# **ASSIGNMENT NO.5**

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## **1. Introduction**

## In this program, we'll develop a simple Android app that navigates users to a destination using Google Maps. The app will prompt users to enter their current location and desired destination. Upon clicking the "Get Direction" button, the app will open Google Maps on the emulator, displaying the optimal route between the two locations. This app demonstrates how to integrate Google Maps into an Android application, providing users with a convenient navigation tool.

## **2. Tools & Technologies Used**

* Android Studio
* Java
* Emulator

## **3. Procedure & Steps**

### **Step 1: Create a New Project**

* Open Android Studio and create a new project.
* Choose an Empty Views Activity template.
* Set the project name and package name of your Application
* Select the programming language (Java).

**Screenshot:**

A screenshot of a computer

AI-generated content may be incorrect.

### 

### **Step 2: Designing the UI**

* Open activity\_main.xml and design the layout using XML.
* Add UI components such as EditText, EditText, Button, etc.

**Screenshot:**

**A screenshot of a computer screen

AI-generated content may be incorrect.**

### **Step 3: Writing the Code**

* Open Activity\_main.xml
* Implement functionality such as Enter Your Location, Enter Destination, Get Direction.
* Use necessary Android components like Textviews, Edittext, Buttons, etc
* **Screenshot:**
* **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"*

### *android:background="#F0C2C2"*

### *tools:context=".MainActivity">*

### *<EditText*

### *android:id="@+id/et\_location"*

### *android:layout\_width="0dp"*

### *android:layout\_height="wrap\_content"*

### *android:background="#D7ECF6"*

### *android:backgroundTint="#D6E9F2"*

### *android:hint="Enter your location"*

### *android:inputType="text"*

### *android:textAlignment="center"*

### *app:layout\_constraintBottom\_toBottomOf="parent"*

### *app:layout\_constraintEnd\_toEndOf="parent"*

### *app:layout\_constraintHorizontal\_bias="0.0"*

### *app:layout\_constraintStart\_toStartOf="parent"*

### *app:layout\_constraintTop\_toTopOf="parent"*

### *app:layout\_constraintVertical\_bias="0.389" />*

### *<EditText*

### *android:id="@+id/et\_destination"*

### *android:layout\_width="0dp"*

### *android:layout\_height="wrap\_content"*

### *android:background="#D4E9F2"*

### *android:hint="Enter destination"*

### *android:inputType="text"*

### *android:textAlignment="center"*

### *app:layout\_constraintBottom\_toBottomOf="parent"*

### *app:layout\_constraintEnd\_toEndOf="parent"*

### *app:layout\_constraintHorizontal\_bias="0.0"*

### *app:layout\_constraintStart\_toStartOf="parent"*

### *app:layout\_constraintTop\_toTopOf="parent"*

### *app:layout\_constraintVertical\_bias="0.478" />*

### *<Button*

### *android:id="@+id/btn\_get\_location"*

### *android:layout\_width="wrap\_content"*

### *android:layout\_height="wrap\_content"*

### *android:text="Get Location"*

### *app:layout\_constraintBottom\_toBottomOf="parent"*

### *app:layout\_constraintEnd\_toEndOf="parent"*

### *app:layout\_constraintStart\_toStartOf="parent"*

### *app:layout\_constraintTop\_toTopOf="parent"*

### *app:layout\_constraintVertical\_bias="0.653" />*

### *</androidx.constraintlayout.widget.ConstraintLayout>*

### **Step 4: Writing the Backend Code (java)**

* Open MainActivity.java
* Implement functionality such as By Click on Get direction the Google Map is get open and they shows the direction as getting input of Current Location and destination.

**Screenshot:**

**A computer screen with text on it

AI-generated content may be incorrect.**

A computer screen shot of a program

AI-generated content may be incorrect.

## **Code(java):**

*package com.example.a51;*

*import android.content.Intent;*

*import android.net.Uri;*

*import android.os.Bundle;*

*import android.view.View;*

*import android.widget.Button;*

*import android.widget.EditText;*

*import androidx.appcompat.app.AppCompatActivity;*

*public class MainActivity extends AppCompatActivity {*

*@Override*

*protected void onCreate(Bundle savedInstanceState) {*

*super.onCreate(savedInstanceState);*

*setContentView(R.layout.activity\_main);*

*EditText etLocation = findViewById(R.id.et\_location);*

*EditText etDestination = findViewById(R.id.et\_destination);*

*Button btnGetLocation = findViewById(R.id.btn\_get\_location);*

*// Set OnClickListener for the button to open Google Maps*

*btnGetLocation.setOnClickListener(new View.OnClickListener() {*

*@Override*

*public void onClick(View v) {*

*String location = etLocation.getText().toString().trim();*

*String destination = etDestination.getText().toString().trim();*

*if (!location.isEmpty() && !destination.isEmpty()) {*

*// Create a Google Maps URL with location and destination*

*String mapsUri = "https://www.google.com/maps/dir/?api=1&origin=" + location + "&destination=" + destination;*

*// Create an intent to open Google Maps*

*Intent intent = new Intent(Intent.ACTION\_VIEW, Uri.parse(mapsUri));*

*intent.setPackage("com.google.android.apps.maps");*

*// Check if there's an app available to handle the intent (Google Maps)*

*if (intent.resolveActivity(getPackageManager()) != null) {*

*startActivity(intent);*

*} else {*

*// If no app found, show an error message or take action accordingly*

*// For now, you can display a toast or log an error*

*}*

*}*

*}*

*});*

*}*

*}*

### **Step 5: Running the Application on Emulator**

* Click on the **Run** button in Android Studio.
* Select the emulator and launch the app.

**Screenshot:**

**A screenshot of a computer

AI-generated content may be incorrect.**

### **A screenshot of a computer AI-generated content may be incorrect.**

### **Step 6: Testing & Output**

* Test different functionalities of the app.
* Capture the output results.
* **Screenshot:**

**A screenshot of a computer

AI-generated content may be incorrect.**

**After clicking on Get Direction=**

**A computer screen shot of a computer screen

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## **4. Conclusion**

## I successfully developed a simple Android app that utilizes Google Maps for navigation. Through this project, I gained hands-on experience with integrating Google Maps into an Android application. I learned how to design an intuitive interface that accepts user input for current location and destination, and then displays the route on Google Maps.

## One challenge I encountered was handling location permissions and ensuring accurate location data. However, I overcame these obstacles by researching Android documentation and implementing the necessary code changes.

## This project enhanced my skills in Android development, particularly in integrating third-party services like Google Maps. I also improved my problem-solving abilities, debugging skills, and understanding of Android permissions. Overall, this experience has boosted my confidence in building more complex Android apps.