

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 İşlemleri

izin Kontrol

izin 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.

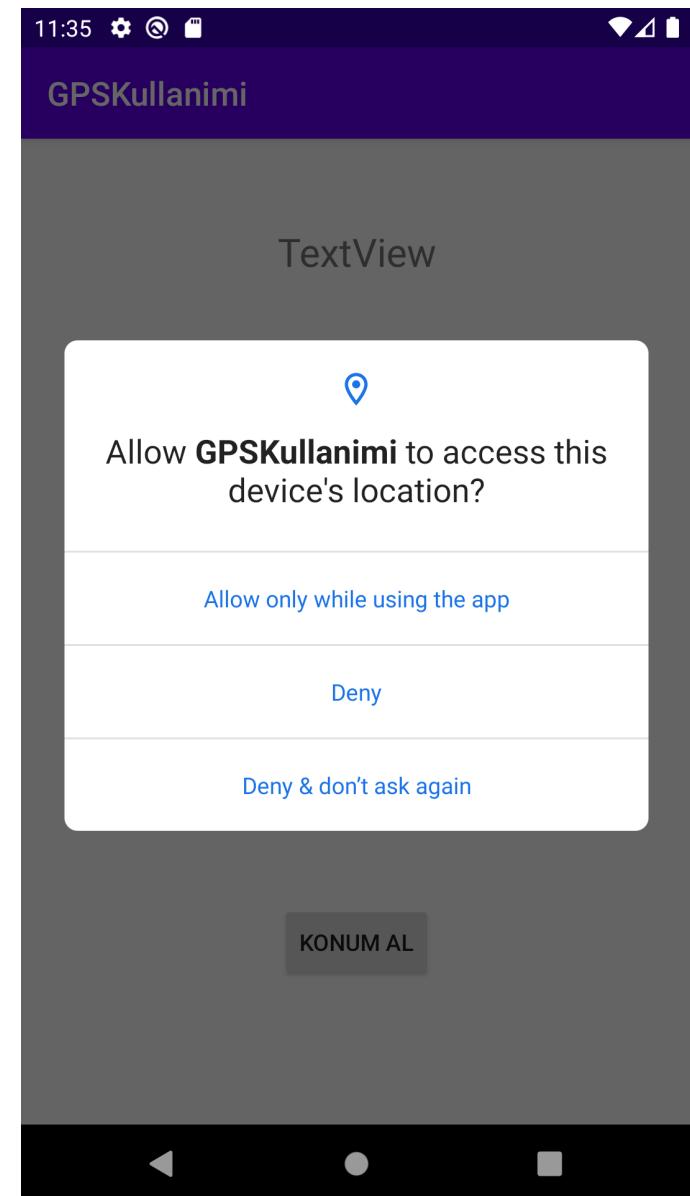
```
izinKontrol = ContextCompat.checkSelfPermission( context: MainActivity.this, Manifest.permission.ACCESS_FINE_LOCATION);
```

Activity'nin adı

Kontrol edilen izin

izin isteği

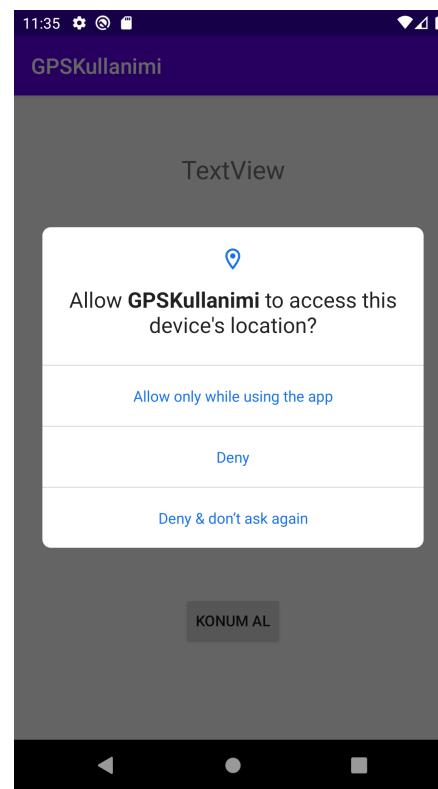
- Android izinleri **ayarlar > uygulamalar > seçilen uygulamanın > izinler** kısmından onay verilir.
- Bu işlemi **yazılımsal** olarak uygulamayı açtığında kullanıcıya sorarak da izin onaylarını alabiliriz.



İzin İsteği Çalışma Yapısı

`requestPermission()`

İzin isteğini sorma diyaloğunu açar



`onRequestPermissionsResult()`

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

ViewBinding Kullanımı

Build.gradle/module

```
android {  
    compileSdk 31  
  
    buildFeatures{  
        viewBinding = true  
    }  
  
    defaultConfig {  
        applicationId "com.example.myapplication"  
        minSdk 21  
    }  
}
```

activity_main.xml

Component Tree

- ConstraintLayout
 - buttonx "Button"

1

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

2

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

}

3

Tasarım isminin sonuna Binding eklenerek sınıf oluşturulur.

```
        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){ //izin onaylanmamışsa
                ActivityCompat.requestPermissions( activity: this@MainActivity,
                    arrayOf(Manifest.permission.ACCESS_FINE_LOCATION), requestCode: 100)
            }else{ //izin onayı verilmiştir.

            }
        }
    }

    @SuppressLint("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"/>
```

10:59

KonumKullanimi

Enlem : Alınamadı

Boylam : Alınamadı

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()
            }
        }
    }
}
```



Enlem : Alınamadı

Boylam : Alınamadı

```
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"
        }
    }
}

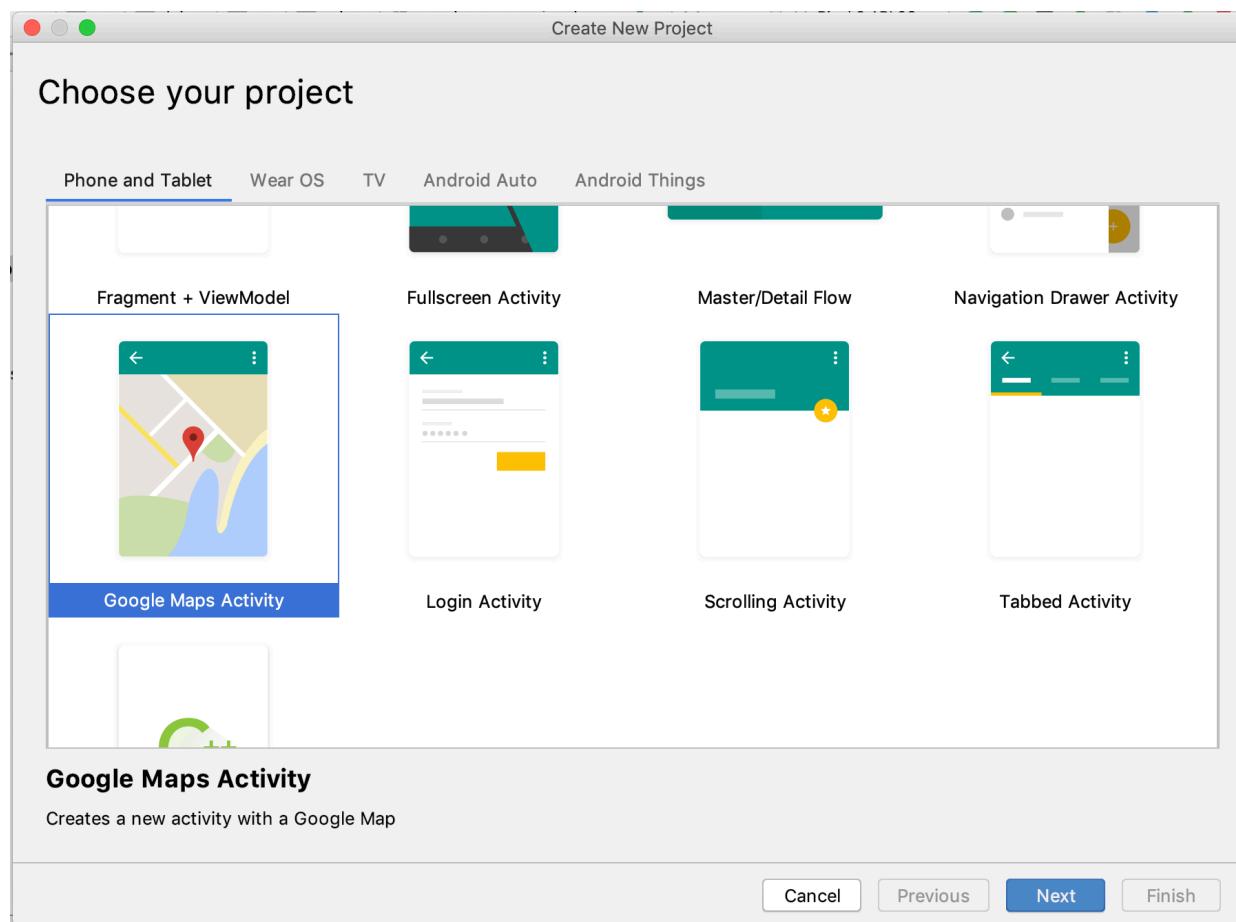
@SuppressLint("MissingSuperCall")
override fun onRequestPermissionsResult(requestCode: Int, permissions: Array<out String>, grantResults: IntArray) {
    if(requestCode == 100){

        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="AIzaSyDyyJC04P_USAWmzvMZ-y29s0Xv6vUVR8" />
```

API KEY Oluşturma İşlemi

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

API Anahtarları

<input type="checkbox"/>	Ad	Oluşturulma tarihi	Kısıtlamalar	Anahtar	Tüm hizmetler ile kullanım (son 30 gün)	
<input type="checkbox"/>	1. API anahtarları	30 Ağustos 2020	Yok	AIzaSyDmIe...Lzf34S6ZU8	4	

AIzaSyBGKYVfB1wcPJ6yLHgvPTYK5grjSBv25W0

Map API Key Alma İşlemi

The screenshot shows the Google Maps Platform documentation page for the Maps SDK for Android. At the top, there's a navigation bar with links for Overview, Products, Pricing, Documentation (which is the current page), Search, Language selection, All Products, and a user profile icon. Below the navigation bar, a breadcrumb trail shows 'Android > Maps SDK for Android'. On the right side of the header, there are two buttons: 'GET STARTED' (highlighted with a red box) and 'CONTACT SALES'. Underneath the header, there are tabs for GUIDES, REFERENCE, SAMPLES, and SUPPORT, along with a 'GERI BİLDİRİM GÖNDER' button. The main content area has a sidebar on the left with links like Overview, Get Started, Get an API Key, Configuration, and Maps SDK for Android v.3.0 BETA. The main content area features a large title 'Overview' with a five-star rating icon. A callout box contains a note for 'New Users' about signing up and creating a billing account. The main text explains the functionality of the Maps SDK for Android, mentioning map addition, server access handling, and various map objects.

Google Maps Platform

Overview Products Pricing Docun Ara LANGUAGE TÜM ÜRÜNLER :

Android > Maps SDK for Android

GET STARTED CONTACT SALES

GUIDES REFERENCE SAMPLES SUPPORT GERI 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

★ ★ ★ ★ ★

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

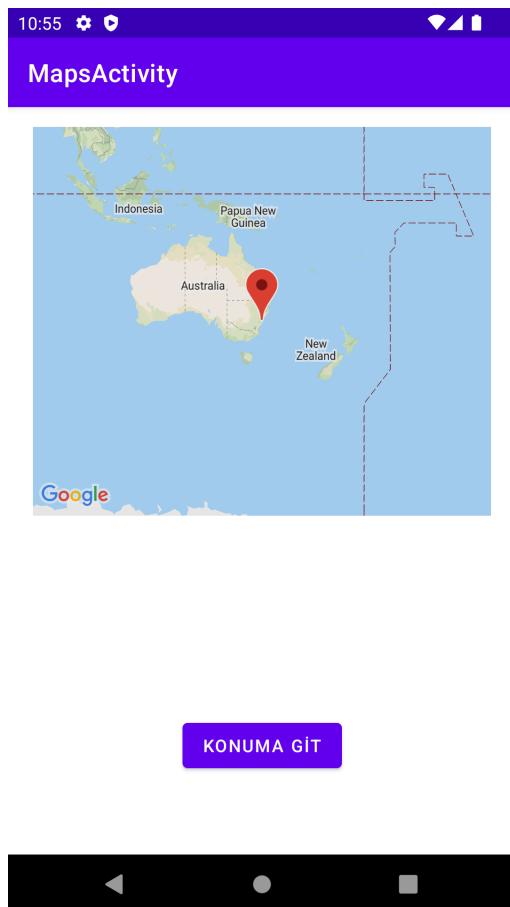


To improve your app's security, restrict this key's usage in the [API Console](#).

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 GIT"
        map:layout_constraintBottom_toBottomOf="parent"
        map:layout_constraintEnd_toEndOf="parent"
        map:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

10:55



MapsActivity



KONUMA GİT

```
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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