ADVANCED ANDROID 14 DEVELOPMENT CHEATSHEET

Add PermissioSetting up Google Maps API Keyns in Android Manifest

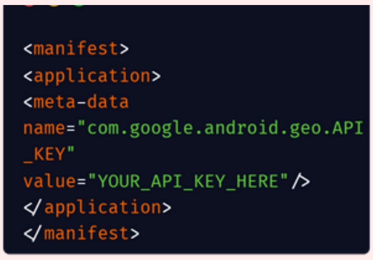
Steps:

1. Google Cloud Project:

- Create a new project in Google Cloud Console.
- Enable "Google Maps Android API" in API Library.
- Obtain the API key.

2. API Key:

- Restrict key to your Android app using package name and SHA-1 fingerprint.
- Add API key to AndroidManifest.xml :



```
<manifest>
<application>
<meta-data
name="com.google.android.geo.API
_KEY"
value="YOUR_API_KEY_HERE"/>
</application>
</manifest>
```

3. Testing:

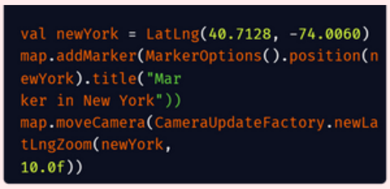
- Ensure map displays correctly in your app.

LatLng Object

Theory:
Represents latitude and longitude.

Syntax:
LatLng(latitude: Double, longitude: Double)

Examples:



```
val newYork = LatLng(40.7128, -74.0060)
map.addMarker(MarkerOptions().position(n
ewYork).title("Mar
ker in New York"))
map.moveCamera(CameraUpdateFactory.newLa
tLngZoom(newYork,
10.0f))
```

Restricting Google Maps API Key

Steps:

1. Find API Key:

- Go to API Credentials in Google Cloud Console.

2. Application Restrictions:

- Select "Android apps".
- Enter your package name and SHA-1 fingerprint.

3. API Restrictions:

- Restrict key to "Maps SDK for Android".

4. Save Settings:

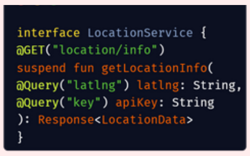
- Apply restrictions and save.

Retrofit @Query

Theory:
Annotates parameters for URL query.

Syntax:
@Query("query_key") param: ParamType

Examples:



```
interface LocationService {
@GET("location/info")
suspend fun getLocationInfo(
@Query("latlng") latlng: String,
@Query("key") apiKey: String
): Response<LocationData>
}
```

Retrofit @Query

Components:

Request:
Endpoint, Method, Headers, Body.

Response:
Status Code, Headers, Body.

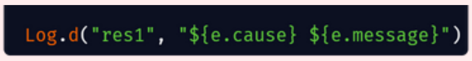
Components:
Request weather data, receive and display forecast.

Why Important:
Allows integration with external services, like flight data for travel apps.

Log Messages in LogCat

Syntax:
Log.d(tag: "tag", msg: "message")

Examples:

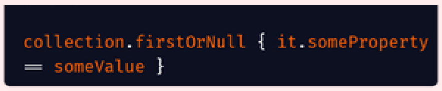


```
Log.d("res1", "${e.cause} ${e.message}")
```

firstOrNull() Method

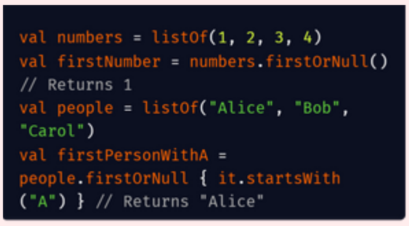
Purpose:
Returns the first matching element or null.

Syntax:
@Query("query_key") param: ParamType



```
collection.firstOrNull { it.someProperty
== someValue }
```

Examples:

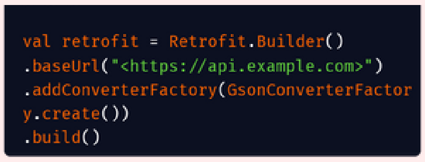


```
val numbers = listOf(1, 2, 3, 4)
val firstNumber = numbers.firstOrNull()
// Returns 1
val people = listOf("Alice", "Bob",
"Carol")
val firstPersonWithA =
people.firstOrNull { it.startsWith
("A") } // Returns "Alice"
```

Retrofit Converter Factory

Purpose:
Converts JSON to/from Java objects.

Setup:



```
val retrofit = Retrofit.Builder()
.baseUrl("<https://api.example.com>")
.addConverterFactory(GsonConverterFactor
y.create())
.build()
```