**How to read GPS information Android?**

<https://javapapers.com/android/get-current-location-in-android/>

# Get Current Location in Android

This android tutorial is to help learn location based service in android platform. Knowing the current location in an android mobile will pave the way for developing many innovative Android apps to solve peoples daily problem. For developing location aware application in android, it needs location providers. There are two types of location providers,

1. GPS Location Provider
2. Network Location Provider



Any one of the above providers is enough to get current location of the user or user’s device. But, it is recommended to use both providers as they both have different advantages. Because, GPS provider will take time to get location at indoor area. And, the Network Location Provider will not get location when the network connectivity is poor.

## Network Location Provider vs GPS Location Provider

* Network Location provider is comparatively faster than the GPS provider in providing the location co-ordinates.
* GPS provider may be very very slow in in-door locations and will drain the mobile battery.
* Network location provider depends on the cell tower and will return our nearest tower location.
* GPS location provider, will give our location accurately.

## Steps to get location in Android

1. Provide permissions in manifest file for receiving location update
2. Create LocationManager instance as reference to the location service
3. Request location from LocationManager
4. Receive location update from LocationListener on change of location



## Provide permissions for receiving location update

To access current location information through location providers, we need to set permissions with [android manifest](https://javapapers.com/android/android-manifest/" \o "Android Manifest) file.

<manifest ... >

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

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

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

ACCESS\_COARSE\_LOCATION is used when we use network location provider for our Android app. But, ACCESS\_FINE\_LOCATION is providing permission for both providers. INTERNET permission is must for the use of network provider.

## Create LocationManager instance as reference to the location service

For any background [Android Service](https://javapapers.com/android/how-to-play-audio-in-android/" \o "How to play audio in Android?), we need to get reference for using it. Similarly, location service reference will be created using getSystemService() method. This reference will be added with the newly created LocationManager instance as follows.

locationManager = (LocationManager) getSystemService(Context.LOCATION\_SERVICE);

## Request current location from LocationManager

After creating the location service reference, location updates are requested using requestLocationUpdates() method of LocationManager. For this function, we need to send the type of location provider, number of seconds, distance and the LocationListener object over which the location to be updated.

locationManager.requestLocationUpdates(LocationManager.GPS\_PROVIDER, 0, 0, this);

## Receive location update from LocationListener on change of location

LocationListener will be notified based on the distance interval specified or the number seconds.

## Sample Android App: Current Location Finder

This example provides current location update using GPS provider. Entire Android app code is as follows,

package com.javapapers.android.geolocationfinder;

import android.os.Bundle;import android.app.Activity;import android.content.Context;import android.location.Location;import android.location.LocationListener;import android.location.LocationManager;import android.widget.TextView;

import android.util.Log;

public class MainActivity extends Activity implements LocationListener{protected LocationManager locationManager;protected LocationListener locationListener;protected Context context;TextView txtLat;String lat;String provider;protected String latitude,longitude; protected boolean gps\_enabled,network\_enabled;

@Overrideprotected void onCreate(Bundle savedInstanceState) {super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

txtLat = (TextView) findViewById(R.id.textview1);

locationManager = (LocationManager) getSystemService(Context.LOCATION\_SERVICE);

locationManager.requestLocationUpdates(LocationManager.GPS\_PROVIDER, 0, 0, this);}@Overridepublic void onLocationChanged(Location location) {

txtLat = (TextView) findViewById(R.id.textview1);

txtLat.setText("Latitude:" + location.getLatitude() + ", Longitude:" + location.getLongitude());}

@Overridepublic void onProviderDisabled(String provider) {Log.d("Latitude","disable");}

@Overridepublic void onProviderEnabled(String provider) {Log.d("Latitude","enable");}

@Overridepublic void onStatusChanged(String provider, int status, Bundle extras) {Log.d("Latitude","status");}}

XML files for layout and android manifest are as shown below

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity" >

<TextView

android:id="@+id/textview1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerHorizontal="true"

android:layout\_centerVertical="true"

android:text="@string/hello\_world" />

</RelativeLayout>

<?xml version="1.0" encoding="utf-8"?><manifest xmlns:android="http://schemas.android.com/apk/res/android"

package="com.javapapers.android.geolocationfinder"

android:versionCode="1"

android:versionName="1.0" >

<uses-sdk

android:minSdkVersion="8"

android:targetSdkVersion="17" />

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

<application

android:allowBackup="true"

android:icon="@drawable/ic\_launcher"

android:label="@string/app\_name"

android:theme="@style/AppBaseTheme" >

<activity

android:name="com.javapapers.android.geolocationfinder.MainActivity"

android:label="@string/app\_name" >

<intent-filter>

<action android:name="android.intent.action.MAIN" />

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

</intent-filter>

</activity>

</application></manifest>

## Android Output



Note: If you are running this Android app with emulator, you need to send the latitude and longitude explicitly for the emulator.