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See example in Play Store

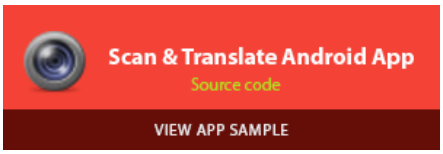
ANDROID GOOGLE MAP VERSION 2 USING GOOGLE PLAY SERVICES

In this tutorial, we are going to learn how to implement android Google Map version 2 using Google Play services.

There are situations where you will like to implement a map in your application, for example to tag a particular address in a map and it trace a route using a map and make more.

For this android tutorial, we will add a map in our android app. Then we will move ahead to implement GoogleMap.OnMapLongClickListener and ***GoogleMap.OnMapClickListener*** callback methods.

We will add an address marker whenever a user clicks in any part of the map. The code to implement this will be called in the ***onMapClick(LatLng latLng)***



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ANDROID SOURCE CODE POLL

Which of the below listed source codes should we publish next month?

Multi Restaurant Food Ordering App (27%, 39 Votes)

Stock and Inventory App (18%, 26 Votes)

Android Dating App (16%, 23

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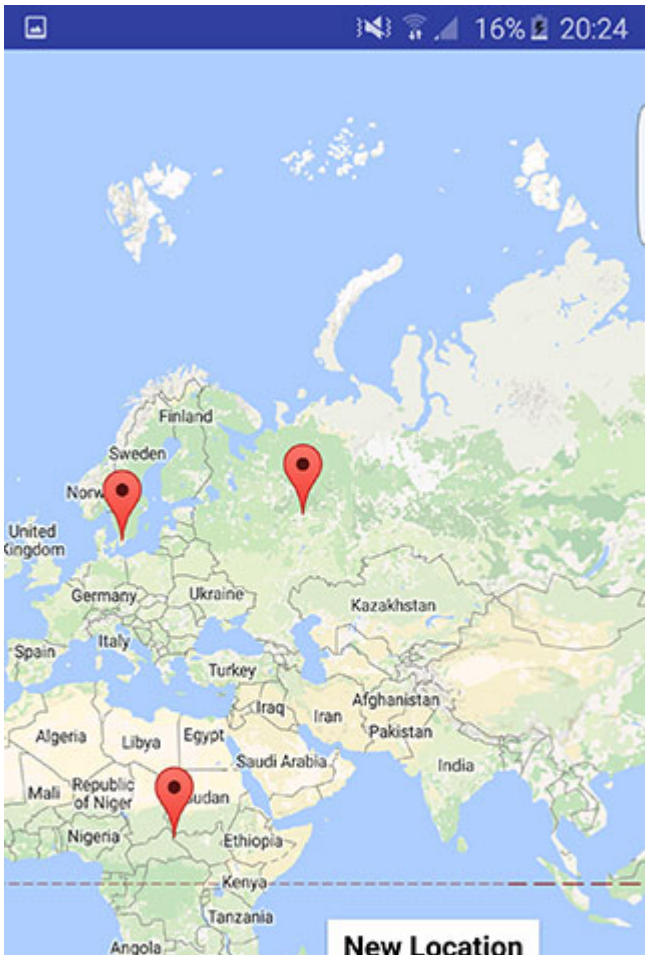
Android Google Play Services helps you take advantage of the latest, Google-powered features such as Maps, Google+, and more, with automatic platform updates distributed as an APK through the Google Play store. This makes it faster for your users to receive updates and easier for you to integrate the newest that Google has to offer.

If you want to read more about Google Play Service, you can refer to the link in **android developers guide**.

Before we go deeper into this tutorial, it is important for us to understand what we are planning to achieve. Below is the screen-shot of the application we will be creating.



(10%, 15 Votes)

Business & Service Provider Finder (6%, 9 Votes)

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Windows 7

Android Studio

Sony Xperia ZL

Min SDK 14

Target SDK 23

To create a new android application project, follow the steps as stipulated below.

Go to File menu

Click on New menu

Click on Android Application

Enter Project name: MapsActivity

Package: com.inducesmile.mapsactivity

Select Blank Activity

Keep other default selections

Continue to click on next button until Finish button is active, then click on Finish Button.

Now that we have created our android project, we are going to add Google Play Services as one of our application dependency module.

Open your android ***build.gradl***e file located in ***gradle script/build.gradle*** , copy and paste this line of code to the dependencies section.

- Android UI App for Food Ordering and Delivery from Multiple Restaurants

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Go to the res folder, then double click on the values folder and double click on the ***colors.xml*** file and add the following lines of codes. This will holder all the colors we will use in this tutorial.

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
<color name="colorPrimary">#3F51B5</color>
<color name="colorPrimaryDark">#303F9F</color>
<color name="colorAccent">#FF4081</color>
</resources>
```

Now, head over to the ***strings.xml*** file and modify the content with the code below.

```
<resources>
<string name="app_name">MapsActivity</string>
<string name="title_activity_maps">Android Map</string>
</resources>
```

Since we are going to use Google Map API, we will use permission to access the location in the map. The user must grant the request before the app can access the user location.

```
<uses-permission android:name="android.permission.ACCESS
```

Open you ***Mainfest.xml*** , copy and paste the following code inside the file. The complete code for the ***Mainfest.xml*** file will look like this.

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/
package="com.inducesmile.mapsactivity">
<!--
```

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```
android:supportsRtl="true"
android:theme="@style/AppTheme">
<!--
The API key for Google Maps-based APIs is defined as a s
(See the file "res/values/google_maps_api.xml").
Note that the API key is linked to the encryption key us
You need a different API key for each encryption key, in
sign the APK for publishing.
You can define the keys for the debug and release target
-->
<meta-data
android:name="com.google.android.geo.API_KEY"
android:value="@string/google_maps_key" />
<activity
android:name=".MapsActivity"
android:label="@string/title_activity_maps">
<intent-filter>
<action android:name="android.intent.action.MAIN" />
<category android:name="android.intent.category.LAUNCHER
</intent-filter>
</activity>
</application>
</manifest>
```

The next thing we will do is to obtain Google Maps API key for our application. There are different ways we can achieve this. I will suggest you read more about ***Google Maps API key in the documentation***.

In our case, we will follow the instruction presented in the ***google_maps_api.xml*** file as shown in the file below.

```
<resources>
<!--
TODO: Before you run your application, you need a Google
To get one, follow this link, follow the directions and
https://console.developers.google.com/flows/enableapi?ap
```

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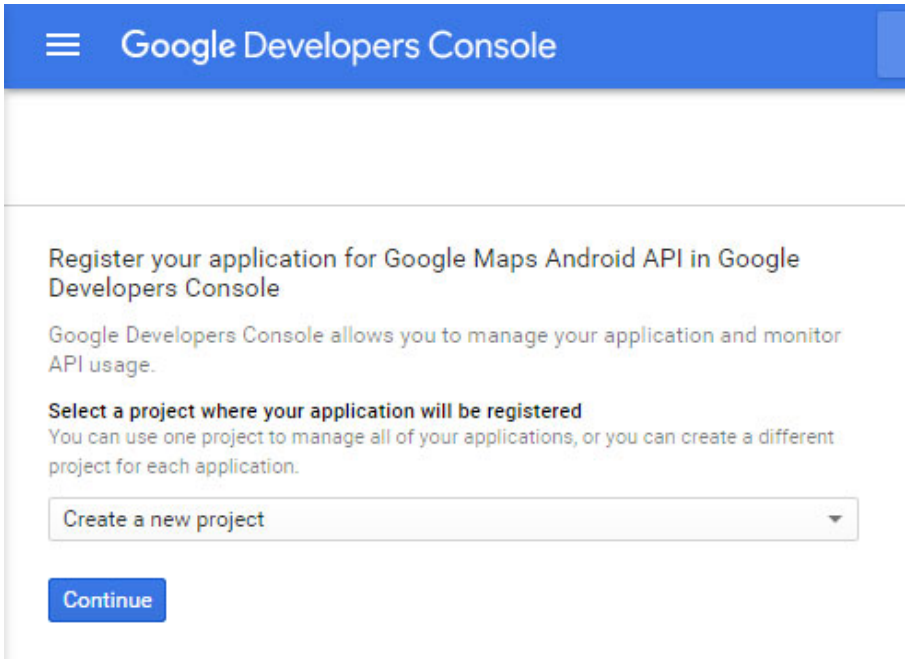
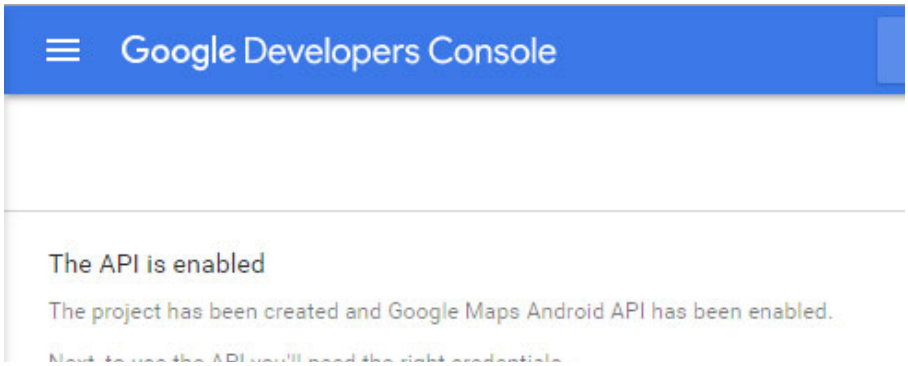
See example in Play Store

```
</resources>
```

Copy the commented line that looks like this – https://console.developers.google.com/flows/enableapi?apiid=maps_android_backend&keyType=CLIENT_SIDE_ANDROID&r=57:A8:DD:42:FF:9E:88:E6:EC:69:71:B7:0D:2C and paste it to your browser. Click enter to load the page. You will see the following page display.



Select Create a new project and click on the Continue button. It will take some time before the API is enabled



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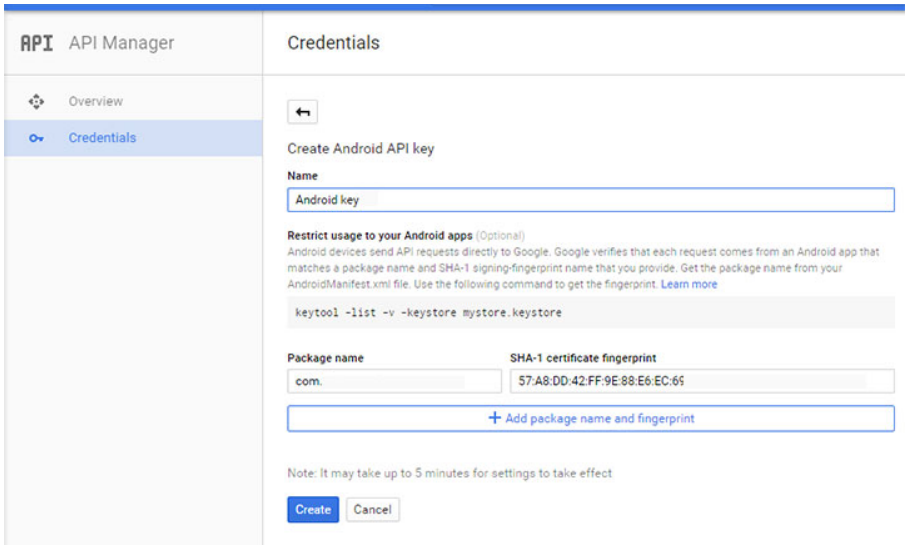

Click on the create button to finish off. Copy your Google Map API key value and paste the value into this line of code.

```
<string name="google_maps_key" templateMergeStrategy="pr
```

The complete code for the ***google_maps_api.xml*** file is shown below.

```
<resources>
<string name="google_maps_key" templateMergeStrategy="pr
</resources>
```

Now, open the ***activity_maps.xml*** file, we are going to add a Fragment Map in the layout that will hold the Map object. The code snippet for this class is shown below.

```
<fragment xmlns:android="http://schemas.android.com/apk/
xmlns:map="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:id="@+id/map"
```

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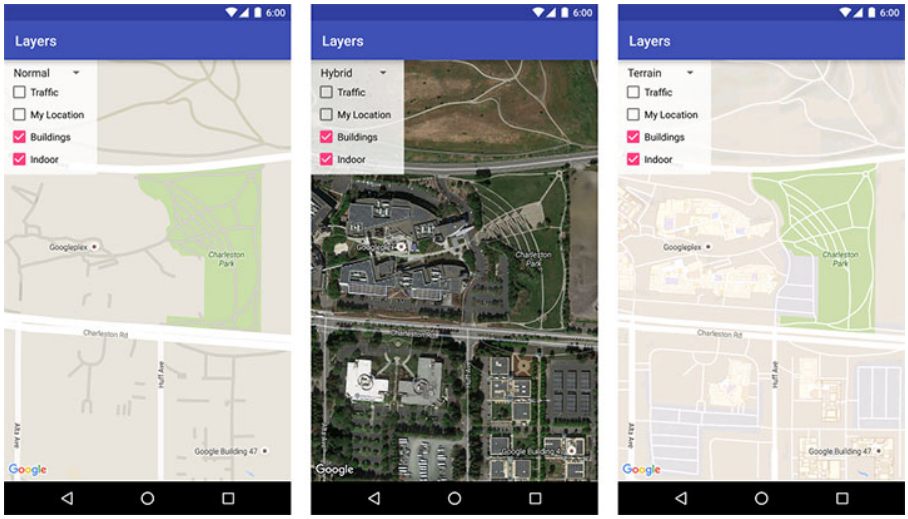
See example in Play Store

There is an int-array of the different map types you can create. An examples of the maps are shown below. (Google Map)



Create a Map object by using the ***findViewById(int r)*** method of the Activity class. We are going to implement the following interfaces. Add the following line in the class declaration.

```
public class MapsActivity extends FragmentActivity imple
```

We add the GoogleAPiClient as a class variable

```
private GoogleApiClient mGoogleApiClient;
```

Instanciate the GoogleAPiClient in the ***onCreate()*** method of the Activity class.

```
if (mGoogleApiClient == null) {
mGoogleApiClient = new GoogleApiClient.Builder(this)
.addConnectionCallbacks(this)
```

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```
@Override
protected void onStart() {
mGoogleApiClient.connect();
super.onStart();
}
```

In **onStop()** method, the GoogleApiClient is disconnected in order to free resources when the activity is finally destroyed.

```
@Override
protected void onStop() {
mGoogleApiClient.disconnect();
super.onStop();
}
```

We will override the ***onMapReady(GoogleMap googleMap)***, in this method we will get the instance of that map object which is ready to be used. The map type will be set and the click and longClick events are set to the map object.

```
public void onMapReady(GoogleMap googleMap) {
mMap = googleMap;
mMap.setMapType(TYPESOfMAPS[1]);
mMap.setOnMapLongClickListener(MapsActivity.this);
mMap.setOnMapClickListener(MapsActivity.this);
}
```

In the ***onConnected(Bundle bundle)*** callback method which signified that the GoogleApiClient instance is connected, LocationRequest is send to see if there is any settings that is not enable that the Location service Api might need.

The ***setResultCallback()*** method of the result instance checks if all the setting required is enable, if so the last known location is requested from from the FusedLocationApi class .

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constructor then add the location marker to the location point.

The complete code on this method is shown below.

```
@Override
public void onConnected(Bundle bundle) {
mLocationRequest = createLocationRequest();
builder = new LocationSettingsRequest.Builder().addLocat
result = LocationServices.SettingsApi.checkLocationSetti
result.setResultCallback(new ResultCallback<LocationSett
@Override
public void onResult(LocationSettingsResult result) {
final Status status = result.getStatus();
final LocationSettingsStates mState = result.getLocation
switch (status.getStatusCode()) {
case LocationSettingsStatusCodes.SUCCESS:
// All location settings are satisfied. The client can
// initialize location requests here.
if (ActivityCompat.checkSelfPermission(MapsActivity.this
ActivityCompat.requestPermissions(MapsActivity.this, new
} else {
mLastLocation = LocationServices.FusedLocationApi.getLas
if (mMap != null) {
LatLng locationMarker = new LatLng(mLastLocation.getLati
mMap.addMarker(new MarkerOptions().position(locationMark
mMap.moveCamera(CameraUpdateFactory.newLatLng(locationMa
}
}
break;
case LocationSettingsStatusCodes.RESOLUTION_REQUIRED:
// Location settings are not satisfied, but this can be
// by showing the user a dialog.
try {
// Show the dialog by calling startResolutionForResult()
// and check the result in onActivityResult().
status.startResolutionForResult(MapsActivity.this, REQUE
} catch (IntentSender.SendIntentException e) {
```

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```
}
});
```

In the ***onMapClick(LatLng latLng),*** we will add marker in any click in the map.

```
@Override
public void onMapClick(LatLng latLng) {
MarkerOptions options = new MarkerOptions().position( la
options.title("New Location");
options.icon(BitmapDescriptorFactory.defaultMarker());
if(mMap != null){
mMap.addMarker( options );
}
}
```

In the ***onMapLongClick(LatLng latLng)***, we are going to call ***displayCircleOnMap(latLng)*** method inside the event method. The ***displayCircleOnMap(LatLng)*** definition is as shown below.

```
private void displayCircleOnMap(LatLng mLatLng){
CircleOptions circleOptions = new CircleOptions();
circleOptions.center(mLatLng);
circleOptions.radius(1000);
circleOptions.fillColor(Color.BLUE);
circleOptions.strokeColor(Color.RED);
circleOptions.strokeWidth(10);
if(mMap != null){
mMap.addCircle(circleOptions);
}
}
```

The complete code for the MainActivity class is shown below.

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```
import android.os.Bundle;
import android.support.v4.app.ActivityCompat;
import android.support.v4.app.FragmentActivity;
import android.widget.Toast;
import com.google.android.gms.common.ConnectionResult;
import com.google.android.gms.common.GoogleApiAvailabili
import com.google.android.gms.common.api.GoogleApiClient
import com.google.android.gms.common.api.PendingResult;
import com.google.android.gms.common.api.ResultCallback;
import com.google.android.gms.common.api.Status;
import com.google.android.gms.location.LocationRequest;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.location.LocationSettingsR
import com.google.android.gms.location.LocationSettingsR
import com.google.android.gms.location.LocationSettingsS
import com.google.android.gms.location.LocationSettingsS
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.BitmapDescripto
import com.google.android.gms.maps.model.Circle;
import com.google.android.gms.maps.model.CircleOptions;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MarkerOptions;
public class MapsActivity extends FragmentActivity imple
private GoogleMap mMap;
private GoogleApiClient mGoogleApiClient;
private Location mLastLocation;
private final int REQUEST_LOCATION = 200;
private final int REQUEST_CHECK_SETTINGS = 300;
private final int REQUEST_GOOGLE_PLAY_SERVICE = 400;
private Circle circle;
private LocationRequest mLocationRequest;
private PendingResult<LocationSettingsResult> result;
private LocationSettingsRequest.Builder builder;
private final int[] TYPESOfMAPS = { GoogleMap.MAP_TYPE_S
@Override
```

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```
.addConnectionCallbacks(this)
.addOnConnectionFailedListener(this)
.addApi(LocationServices.API)
.build();
}
}
@Override
protected void onStart() {
mGoogleApiClient.connect();
super.onStart();
}
@Override
protected void onStop() {
mGoogleApiClient.disconnect();
super.onStop();
}
@Override
protected void onResume() {
super.onResume();
int resultReturned = GoogleApiAvailability.getInstance()
if(resultReturned != ConnectionResult.SUCCESS){
GoogleApiAvailability.getInstance().getErrorDialog(MapsA
}
}
/**
* Manipulates the map once available.
* This callback is triggered when the map is ready to be
* This is where we can add markers or lines, add listene
* we just add a marker near Sydney, Australia.
* If Google Play services is not installed on the device
* it inside the SupportMapFragment. This method will onl
* installed Google Play services and returned to the app
*/
@Override
public void onMapReady(GoogleMap googleMap) {
mMap = googleMap;
mMap.setMapType(TYPESOfMAPS[1]);
mMap.setOnMapLongClickListener(MapsActivity.this);
```

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```
@Override
public void onResult(LocationSettingsResult result) {
final Status status = result.getStatus();
final LocationSettingsStates mState = result.getLocation
switch (status.getStatusCode()) {
case LocationSettingsStatusCodes.SUCCESS:
// All location settings are satisfied. The client can
// initialize location requests here.
if (ActivityCompat.checkSelfPermission(MapsActivity.this
ActivityCompat.requestPermissions(MapsActivity.this, new
} else {
mLastLocation = LocationServices.FusedLocationApi.getLas
if (mMap != null) {
LatLng locationMarker = new LatLng(mLastLocation.getLati
mMap.addMarker(new MarkerOptions().position(locationMark
mMap.moveCamera(CameraUpdateFactory.newLatLng(locationMa
}
}
break;
case LocationSettingsStatusCodes.RESOLUTION_REQUIRED:
// Location settings are not satisfied, but this can be
// by showing the user a dialog.
try {
// Show the dialog by calling startResolutionForResult()
// and check the result in onActivityResult().
status.startResolutionForResult(MapsActivity.this, REQUE
} catch (IntentSender.SendIntentException e) {
// Ignore the error.
}
break;
case LocationSettingsStatusCodes.SETTINGS_CHANGE_UNAVAIL
// Location settings are not satisfied. However, we have
// to fix the settings so we won't show the dialog.
break;
}
}
});
}
```

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```
} else {
mLastLocation = LocationServices.FusedLocationApi.getLas
if (mMap != null) {
LatLng locationMarker = new LatLng(mLastLocation.getLati
mMap.addMarker(new MarkerOptions().position(locationMark
mMap.moveCamera(CameraUpdateFactory.newLatLng(locationMa
}
}
break;
case Activity.RESULT_CANCELED:
// user does not want to update setting. Handle it in a
Toast.makeText(MapsActivity.this, "User does not update
break;
}
break;
}
}
@Override
public void onConnectionSuspended(int i) {
}
@Override
public void onConnectionFailed(ConnectionResult connecti
}
protected LocationRequest createLocationRequest() {
LocationRequest mLocationRequest = new LocationRequest()
mLocationRequest.setInterval(10000);
mLocationRequest.setFastestInterval(5000);
mLocationRequest.setPriority(LocationRequest.PRIORITY_HI
return mLocationRequest;
}
@Override
public void onMapClick(LatLng latLng) {
MarkerOptions options = new MarkerOptions().position( la
options.title("New Location");
options.icon(BitmapDescriptorFactory.defaultMarker());
if(mMap != null){
mMap.addMarker( options );
}
```

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```
circleOptions.radius(1000);
circleOptions.fillColor(Color.BLUE);
circleOptions.strokeColor(Color.RED);
circleOptions.strokeWidth(10);
if(mMap != null){
mMap.addCircle(circleOptions);
}
}
}
```

Please note that I did not test this tutorial on device running android 6 but it has been tested from android 5 and below.

Run your application and see for yourself what we have just created.

This brings us to the end of this tutorial, If you find anything confusing kindly contact me with your questions or use the comment box below.

You can download the code for this tutorial below. If you are having hard time downloading the tutorials, kindly contact me.

Android Map 691.01 KB
Download

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ABOUT THE AUTHOR

Inducesmile

I learn and write about Android, iOS, Javascript, Php, Node.js, React Native, Mobile Game, Virtual Reality and Internet of Things

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Henry Author | April 8, 2016

Log in to Reply

Hello Sathya, I have added the source code.

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