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Location Data

One of the unique features of mobile applications is location awareness. Mobile users bring their devices with them everywhere, and adding location awareness to your app offers users a more contextual experience.

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Working with location data

The location data available to an Android device includes the current location of the device — pinpointed using a combination of technologies — the direction and method of movement, and whether the device has moved across a predefined geographical boundary, or geofence. Depending upon the needs of your application, you can choose between several ways of working with location data:

- The **My Location** layer provides a simple way to display a device's location on the map. It does not provide data.
- The **Google Play services Location API** is recommended for all programmatic requests for location data.
- The `LocationSource` interface allows you to provide a custom location provider.

The My Location layer

In simple applications, the My Location layer and the My Location button can be used to provide your user with their current position on the map.

When the My Location layer is enabled, the My Location button appears in the top right corner of the map. When a user clicks the button, the camera centers the map on the current location of the device, if it is known. The location will be indicated on the map by a small blue dot if the device is stationary, or as a chevron if the device is moving. Note that the My Location layer does not return any data. Should you wish to access location data programmatically, use the Location API.

To enable the My Location layer in your application, you must first add the `ACCESS_COARSE_LOCATION` and `ACCESS_FINE_LOCATION` permissions to your application as a child of the `<manifest>` element in your Android manifest.

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

Then enable the My Location layer on the Map.

```
mMap.setMyLocationEnabled(true);
```

The My Location button will be visible on the top right of the map.

The Google Play services Location API

The Google Play services Location API is the preferred method for adding location awareness to your Android application. It includes functionality that lets you:

- Determine the device location.
- Listen for location changes.
- Determine the mode of transportation, if the device is moving.
- Create and monitor predefined geographical regions, known as geofences.

The location APIs make it easy for you to build power efficient, location-aware applications. Like the Google Maps Android API, the Location API is distributed as part of the Google Play services SDK. For more

information on the Location API, please refer to the Android training class "Making Your App Location Aware" or the Location API Reference. Code examples are includes as part of the Google Play services SDK.

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