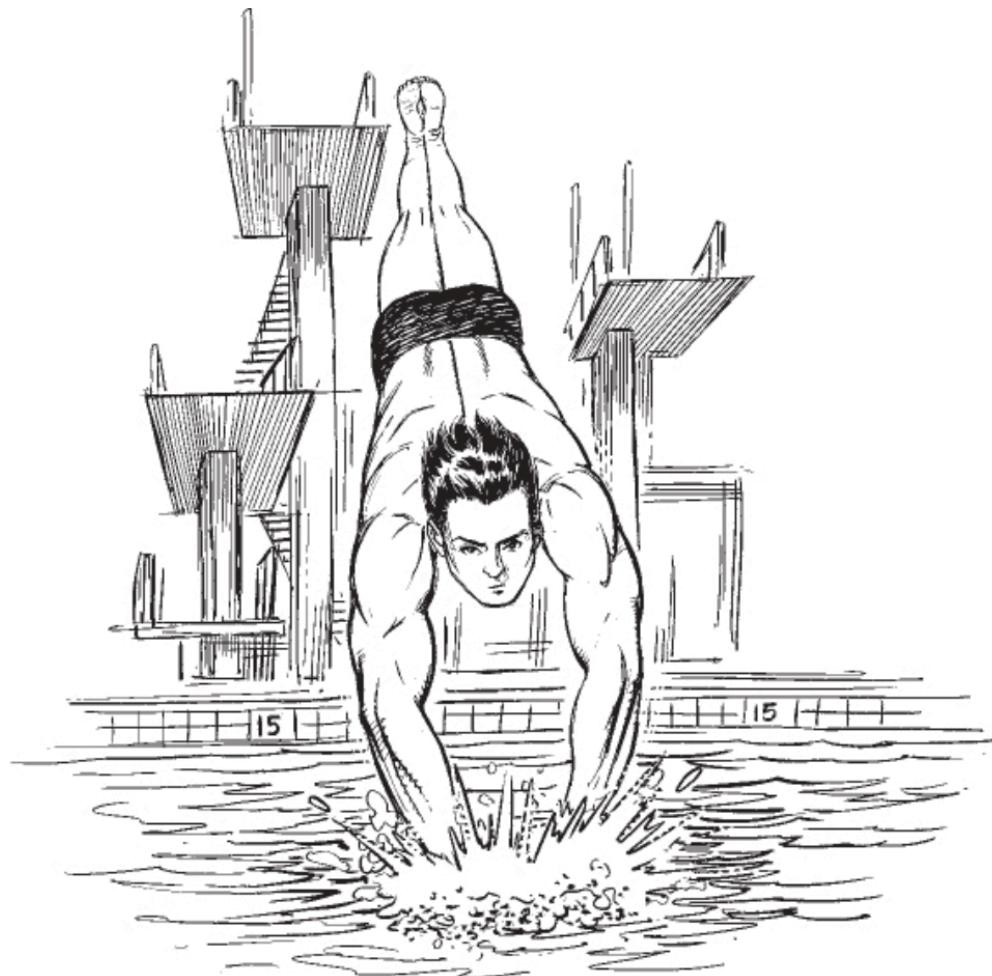


1

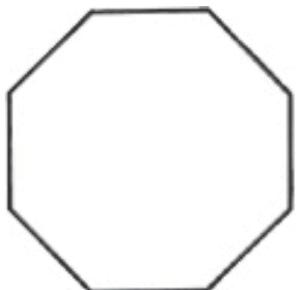
Introducción a Android y Android Studio



Android

- Android es la plataforma móvil más popular del mundo. En el último conteo había tres mil millones de dispositivos Android en el mundo, y sigue creciendo.
- Android es una plataforma de código abierto basada en Linux y manejada por Google. Es un Marco de desarrollo poderoso que incluye todo lo necesario para construir buenas aplicaciones. Inclusive, permite implementar estas aplicaciones para una variedad de dispositivos (teléfonos, tabletas, relojes y más).
- Entonces, de qué se compone una aplicación Android?

Android

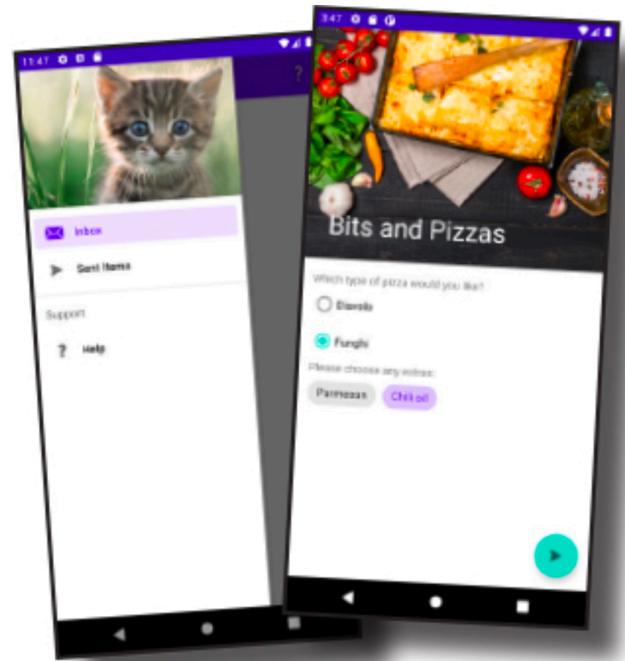


MainActivity

← You define what the app does using activities.

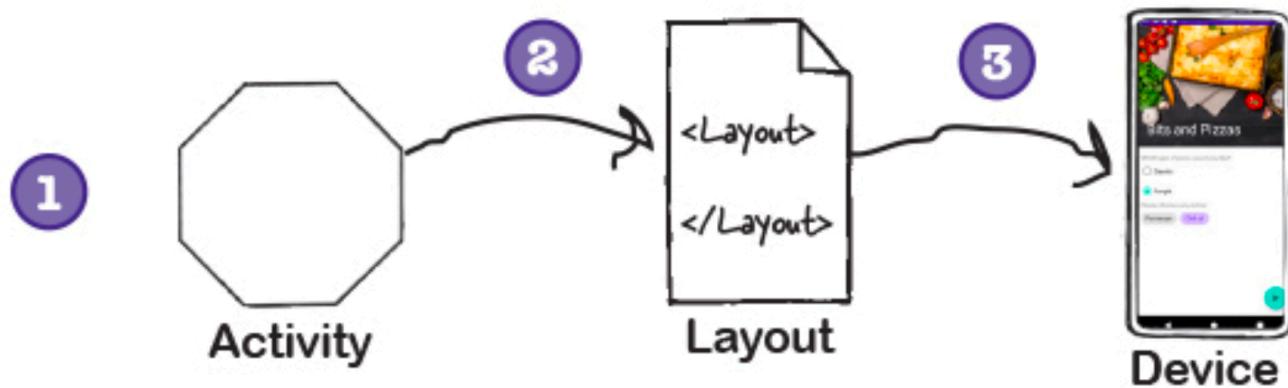


There may be extra files too, such as image files.



← Layouts tell Android what the screens in your app look like.

Android

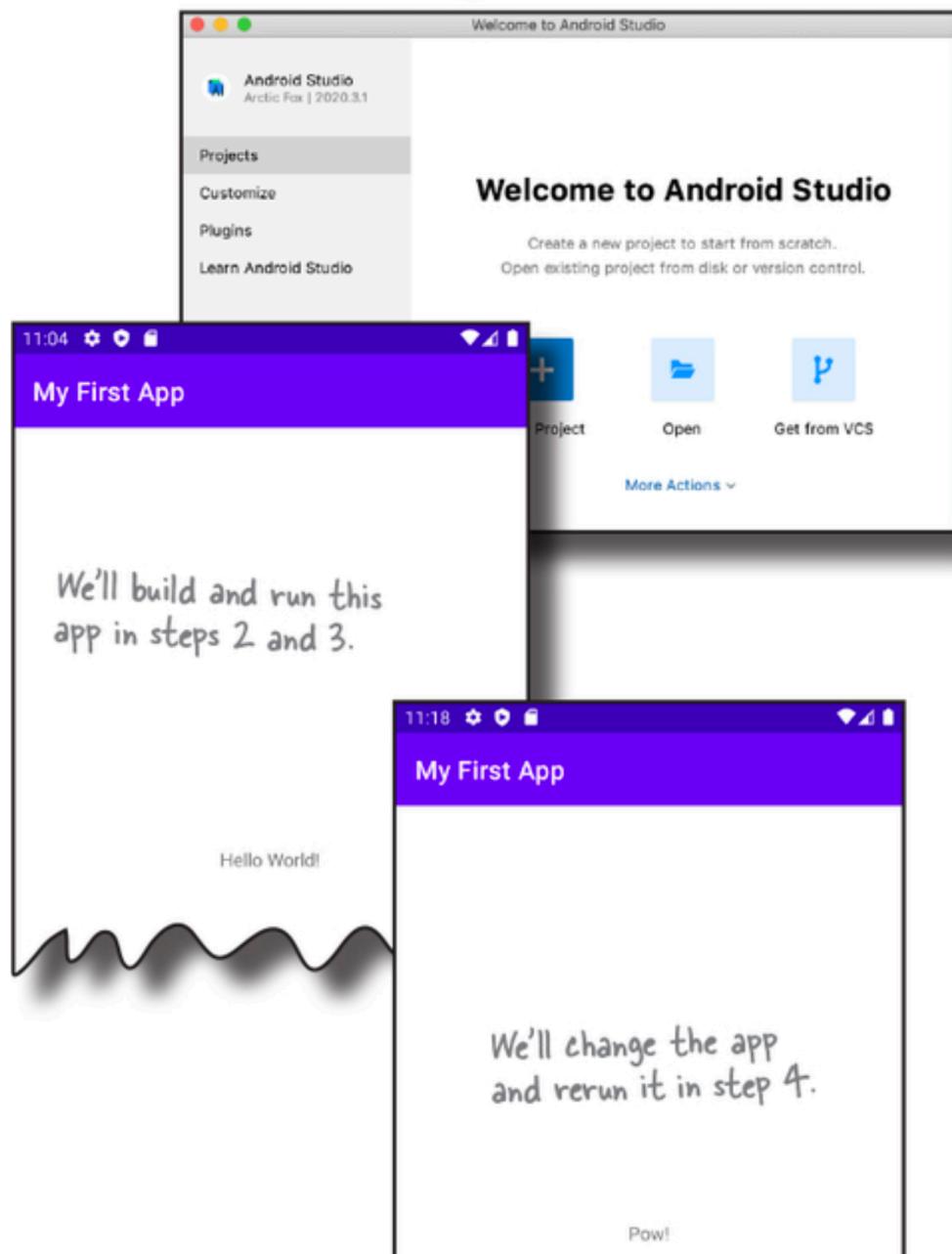


Android

- Los pasos para crear una aplicación Android son:
 1. Configurar un ambiente de desarrollo.
 2. Construir una aplicación básica.
 3. Ejecutar la aplicación.
 4. Modificar la aplicación.

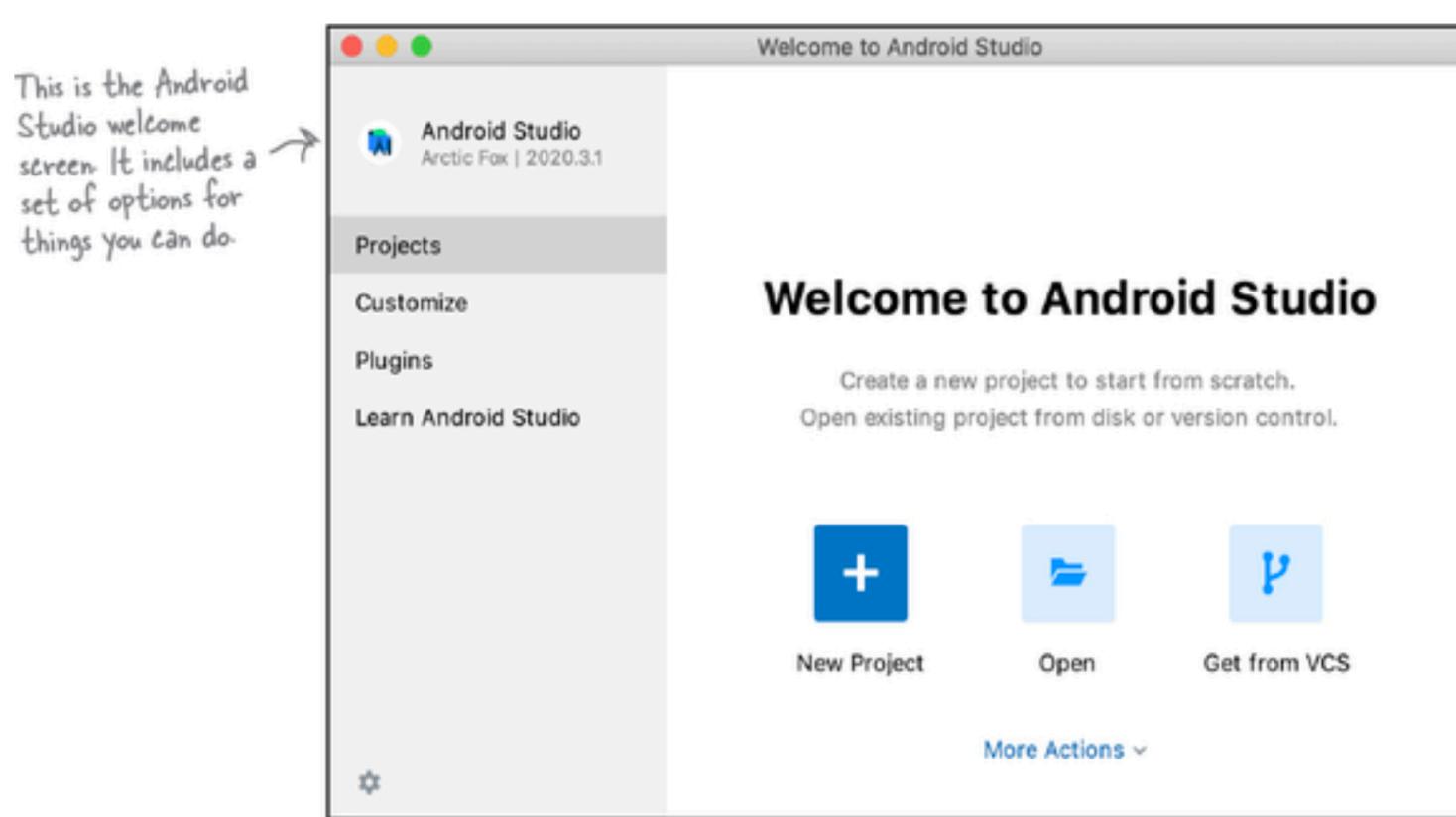
Android

We're going to use Android Studio
to build all the apps in this book.
↓



Android

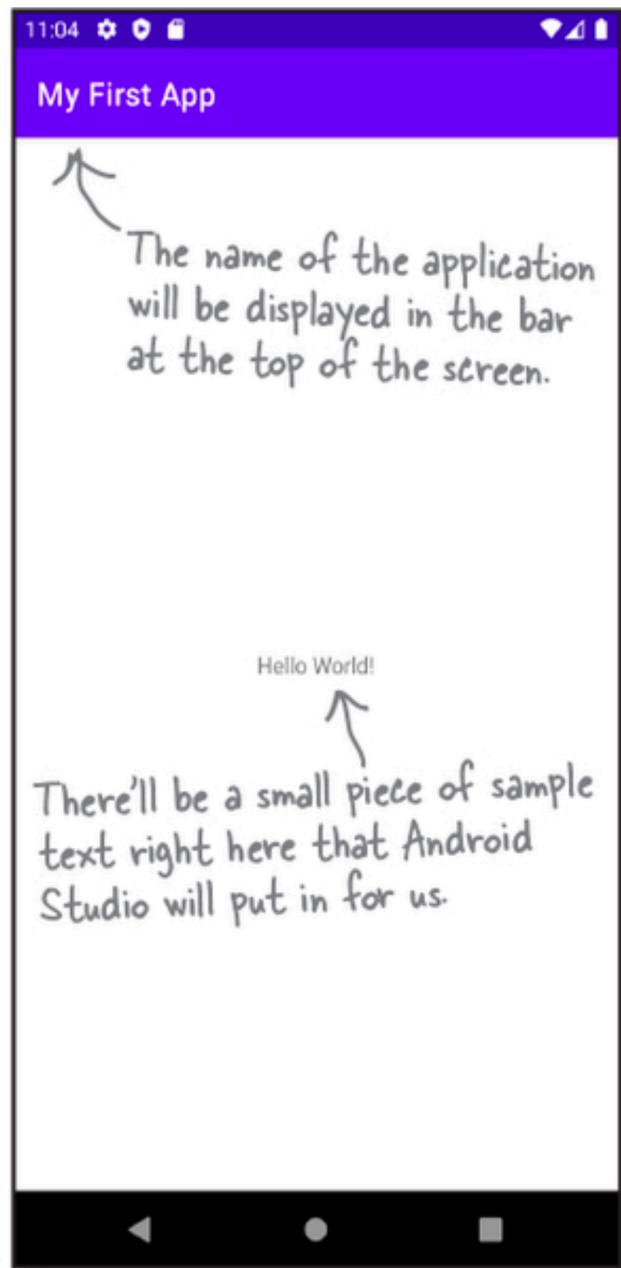
1. Configurar un ambiente de desarrollo.



Android

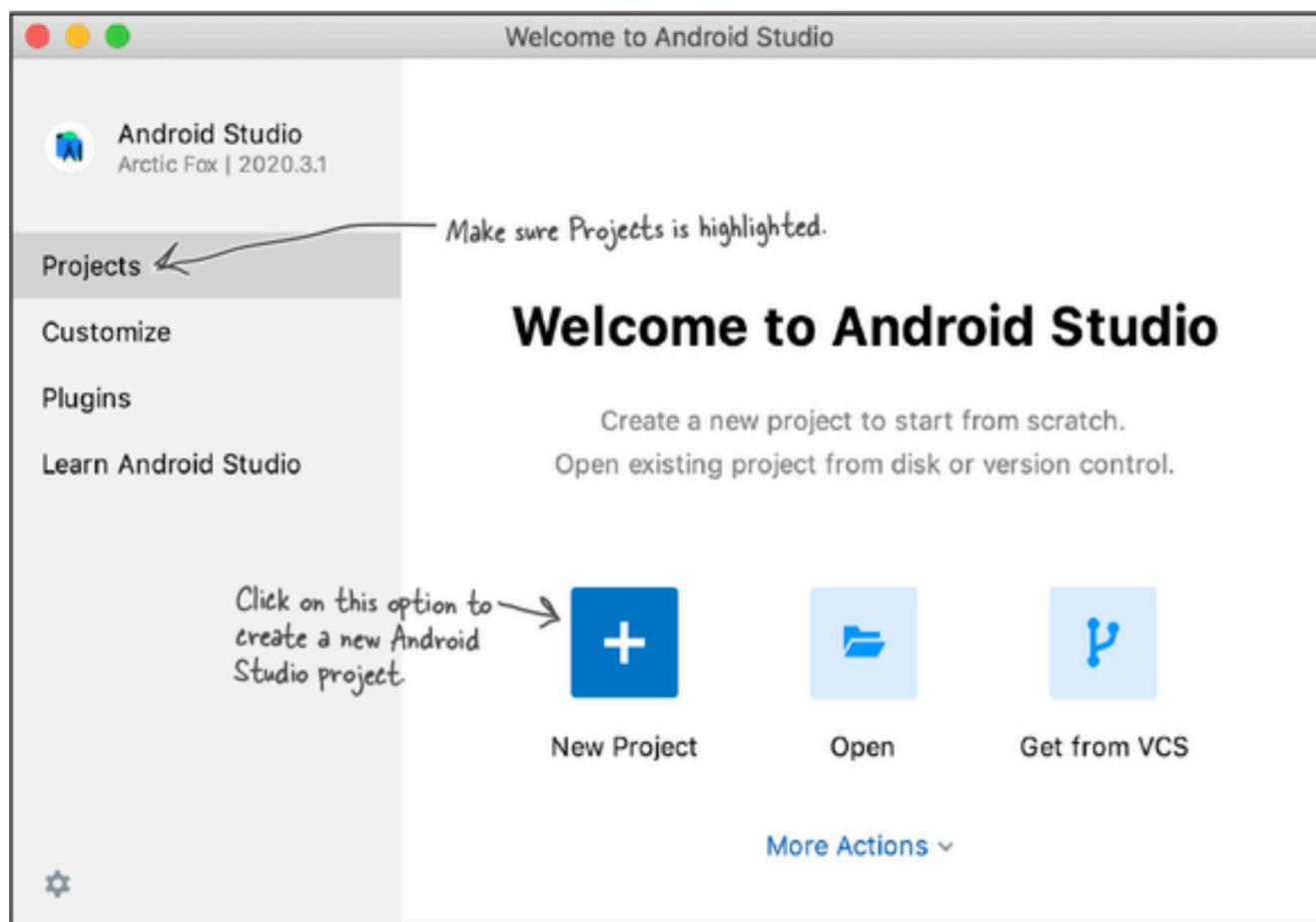
2. Construir una aplicación básica.

This is the app you're going to build. It's very simple, but → it's all you need for your very first Android app.



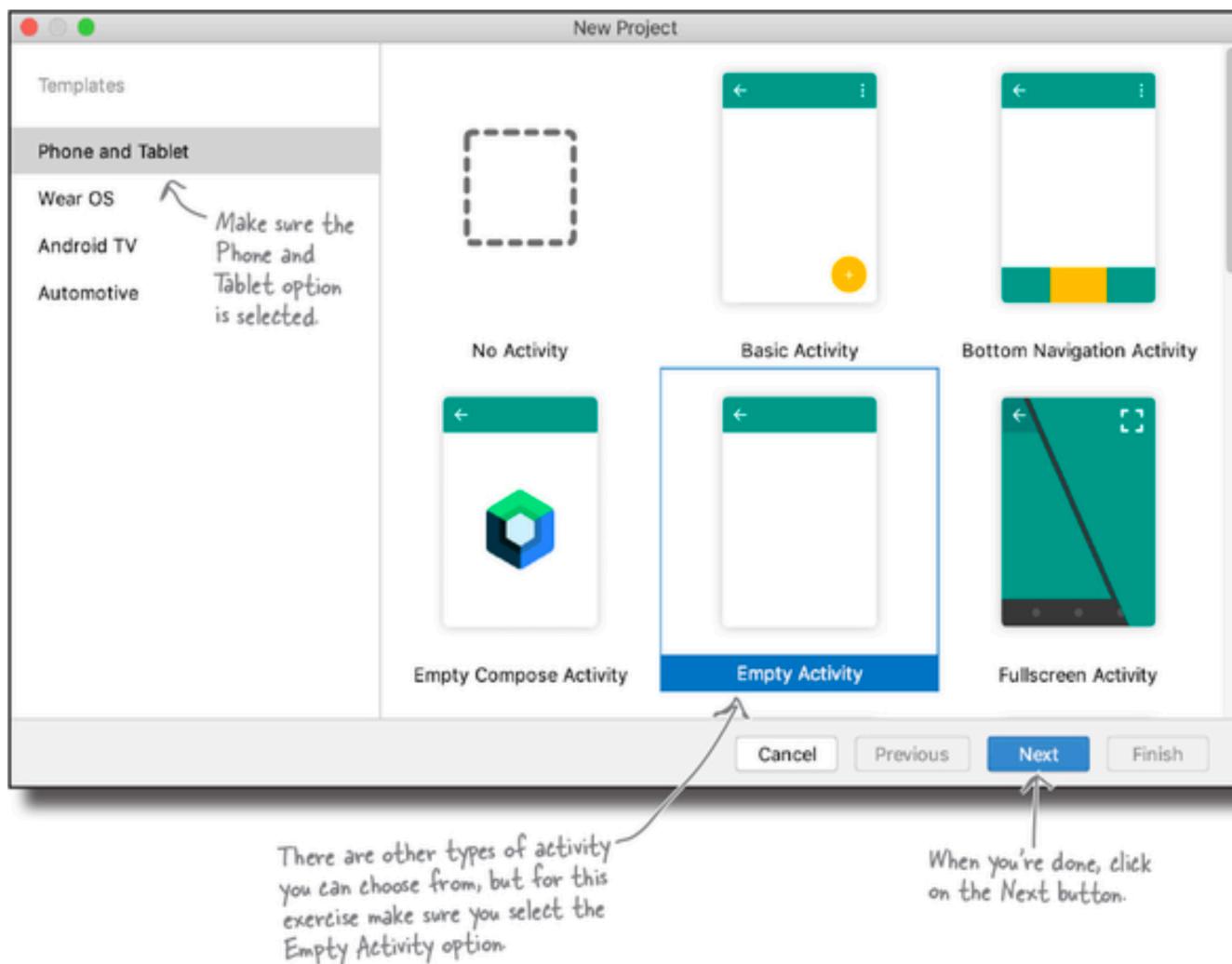
Android

- Crear un nuevo proyecto.



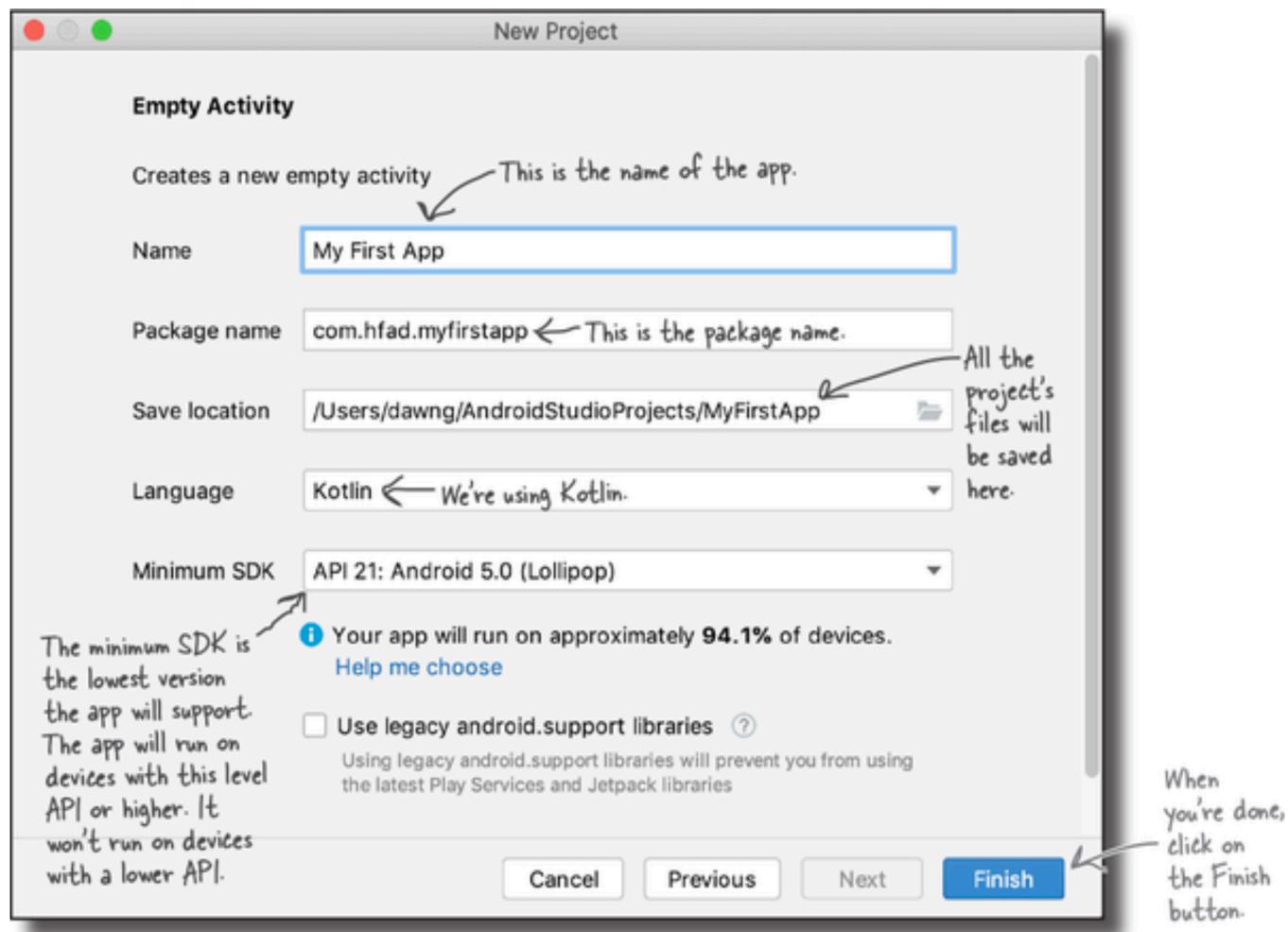
Android

- Seleccionar una plantilla.



Android

- Configurar el proyecto.



Android

Version	Code name	API level
1.0		1
1.1	Petit Four	2
1.5	Cupcake	3
1.6	Donut	4
2.0–2.1	Eclair	5–7
2.2–2.2.3	Froyo	8
2.3–2.3.7	Gingerbread	9–10
3.0–3.2.6	Honeycomb	11–13
4.0–4.0.4	Ice Cream Sandwich	14–15
4.1–4.3.1	Jelly Bean	16–18
4.4–4.4.4	KitKat	19–20
5.0–5.1.1	Lollipop	21–22
6.0–6.0.1	Marshmallow	23
7.0–7.1.2	Nougat	24–25
8.0–8.1	Oreo	26–27
9.0	Pie	28
10.0	10	29
11.0	11	30
12.0	12	31

Hardly anyone uses these versions anymore.

Most devices use one of these APIs.

Android

This is the project in Android Studio.

The screenshot shows the Android Studio interface with the title bar "My First App – MainActivity.kt [My_First_App.app]". The left sidebar shows the project structure for "MyFirstApp" with "app" selected. The main editor window displays the "MainActivity.kt" file:

```
1 package com.hfad.myfirstapp
2
3 import ...
4
5 class MainActivity : AppCompatActivity() {
6     override fun onCreate(savedInstanceState: Bundle?) {
7         super.onCreate(savedInstanceState)
8         setContentView(R.layout.activity_main)
9     }
10 }
11 }
```

A handwritten-style annotation with a downward arrow points from the text "This is the project in Android Studio." to the top of the code editor area. Another annotation with an upward arrow points from the text "This is the template code that Android Studio added for the activity. Don't worry about understanding the code right now, we'll go through it later." to the opening brace of the MainActivity class definition.

This is the template code that Android Studio added for the activity. Don't worry about understanding the code right now, we'll go through it later.

Resource Manager TODO Problems Git Terminal Logcat Profiler App Inspection Event Log Layout Inspector

* daemon started successfully (2 minutes ago) 1:1 LF UTF-8 4 spaces master ☺ ☹ ☻ ☻

Android

- Estructura del proyecto.

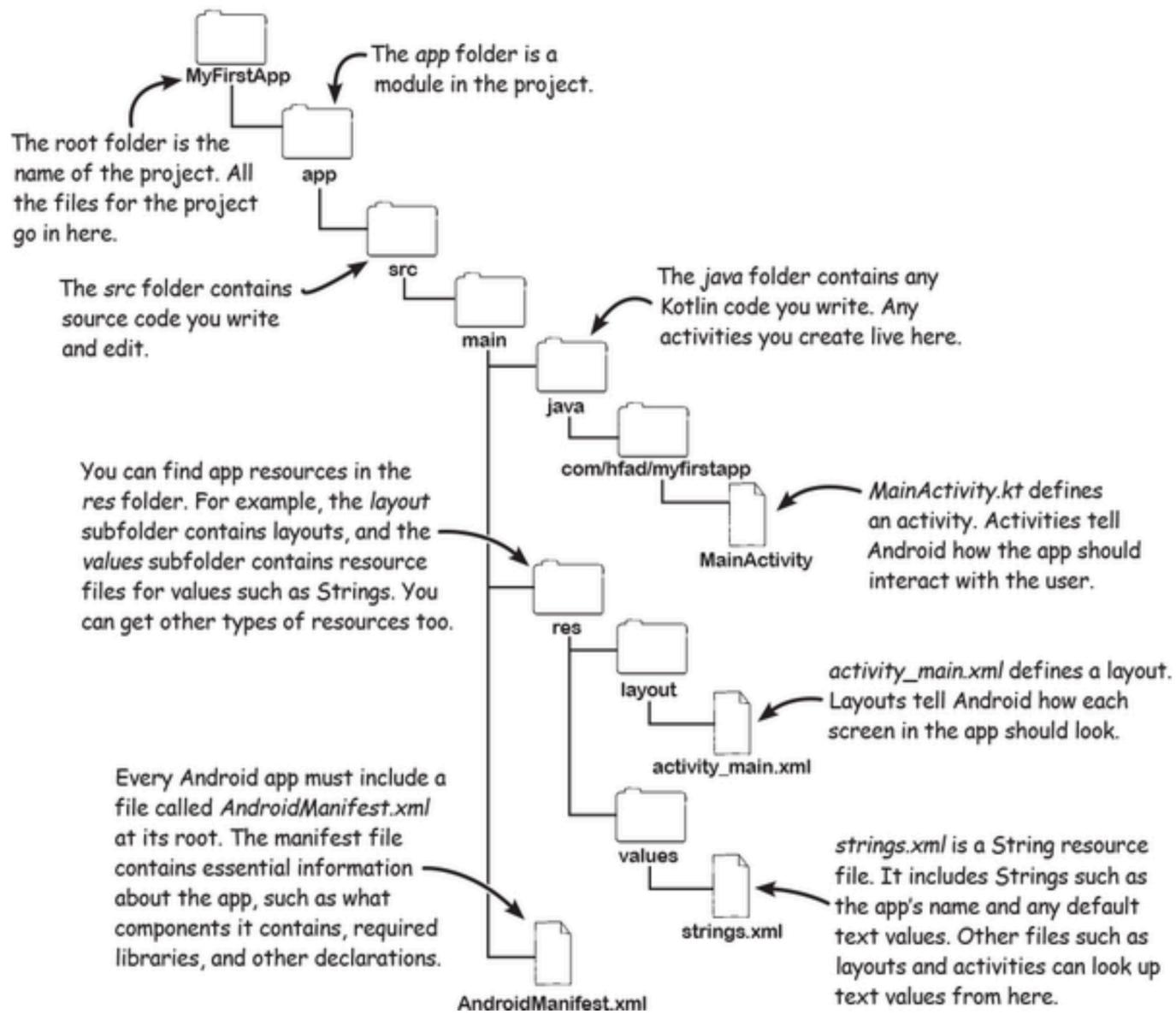


This is the name
of the project.

We're currently displaying files and folders using the Android view of the explorer, which is the default. You can choose a different explorer view by clicking on the arrow next to "Android."

These files and folders are all included in the project.

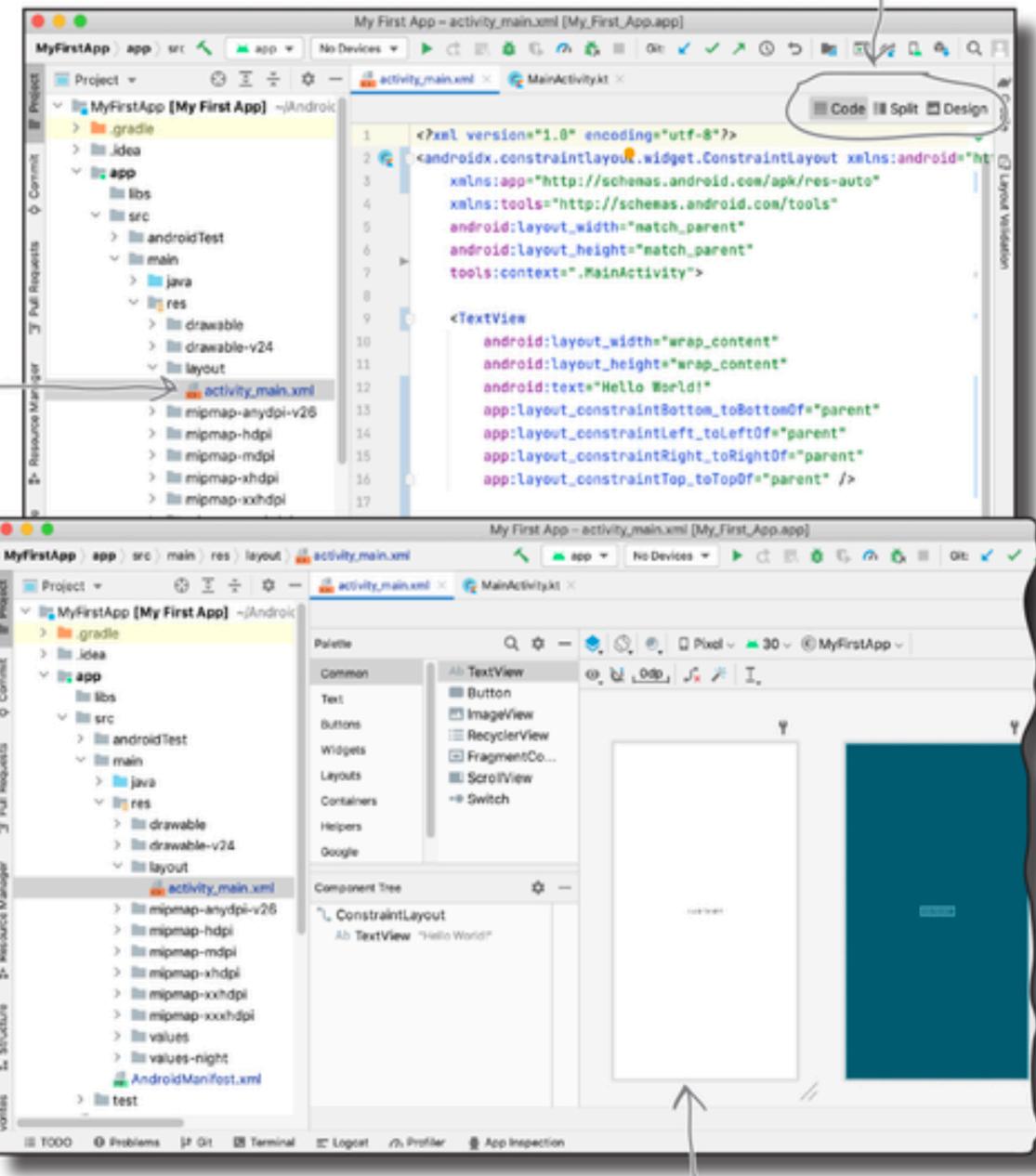
Android



Android

- Editores en Android Studio

Double-click on the file in the explorer and the file contents appear in the editor panel.



You can edit layouts using the visual editor by dragging and dropping components.

You dictate which editor you're using with these.

Android

- Partes de una actividad

MainActivity.kt

```
package com.hfad.myfirstapp

import androidx.appcompat.app.AppCompatActivity
import android.os.Bundle

class MainActivity : AppCompatActivity() {

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
    }
}
```

This is the package name.

These are Android classes used in **MainActivity**.

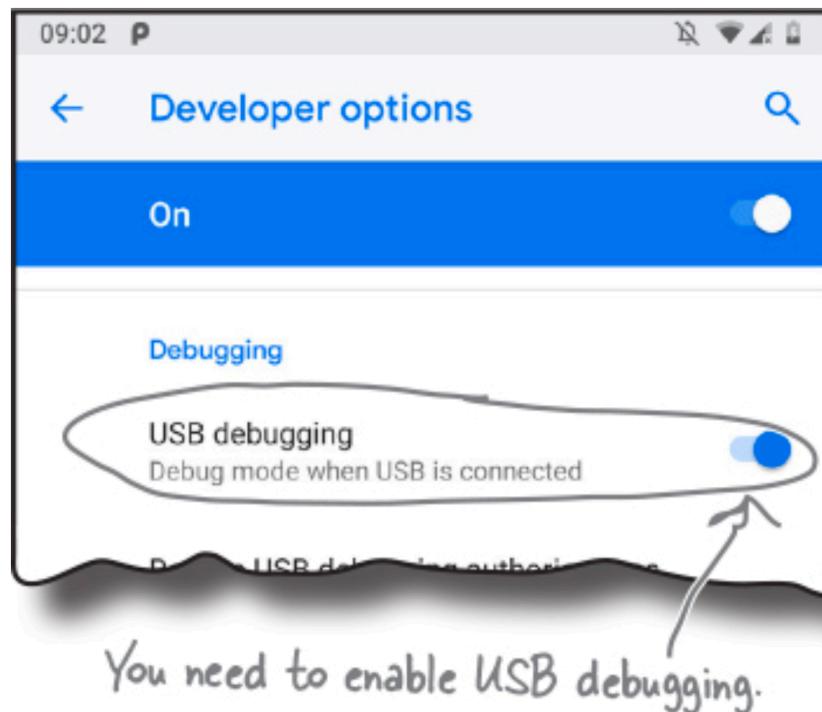
Specify which layout to use.

Implement the **onCreate ()** method from the **AppCompatActivity** class. This method is called when the activity is first created.

MainActivity extends the class **AppCompatActivity**.

Android

3. Ejecutar la aplicación.



- Habilitar depuración USB

Android

- Seleccionar dispositivo
(En caso de que exista un AVD disponible)



Make sure your device is selected before running the app.
Here, we're using a Pixel 3a XL.

Android

- Ejecución del AVD

This is an AVD that's running in the Android emulator. It's based on a Pixel 3 device running Android 11. It has the same device specifications, and runs just like the physical device.



Android

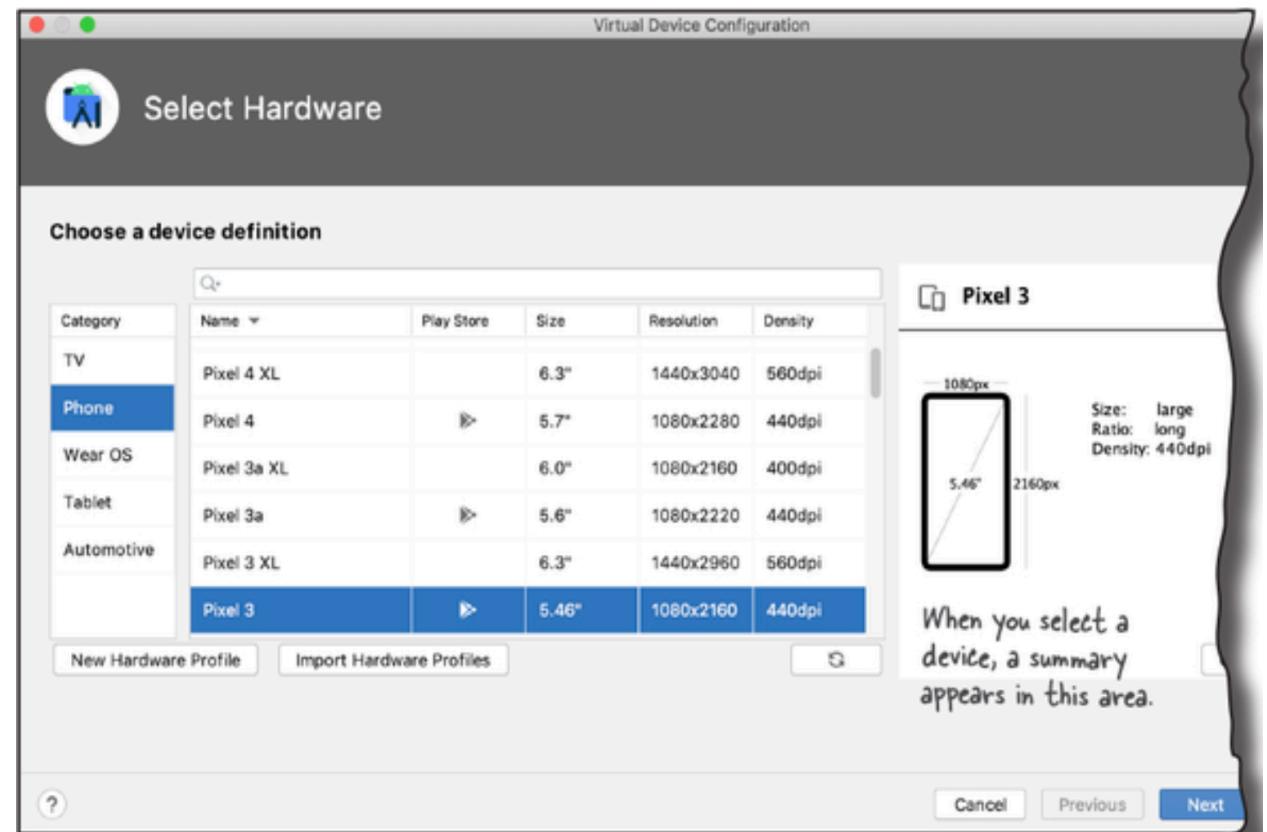
- Creación de un AVD (En caso de que no haya ninguno disponible)

Click on this button
to create an AVD.



Android

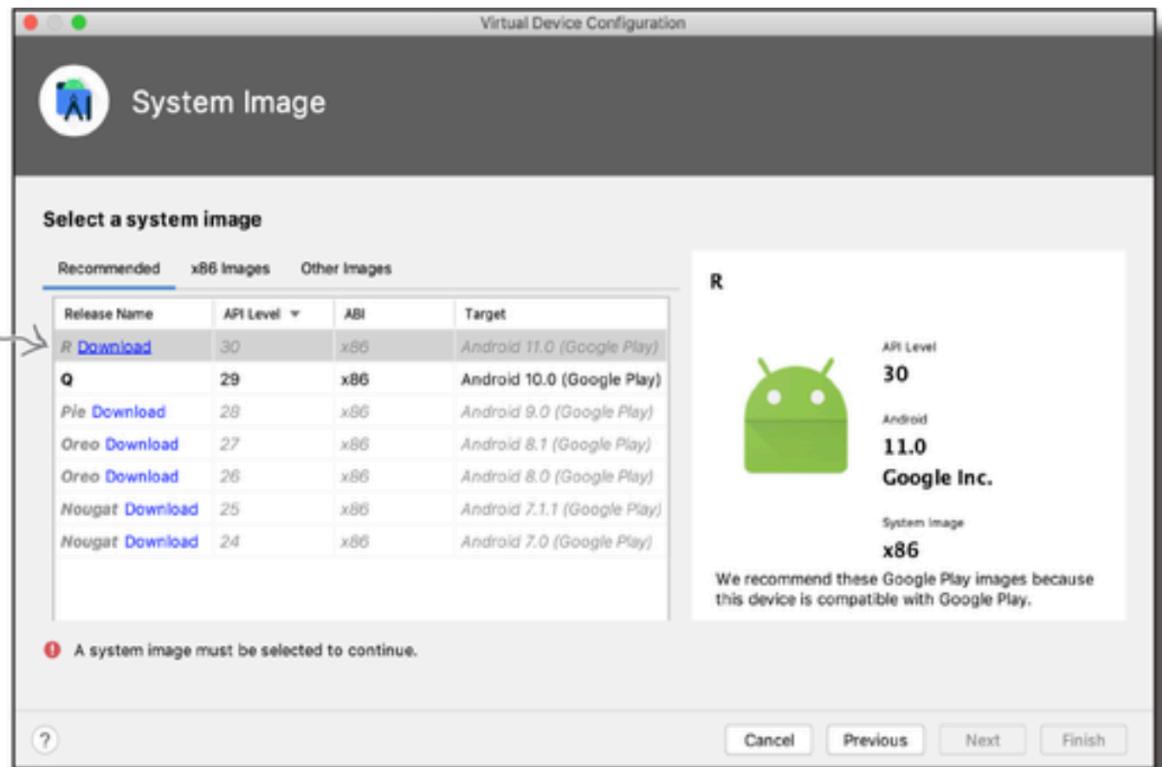
- Selección del dispositivo a emular



Android

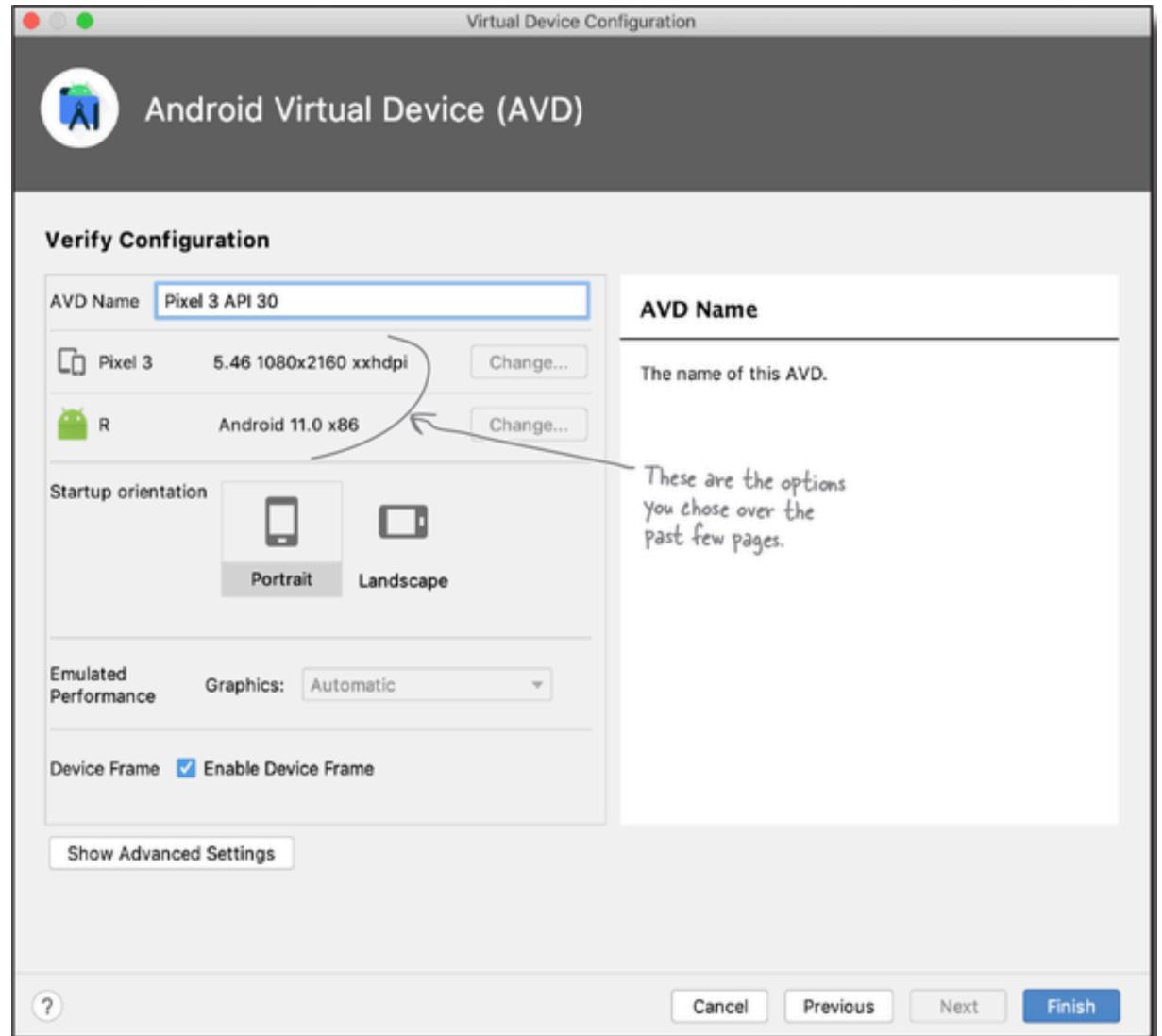
- Descarga de la imagen del dispositivo

If you don't have this system image installed, you'll be presented with a Download link. Click on this link to download and install the system image.



Android

- Configuración del AVD



Android

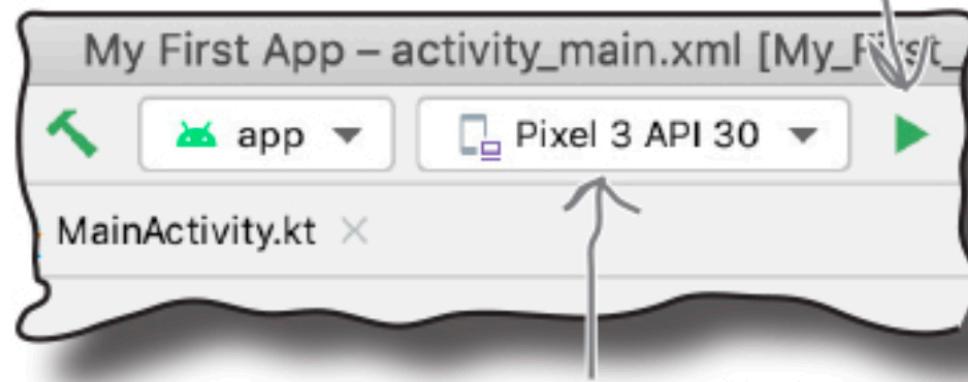
- Configuración del AVD



Android

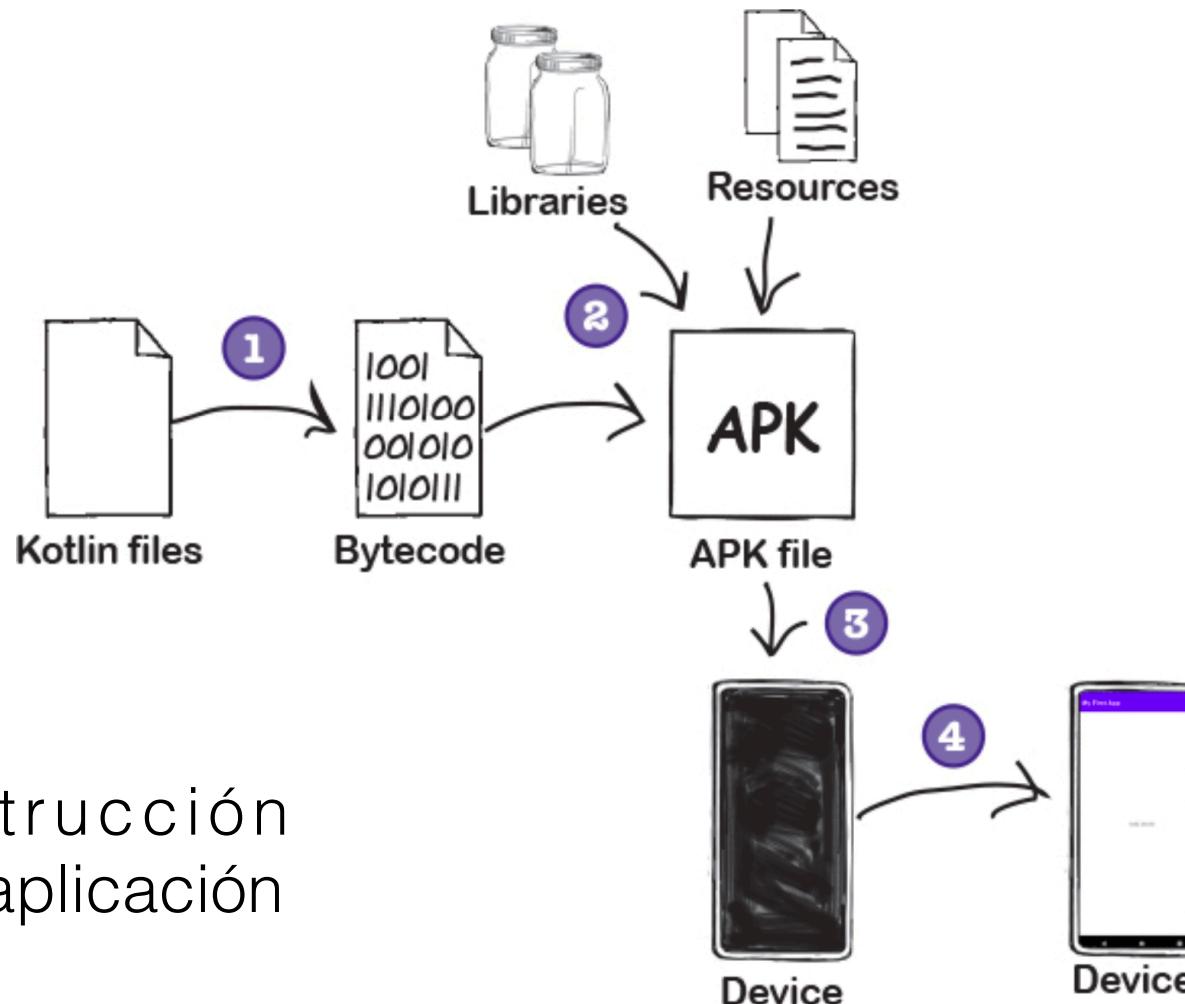
- Configuración del AVD

You can also run the app by clicking this button.



Make sure the AVD is selected before running the app. Here, we're using a Pixel 3.

Android



- Construcción de la aplicación

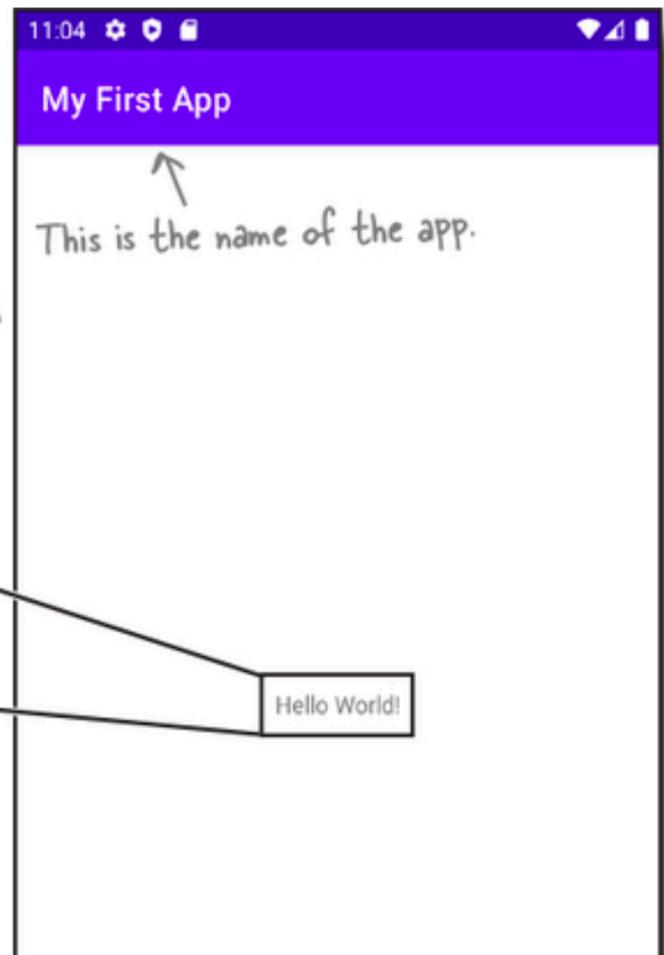
Android

- Aplicación en ejecución

It can take the app a while to load, so we suggest you find something else to do while you're waiting. Like quilting, or cooking a small meal.

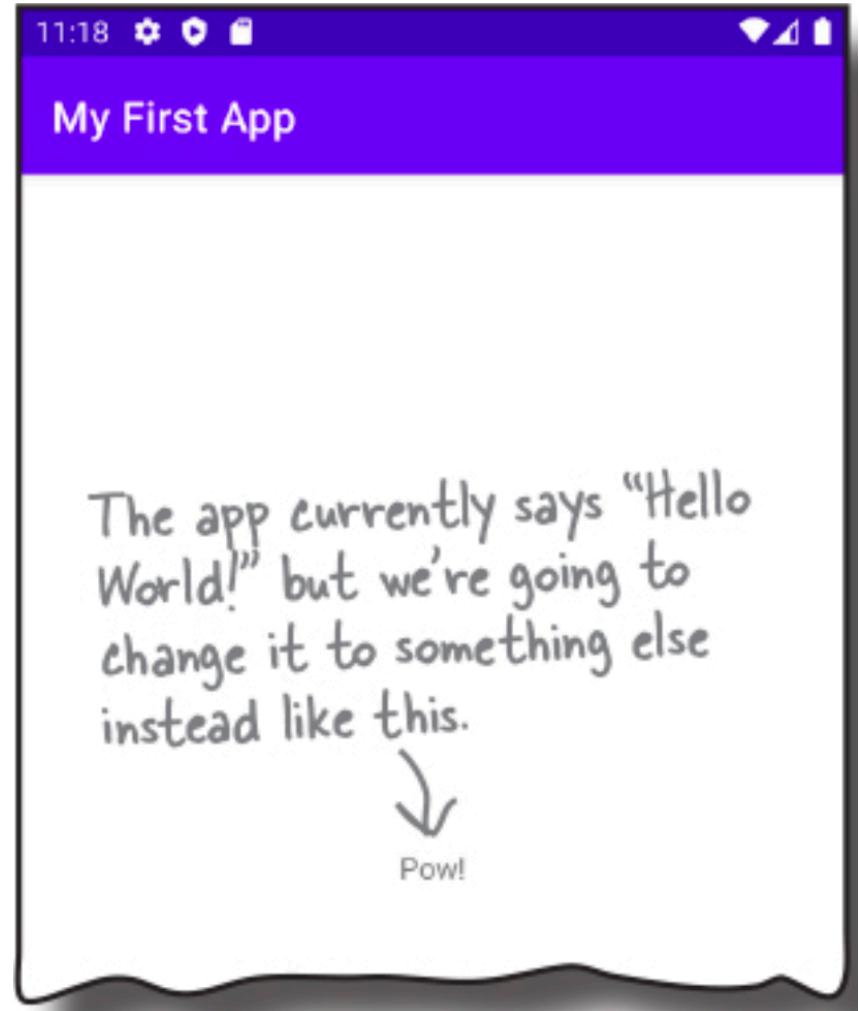


Android Studio created the text "Hello World!" without us telling it to.

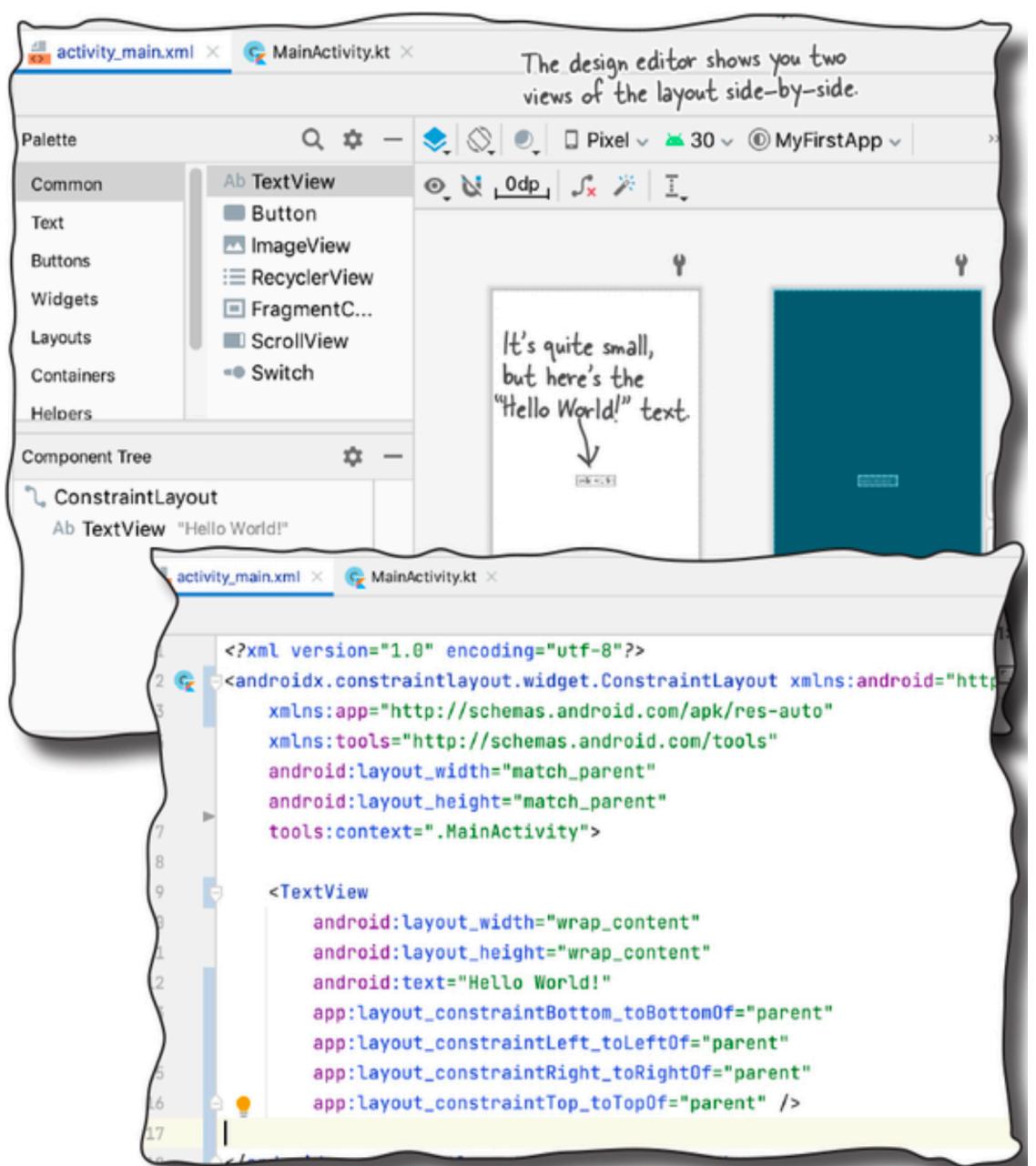
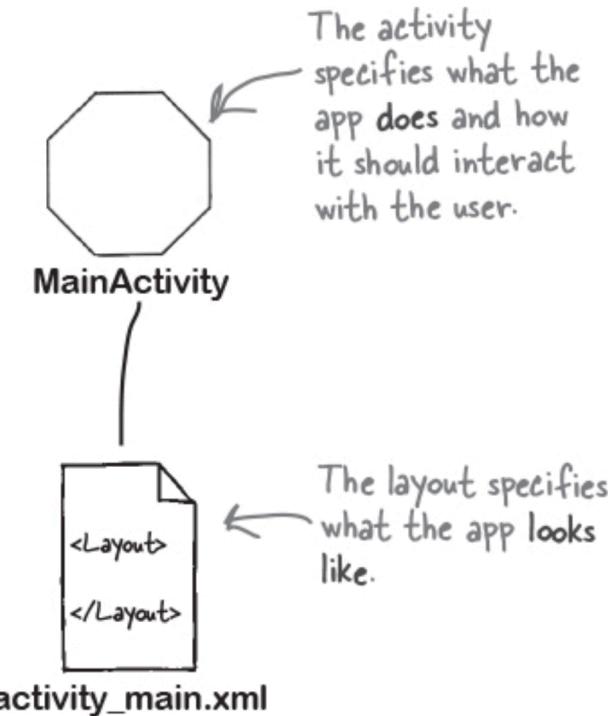


Android

4. Modificar la aplicación.



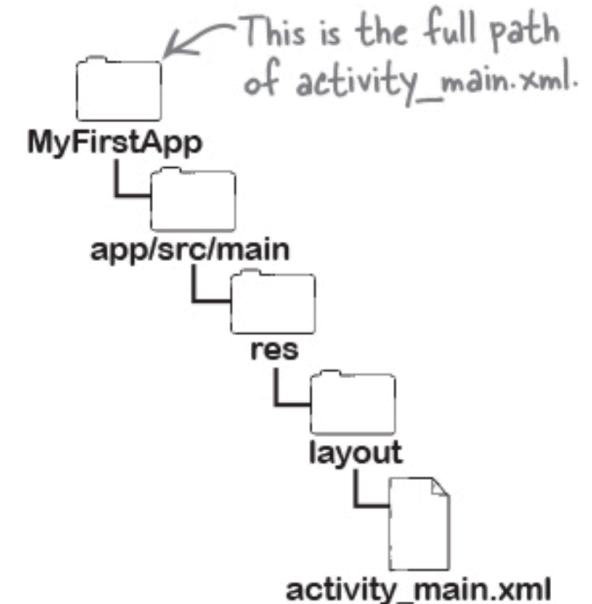
Android



Android

This element determines how components should be displayed, in this case the "Hello World!" text.

```
<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout  
    ...> Android Studio gave us more XML here, but  
        you don't need to think about that yet.  
    <TextView <-- This is a <TextView> element.  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Hello World!"  
    ... /> We've left out some of the  
        <TextView> XML too.  
</androidx.constraintlayout.widget.ConstraintLayout>
```



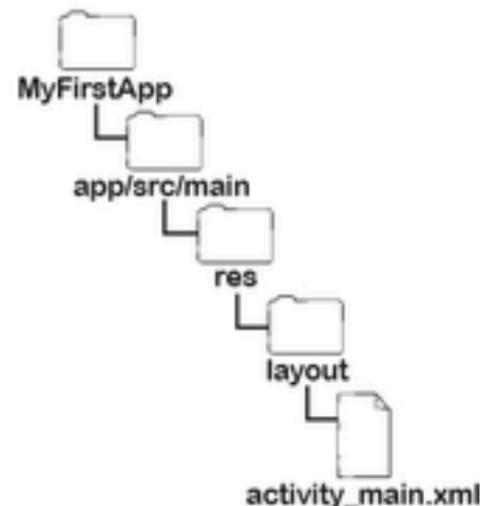
- Layout

Android

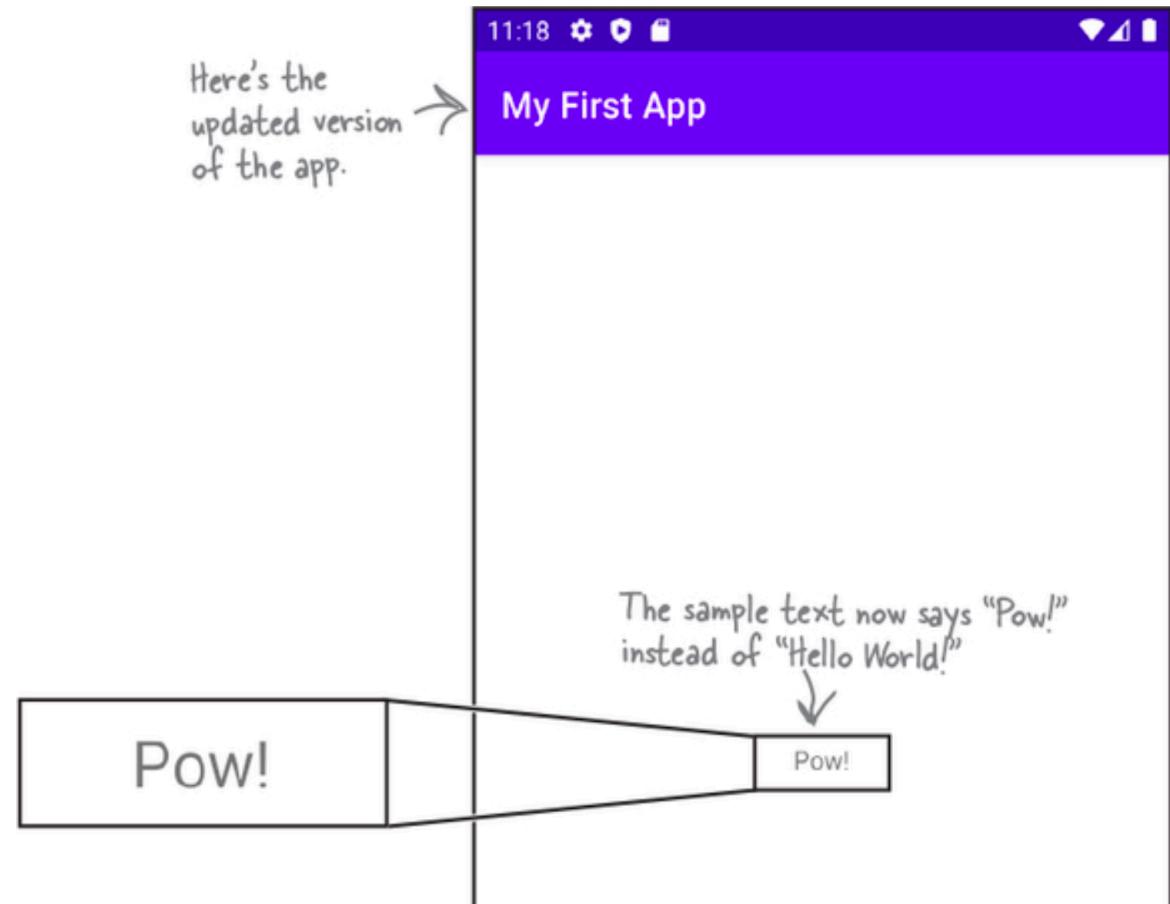
We've left out some of the code, since all we're doing for now is changing the text that's displayed.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    ...
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World! Pow!"↑
        ...
    >
</androidx.constraintlayout.widget.ConstraintLayout>
```

Change the text here from "Hello World!" to "Pow!"



Android



BULLET POINTS

- Versions of Android have a version number, API level, and code name.
- Android Studio is based on IntelliJ IDEA. It interfaces with the Android Software Development Kit (SDK), and the Gradle build system.
- A typical Android app is composed of activities, layouts, and resource files.
- Layouts describe what the app looks like. They're held in the *app/src/main/res/layout* folder.
- Activities describe what the app does, and how it interacts with the user. The activities you write are held in the *app/src/main/java* folder.
- *AndroidManifest.xml* contains information about the app itself. It lives in the *app/src/main* folder.
- An AVD is an Android Virtual Device. It runs in the Android emulator and mimics a physical Android device.
- An APK is an Android application package. It contains the app's bytecode, libraries, and resources. You install an app on a device by installing the APK.
- Android apps run in separate processes using the Android runtime (ART).
- The `<TextView>` element is used for displaying text.
- The `<TextView>` element's `text` attribute specifies what text it should display.