

**20CYS404**

Android Application

Development

**Name:** Sagili Pavani

**Roll No:** CH.EN.U4CYS21070

**Experiment Number :** 01

**Aim:**

To Get and store the Latitude and Longitude to Google Maps API **Code:**

**activity\_main.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:id="@+id/main" android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:background="@drawable/map" tools:context=".MainActivity">

<!-- Header Logo (Profile Image) -->

<ImageView

android:id="@+id/header\_logo" android:layout\_width="64dp" android:layout\_height="64dp" android:src="@drawable/img" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintStart\_toStartOf="parent" android:layout\_marginTop="16dp" android:layout\_marginStart="16dp"/>

<!-- User Name --> <TextView

android:id="@+id/header\_names" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Sagili Pavani" android:textColor="#212121" android:textSize="20sp" android:textStyle="bold"

app:layout\_constraintStart\_toEndOf="@id/header\_logo" app:layout\_constraintTop\_toTopOf="@id/header\_logo" android:layout\_marginStart="16dp"/>

<!-- Registration Number -->

<TextView

android:id="@+id/header\_namesR" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="CH.EN.U4CYS21070" android:textColor="#212121" android:textSize="14sp"

app:layout\_constraintStart\_toStartOf="@id/header\_names" app:layout\_constraintTop\_toBottomOf="@id/header\_names" android:layout\_marginTop="4dp"/>

<!-- Amrita Logo --> <ImageView

android:id="@+id/header\_logoamrita" android:layout\_width="102dp" android:layout\_height="80dp" android:layout\_marginStart="292dp" android:layout\_marginTop="16dp" android:src="@drawable/amrita" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintEnd\_toEndOf="parent" android:layout\_marginEnd="16dp"/>

<!-- Latitude Text -->

<TextView

android:id="@+id/latitude\_text" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Latitude: " android:textColor="#212121" android:textSize="20sp" android:textStyle="bold"

app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintStart\_toStartOf="parent" android:layout\_marginTop="100dp" android:layout\_marginStart="16dp" />

<!-- Longitude Text -->

<TextView

android:id="@+id/longitude\_text" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Longitude: " android:textColor="#212121" android:textSize="20sp" android:textStyle="bold"

app:layout\_constraintTop\_toBottomOf="@id/latitude\_text" app:layout\_constraintStart\_toStartOf="parent" android:layout\_marginTop="16dp" android:layout\_marginStart="16dp" />

<!-- Get Location Button (Red Color) -->

<Button

android:id="@+id/get\_location\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="80dp" android:text="Get Location"

android:backgroundTint="@android:color/holo\_red\_dark" app:layout\_constraintTop\_toBottomOf="@id/longitude\_text" app:layout\_constraintStart\_toStartOf="parent" android:layout\_marginStart="156dp" />

<!-- Navigate to Google Maps Button (Red Color) -->

<Button

android:id="@+id/navigate\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginTop="56dp" android:text="Navigate to Google Maps"

android:backgroundTint="@android:color/holo\_red\_dark" app:layout\_constraintTop\_toBottomOf="@id/get\_location\_btn" app:layout\_constraintStart\_toStartOf="parent" android:layout\_marginStart="116dp" />

</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.java:**

package com.example.endsemlab;

import android.Manifest;

import android.annotation.SuppressLint; import android.content.Intent; import android.content.pm.PackageManager; import android.location.Location; import android.net.Uri; import android.os.Bundle; import android.widget.Button; import android.widget.TextView;

import androidx.activity.result.ActivityResultLauncher; import androidx.activity.result.contract.ActivityResultContracts; import androidx.appcompat.app.AppCompatActivity; import androidx.core.app.ActivityCompat;

import com.google.android.gms.location.FusedLocationProviderClient; import com.google.android.gms.location.LocationServices; import com.google.android.gms.tasks.OnSuccessListener; import com.google.firebase.database.DatabaseReference; import com.google.firebase.database.FirebaseDatabase;

public class MainActivity extends AppCompatActivity {

private FusedLocationProviderClient fusedLocationClient; private FirebaseDatabase database; private DatabaseReference locationRef; private TextView latitudeText, longitudeText; private Button getLocationBtn, navigateBtn;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.*activity\_main*);

// Initialize views

latitudeText = findViewById(R.id.*latitude\_text*); longitudeText = findViewById(R.id.*longitude\_text*); getLocationBtn = findViewById(R.id.*get\_location\_btn*); navigateBtn = findViewById(R.id.*navigate\_btn*);

// Initialize Firebase

database = FirebaseDatabase.getInstance(); locationRef = database.getReference("Locations");

// Initialize Location Client fusedLocationClient =

LocationServices.getFusedLocationProviderClient(this);

// Check for permission and fetch location getLocationBtn.setOnClickListener(v -> { if (ActivityCompat.*checkSelfPermission*(this,

Manifest.permission.*ACCESS\_FINE\_LOCATION*) !=

PackageManager.*PERMISSION\_GRANTED*) {

requestPermissionLauncher.launch(Manifest.permission.*ACCESS\_FINE\_LO*

*CATION*);

} else {

getLocation();

}

});

// Navigate to Google Maps navigateBtn.setOnClickListener(v -> { double latitude =

Double.*parseDouble*(latitudeText.getText().toString()); double longitude =

Double.*parseDouble*(longitudeText.getText().toString());

Uri gmmIntentUri = Uri.*parse*("google.navigation:q=" + latitude + "," + longitude);

Intent mapIntent = new Intent(Intent.*ACTION\_VIEW*, gmmIntentUri);

mapIntent.setPackage("com.google.android.apps.maps"); startActivity(mapIntent);

});

}

private final ActivityResultLauncher<String> requestPermissionLauncher =

registerForActivityResult(new

ActivityResultContracts.RequestPermission(), isGranted -> { if (isGranted) { getLocation();

}

});

@SuppressLint("MissingPermission") private void getLocation() { fusedLocationClient.getLastLocation() .addOnSuccessListener(this, new

OnSuccessListener<Location>() {

@Override

public void onSuccess(Location location) { if (location != null) { double latitude = location.getLatitude();

double longitude = location.getLongitude();

// Update UI

latitudeText.setText(String.*valueOf*(latitude));

longitudeText.setText(String.*valueOf*(longitude));

// Store in Firebase

locationRef.child("location1").setValue(new LatLng(latitude, longitude));

}

}

});

}

// LatLng class to store the location in Firebase public static class LatLng { public double latitude; public double longitude;

public LatLng(double latitude, double longitude) { this.latitude = latitude; this.longitude = longitude;

}

} }

**AndriodManifest.xml:**

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android:id="@+id/navigate\_btn" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginStart="116dp" android:layout\_marginTop="56dp" android:text="Navigate to Google Maps" app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@id/get\_location\_btn"

/>

</androidx.constraintlayout.widget.ConstraintLayout>

**Build.gradle.kts(:app)**

plugins **{**

id("com.android.application")

id("com.google.gms.google-services") // Firebase services

**}** *android* **{**

namespace = "com.example.endsemlab" compileSdk = **34**

defaultConfig **{**

applicationId = "com.example.endsemlab" minSdk = **24** targetSdk = **34** versionCode = **1** versionName = "1.0"

testInstrumentationRunner = "androidx.test.runner.AndroidJUnitRunner"

**}**

buildTypes **{** *release* **{**

isMinifyEnabled = false proguardFiles(

getDefaultProguardFile("proguard-androidoptimize.txt")**,**

"proguard-rules.pro"

)

**}**

**}**

compileOptions **{**

sourceCompatibility = JavaVersion.*VERSION\_1\_8* targetCompatibility = JavaVersion.*VERSION\_1\_8*

**}**

**}**

*dependencies* **{**

*implementation*("androidx.appcompat:appcompat:1.7.0") // Check for the latest version

*implementation*("com.google.android.material:material:1.10.0")

// Latest version

*implementation*("androidx.activity:activity:1.7.0") // Latest version

*implementation*("androidx.constraintlayout:constraintlayout:2.1.4")

// Latest version

*testImplementation*("junit:junit:4.13.2") // Latest version *androidTestImplementation*("androidx.test.ext:junit:1.1.5") // Latest version

*androidTestImplementation*("androidx.test.espresso:espressocore:3.5.1") // Latest version

// Firebase Realtime Database and Analytics dependencies *implementation*("com.google.firebase:firebase-database:20.3.0") *implementation*("com.google.firebase:firebase-analytics:21.3.0")

// Optional: Firebase Authentication (if needed)

*implementation*("com.google.firebase:firebase-auth:22.1.1")

// Google Play Services Location dependency *implementation*("com.google.android.gms:play-serviceslocation:21.0.1") // Ensure you have the latest version

**}** *apply*(**plugin =** "com.google.gms.google-services")

**build.gradle.kts (project)**

// Top-level build file where you can add configuration options common to all sub-projects/modules.

buildscript { *repositories* {

google() // Ensure this is included mavenCentral() // Ensure this is included

} dependencies {

*classpath*("com.android.tools.build:gradle:8.1.0") // Updated to a newer version

*classpath*("com.google.gms:google-services:4.3.15") //

Ensure you have the latest version

}

}

**Settings.gradle.kts (project)**

pluginManagement **{** repositories **{**

google() // Make sure to include Google's Maven repository mavenCentral() // Include Maven Central

**}**

**}**

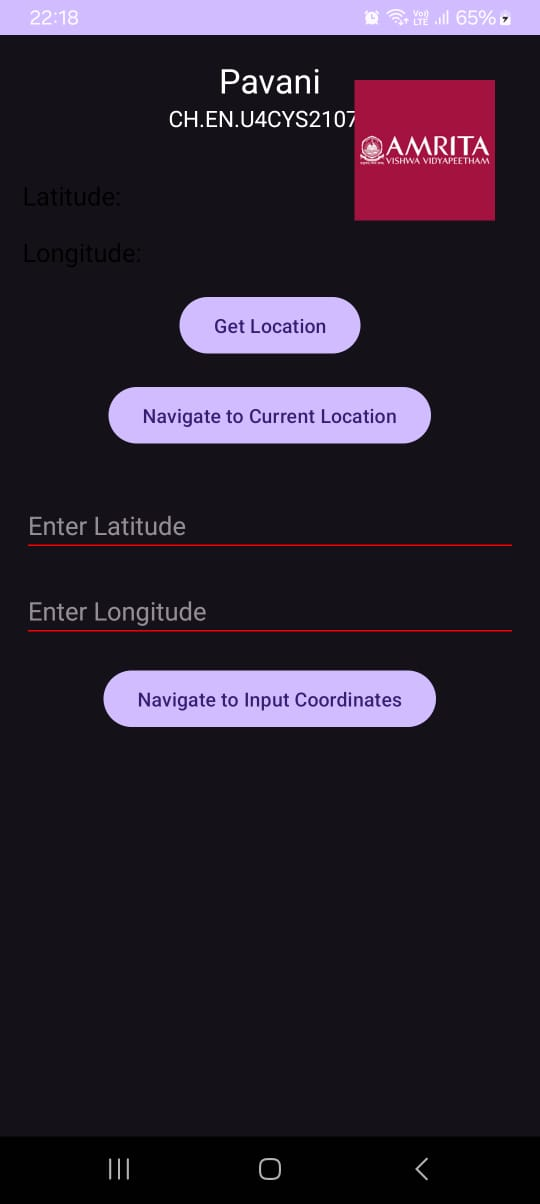
dependencyResolutionManagement **{** repositories **{** google() mavenCentral()

**}**

**}**

*rootProject*.*name* = "EndsemLab" // Change this to your project name include(":app") // Include your app module or other modules as needed

**Output:**

****