

Overview

This section is for overview of steps. For details, see the next section, **Lab Instructions (Step by Step)**.

Basic Setup

1. Install JDK

2. Install Android Studio

3. Setup Device

https://docs.google.com/document/d/1LTSZouLBQ7nj-YO97qhSu0_LRzsVbqsVSQ_a-Osi4tA/pub

Installing Driver Examples:

A) Samsung

https://docs.google.com/document/d/1L8KpRZHKGnK9sIBkbnQo-si7i30pDPDxvY2C_r-K1B4/pub?embedded=true

B) Nexus

<https://docs.google.com/document/d/1Oyo-Uhf6LgjDDAehAstOzEbRNuZd7eoeWfE280upE8M/pub>

4. Create Hello World App

Create New Project, and click Play button. Use your reverse-domain name for your app.

For example: **edu.liu.myfirstapp**

Google Map Setup

5. Run keytools command to get a hash via Command Line

```
cd "C:\Program Files (x86)\Java\jre7\bin>"
```

```
keytool.exe -list -keystore "C:\Users\my_username\.android\debug.keystore"
```

6. Create a new App in Google API Console & Enable the Android Map

https://developers.google.com/maps/documentation/android/start#installing_the_google_maps_android_v2_api

7. Install Google Play Services and Repository via SDK Manager, then modify build.gradle

<http://developer.android.com/google/play-services/setup.html#Install>

8. Edit Source code

8.1 Add Permissions in AndroidManifest.xml

After <manifest... > tag, add (make sure change helloworld to your app id)

```
<permission
  android:name="edu.liu.helloworld.permission.MAPS_RECEIVE"
  android:protectionLevel="signature"/>
<uses-permission android:name="edu.liu.helloworld.permission.MAPS_RECEIVE"/>
<uses-permission android:name="android.permission.ACCESS_NETWORK_STATE"/>
<uses-permission android:name="android.permission.INTERNET"/>
<uses-permission
android:name="com.google.android.providers.gsf.permission.READ_GSERVICES"/>
<!-- External storage for caching. -->
<uses-permission android:name="android.permission.WRITE_EXTERNAL_STORAGE"/>
<!-- My Location -->
<uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION"/>
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
<!-- Maps API needs OpenGL ES 2.0. -->
<uses-feature
  android:glEsVersion="0x00020000"
  android:required="true"/>
```

After <application ...> tag, and change the key

```
<meta-data
  android:name="com.google.android.maps.v2.API_KEY"
  android:value="YOUR_KEY_FROM_GOOGLE_API_CONSOLE" />
```

8.2 Add Map Fragment in fragment_main.xml before </RelativeLayout>

```
<fragment xmlns:android="http://schemas.android.com/apk/res/android"
  android:id="@+id/map"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:name="com.google.android.gms.maps.MapFragment"/>
```

9. Build and Run

Lab Instructions: Step by Step (Details)

Part1

<https://docs.google.com/document/d/1uhOGKdOMxrf-RlvJlwun-38N3E9AkHTqgX7uu4FHkJQ/pub>

Part2

<https://docs.google.com/document/d/1MjmLDF96Of7enG3SkU-aXq81jiFw91VWsRoqWh1pRa4/pub>

References

Slideshow

<https://docs.google.com/presentation/d/1dSFRg0sTLyLW1pKapibk-HmQJd7zg6iAw5EpOqYdQ58/pub?start=false&loop=false&delayms=3000>

Troubleshooting:

<https://docs.google.com/document/d/1OsYOvBQ-O2H4PIOI7M4OxCRhFijwm-yaSwFXHgV7kTY/pub?embedded=true#h.v7t9mxubp7ys>

IntelliJ + ADT

<http://stackoverflow.com/questions/5271182/how-do-i-set-up-intellij-idea-for-android-applications>

Keytool in Windows (Video)

<https://vimeo.com/68070197>