makeText(this, "Access Denied",
Toast.LENGTH_SHORT).show();
        }
    }

    private void updateLocationToUI() {

        Criteria criteria = new Criteria();
        provider = locationManager.getBestProvider(criteria, false);

        if (ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) !=
PackageManager.PERMISSION_GRANTED &&
ActivityCompat.checkSelfPermission(this,
```

```
Manifest.permission.ACCESS_COARSE_LOCATION) !=
PackageManager.PERMISSION_GRANTED) {
            return;
        }

        if (provider != null) {
            Location location =
locationManager.getLastKnownLocation(provider);
            locationManager.requestLocationUpdates(provider, 20000, 1, this);
            if (location != null) {
                onLocationChanged(location);
            } else
                Toast.makeText(this, "location not available",
Toast.LENGTH_SHORT).show();
        } else
            Toast.makeText(this, "No provider found",
Toast.LENGTH_SHORT).show();
    }
}
```

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:layout_width="match_parent"
    android:gravity="center"
    android:orientation="vertical"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
```

```
        android:id="@+id/tv_latitude"
        android:textSize="20sp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

    <TextView
        android:id="@+id/tv_longitude"
        android:textSize="20sp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        />

</LinearLayout>
```

AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.by.assignment7">

    <uses-permission android:name =
"android.permission.ACCESS_FINE_LOCATION" />
    <uses-permission android:name = "android.permission.INTERNET" />

    <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/Theme.Assignment7">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
```

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

</manifest>
```

Output:

Latitude - 25.62787865
Longitude -85.0869419