

MOBILE APPLICATION DEVELOPMENT

LAB EXERCISE - Getting the last known location and displaying a location Address

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Manifest file:

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

Add the following inside applications in Manifest file:

```
<uses-library android:name="org.apache.http.legacy"
android:required="false" />
```

MainActivity.java:

```
package com.example.location;

import android.Manifest;
import android.content.pm.PackageManager;
import android.location.Address;
import android.location.Geocoder;
import android.location.Location;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
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.tasks.OnSuccessListener;

import java.io.IOException;
import java.util.List;
import java.util.Locale;

public class MainActivity extends AppCompatActivity {
```

```

FusedLocationProviderClient fusedLocationProviderClient;
TextView latitude, longitude, address, city, country;
Button getLocation;
private final static int REQUEST_CODE = 100;

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

    latitude = findViewById(R.id.latitude);
    longitude = findViewById(R.id.longitude);
    address = findViewById(R.id.address);
    city = findViewById(R.id.city);
    country = findViewById(R.id.country);
    getLocation = findViewById(R.id.getLocation);

    fusedLocationProviderClient =
    LocationServices.getFusedLocationProviderClient(this);

    getLocation.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            getLastLocation();
        }
    });

    private void getLastLocation() {
        if (ContextCompat.checkSelfPermission(this,
        Manifest.permission.ACCESS_FINE_LOCATION) ==
        PackageManager.PERMISSION_GRANTED) {
            fusedLocationProviderClient.getLastLocation()
            .addOnSuccessListener(new OnSuccessListener<Location>()
            {
                @Override
                public void onSuccess(Location location) {
                    if (location != null) {
                        double lat = location.getLatitude();
                        double lon = location.getLongitude();

                        latitude.setText("Latitude: " + lat);
                        longitude.setText("Longitude: " + lon);
                        Toast.makeText(MainActivity.this, "Location
retrieved!", Toast.LENGTH_SHORT).show();

                        try {
                            Geocoder geocoder = new
                            Geocoder(MainActivity.this, Locale.getDefault());
                            List<Address> addresses =
                            geocoder.getFromLocation(lat, lon, 1);

                            if (!addresses.isEmpty()) {
                                Address addr = addresses.get(0);
                                address.setText("Address: " +
                                addr.getAddressLine(0));
                                city.setText("City: " +
                                addr.getLocality());
                                country.setText("Country: " +
                                addr.getCountryName());
                            } else {

```

```

        address.setText("No address found");
    }

    } catch (IOException e) {
        Toast.makeText(MainActivity.this,
"Geocoder error: " + e.getMessage(), Toast.LENGTH_SHORT).show();
    }
    } else {
        Toast.makeText(MainActivity.this, "Location
is null, try again", Toast.LENGTH_SHORT).show();
    }
    }
    });
    } else {
        askPermission();
    }
}

private void askPermission() {
    ActivityCompat.requestPermissions(MainActivity.this, new
String[]{Manifest.permission.ACCESS_FINE_LOCATION}, REQUEST_CODE);
}

@Override
public void onRequestPermissionsResult(int requestCode, @NonNull
String[] permissions,
                                     @NonNull int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions,
grantResults);

    if (requestCode == REQUEST_CODE) {
        if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
            getLastLocation();
        } else {
            Toast.makeText(this, "Location permission is required",
Toast.LENGTH_SHORT).show();
        }
    }
}
}
}

```

activity_main.xml:

```

<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:padding="16dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <Button
        android:id="@+id/getLocation"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Get My Location" />

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

```

```
        android:layout_width="wrap_content" android:layout_height="wrap_content" />
        <TextView android:id="@+id/longitude"
        android:layout_width="wrap_content" android:layout_height="wrap_content" />
        <TextView android:id="@+id/address" android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
        <TextView android:id="@+id/city" android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
        <TextView android:id="@+id/country" android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    </LinearLayout>
```

Output:

Connect a physical device and check with GPS kept on:

Location


GET MY LOCATION



Location

GET MY LOCATION

Latitude: 11.1025281
Longitude: 77.178891
Address:
Coimbatore, Tamil Nadu 641659, India
City: Coimbatore
Country: India

 Location retrieved!