

# Maps

Himadri Parikh

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# Introduction



- Google maps can be used to work with maps.
- You can get your current location, drop a pin to another location, find distance between the two locations, etc.
- You require Google Play Services to be downloaded from SDK Manager.

# New Project

- Create a new project
  - Make sure you select Google Maps Activity( not Empty Activity)
- Here you get a different code than Empty Activity

```
public class MapsActivity extends FragmentActivity implements OnMapReadyCallback {  
    private GoogleMap mMap;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_maps2);  
        // Obtain the SupportMapFragment and get notified when the map is ready to be used.  
        SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()  
            .findFragmentById(R.id.map);  
        mapFragment.getMapAsync(this);  
    }  
}
```

- One in-build method:

@Override

```
public void onMapReady(GoogleMap googleMap) {  
    mMap = googleMap;
```

```
    // Add a marker in Sydney and move the camera
```

```
    LatLng sydney = new LatLng(-34, 151);
```

```
    mMap.addMarker(new MarkerOptions().position(sydney).title("Marker in Sydney"));
```

```
    mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney));
```

```
}
```

- Manifest Permissions:

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

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

- Generate Google-API key from google\_maps\_api.xml which is stored in values directory.
  - You will need your google login and need to follow simple steps.
- Create Request code and Array to store latitude and longitude: //outside onCreate()

```
private static final int LOCATION_REQUEST = 270;  
ArrayList<LatLng> listPoints;
```

- Initialise arrayList in onCreate();  
`listPoints = new ArrayList<>();`

# Modify onMapReady()

- Enable zoom-in

```
mMap.getUiSettings().setZoomControlsEnabled(true);
```

- Check permissions from Manifest

```
if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION) !=  
PackageManager.PERMISSION_GRANTED && ActivityCompat.checkSelfPermission(this,  
Manifest.permission.ACCESS_COARSE_LOCATION) != PackageManager.PERMISSION_GRANTED) {
```

```
    ActivityCompat.requestPermissions(this, new String[]{Manifest.permission.ACCESS_FINE_LOCATION},  
LOCATION_REQUEST);
```

```
return;  
}
```

- Enable current location

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

# OnLongClickListener(), onMapsReady()

```
mMap.setOnMapLongClickListener(new GoogleMap.OnMapLongClickListener() {  
    @Override  
    public void onMapLongClick(LatLng latLng) {  
    }  
});
```

- Write following code inside onMapLongClick()

*//Reset Marker when already 2*

```
if(listPoints.size()==2){  
    listPoints.clear();  
    mMap.clear();  
}
```

*//save first point select*

```
listPoints.add(latLng);
```

*//create marker*

```
MarkerOptions markerOptions = new MarkerOptions();  
markerOptions.position(latLng);
```



- Continuation inside onMapLongClick()

```
if(listPoints.size() == 1){  
    //add first marker to the map  
    markerOptions.icon(BitmapDescriptorFactory.defaultMarker(BitmapDescriptorFactory.HUE_BLUE));  
}  
else {  
    //Add second marker to the map  
    markerOptions.icon(BitmapDescriptorFactory.defaultMarker(BitmapDescriptorFactory.HUE_GREEN));  
}  
  
mMap.addMarker(markerOptions);  
}  
});  
}
```

# Create onRequestPermissionsResult() method



```
@SuppressWarnings("MissingPermission")
@Override
public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions, @NonNull int[]
grantResults) {
    switch (requestCode){ //if more than one request are to be permitted
        case LOCATION_REQUEST: //270 in our case
            if(grantResults.length>0 && grantResults[0] == PackageManager.PERMISSION_GRANTED){
                mMap.setMyLocationEnabled(true);
            }
            break;
        }
    }
}
```



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Himadri Vrajesh Parikh

[himadrichaudhary1314@gmail.com](mailto:himadrichaudhary1314@gmail.com)

<https://www.linkedin.com/in/himadri-parikh-506219109/>

+91-7990403184