

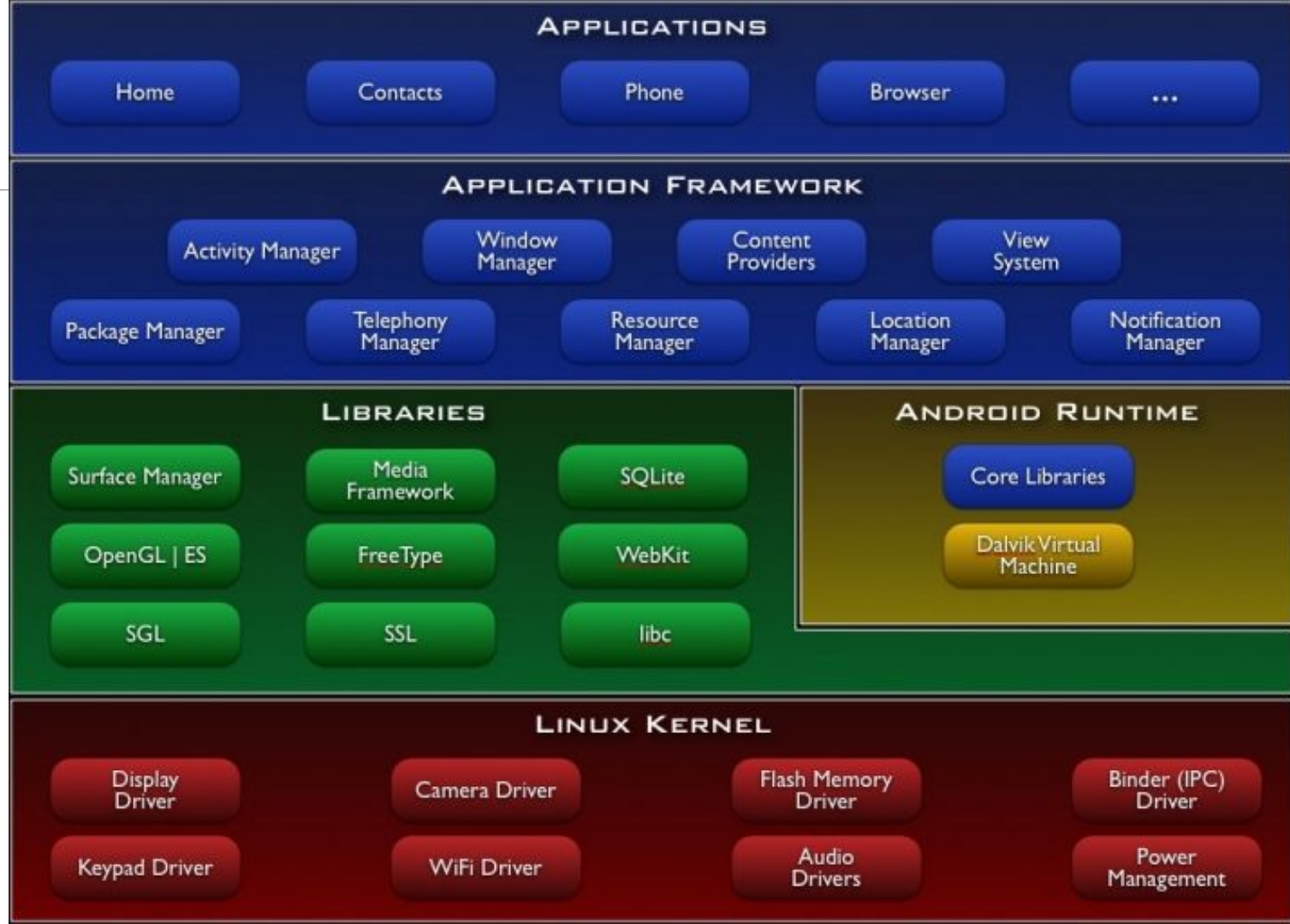


Desenvolvimento de Software para Dispositivos Móveis

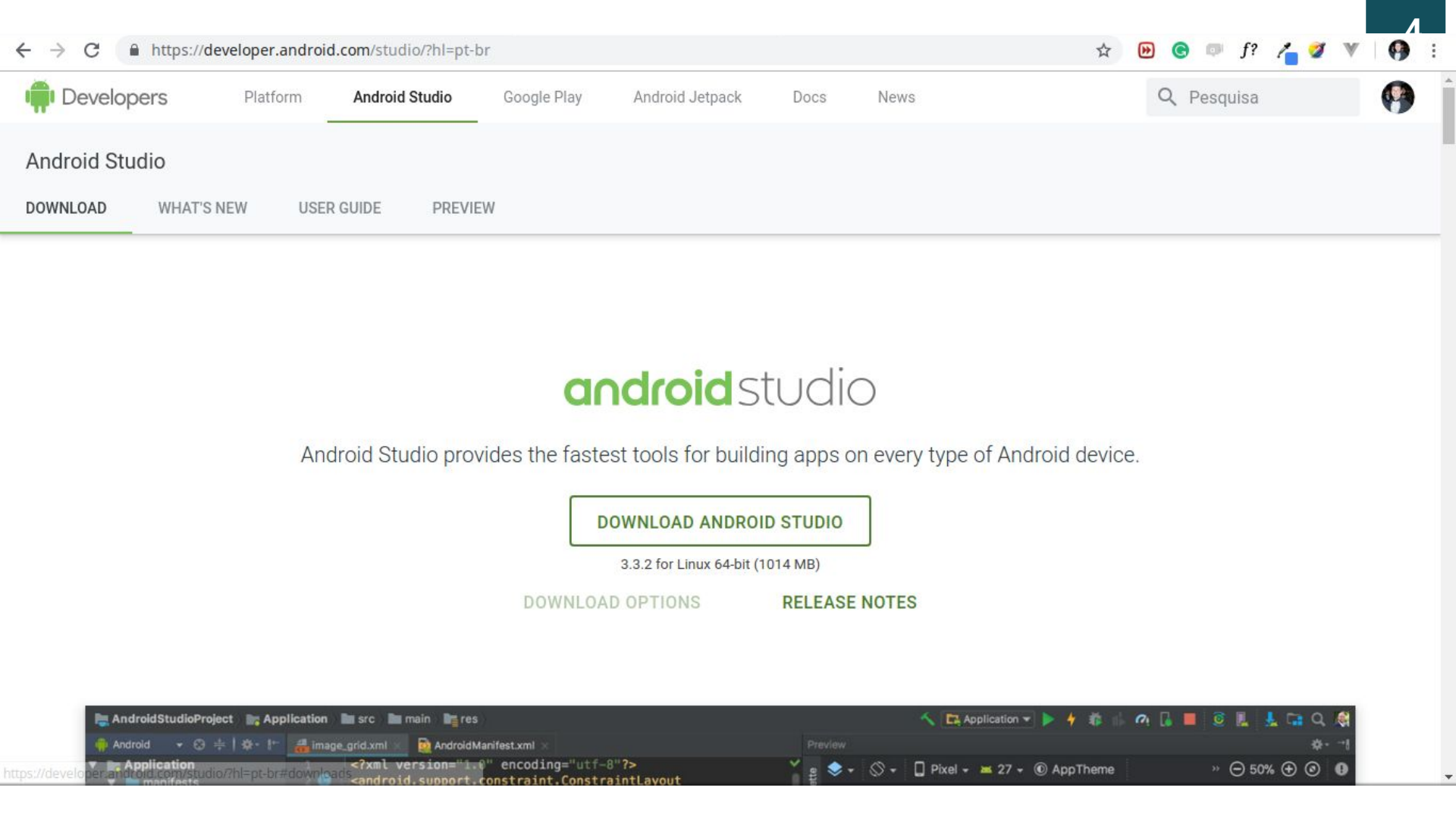
Aula 4 - Introdução ao Android



Professor: Anderson Almada



IDE



Android Studio

DOWNLOAD

WHAT'S NEW

USER GUIDE

PREVIEW

androidstudio

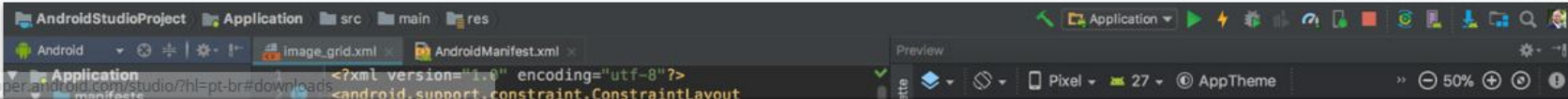
Android Studio provides the fastest tools for building apps on every type of Android device.

DOWNLOAD ANDROID STUDIO

3.3.2 for Linux 64-bit (1014 MB)

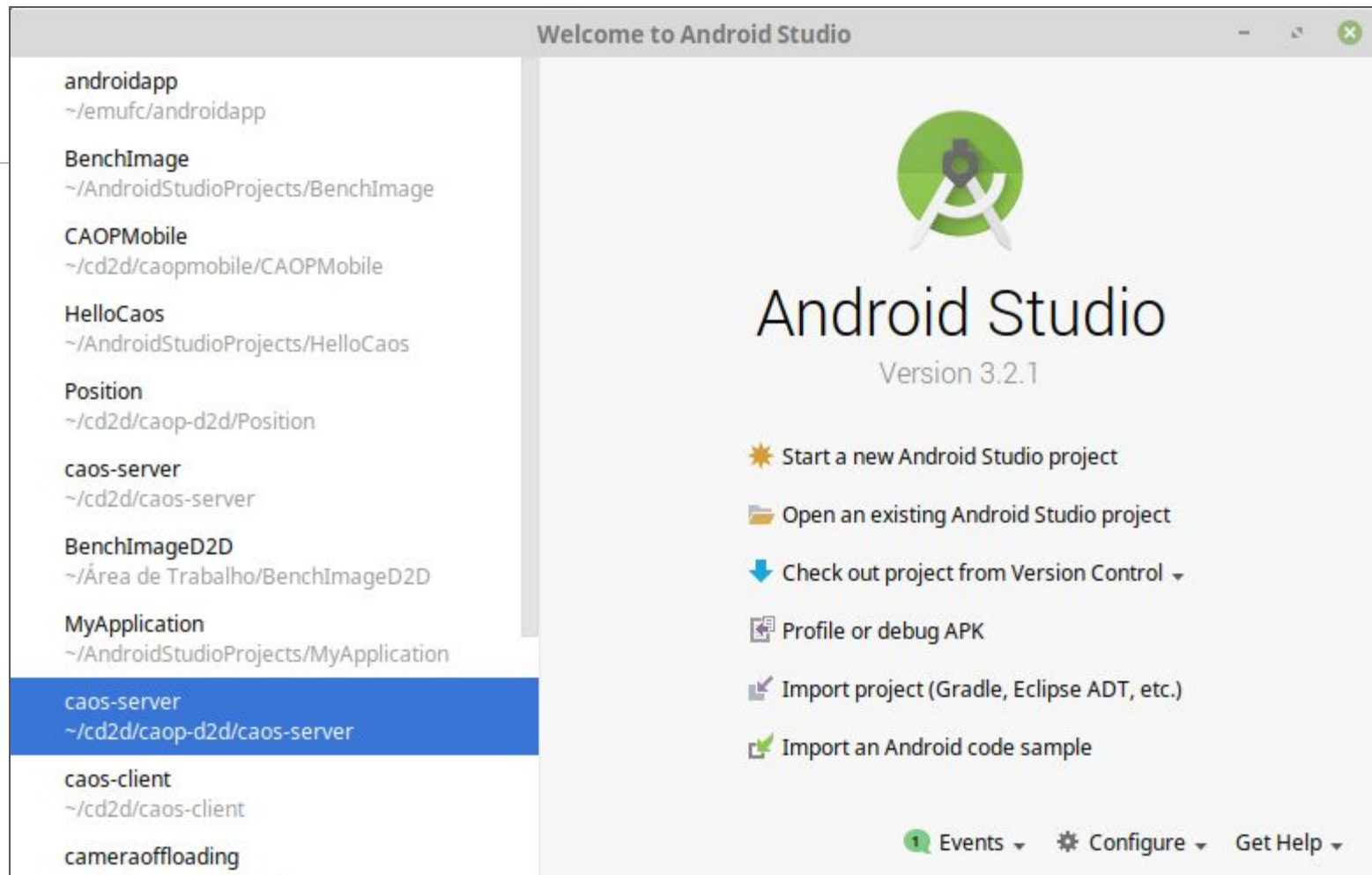
DOWNLOAD OPTIONS

RELEASE NOTES



Instalação

- Pré-requisito
 - < Java 1.8 instalado
- Acesse:
 - <https://developer.android.com/studio#downloads>
- Faça o download da IDE (será baixado um arquivo tar.gz)
- Extraí-a
- Em seguida execute os seguintes comandos:
 - `cd /android-studio/bin`
 - `./studio.sh`



Configurar o adb

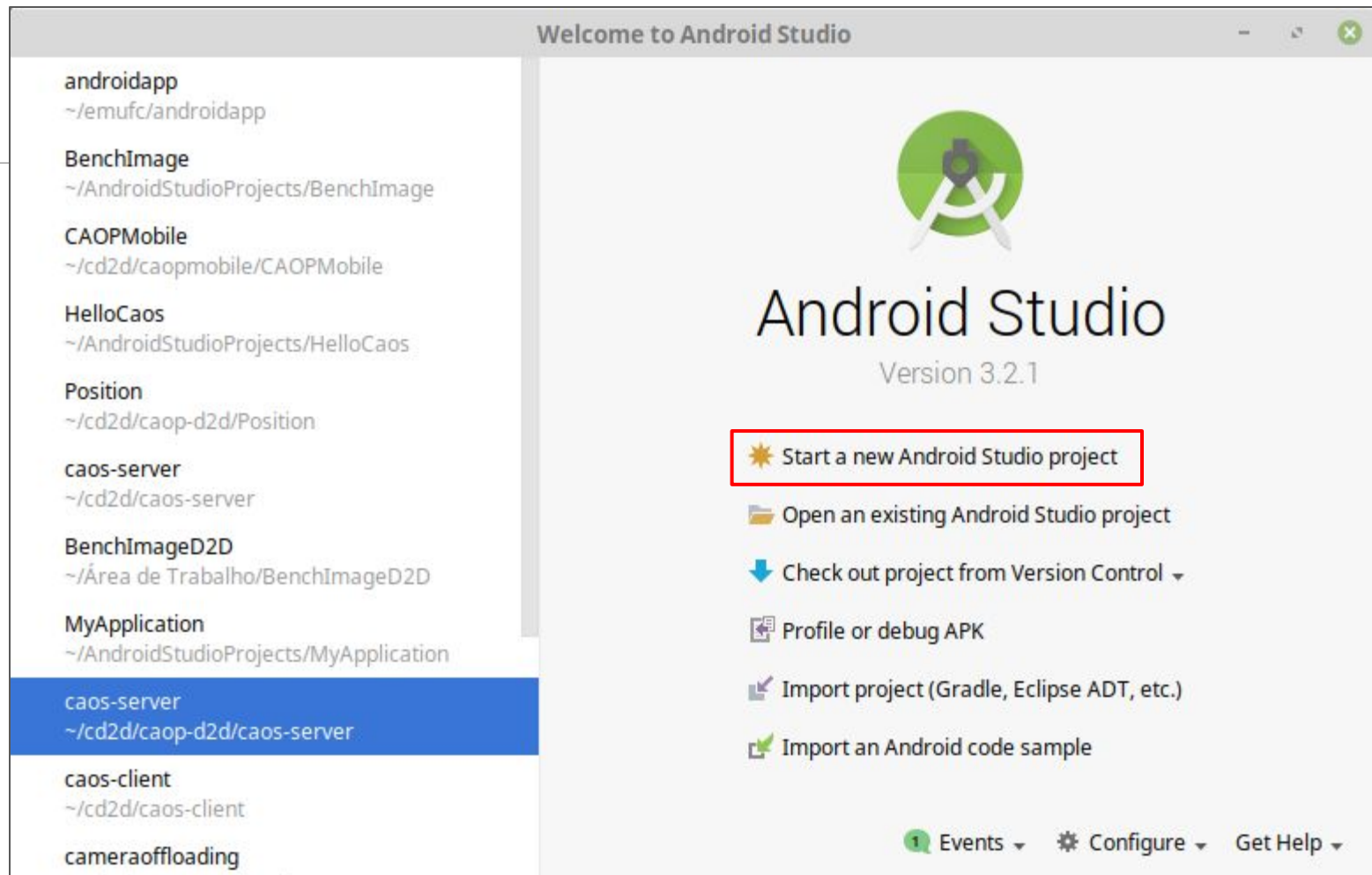
Configurar o adb

- Procure pelo o local de instalação do adb.
- Copie o path
- Abra o terminal e digite:
 - `sudo gedit /etc/environment`
- Cole no final do conteúdo
 - Exemplo:
`PATH="/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/home/anderson/Android/Sdk/platform-tools"`

Configurar o adb

- No terminal, digite o comando:
 - `source /etc/environment`
- (opcionalmente) Reinicie a máquina

Hello World





Create Android Project

Application name

Company domain

Project location



Package name

- ☐ Include C++ support
- ☐ Include Kotlin support



Target Android Devices

Select the form factors and minimum SDK

Some devices require additional SDKs. Low API levels target more devices, but offer fewer API features.

☒ **Phone and Tablet**

API 19: Android 4.4 (KitKat)

By targeting **API 19 and later**, your app will run on approximately **95,3%** of devices. [Help me choose](#)

☐ Include Android Instant App support

☐ **Wear OS**

API 23: Android 6.0 (Marshmallow)

☐ **TV**

API 21: Android 5.0 (Lollipop)

☐ **Android Auto**

☐ **Android Things**

API 24: Android 7.0 (Nougat)

Previous

Next

Cancel

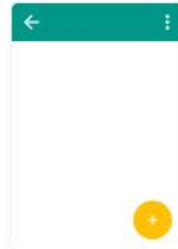
Finish



Add an Activity to Mobile



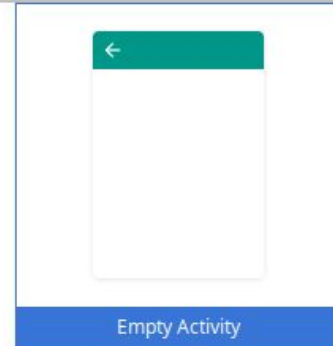
Add No Activity



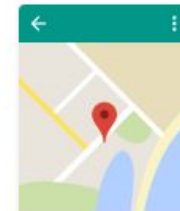
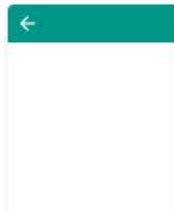
Basic Activity



Bottom Navigation Activity



Empty Activity





Previous

Next

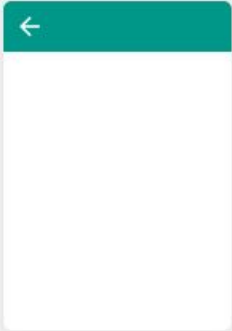
Cancel

Finish

Create New Project

 Configure Activity 

Creates a new empty activity



Activity Name:

☒ Generate Layout File

Layout Name:

☒ Backwards Compatibility (AppCompat)

The name of the activity class to create

Previous

Next

Cancel

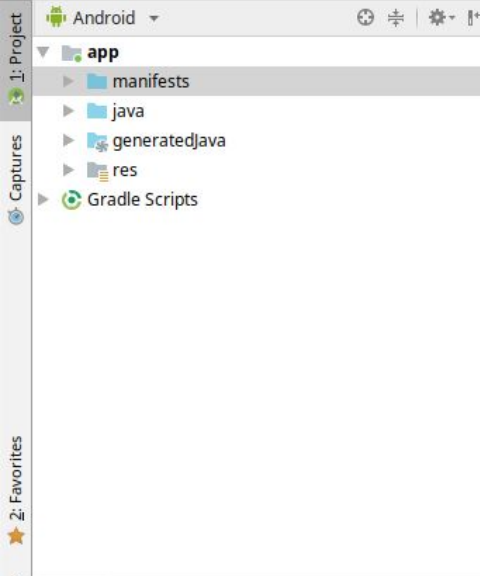
Finish

```
1 package com.example.anderson.myapplication;
2
3 import ...
4
5 public class MainActivity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main);
11    }
12 }
13
14
```

Build Sync

```
:app:generateDebugResValues UP-TO-DATE
:app:generateDebugResources UP-TO-DATE
:app:mergeDebugResources
:app:createDebugCompatibleScreenManifests UP-TO-DATE
:app:processDebugManifest
:app:splitsDiscoveryTaskDebug UP-TO-DATE
:app:processDebugResources
:app:generateDebugSources
```

```
BUILD SUCCESSFUL in 3s
13 actionable tasks: 3 executed, 10 up-to-date
```

```
1 <?xml version="1.0" encoding="utf-8"?>
2 <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3       package="com.example.anderson.myapplication">
4
5     <application
6         android:allowBackup="true"
7         android:icon="@mipmap/ic_launcher"
8         android:label="My Application"
9         android:roundIcon="@mipmap/ic_launcher_round"
10        android:supportRtl="true"
11        android:theme="@style/AppTheme">
12         <activity android:name=".MainActivity">
13             <intent-filter>
14                 <action android:name="android.intent.action.MAIN" />
15
16                 <category android:name="android.intent.category.LAUNCHER" />
17             </intent-filter>
18         </activity>
19     </application>
20
21 </manifest>
```

manifest

Text Merged Manifest

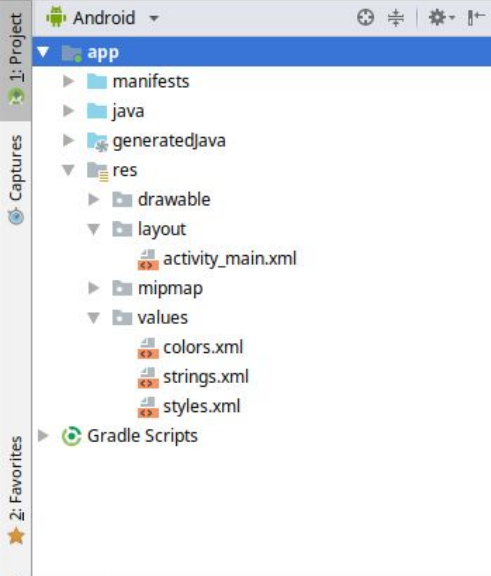
Build Sync

```
:app:generateDebugResValues UP-TO-DATE
:app:generateDebugResources UP-TO-DATE
:app:mergeDebugResources
:app:createDebugCompatibleScreenManifests UP-TO-DATE
:app:processDebugManifest
:app:splitsDiscoveryTaskDebug UP-TO-DATE
:app:processDebugResources
:app:generateDebugSources
```

```
BUILD SUCCESSFUL in 3s
13 actionable tasks: 3 executed, 10 up-to-date
```

Logcat Terminal Build TODO

1 Event Log



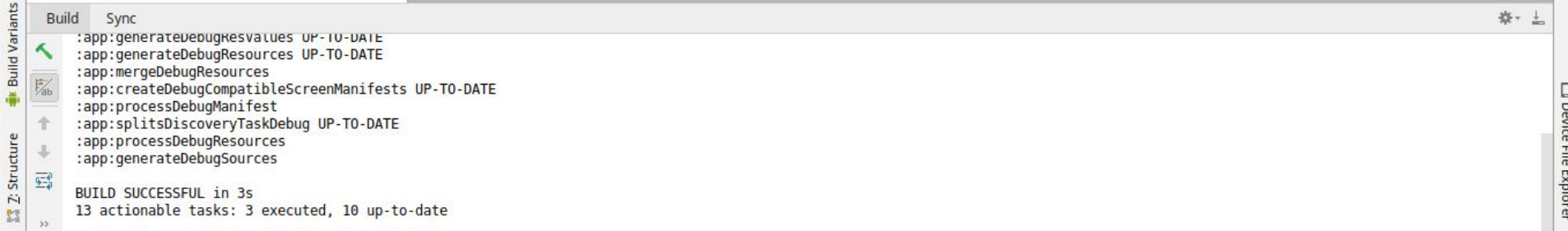
Search Everywhere [Double Shift](#)

Go to File [Ctrl+Shift+R](#)

Recent Files [Ctrl+E](#)

Navigation Bar [Alt+Inicio](#)

Drop files here to open



Android > styles.xml x strings.xml x colors.xml x activity_main.xml x

1: Project

- app
 - manifests
 - java
 - generatedjava
 - res
 - drawable
 - layout
 - activity_main.xml
 - mipmap
 - values
 - colors.xml
 - strings.xml
 - styles.xml
- Gradle Scripts

2: Favorites

Build Variants

7: Structure

Palette

- Common
 - Ab TextView
 - Button
 - ImageView
 - RecyclerView
 - <> <fragment>
 - ScrollView
 - Switch
- Text
- Buttons
- Widgets
- Layouts
- Container
- Google

Component Tree

- ConstraintLayout
 - Ab TextView - "Hello World!"

Design Text

Build Sync

```
:app:splitDiscoveryTaskDebug UP-TO-DATE
:app:processDebugResources
:app:generateDebugSources

BUILD SUCCESSFUL in 3s
13 actionable tasks: 3 executed, 10 up-to-date
```

Logcat Terminal Build TODO

Event Log

Context: <no context>

Device File Explorer

Emulador

Palette



Common

Ab TextView

Text

Buttons

Widgets

Layouts

Containers

Google

Legacy

Button

ImageView

RecyclerView

<> <fragment>

ScrollView

Switch

Component Tree

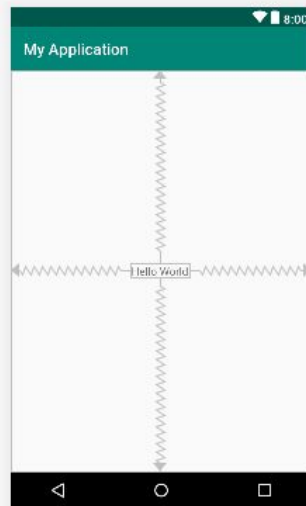


ConstraintLayout

Ab TextView "Hello World!"

Design

Text






Your Virtual Devices

Android Studio

Type	Name	Play Store	Resolution	API	Target	CPU/ABI	Size on Disk	Actions
	Nexus 5X API 24		1080 × 1920: 420dpi	24	Android 7.0 (Google Play)	x86	10 GB	  
	Nexus 5X API 19		1080 × 1920: 420dpi	19	Android 4.4 (Google APIs)	x86	5,1 GB	  

 Create Virtual Device...



Select Hardware

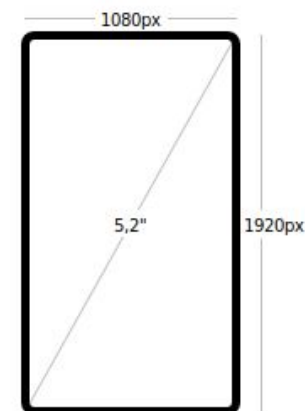
Android Studio

Choose a device definition

Category	Name ▾	Play Store	Size	Resolution	Density
TV	Pixel		5,0"	1080x1920	420dpi
Phone	Nexus 5		4,0"	480x800	hdpi
Wear OS	Nexus One		3,7"	480x800	hdpi
Tablet	Nexus 6P		5,7"	1440x2560	560dpi
	Nexus 6		5,96"	1440x2560	560dpi
	Nexus 5X		5,2"	1080x1920	420dpi
	Nexus 5		4,95"	1080x1920	xxhdpi
	Nexus 4		4,7"	768x1280	xhdpi

New Hardware ProfileImport Hardware Profiles

Nexus 5X



Size: large
Ratio: long
Density: 420dpi

Clone Device...PreviousNextCancelFinishHelp



Select Hardware

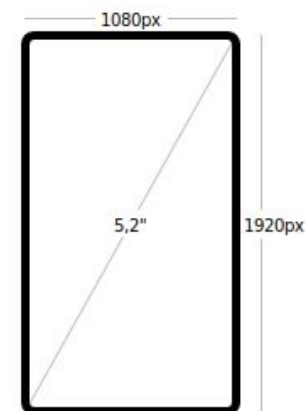
Android Studio

Choose a device definition

Q					
Category	Name ▾	Play Store	Size	Resolution	Density
TV	Pixel	▶	5,0"	1080x1920	420dpi
Phone	Nexus 5		4,0"	480x800	hdpi
Wear OS	Nexus One		3,7"	480x800	hdpi
Tablet	Nexus 6P		5,7"	1440x2560	560dpi
	Nexus 6		5,96"	1440x2560	560dpi
	Nexus 5X	▶	5,2"	1080x1920	420dpi
	Nexus 5	▶	4,95"	1080x1920	xxhdpi
	Nexus 4		4,7"	768x1280	xhdpi

New Hardware ProfileImport Hardware Profiles

Nexus 5X



Size: large
Ratio: long
Density: 420dpi

Clone Device...Previous**Next**CancelFinishHelp



System Image

Android Studio

Select a system image

Recommended

x86 Images

Other Images

Release Name	API Level ▾	ABI	Target
Q Download	Q	x86	Android API Q (Google Play)
Pie Download	28	x86	Android 9.0 (Google Play)
Oreo Download	27	x86	Android 8.1 (Google Play)
Oreo Download	26	x86	Android 8.0 (Google Play)
Nougat Download	25	x86	Android 7.1.1 (Google Play)
Nougat	24	x86	Android 7.0 (Google Play)



Nougat



API Level

24

Android

7.0**Google Inc.**

System Image

x86

We recommend these Google Play images because this device is compatible with Google Play.

Questions on API level?

See the [API level distribution chart](#)

Previous

Next

Cancel

Finish

Help



System Image

Android Studio

Select a system image

Recommended x86 Images Other Images

Release Name	API Level ▾	ABI	Target
<i>Lollipop</i> Download	22	x86	Android 5.1
<i>Lollipop</i> Download	22	x86_64	Android 5.1
<i>Lollipop</i> Download	21	x86_64	Android 5.0 (Google APIs)
<i>Lollipop</i> Download	21	x86	Android 5.0 (Google APIs)
<i>Lollipop</i> Download	21	x86_64	Android 5.0
<i>Lollipop</i> Download	21	x86	Android 5.0
KitKat	19	x86	Android 4.4 (Google APIs)
<i>KitKat</i> Download	19	x86	Android 4.4
<i>Jelly Bean</i> Download	18	x86	Android 4.3 (Google APIs)
<i>Jelly Bean</i> Download	18	x86	Android 4.3



KitKat



API Level

19

Android

4.4**Google Inc.**

System Image

x86

Questions on API level?

See the [API level distribution chart](#)

Previous

Next

Cancel

Finish

Help



Android Virtual Device (AVD)

Android Studio

Verify Configuration

AVD Name Nexus 5X API 19 2



Nexus 5X

5.2 1080x1920 420dpi

Change...



KitKat

Android 4.4 x86

Change...

Startup orientation



Portrait



Landscape

Emulated
Performance

Graphics: Automatic

Device Frame ☐ Enable Device Frame

Show Advanced Settings

Enable device frame

Enable a frame around the Android emulator window that mimics the look of a real Android device. Click on Show Advanced Settings for more options.

Previous

Next

Cancel

Finish

Help

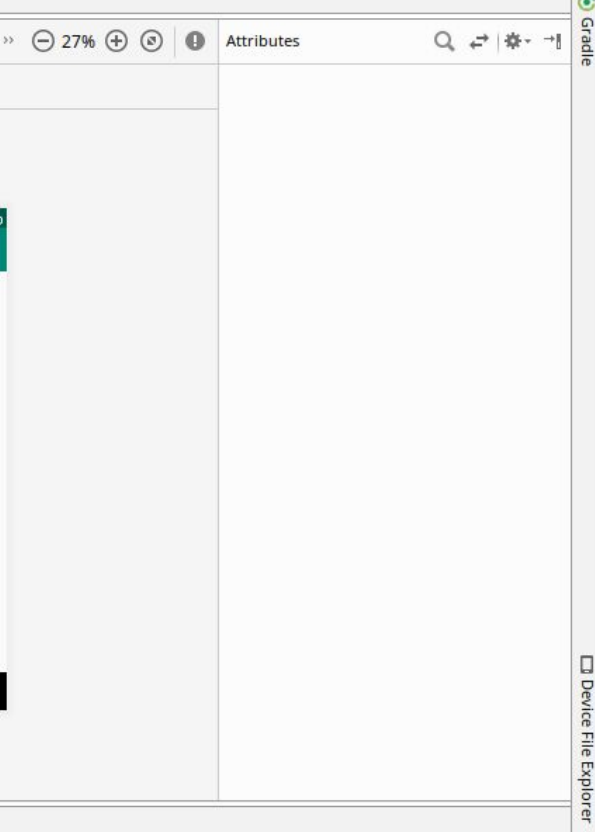
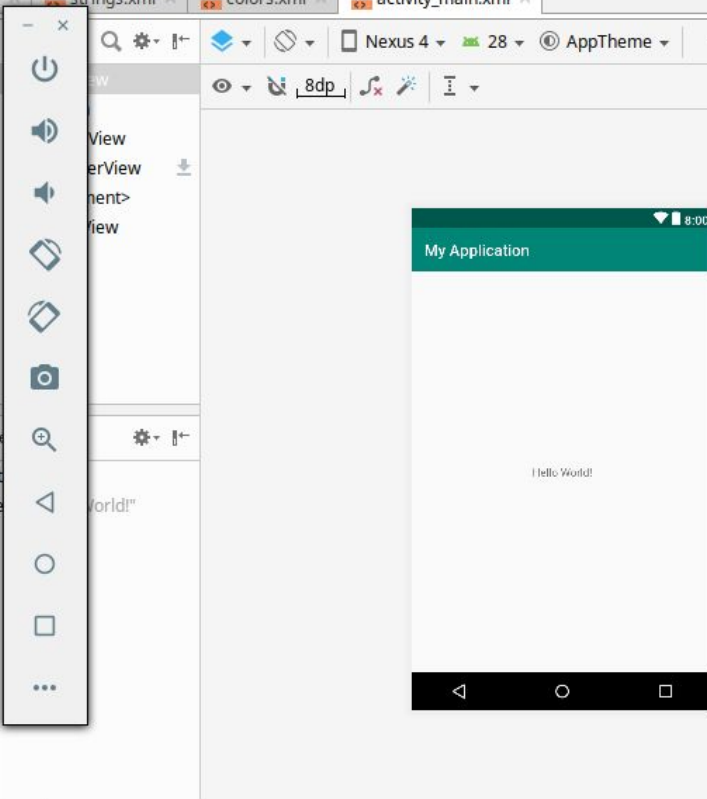
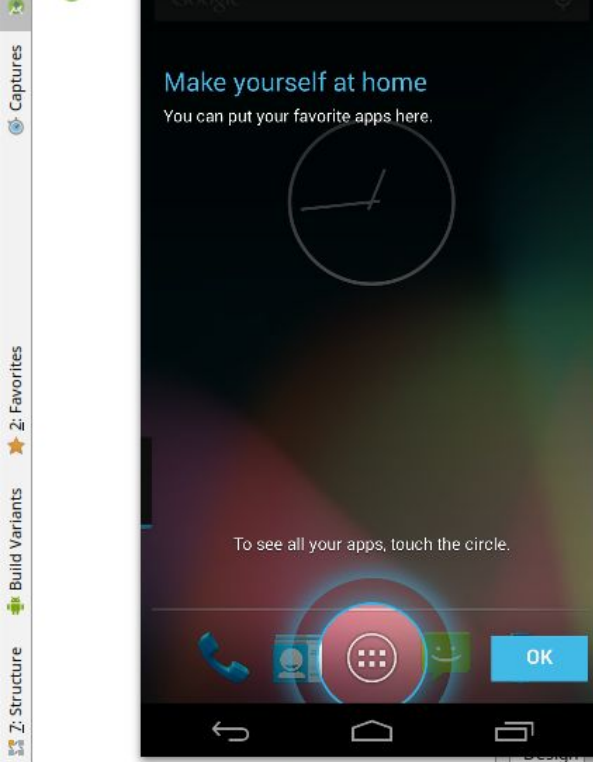


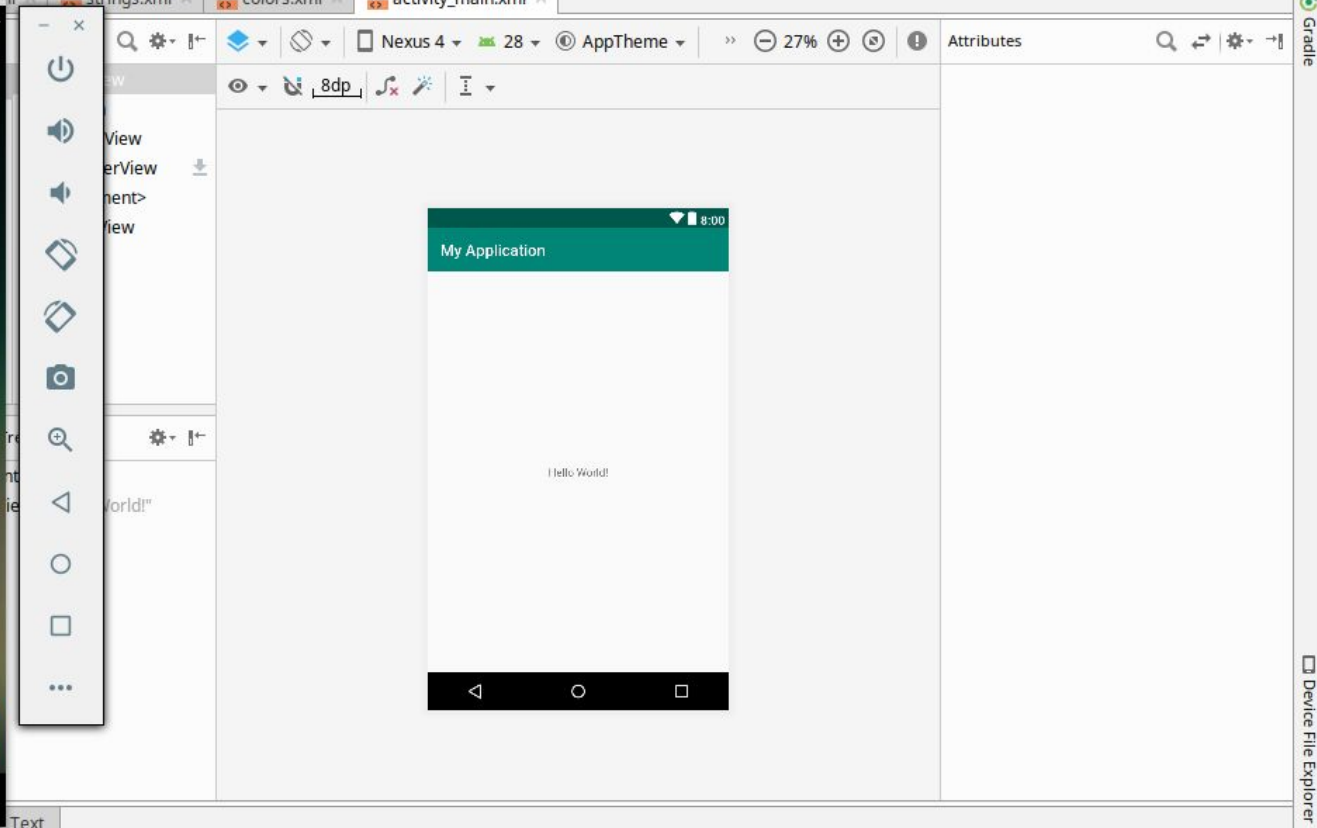
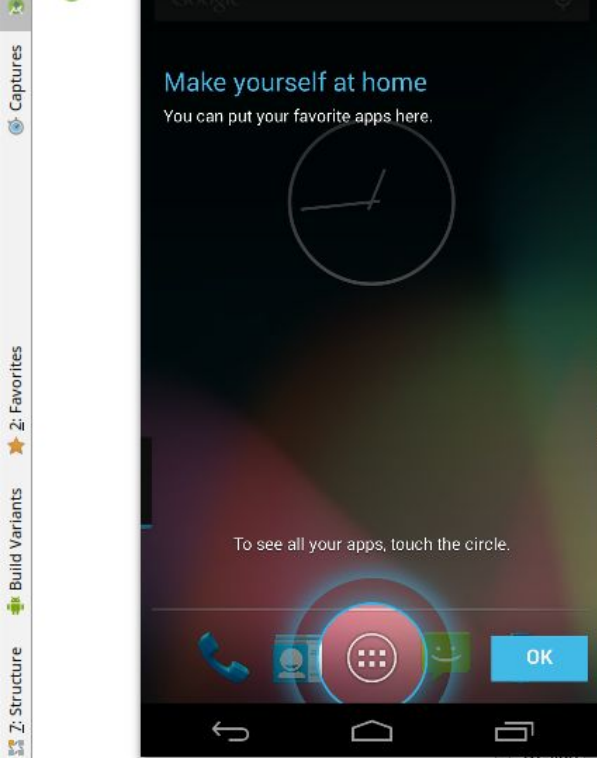
Your Virtual Devices

Android Studio

Type	Name	Play Store	Resolution	API	Target	CPU/ABI	Size on Disk	Actions
	Nexus 5X API 24		1080 × 1920: 420dpi	24	Android 7.0 (Google Play)	x86	10 GB	
	Nexus 5X API 19		1080 × 1920: 420dpi	19	Android 4.4 (Google APIs)	x86	5,1 GB	
	Nexus 5X API 19 2		1080 × 1920: 420dpi	19	Android 4.4 (Google APIs)	x86	2,5 GB	

[+ Create Virtual Device...](#)







Select Deployment Target

Connected Devices

 Nexus 5X API 19 2 (Android 4.4.2, API 19)

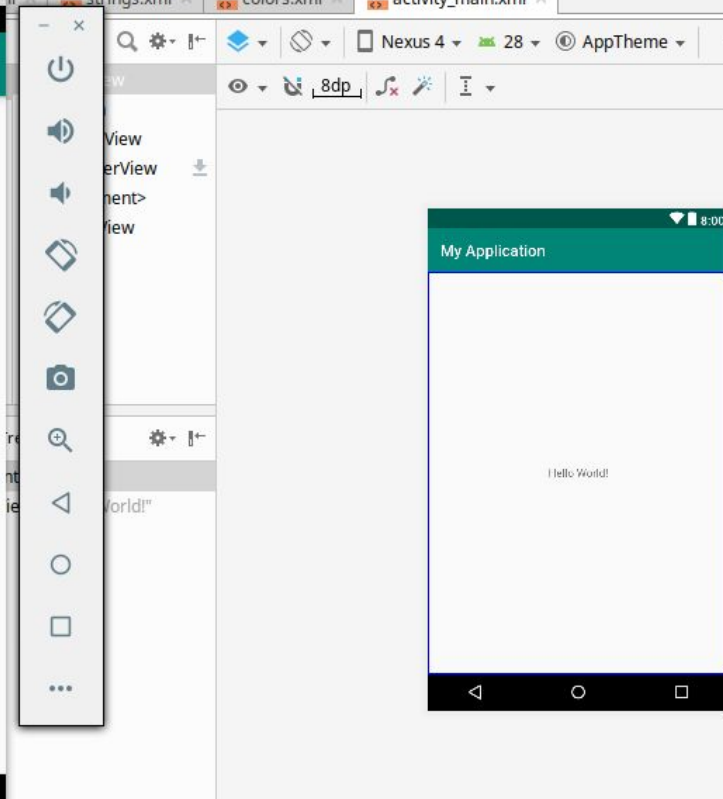
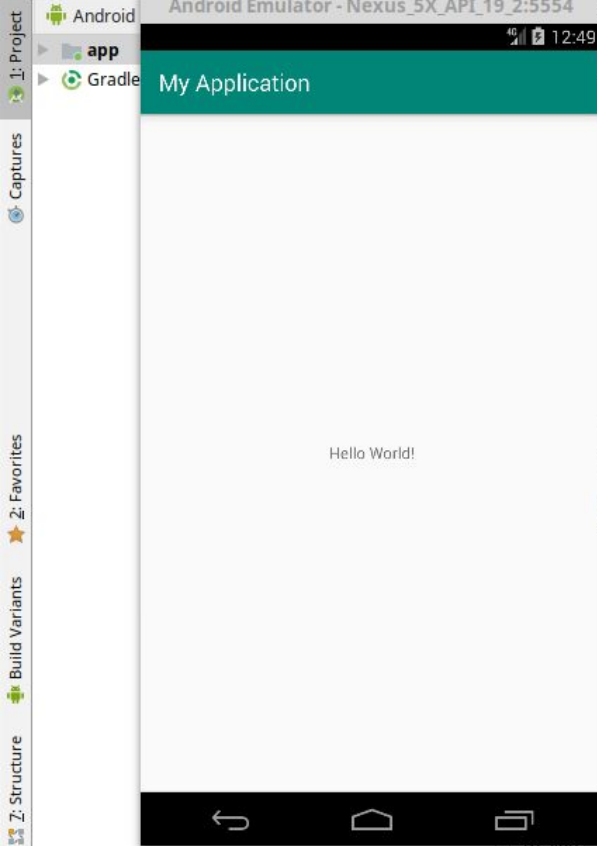
Available Virtual Devices

 Nexus 5X API 24 Nexus 5X API 19[Create New Virtual Device](#)☒ Use same selection for future launches

OK

Cancel

Help



Attributes

ID	<input type="text"/>
layout_width	<input type="text" value="match_parent"/>
layout_height	<input type="text" value="match_parent"/>
▼ ConstraintLayout	
minWidth	<input type="text"/>
maxWidth	<input type="text"/>
minHeight	<input type="text"/>
maxHeight	<input type="text"/>
▼ Favorite Attributes	
visibility	<input type="text" value="none"/>

[View all attributes](#)

Emulador

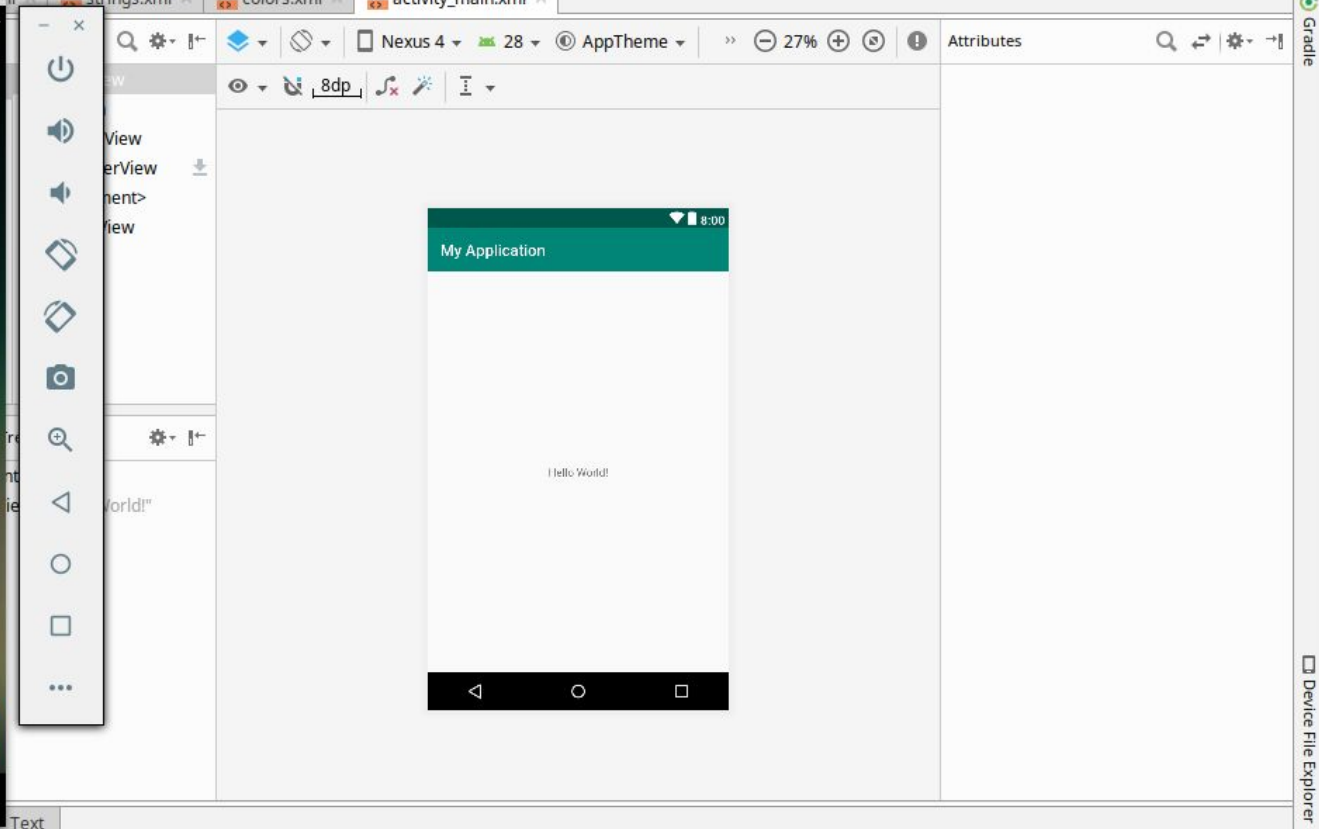
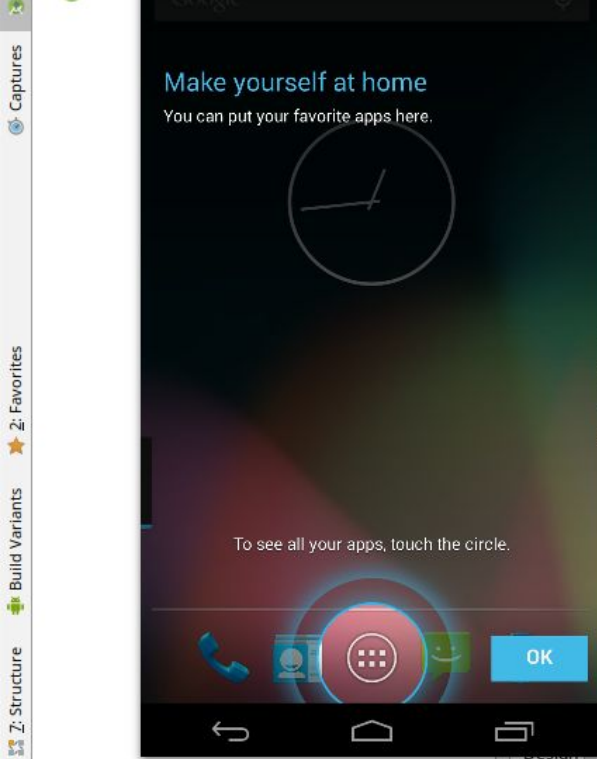
- Se caso o emulador demorar muito a iniciar, pode ser o caso de apagar os dados de cache do mesmo.

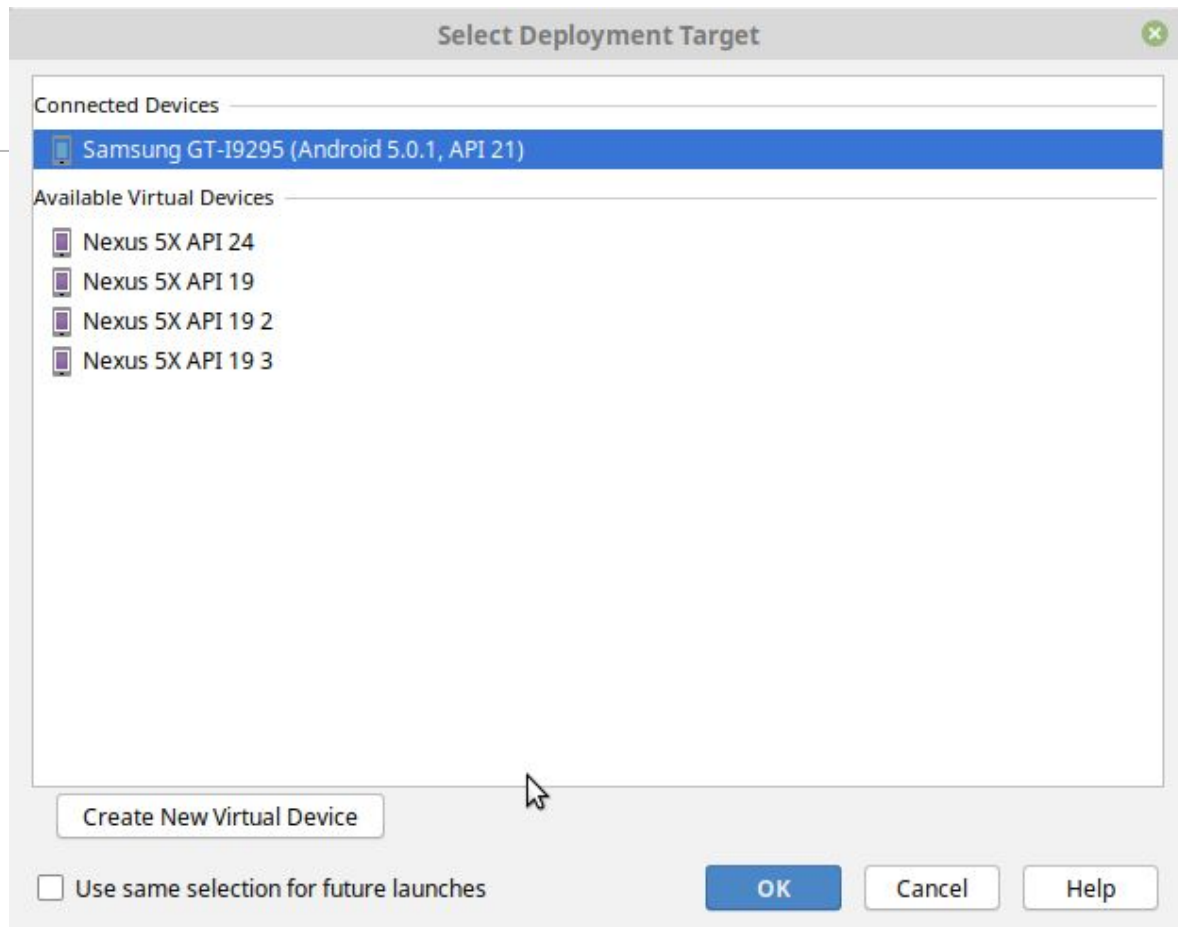


Dispositivo físico

Dispositivo físico

- Abra o aplicativo “Settings” (Configurações);
- No Android 8.0 ou em versões superiores, selecione “System” (Sistema);
- Role a tela e selecione “About phone” (Sobre o telefone);
- Role a tela e toque 7 vezes em “Build number” (Versão do Android).
- Retorne à tela anterior “Settings” (Configurações) e role até o final;
- Você deve encontrar agora as “Developer options” (Opções do Desenvolvedor).
- Ativar USB debugging.





Link importante

- <https://developer.android.com/>
- <https://tecnoblog.net/277750/como-ativar-o-modo-desenvolvedor-no-android/>



Dúvidas??

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