

# Android Mobil Uygulama Geliştirme Eğitimi | Kotlin

## Android Lokasyon İşlemleri

Kasım ADALAN

Elektronik ve Haberleşme Mühendisi

Android - IOS Developer and Trainer

# Eğitim İçeriği

- GPS
- Google Maps

- Lokasyon Ön Kurulum ve Tasarım
- İzin Kontrol
- Konum Kullanımı
- Harita Kurulumu
- API key kullanımı ( Siteyi göstererek ayrıntı olmadan )
- Tasarımı Düzenleme
- Harita Kodlaması

# Lokasyon işlemleri

# İzin Kontrol

# İzin kontrolü

- AndroidManifest.xml dosyasının içinde izin tanımlaması yapılır.

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

- Activity içerisinde **checkSelfPermission()** metodu ile kullanılmak istenen izine **manifest** dosyasında sahip mi değil mi kontrolü yapılır.

```
izinKontrol = ContextCompat.checkSelfPermission(context: MainActivity.this, Manifest.permission.ACCESS_FINE_LOCATION);
```



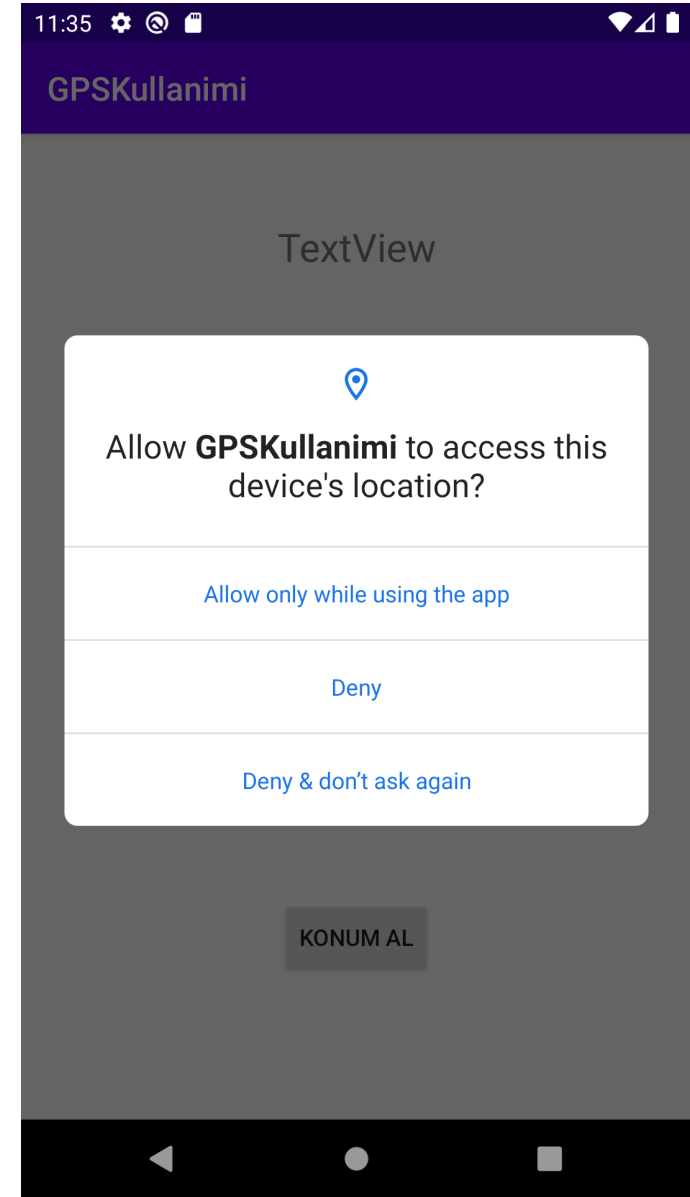
Activity'nin adı



Kontrol edilen izin

# İzin İsteği

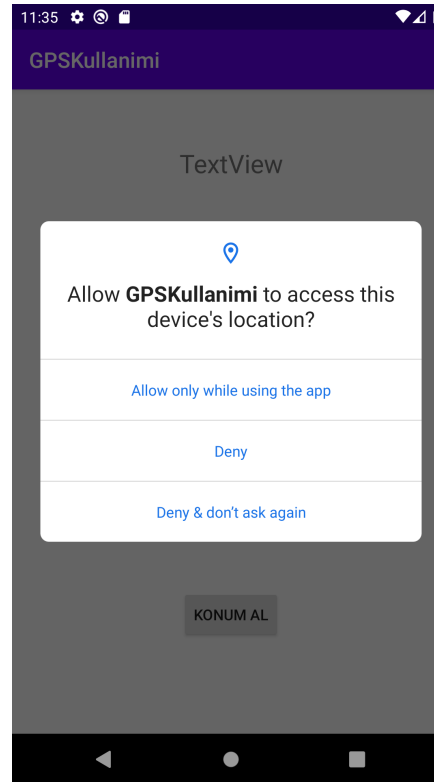
- Android izinleri **ayarlar > uygulamalar > seçilen uygulamanın > izinler** kısmından onay verilir.
- Bu işlemi **yazılımsal** olarak uygulamayı açtığında kullanıcıya sorarak da izin onaylarını alabiliriz.



# İzin İsteği Çalışma Yapısı

`requestPermission()`

İzin isteğini sorma diyalogunu açar



`onRequestPermissionsResult()`

İzin isteği diyalogu açıldıktan sonra verilen cevaplar bu metot ile takip edilir.

# ViewBinding Kullanımı

*Build.gradle/module*

```
android {  
    compileSdk 31
```

1

```
    buildFeatures{  
        viewBinding = true  
    }  
}
```

```
defaultConfig {  
    applicationId "com.example.myapplication"  
    minSdk 21
```

*activity\_main.xml*

Component Tree

```
└─ ConstraintLayout  
   └─ buttonx "Button"
```

2

*Tasarım isminin sonuna Binding eklenerek sınıf oluşur.*

```
class MainActivity : AppCompatActivity() {
```

3

```
    private lateinit var tasarim: ActivityMainBinding
```

```
    override fun onCreate(savedInstanceState: Bundle?) {
```

```
        super.onCreate(savedInstanceState)
```

```
        tasarim = ActivityMainBinding.inflate(layoutInflater)
```

```
        setContentView(tasarim.root)
```

```
        tasarim.buttonx.setOnClickListener { it: View!
```

```
            Snackbar.make(it, text: "Merhaba", Snackbar.LENGTH_SHORT).show()
```

```
    }
```

```
}
```

10:59

KonumKullanimi

Enlem : Alınamadı

Boylam : Alınamadı

KONUM AL

```
class MainActivity : AppCompatActivity() {
    private lateinit var tasarim:ActivityMainBinding
    private var izinKontrol = 0
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        tasarim = ActivityMainBinding.inflate(layoutInflater)
        setContentView(tasarim.root)

        tasarim.buttonKonumAl.setOnClickListener { it: View!
            izinKontrol = ContextCompat.checkSelfPermission( context: this@MainActivity,
                Manifest.permission.ACCESS_FINE_LOCATION)

            if(izinKontrol != PackageManager.PERMISSION_GRANTED){ //İzin onaylanmamışsa
                ActivityCompat.requestPermissions( activity: this@MainActivity,
                    arrayOf(Manifest.permission.ACCESS_FINE_LOCATION), requestCode: 100)
            }else{ //İzin onayı verilmişse.
            }
        }
    }
}

@SuppressLint( ...value: "MissingSuperCall")
override fun onRequestPermissionsResult(requestCode: Int, permissions: Array<out String>, grantResults: IntArray) {
    if(requestCode == 100){
        if(grantResults.size > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED){
            Toast.makeText(applicationContext, text: "İzin kabul edildi",Toast.LENGTH_LONG).show()
        }else{
            Toast.makeText(applicationContext, text: "İzin reddedildi",Toast.LENGTH_LONG).show()
        }
    }
}
}
```

# Ön Kurulum

# Kütüphane Kurulumu

Build gradle dosyasına gerekli kütüphane eklenir

implementation '**com.google.android.gms:play-services-location:17.0.0**'

Kütüphanenin güncel versiyonuna aşağıdaki siteden ulaşabilirsiniz.

<https://developers.google.com/android/guides/setup>

## İzin Alma

```
<?xml version="1.0" encoding="utf-8"?>  
<manifest xmlns:android="http://schemas.android.com/apk/res/android"  
    package="com.example.widgetkullanimi1">  
  
    <uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>  
    <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION"/>
```



Enlem : Alinamadi

Boylam : Alinamadi

KONUM AL

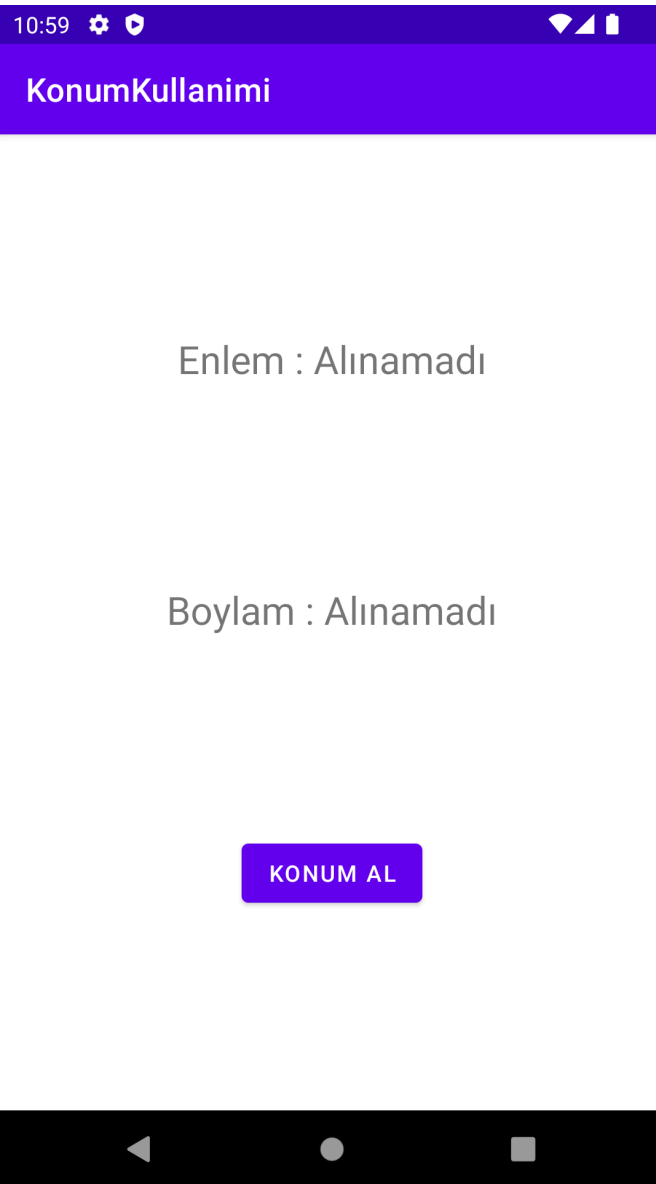
```
class MainActivity : AppCompatActivity() {
    private lateinit var tasarim:ActivityMainBinding
    private var izinKontrol = 0
    private lateinit var flpc:FusedLocationProviderClient
    private lateinit var locationTask:Task<Location>

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        tasarim = ActivityMainBinding.inflate(layoutInflater)
        setContentView(tasarim.root)

        flpc = LocationServices.getFusedLocationProviderClient(this)

        tasarim.buttonKonumAL.setOnClickListener { it: View!
            izinKontrol = ContextCompat.checkSelfPermission( context: this@MainActivity,
                Manifest.permission.ACCESS_FINE_LOCATION)

            if(izinKontrol != PackageManager.PERMISSION_GRANTED){ //İzin onaylanmamışsa
                ActivityCompat.requestPermissions( activity: this@MainActivity,
                    arrayOf(Manifest.permission.ACCESS_FINE_LOCATION), requestCode: 100)
            }else{ //İzin onayı verilmişse.
                locationTask = flpc.lastLocation
                konumBilgisiAl()
            }
        }
    }
}
```



```
fun konumBilgisiAl(){
    LocationTask.addOnSuccessListener { it: Location!
        if(it != null){
            tasarim.textViewEnlem.text = "Enlem : ${it.latitude}"
            tasarim.textViewBoylam.text = "Boylam : ${it.longitude}"
        }else{
            tasarim.textViewEnlem.text = "Enlem : Alınamadı"
            tasarim.textViewBoylam.text = "Boylam : Alınamadı"
        }
    }
}

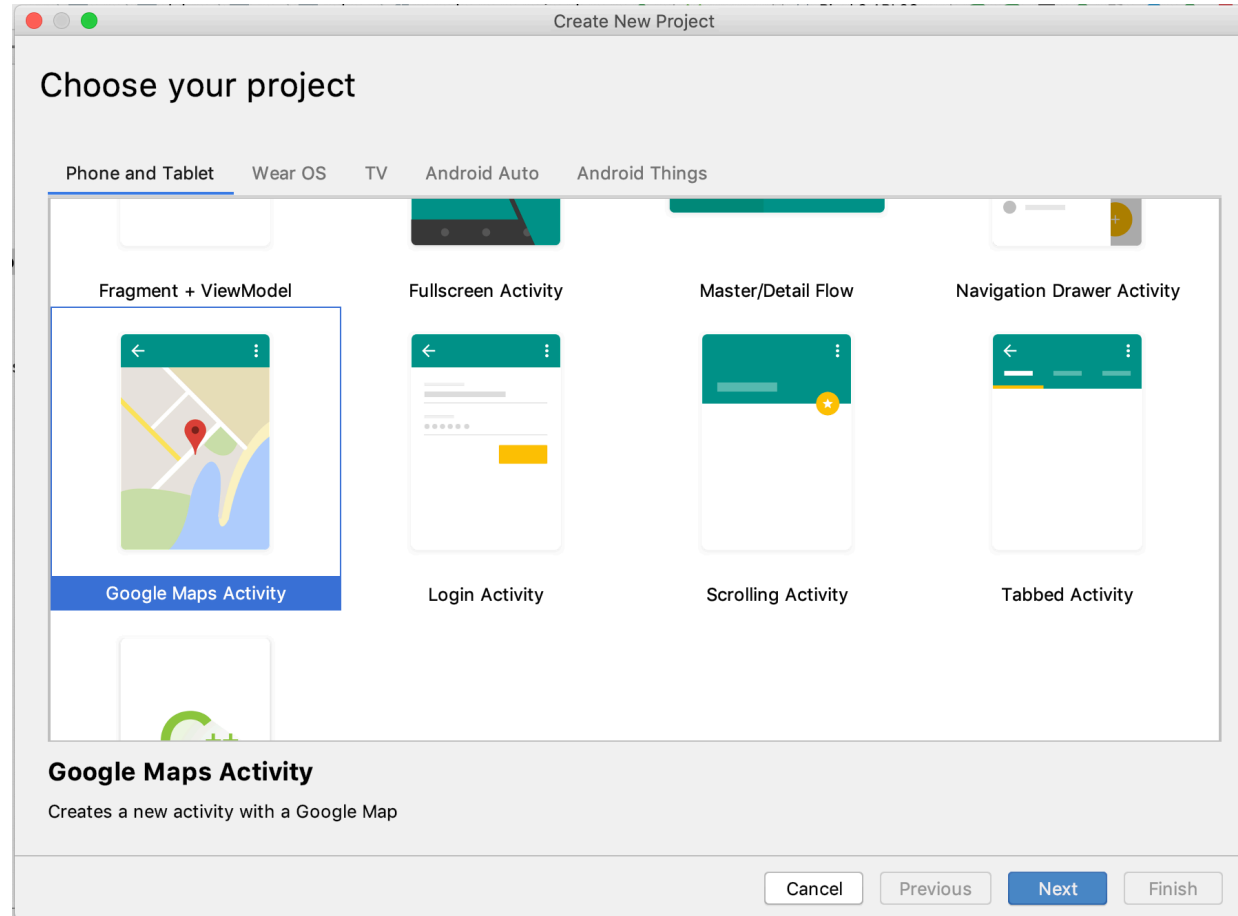
@SuppressLint( ...value: "MissingSuperCall")
override fun onRequestPermissionsResult(requestCode: Int, permissions: Array<out String>, grantResults: IntArray) {
    if(requestCode == 100){

        izinKontrol = ContextCompat.checkSelfPermission( context: this@MainActivity,
            Manifest.permission.ACCESS_FINE_LOCATION)

        if(grantResults.size > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED){
            Toast.makeText(applicationContext, text: "İzin kabul edildi", Toast.LENGTH_LONG).show()
            locationTask = flpc.lastLocation
            konumBilgisiAl()
        }else{
            Toast.makeText(applicationContext, text: "İzin reddedildi", Toast.LENGTH_LONG).show()
        }
    }
}
```

# Harita Kullanımı

# Map Çalışması İçin Proje Oluşturma



# Manifest Dosyası Api Key

```
<application
    android:allowBackup="true"
    android:icon="@mipmap/ic_launcher"
    android:label="@string/app_name"
    android:roundIcon="@mipmap/ic_launcher_round"
    android:supportsRtl="true"
    android:theme="@style/Theme.HaritaKullanimi">

    <!--
        TODO: Before you run your application, you need a Google Maps API key.

        To get one, follow the directions here:

        https://developers.google.com/maps/documentation/android-sdk/get-api-key



        Once you have your API key (it starts with "AIza"), define a new property in your
        project's local.properties file (e.g. MAPS_API_KEY=Aiza...), and replace the
        "YOUR_API_KEY" string in this file with "${MAPS_API_KEY}".

    -->
    <meta-data
        android:name="com.google.android.geo.API_KEY"
        android:value="AIzaSyDyynJC04P_USAWmzvMZ-y29sOXv6vUVR8" />
```

# API KEY Oluřturma İřlemi


- Harita hizmetini kullanabilmek için api key almalıyız.
- Site : <https://cloud.google.com/maps-platform/>

## API Anahtarları


| <input type="checkbox"/> | Ad              | Oluřturulma tarihi ↓ | Kısıtlamalar | Anahtar                 |  | Tüm hizmetler ile kullanım (son 30 gün) ? |   |
|--------------------------|-----------------|----------------------|--------------|-------------------------|--|---|---|
| <input type="checkbox"/> | 1. API anahtarı | 30 Aęu 2020          | Yok          | AIzaSyDmIe...Lzf34S6ZU8 |  | 4   |   |

AlzaSyBGKYVfB1wcPJ6yLHgvPTYK5grjSBv25W0


# Map API Key Alma işlemi

 Google Maps Platform

OverviewProductsPricingDocun >

 Ara

LANGUAGE ▾

TÜM ÜRÜNLER ⋮ 

Android > Maps SDK for Android

GET STARTEDCONTACT SALES

GUIDESREFERENCESAMPLESSUPPORT


GERİ BİLDİRİM GÖNDER

Overview

Get Started

Get an API Key

Configuration

Maps SDK for Android v.3.0 BETA 

Tutorials

Map with Marker

Polylines and Polygons to Represent Routes and Areas

Select Current Place

## Overview

☆☆☆☆☆

★ **New Users:** Before you can start using the Google Maps Platform APIs and SDKs, you must sign up and create a billing account. To learn more, see [Get Started with Google Maps Platform](#).

With the Maps SDK for Android, you can add maps based on Google Maps data to your application. The API automatically handles access to Google Maps servers, data downloading, map display, and response to map gestures. You can also use API calls to add markers, polygons, and overlays to a basic map, and to change the user's view of a particular map area. These objects provide additional information for map locations, and allow user interaction with the map. The API allows you to add these

İçindekiler

Audience

Google Maps APIs

Premium Plan

Accessibility



## Google Haritalar Platformunu Etkinleştirme

You're all set!

You're ready to start developing!

YOUR API KEY

AIzaSyClmy-SUKjNY8gNuPnpfjcpVnux4O3b1wU

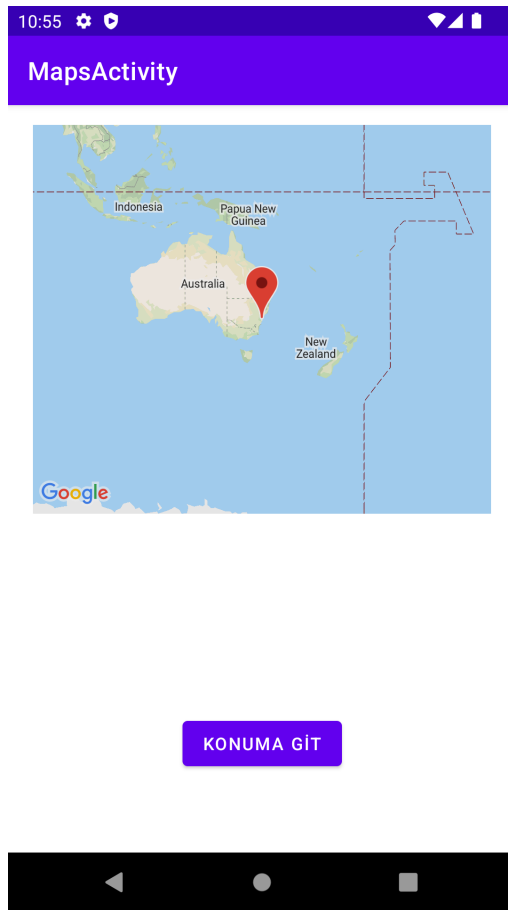


To improve your app's security, restrict this key's usage in the [API Console](#).

DONE

# Tasarım

- Google haritaları uygulama içinde görsel olarak kullanmak için fragment kullanıyoruz.
- Boyutlandırmayı istediğimiz gibi yapabiliriz.



```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:map="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <fragment
        android:id="@+id/map"
        android:name="com.google.android.gms.maps.SupportMapFragment"
        android:layout_width="371dp"
        android:layout_height="314dp"
        android:layout_marginStart="16dp"
        android:layout_marginTop="16dp"
        android:layout_marginEnd="16dp"
        map:layout_constraintEnd_toEndOf="parent"
        map:layout_constraintStart_toStartOf="parent"
        map:layout_constraintTop_toTopOf="parent"
        tools:context=".MapsActivity" />

    <Button
        android:id="@+id/buttonKonumaGit"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginBottom="64dp"
        android:text="KONUMA GİT"
        map:layout_constraintBottom_toBottomOf="parent"
        map:layout_constraintEnd_toEndOf="parent"
        map:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```



KONUMA GIT

41.0361566 , 28.9854576 , 17z

```
class MapsActivity : AppCompatActivity(), OnMapReadyCallback {
    private lateinit var mMap: GoogleMap
    private lateinit var binding: ActivityMapsBinding
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        binding = ActivityMapsBinding.inflate(layoutInflater)
        setContentView(binding.root)

        val mapFragment = supportFragmentManager
            .findFragmentById(R.id.map) as SupportMapFragment
        mapFragment.getMapAsync(callback: this)

        binding.buttonKonumaGit.setOnClickListener { it: View!
            //41.0361566,28.9854576,17z
            val konum = LatLng(latitude: 41.0361566, longitude: 28.9854576)
            mMap.addMarker(MarkerOptions()
                .position(konum)
                .title(title: "Taksim").icon(BitmapDescriptorFactory.fromResource(R.drawable.konum_resim)))
            mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(konum, zoom: 17f))
            mMap.mapType = GoogleMap.MAP_TYPE_SATELLITE
        }
    }

    override fun onMapReady(googleMap: GoogleMap) {
        mMap = googleMap
        val sydney = LatLng(latitude: -34.0, longitude: 151.0)
        mMap.addMarker(MarkerOptions().position(sydney).title(title: "Marker in Sydney"))
        mMap.moveCamera(CameraUpdateFactory.newLatLng(sydney))
    }
}
```

Teşekkürler...



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