

Lab 2: Google Map

Objective

- To implement google map in android application

Lab work

MainActivity.java

```
package com.example.googlemap;

import android.Manifest;
import android.app.Activity;
import android.content.pm.PackageManager;
import android.location.Location;
import android.os.Bundle;

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

import com.google.android.gms.location.FusedLocationProviderClient;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap;
import com.google.android.gms.maps.OnMapReadyCallback;
import com.google.android.gms.maps.SupportMapFragment;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MarkerOptions;
import com.google.android.gms.tasks.OnSuccessListener;

// google map sdk
public class MapActivity extends AppCompatActivity implements OnMapReadyCallback {

    private GoogleMap googleMap;

    private FusedLocationProviderClient locationProviderClient;

    @Override
```

```

protected void onCreate(@Nullable Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_map);

    locationProviderClient = LocationServices.getFusedLocationProviderClient(this);

    if (ContextCompat.checkSelfPermission(this,
android.Manifest.permission.ACCESS_FINE_LOCATION)
        != PackageManager.PERMISSION_GRANTED) {
        ActivityCompat.requestPermissions(this,
            new String[]{Manifest.permission.ACCESS_FINE_LOCATION}, 1);
    }

    SupportMapFragment mapFragment = (SupportMapFragment)
getSupportFragmentManager().findFragmentById(R.id.map);
    mapFragment.getMapAsync(this);

}

@Override
public void onMapReady(@NonNull GoogleMap googleMap) {
    this.googleMap = googleMap;
    UpdateLocation();
}

@Override
public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions,
@NonNull int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults);
    if (requestCode == 1) {
        if (grantResults[0] == PackageManager.PERMISSION_GRANTED) {
            UpdateLocation();
        }
    }
}

private void UpdateLocation(){
    if (ActivityCompat.checkSelfPermission(this,
android.Manifest.permission.ACCESS_FINE_LOCATION) !=
        PackageManager.PERMISSION_GRANTED
        && ActivityCompat.checkSelfPermission(this,
android.Manifest.permission.ACCESS_COARSE_LOCATION) !=
        PackageManager.PERMISSION_GRANTED) {

```

```

        return;
    }
    locationProviderClient.getLastLocation().addOnSuccessListener(this, new
OnSuccessListener<Location>() {
    @Override
    public void onSuccess(Location location) {
        if (location == null) {
            return;
        }
        LatLng currentLat = new LatLng(location.getLatitude(),location.getLongitude());
        googleMap.addMarker(new MarkerOptions().position(currentLat).title("you is here"));
        googleMap.moveCamera(CameraUpdateFactory.newLatLngZoom(currentLat,15));
    }
});
    }
}

```

activity_main.xml

```

<?xml version="1.0" encoding="utf-8"?>

<androidx.fragment.app.FragmentContainerView android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:layout_gravity="center"
    android:name="com.google.android.gms.maps.SupportMapFragment"
    android:id="@+id/map"
    xmlns:android="http://schemas.android.com/apk/res/android" />

```

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

    <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.GoogleMap"  
tools:targetApi="31">
```

```
<meta-data  
    android:name="com.google.android.geo.API_KEY"  
    android:value="AIzaSyBiK29ZZJ9hjSho0c9UhX1hKujvygh8UVY"/>
```

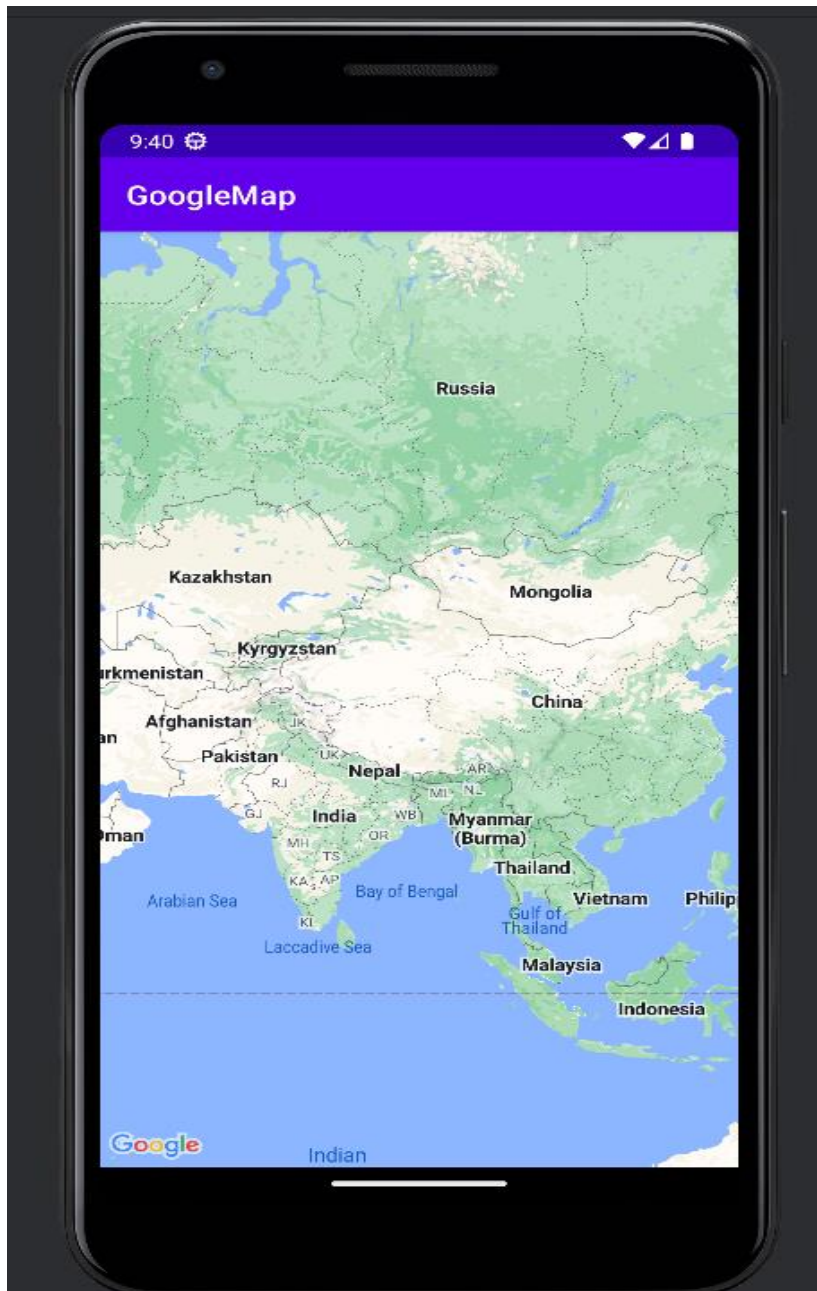
```
<activity android:name=".MainActivity" android:exported="true">  
    <intent-filter >  
        <action android:name="android.intent.action.MAIN"/>  
        <category android:name="android.intent.category.LAUNCHER"/>  
    </intent-filter>
```

```
</activity>
```

```
</application>
```

```
</manifest>
```

Output:



Discussion and conclusion:

In this lab, we implement google map using API key. We implement the OnMapReadyCallback method to add google map feature in the application. In this lab we try to pin points on our own current location and add marker there as You are here.