



Location and Maps

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Note: This is a guide to the *Android framework* location APIs in the package [android.location](#). The Google Location Services API, part of Google Play Services, provides a more powerful, high-level framework that automates tasks such as location provider choice and power management. Location Services also provides new features such as activity detection that aren't available in the framework API. Developers who are using the framework API, as well as developers who are just now adding location-awareness to their apps, should strongly consider using the Location Services API.

To learn more about the Location Services API, see [Google Location Services for Android](#).

Location and maps-based apps offer a compelling experience on mobile devices. You can build these capabilities into your app using the classes of the [android.location](#) package and the Google Maps Android API. The sections below provide an introduction to how you can add the features.

Location Services

Android gives your applications access to the location services supported by the device through classes in the [android.location](#) package. The central component of the location framework is the [LocationManager](#) system service, which provides APIs to determine location and bearing of the underlying device (if available).

As with other system services, you do not instantiate a [LocationManager](#) directly. Rather, you request an instance from the system by calling [getSystemService\(Context.LOCATION_SERVICE\)](#). The method returns a handle to a new [LocationManager](#) instance.

Once your application has a [LocationManager](#), your application is able to do three things:

- Query for the list of all [LocationProviders](#) for the last known user location.
- Register/unregister for periodic updates of the user's current location from a location provider (specified either by criteria or name).
- Register/unregister for a given [Intent](#) to be fired if the device comes within a given proximity (specified by radius in meters) of a given lat/long.

For more information about acquiring the user location, read the [Location Strategies](#) guide.

Google Maps Android API

With the [Google Maps Android API](#), you can add maps to your app that are based on Google Maps data. The API automatically handles access to Google Maps servers, data downloading, map display, and touch gestures on the map. You can also use API calls to add markers, polygons and overlays, and to change the user's view of a particular map area.

The key class in the Google Maps Android API is [MapView](#). A [MapView](#) displays a map with data obtained from the Google Maps service. When the [MapView](#) has focus, it will capture keypresses and touch gestures to pan and zoom the map automatically, including handling network requests for additional maps tiles. It also provides all of the UI elements necessary for users to control the map. Your application can also use [MapView](#) class methods to control the map programmatically and draw a number of overlays on top of the map.

The Google Maps Android APIs are not included in the Android platform, but are available on any device with the Google Play Store running Android 2.2 or higher, through [Google Play services](#).

To integrate Google Maps into your app, you need to install the Google Play services libraries for your Android SDK. For more details, read about [Google Play services](#).