**Week 9: Develop a naƟve applicaƟon that uses GPS LocaƟon InformaƟon**

# acƟvity\_main.xml

<?xml version="1.0" encoding="uƞ-8"?>

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="hƩp://schemas.android.com/apk/res/androi d"

xmlns:app="hƩp://schemas.android.com/apk/res-auto" xmlns:tools="hƩp://schemas.android.com/tools" android:id="@+id/main" android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainAcƟvity">

<TextView android:id="@+id/textView"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="" app:layout\_constraintBoƩom\_toBoƩomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" />

<BuƩon android:id="@+id/buƩon"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content" android:text="Get LocaƟon" app:layout\_constraintBoƩom\_toBoƩomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVerƟcal\_bias="0.715" />

</androidx.constraintlayout.widget.ConstraintLayout>

# MainAcƟvity.java

package com.example.week9; import android.os.Bundle;

import androidx.appcompat.app.AppCompatAcƟvity; import androidx.core.app.AcƟvityCompat;

import android.Manifest; import android.app.AlertDialog;

import android.content.Context;

import android.content.DialogInterface; import android.content.Intent;

import android.content.pm.PackageManager; import android.locaƟon.LocaƟon;

import android.locaƟon.LocaƟonManager; import android.provider.Seƫngs;

import android.view.View; import android.widget.BuƩon; import android.widget.TextView; import android.widget.Toast;

public class MainAcƟvity extends AppCompatAcƟvity { private staƟc ﬁnal int *REQUEST\_LOCATION* = 1; BuƩon btnGetLocaƟon;

TextView showLocaƟon;

LocaƟon nManager; LocaƟonManager locaƟonManager; String laƟtude, longitude;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.*acƟvity\_main*); AcƟvityCompat.*requestPermissions*( this,

new String[]

{Manifest.permission.*ACCESS\_FINE\_LOCATION*},

*REQUEST\_LOCATION*);

showLocaƟon = ﬁndViewById(R.id.*textView*); btnGetLocaƟon = ﬁndViewById(R.id.*buƩon*); btnGetLocaƟon.setOnClickListener(new

View.OnClickListener() {

@Override

public void onClick(View v) { locaƟonManager = (LocaƟonManager)

getSystemService(Context.*LOCATION\_SERVICE*); if

(!locaƟonManager.isProviderEnabled(LocaƟonManager.*GPS\_ PROVIDER*)) {

OnGPS();

} else {

getLocaƟon();

}

}

});

}

private void OnGPS() {

ﬁnal AlertDialog.Builder builder = new AlertDialog.Builder(this);

builder.setMessage("Enable GPS").setCancelable(false).setPosiƟveBuƩon("Yes", new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialogInterface, int

i) {

startAcƟvity(new

Intent(Seƫngs.*ACTION\_LOCATION\_SOURCE\_SETTINGS*));

}

}).setNegaƟveBuƩon("No", new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialog, int i) { dialog.cancel();

}

});

ﬁnal AlertDialog alertDialog = builder.create(); alertDialog.show();

}

private void getLocaƟon() {

if (AcƟvityCompat.*checkSelfPermission*(

MainAcƟvity.this,Manifest.permission.*ACCESS\_FINE\_LOCATIO*

*N*) !=

PackageManager.*PERMISSION\_GRANTED* && AcƟvityCompat.*checkSelfPermission*(

MainAcƟvity.this, Manifest.permission.*ACCESS\_COARSE\_LOCATION*) !=

PackageManager.*PERMISSION\_GRANTED*){ AcƟvityCompat.*requestPermissions*(this, new

String[]{Manifest.permission.*ACCESS\_FINE\_LOCATION*},

*REQUEST\_LOCATION*);

} else {

LocaƟon locaƟonGPS = locaƟonManager.getLastKnownLocaƟon(LocaƟonManager.*GP S\_PROVIDER*);

if (locaƟonGPS != null) {

double lat = locaƟonGPS.getLaƟtude(); double longi = locaƟonGPS.getLongitude(); laƟtude = String.*valueOf*(lat);

longitude = String.*valueOf*(longi);

showLocaƟon.setText("Your LocaƟon: " + " " + "LaƟtude: " + laƟtude + " " + "Longitude: " + longitude);

} else {

Toast.*makeText*(this, "Unable to ﬁnd locaƟon.", Toast.*LENGTH\_SHORT*).show();

}

}

}

}

# AndroidManifest.xml

<?xml version="1.0" encoding="uƞ-8"?>

<manifest xmlns:android="hƩp://schemas.android.com/apk/res/androi d"

xmlns:tools="hƩp://schemas.android.com/tools">

<uses-permission android:name="android.permission.ACCESS\_FINE\_LOCATION " />

<uses-permission android:name="android.permission.ACCESS\_COARSE\_LOCATI ON" />

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

<applicaƟon android:allowBackup="true"

android:dataExtracƟonRules="@xml/data\_extracƟon\_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.Week9" tools:targetApi="31">

<acƟvity android:name=".MainAcƟvity" android:exported="true">

<intent-ﬁlter>

<acƟon android:name="android.intent.acƟon.MAIN"

/>

<category android:name="android.intent.category.LAUNCHER" />

</intent-ﬁlter>

</acƟvity>

</applicaƟon>

</manifest>