

# Enfoques de desarrollo de Aplicaciones Móviles



Aplicaciones Nativas con Android

Primeros pasos con Android



# Android Studio

**Android Studio 2.2.3**

Build #AI-145.3537739, built on December 2, 2016

JRE: 1.8.0\_76-release-b03 amd64

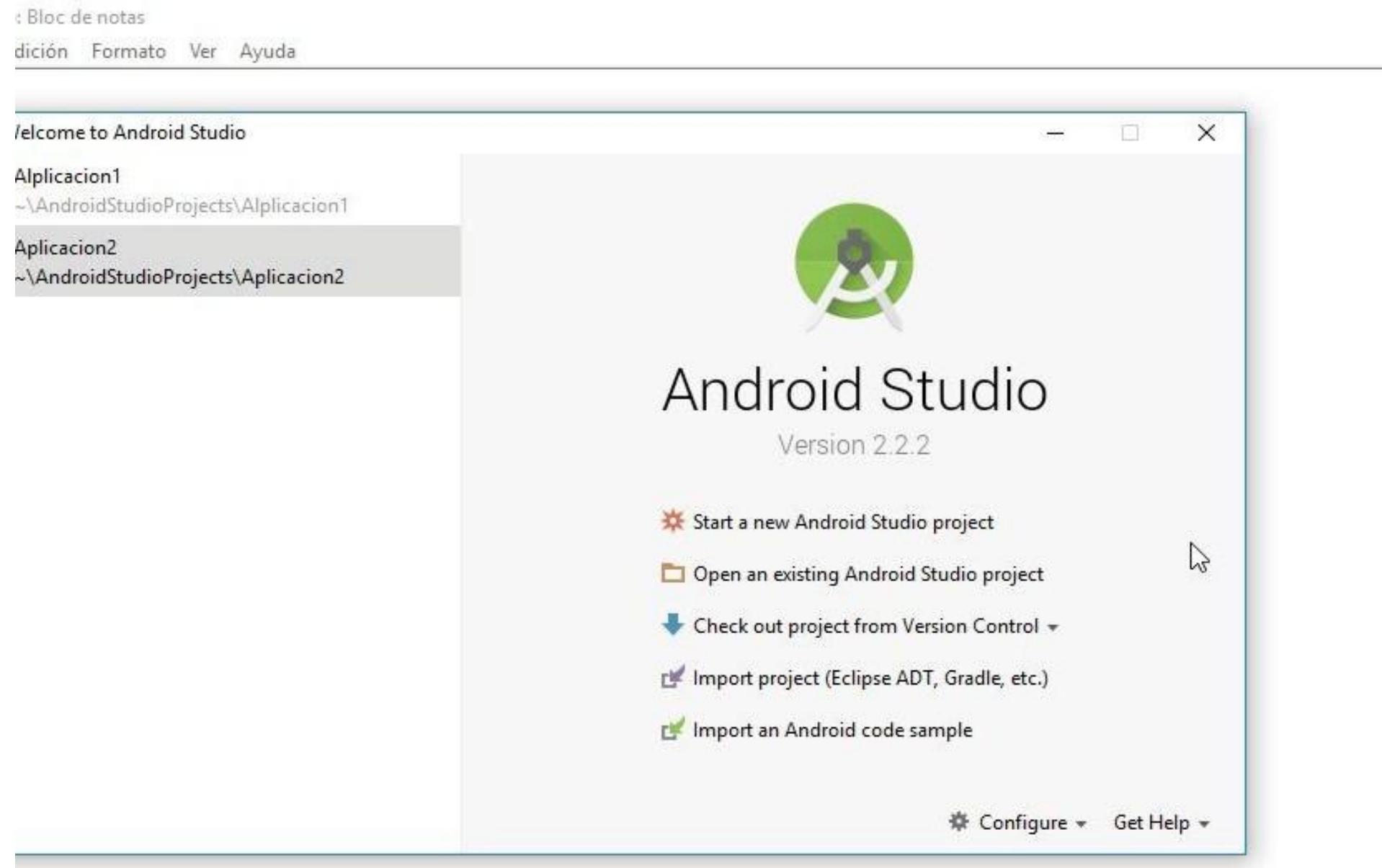
JVM: OpenJDK 64-Bit Server VM by JetBrains s.r.o

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***Android Studio*** es un IDE para la plataforma Android y reemplazó a Eclipse como el IDE oficial para el desarrollo de aplicaciones para Android. La primera versión estable fue publicada en diciembre de 2014.

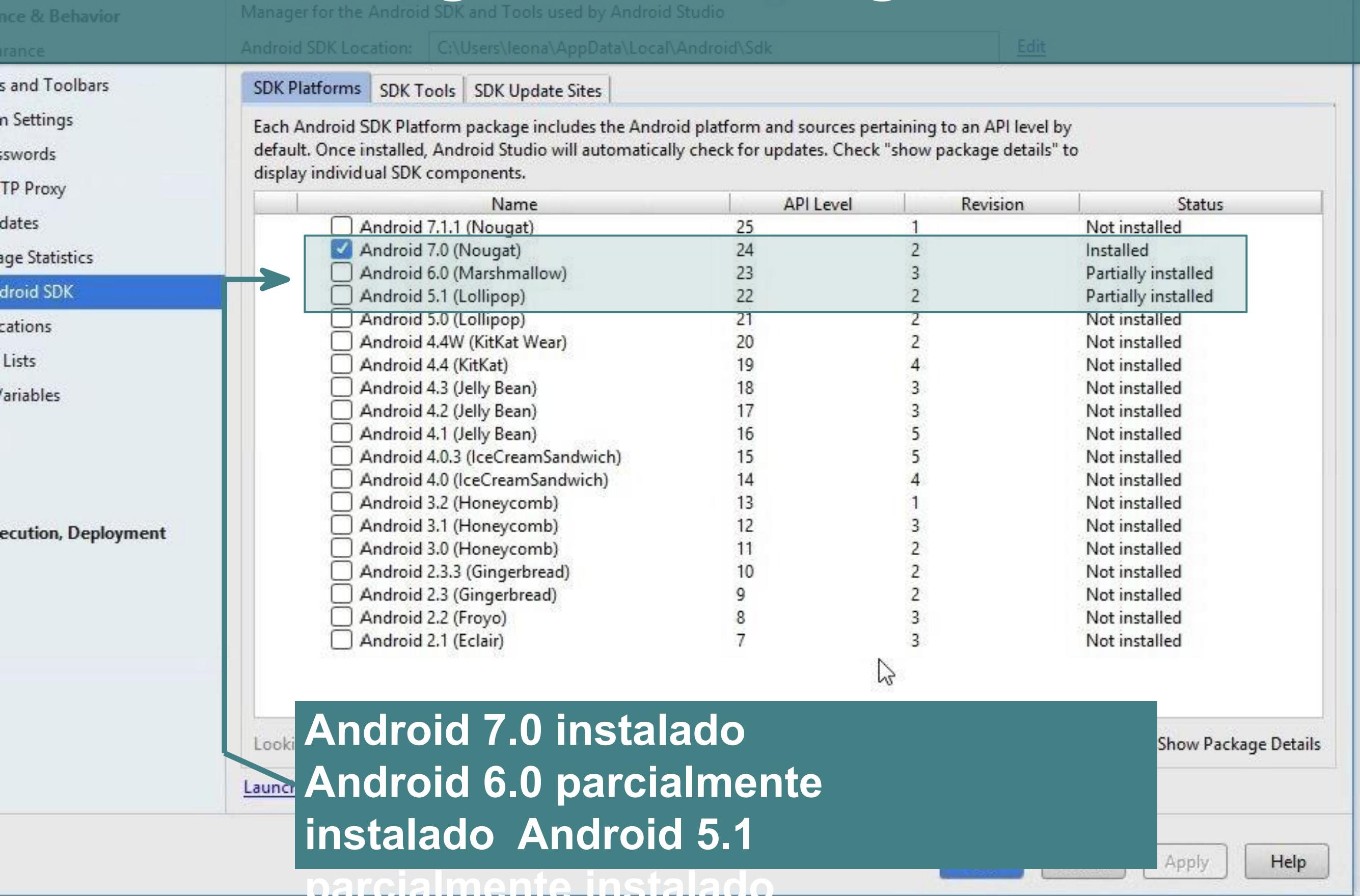
Instrucciones sobre descarga e instalación en:  
<https://developer.android.com/studio/index.html>

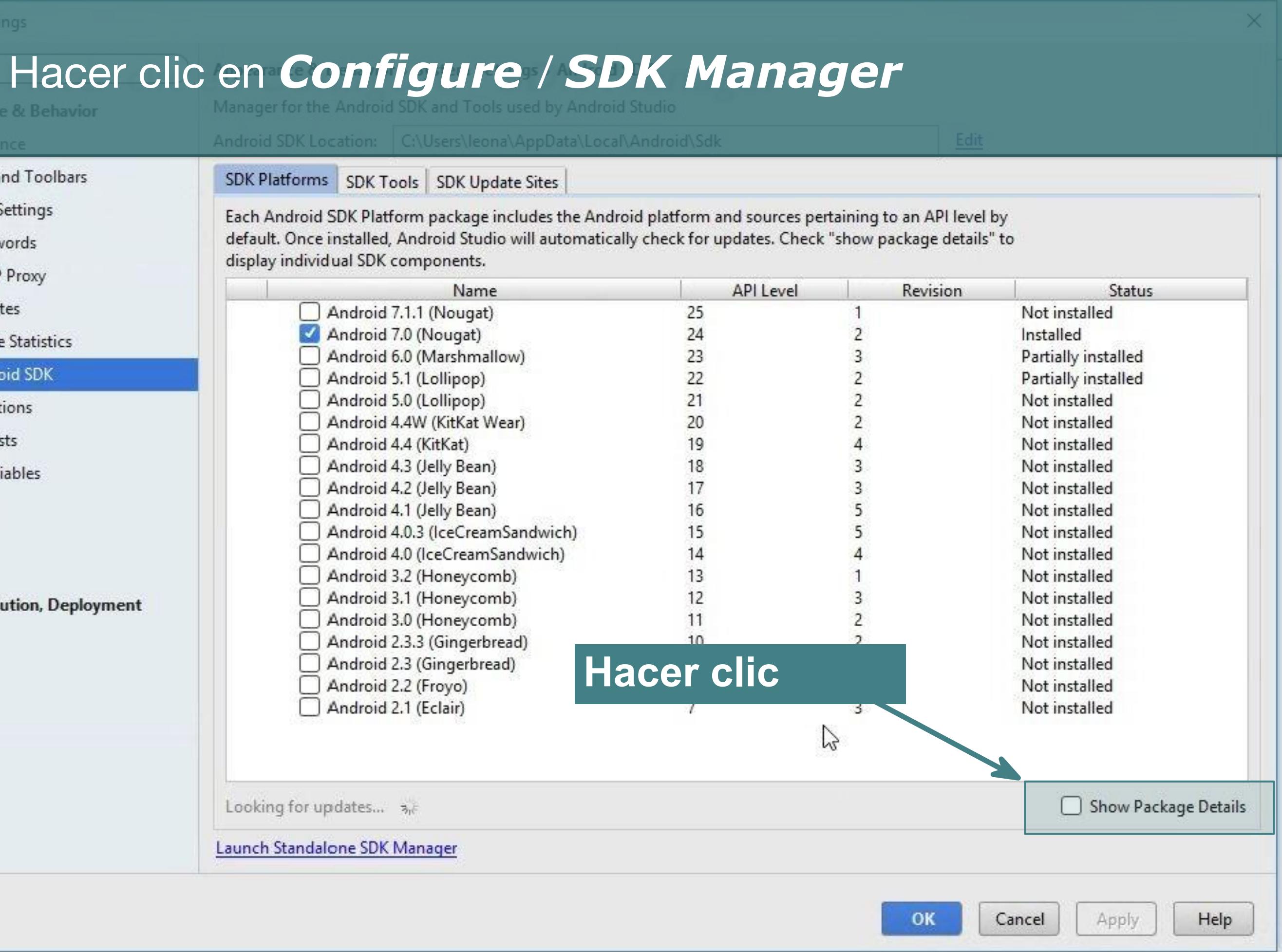
# Hacer clic en *Configure / SDK Manager*



ettings

# Hacer clic en **Configure / SDK Manager**





## Appearance &amp; Behavior &gt; System Settings &gt; Android SDK

Manager for the Android SDK and Tools used by Android Studio

Android SDK Location: C:\Users\leona\AppData\Local\Android\Sdk

Edit

SDK Platforms **SDK Tools** SDK Update Sites

Each Android SDK Platform package includes the Android platform and sources pertaining to an API level by default. Once installed, Android Studio will automatically check for updates. Check "show package details" to display individual SDK components.

	Name	API Level	Revision	Status
	<input type="checkbox"/> Google APIs Intel x86 Atom System Image	25	2	Not installed
	<input type="checkbox"/> Google APIs Intel x86 Atom_64 System Image	25	2	Not installed
▼	- <b>Android 7.0 (Nougat)</b>			
	<input checked="" type="checkbox"/> Google APIs	24	1	Installed
	<input checked="" type="checkbox"/> Android SDK Platform 24	24	2	Installed
	<input checked="" type="checkbox"/> Sources for Android 24	24	1	Installed
	<input type="checkbox"/> Android TV Intel x86 Atom System Image	24	7	Not installed
	<input type="checkbox"/> Android Wear ARM EABI v7a System Image	24	2	Not installed
	<input type="checkbox"/> Android Wear Intel x86 Atom System Image	24	2	Not installed
	<input type="checkbox"/> ARM 64 v8a System Image	24	7	Not installed
	<input type="checkbox"/> ARM EABI v7a System Image	24	7	Not installed
	<input type="checkbox"/> Intel x86 Atom System Image	24	7	Not installed
	<input type="checkbox"/> Intel x86 Atom_64 System Image	24	7	Not installed
	<input type="checkbox"/> Google APIs ARM 64 v8a System Image	24	8	Not installed
	<input type="checkbox"/> Google APIs ARM EABI v7a System Image	24	8	Not installed
	<input checked="" type="checkbox"/> Google APIs Intel x86 Atom System Image	24	8	Installed
	<input type="checkbox"/> Google APIs Intel x86 Atom_64 System Image	24	8	Not installed
▼	- <b>Android 6.0 (Marshmallow)</b>			
	<input type="checkbox"/> Google APIs	23	1	Not installed
	<input checked="" type="checkbox"/> Android SDK Platform 23	23	3	Installed
	<input type="checkbox"/> Sources for Android 23	23	1	Not installed
	<input type="checkbox"/> Android TV ARM EABI v7a System Image	22	2	Not installed

 Show Package Details

Se recomienda al menos instalar la plataforma y las fuentes del nivel API con el que se compilarán las aplicaciones

el

Apply

Help

## Appearance &amp; Behavior &gt; System Settings &gt; Android SDK

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▼ <input checked="" type="checkbox"/>	<b>Android 7.0 (Nougat)</b>			
<input checked="" type="checkbox"/>	Google APIs	24	1	Installed
<input checked="" type="checkbox"/>	Android SDK Platform 24	24	2	Installed
<input checked="" type="checkbox"/>	Sources for Android 24	24	1	Installed
<input type="checkbox"/>	Android TV Intel x86 Atom System Image	24	7	Not installed
<input type="checkbox"/>	Android Wear ARM EABI v7a System Image	24	2	Not installed
<input type="checkbox"/>	Android Wear Intel x86 Atom System Image			
<input type="checkbox"/>	ARM 64 v8a System Image			
<input type="checkbox"/>	ARM EABI v7a System Image			
<input type="checkbox"/>	Intel x86 Atom System Image			
<input type="checkbox"/>	Intel x86 Atom_64 System Image			
<input type="checkbox"/>	Google APIs ARM 64 v8a System Image			
<input type="checkbox"/>	Google APIs ARM EABI v7a System Image			
<input checked="" type="checkbox"/>	Google APIs Intel x86 Atom System Image			
<input type="checkbox"/>	Google APIs Intel x86 Atom_64 System Image			
▼ <input checked="" type="checkbox"/>	<b>Android 6.0 (Marshmallow)</b>			
<input type="checkbox"/>	Google APIs	23	3	Installed
<input checked="" type="checkbox"/>	Android SDK Platform 23	23	1	Not installed
<input type="checkbox"/>	Sources for Android 23	23	3	Not installed
<input type="checkbox"/>	Android TV ARM EABI v7a System Image			

 Show Package Details[Launch Standalone SDK Manager](#)

Opcionalmente puede instalar Google APIs para acceder a los servicios Google (map, sing-in, places,

OK

Cancel

Apply

Help

Appearance & Behavior  
Appearance  
Toolbars  
System Settings  
Passwords  
HTTP Proxy  
Updates  
Usage Statistics

## Android SDK

Applications

Task Lists

Variables

Execution, Deployment

## Appearance &amp; Behavior &gt; System Settings &gt; Android SDK

Manager for the Android SDK and Tools used by Android Studio

Android SDK Location: C:\User\

SDK Platforms SDK Tools SD

Each Android SDK Platform package contains the components required to run the platform in the default. Once installed, Android Studio will automatically detect the platform and display individual SDK components.

Component	API Level	Revision	Last Check	Status
Google APIs	25	2	Not installed	
Google APIs Intel x86 Atom_b4 System Image	24	1	Installed	
Android 7.0 (Nougat)	24	2	Installed	
Google APIs	24	1	Installed	
Android SDK Platform 24	24	7	Not installed	
Sources for Android 24	24	2	Not installed	
Android TV Intel x86 Atom System Image	24	2	Not installed	
Android Wear ARM EABI v7a System Image	24	2	Not installed	
Android Wear Intel x86 Atom System Image	24	2	Not installed	
ARM 64 v8a System Image	24	7	Not installed	
ARM EABI v7a System Image	24	7	Not installed	
Intel x86 Atom System Image	24	7	Not installed	
Intel x86 Atom_64 System Image	24	7	Not installed	
Google APIs ARM 64 v8a System Image	24	8	Not installed	
Google APIs ARM EABI v7a System Image	24	8	Not installed	
Google APIs Intel x86 Atom System Image	24	8	Installed	
Google APIs Intel x86 Atom_64 System Image	24	8	Not installed	
Android 6.0 (Marshmallow)	23	1	Not installed	
Google APIs	23	3	Installed	
Android SDK Platform 23	23	1	Not installed	
Sources for Android 23	23	3	Not installed	
Android TV ARM EABI v7a System Image	23	1	Not installed	

 Show Package Details[Launch Standalone SDK Manager](#)

Todas estas imágenes pertenecen a dispositivos que podemos emular para correr y depurar las aplicaciones que desarrollemos



OK

Cancel

Apply

Help

## Appearance &amp; Behavior &gt; System Settings &gt; Android SDK

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[Edit](#)[SDK Platforms](#) [SDK Tools](#) [SDK Update Sites](#)

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<input type="checkbox"/>	ARM EABI v7a System Image	24	7	Not installed
<input type="checkbox"/>	Intel x86 Atom System Image	24	7	Not installed
<input type="checkbox"/>	Intel x86 Atom_64 System Image	24	7	Not installed
<input type="checkbox"/>	Google APIs ARM 64 v8a System Image	24	8	Not installed
<input type="checkbox"/>	Google APIs ARM EABI v7a System Image	24	8	Not installed
<input checked="" type="checkbox"/>	Google APIs Intel x86 Atom System Image	24	8	Installed
<input type="checkbox"/>	Google APIs Intel x86 Atom_64 System Image	24	8	Not installed
▼ <input checked="" type="checkbox"/>	<b>Android 6.0 (Marshmallow)</b>			
<input type="checkbox"/>	Google APIs	23	1	Not installed
<input checked="" type="checkbox"/>	Android SDK Platform 23	23	3	Installed
			1	Not installed
			3	Not installed

 Show Package Details

Es conveniente emular dispositivos  
x86 para aprovechar el acelerador  
Haxm

[OK](#)[Cancel](#)[Apply](#)[Help](#)

## Appearance &amp; Behavior &gt; System Settings &gt; Android SDK

Manager for the Android SDK and Tools used by Android Studio

Android SDK Location: C:\Users\leona\AppData\Local\Android\Sdk

Edit

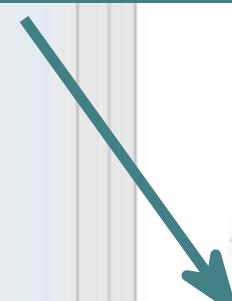
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	Name	API Level	Revision	Status
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	<input type="checkbox"/> Google APIs Intel x86 Atom_64 System Image	25	2	Not installed
▼	- <b>Android 7.0 (Nougat)</b>			
	<input type="checkbox"/> Intel x86 Atom_64 System Image	24	1	Installed
	<input type="checkbox"/> Google APIs ARM 64 v8a System Image	24	2	Installed
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▼	- <b>Android 6.0 (Marshmallow)</b>			
	<input type="checkbox"/> Google APIs	23	2	Not installed
	<input checked="" type="checkbox"/> <b>Android SDK Platform 23</b>	23	8	Not installed
	<input type="checkbox"/> Sources for Android 23	23	8	Not installed
	<input type="checkbox"/> Android TV ARM EABI v7a System Image	23	9	Installed

[Launch Standalone SDK Manager](#)

**Tener instalada la plataforma de la API 23, nos permite correr y depurar las aplicaciones que desarrollemos en un dispositivo con Android 6.0**



**Presionar en el botón**

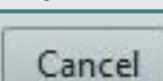
 Show Package Details

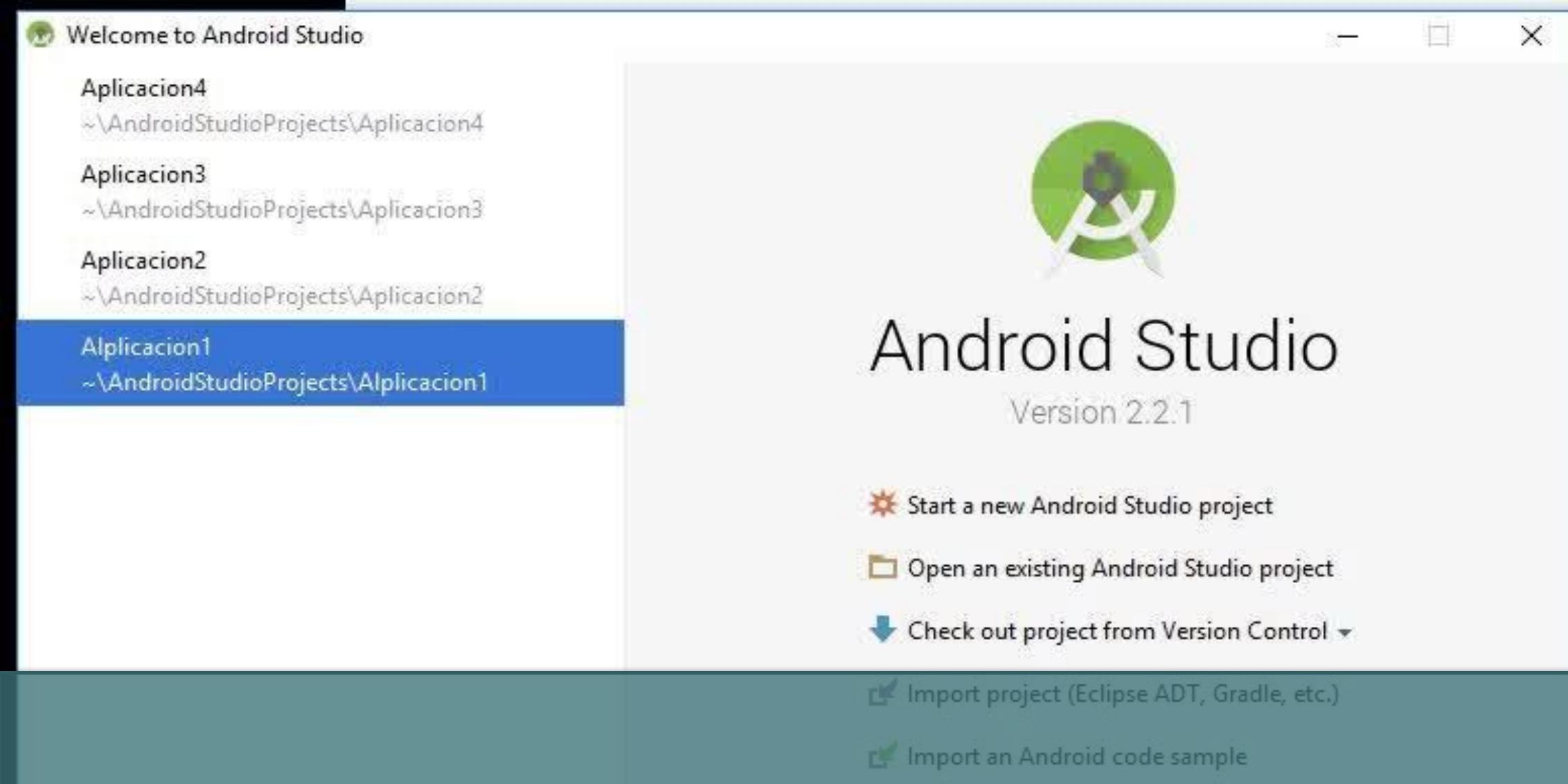
OK

Cancel

Apply

Help





Hacer clic en ***Start a new Android Studio project*** y elegir el nombre de la aplicación

Templates

Phone and Tablet

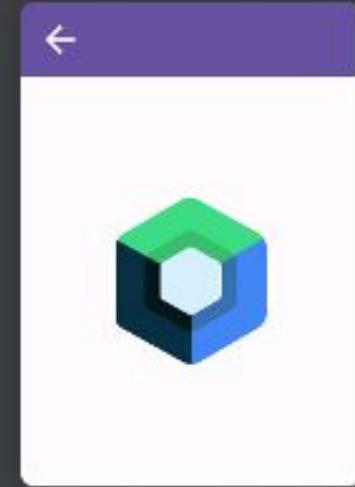
Wear OS

Television

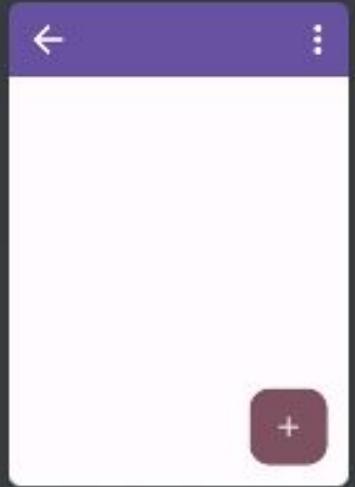
Automotive



No Activity



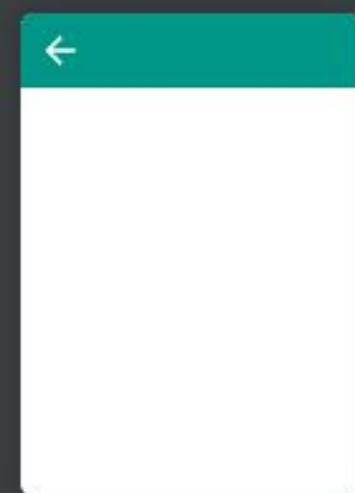
Empty Activity



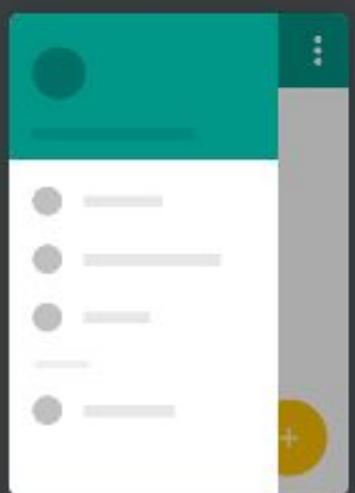
Basic Views Activity



Bottom Navigation Views Activity



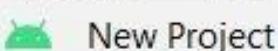
Empty Views Activity



Navigation Drawer Views Activity

Seleccionar ***Phone and Tablet.***

En esta ventana elegir Empty Views Activity



New Project

X

## Empty Activity

Creates a new empty activity

Name

My Application

Package name

com.example.myapplication

Save location

C:\Users\Verena\AndroidStudioProjects\MyApplication3



Language

Kotlin



Minimum SDK

API 26: Android 8.0 (Oreo)



Your app will run on approximately **92,4%** of devices.

[Help me choose](#)

Use legacy android.support libraries

Using legacy android.support libraries will prevent you from using  
the latest Play Services and Jetpack libraries

Dejar el **Activity Name** . Seleccionar el lenguaje con el que desea desarrollar y la mínima versión SDK

[Previous](#)[Next](#)[Cancel](#)[Finish](#)

ANDROID PLATFORM VERSION	API LEVEL	CUMULATIVE DISTRIBUTION
4.1 Jelly Bean	16	
4.2 Jelly Bean	17	99,9%
4.3 Jelly Bean	18	99,7%
4.4 KitKat	19	99,7%
5.0 Lollipop	21	98,8%
5.1 Lollipop	22	98,4%
6.0 Marshmallow	23	96,2%
7.0 Nougat	24	92,7%
7.1 Nougat	25	90,4%
8.0 Oreo	26	88,2%
8.1 Oreo	27	85,2%
9.0 Pie	28	77,3%
10. Q	29	62,8%

**Marshmallow**

Security  
Fingerprint Authentication  
Confirm Credential  
System  
App Linking  
Adoptable Storage Devices  
Multimedia  
4K Display Mode  
Support for MIDI  
Create digital audio capture and playback objects  
APIs to associate audio and input devices  
List of all audio devices  
Updated video processing APIs  
Flashlight API  
Reprocessing Camera2 API  
Updated ImageWriter objects and Image Reader class  
User Input  
Voice Interactions  
Assist API  
Bluetooth Stylus Support  
User Interface  
Themeable ColorStateLists

Wireless & Connectivity  
Hotspot 2.0  
Improved Bluetooth Low Energy Scanning  
Android for Work  
Controls for Corporate-Owned, Single-Use devices  
Silent install and uninstall of apps by Device Owner  
Silent enterprise certificate access  
Auto-acceptance of system updates  
Delegated certificate installation  
Data usage tracking  
Runtime permission management  
Work status notification

Last updated: August 4th, 2022

Si se selecciona **help me choose** en la ventana anterior se despliega esta información que puede ayudarnos a elegir la versión mínima soportada por nuestra aplicación

<https://developer.android.com/about/versions/marshmallow/android-6.0.html>

 New Project

X

# Presiones en

## Finish

Creates a new empty activity

Name

My Application

Package name

com.example.myapplication

Save location

C:\Users\Verena\AndroidStudioProjects\MyApplication3



Language

Kotlin



Minimum SDK

API 26: Android 8.0 (Oreo)



 Your app will run on approximately **92,4%** of devices.

[Help me choose](#)

[Use legacy android.support libraries](#) 

Using legacy android.support libraries will prevent you from using  
the latest Play Services and Jetpack libraries

Previous

Next

Cancel

Finish

File Edit View Navigate Code Refactor Build Run Tools VCS Window Help My Application - MainActivity.kt [My\_Application.app.main]

MyApplication3 > app > src > main > java > com > example > myapplication > MainActivity

Android app Pixel 5 API 30

Project app Gradle Scripts

Resource Manager

Structure Bookmarks Build Variants

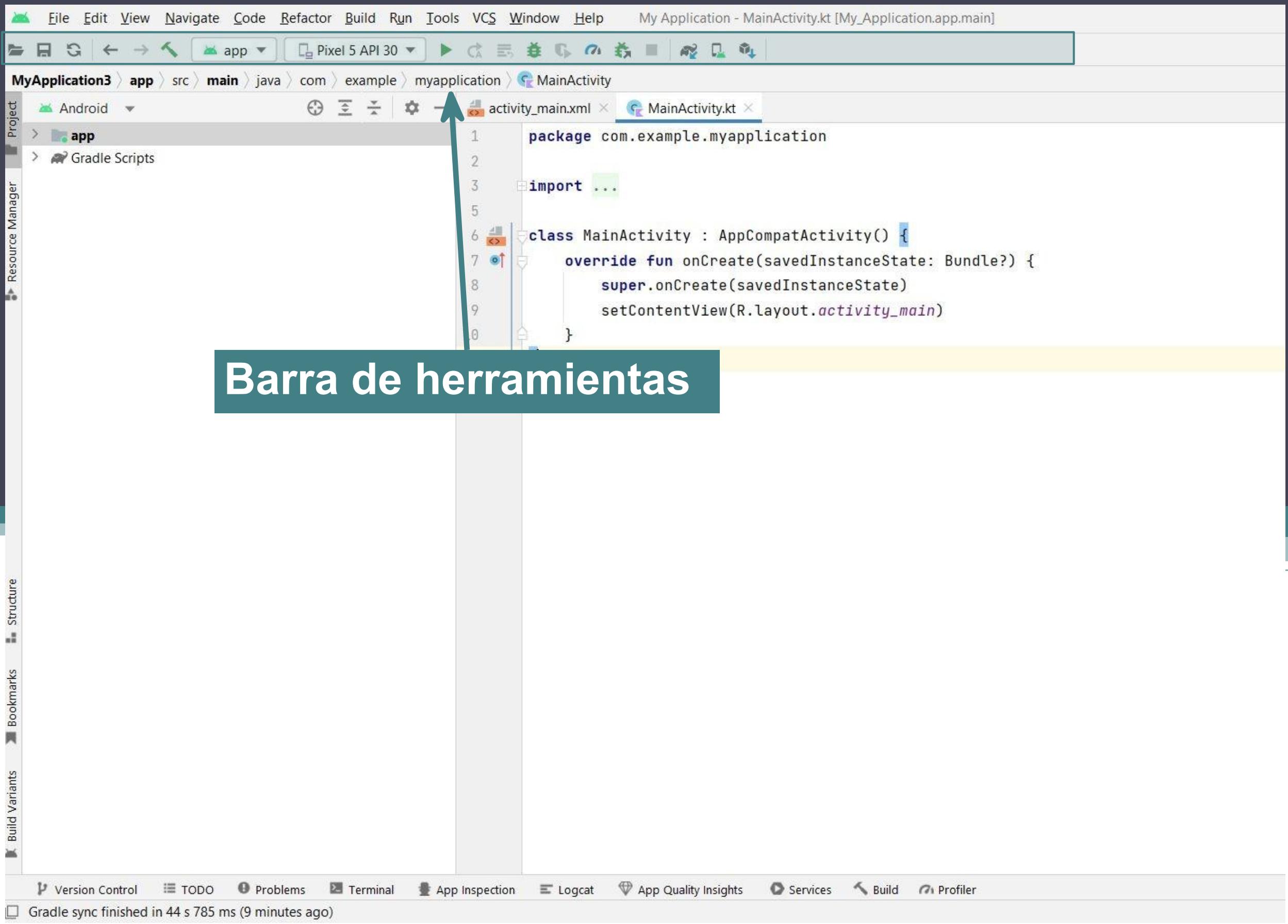
activity\_main.xml MainActivity.kt

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

Conociendo la interfaz del IDE

Version Control TODO Problems Terminal App Inspection Logcat App Quality Insights Services Build Profiler

Gradle sync finished in 44 s 785 ms (6 minutes ago)



Barra de herramientas

The screenshot shows the Android Studio interface with the following details:

- Top Bar:** File Edit View Navigate Code Refactor Build Run Tools VCS Window Help My Application - MainActivity.kt [My\_Application.app.main]
- Toolbar:** Includes icons for file operations (New, Open, Save, Find, Run, Stop, Refresh), device selection (Pixel 5 API 30), and various developer tools.
- Project Navigation:** Shows the project structure: MyApplication3 > app > src > main > java > com > example > myapplication > MainActivity.
- Code Editor:** Displays the MainActivity.kt file content:

```
1 package com.example.myapplication
2
3 import ...
4
5
6 class MainActivity : AppCompatActivity() {
7     override fun onCreate(savedInstanceState: Bundle?) {
8
9
10 }
11 }
```
- Annotations:** A large teal box with the text "Barra de navegación" is overlaid on the code editor area, with a vertical teal arrow pointing upwards from its bottom edge towards the top bar.
- Side Panels:** Project Manager, Resource Manager, Bookmarks, and Build Variants are visible on the left side.
- Bottom Bar:** Includes links for Version Control, TODO, Problems, Terminal, App Inspection, Logcat, App Quality Insights, Services, Build, and Profiler.
- Status Bar:** Shows "Gradle sync finished in 44 s 785 ms (9 minutes ago)"

File Edit View Navigate Code Refactor Build Run Tools VCS Window Help My Application - MainActivity.kt [My\_Application.app.main]

MyApplication3 > app > src > main > java > com > example > myapplication > MainActivity

Project Android app Gradle Scripts

Resource Manager

Ventana del editor

Activity\_main.xml MainActivity.kt

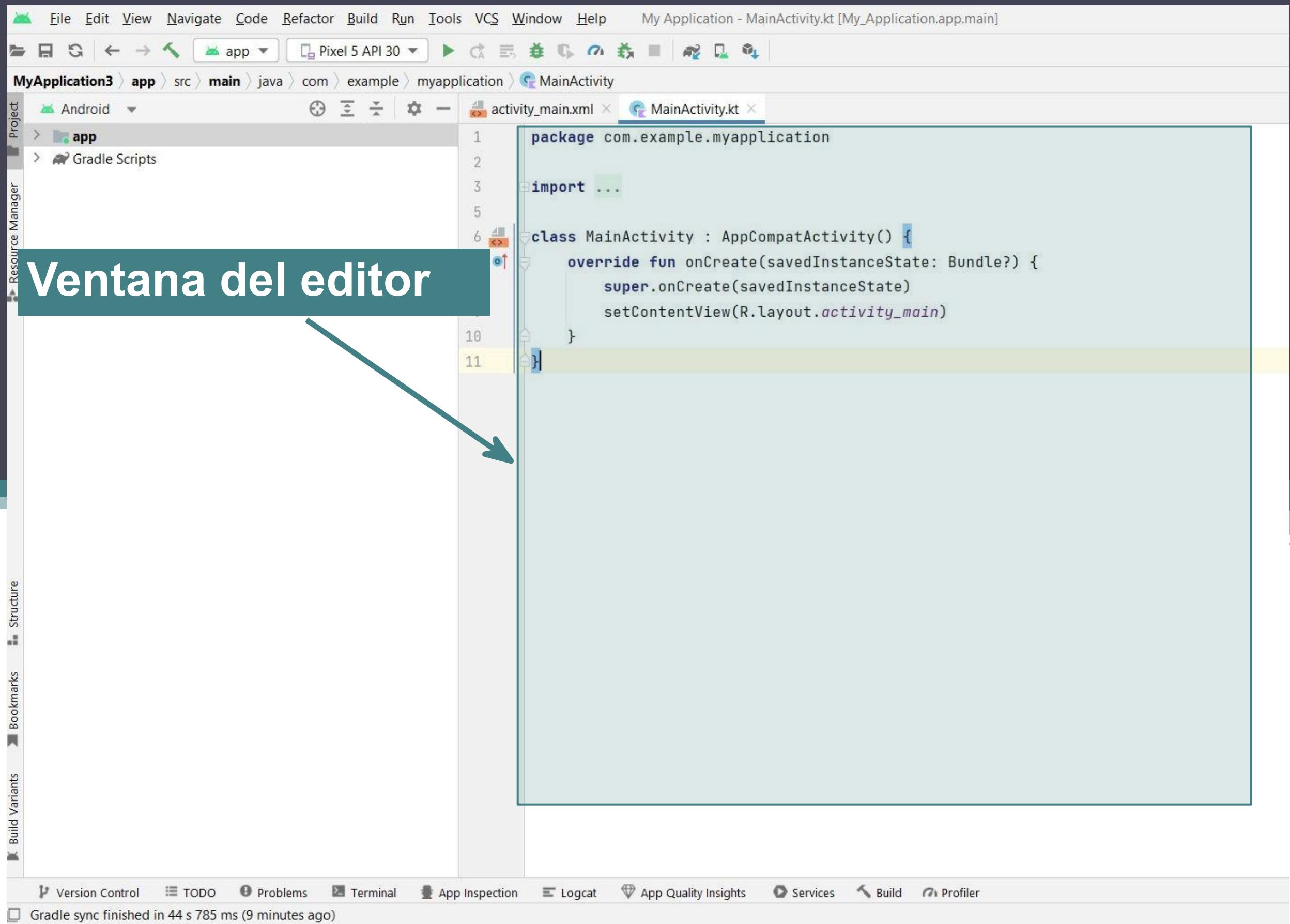
```
package com.example.myapplication

import ...

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

Version Control TODO Problems Terminal App Inspection Logcat App Quality Insights Services Build Profiler

Gradle sync finished in 44 s 785 ms (9 minutes ago)



File Edit View Navigate Code Refactor Build Run Tools VCS Window Help My Application - MainActivity.kt [My\_Application.app.main]

MyApplication3 > app > src > main > java > com > example > myapplication > MainActivity

Project

Resource Manager

Structure

Bookmarks

Bundled Variants

activity\_main.xml MainActivity.kt

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

Ventana de herramientas

Version Control TODO Problems Terminal App Inspection Logcat App Quality Insights Services Build Profiler

Gradle sync finished in 44 s 785 ms (9 minutes ago)

File Edit View Navigate Code Refactor Build Run Tools VCS Window Help My Application - MainActivity.kt [My\_Application.app.main]

MyApplication3 > app > src > main > java > com > example > myapplication > MainActivity

Project app Gradle Scripts

Resource Manager

Structure Bookmarks Build Variants

activity\_main.xml MainActivity.kt

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

Barra de Services

Version Control TODO Problems Terminal App Inspection Logcat App Quality Insights Build Profiler

Gradle sync finished in 44 s 785 ms (9 minutes ago)

# Definición de la clase que constituye la Actividad

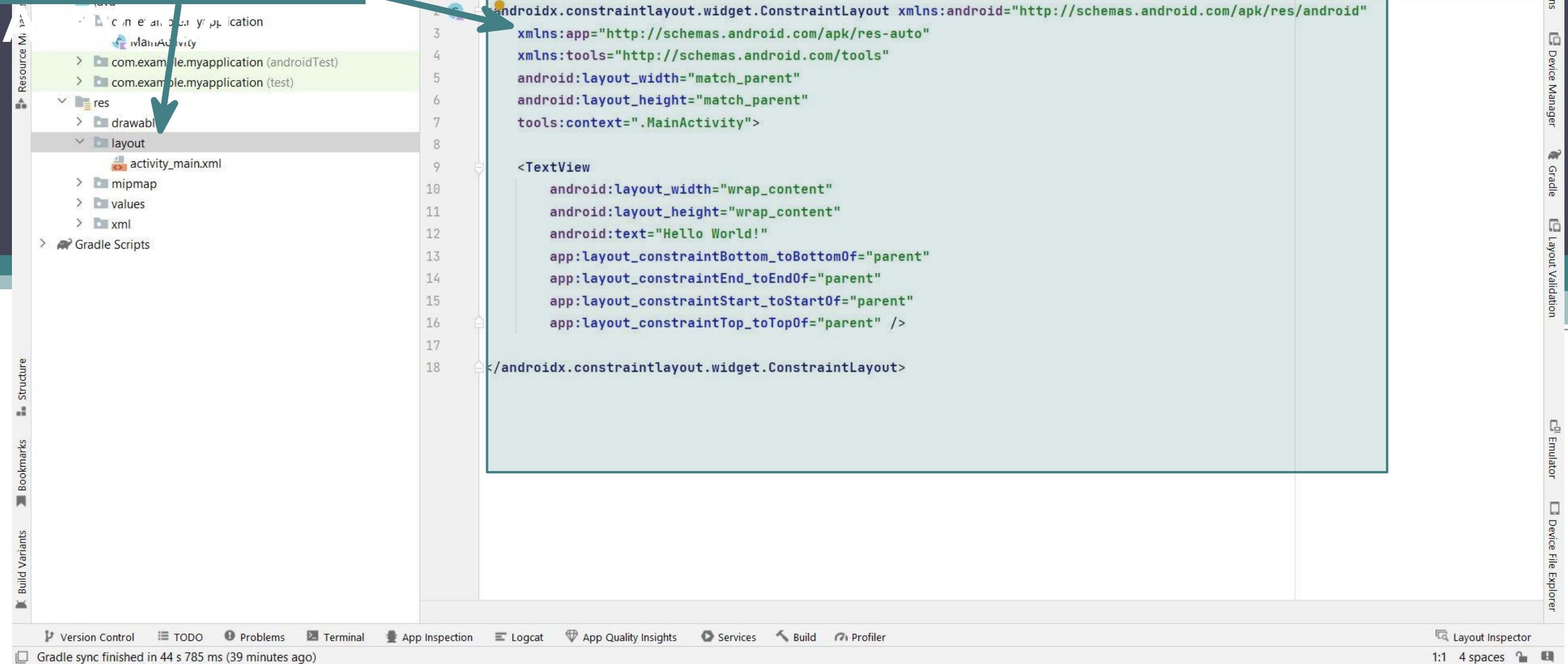
The screenshot shows the Android Studio interface with the following details:

- Project Bar:** Shows "My Application" and "app".
- Project Tree:** Under "app", there are "manifests", "java", and "res" directories. "java" contains a package "com.example.myapplication" with a file "MainActivity".
- Main Activity File:** The "MainActivity.kt" file is open in the editor. The code defines the Main Activity class:

```
package com.example.myapplication
import ...
class MainActivity : AppCompatActivity() {
    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)
    }
}
```

- Annotations:** A large green box highlights the entire code block in the editor. Two arrows point from the text "Actividad" in the title to the "MainActivity" class definition: one from the word "MainActivity" and another from the opening brace of the class definition.

# Definición de la vista de la



The screenshot shows the Android Studio interface with the following details:

- Project Structure:** On the left, the project tree shows the package structure: com.example.myapplication > MainActivity > com.example.myapplication (androidTest) > com.example.myapplication (test). A green arrow points from the "layout" folder in the res directory to the XML code in the editor.
- Editor:** The main window displays the XML code for `activity_main.xml`. The code defines a ConstraintLayout containing a single TextView with the text "Hello World!".

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```
- Toolbars and Status Bar:** The top bar includes tabs for Run, Tools, VCS, Window, Help, and the current file (My Application - activity\_main.xml [My\_Application.app.main]). The bottom bar shows navigation icons and the status "Gradle sync finished in 44 s 785 ms (39 minutes ago)".
- Sidebar:** The right sidebar contains tabs for Notifications, Device Manager, Gradle, Layout Validation, Emulator, and Device File Explorer.

The screenshot shows the Android Studio interface with the following details:

- Project Bar:** Shows the project name "MyApplication3" and the file path "app > src > main > res > layout > activity\_main.xml".
- Toolbar:** Includes icons for File, Edit, View, Navigate, Code, Refactor, Build, Run, Tools, VCS, Window, Help, and a device icon.
- File Path:** Pixel 5 API 30 is selected in the device dropdown.
- Code Editor:** The file "activity\_main.xml" is open, displaying XML code for a ConstraintLayout.

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```
- Preview Window:** A large teal box displays the text "Ejecución de la aplicación en el".
- Bottom Bar:** Includes Version Control, TODO, Problems, and a message indicating "Gradle sync finished in 44 s 785 ms (39 minutes ago)".

Code Refactor Build Run Tools VCS Window Help My Application - MainActivity.kt [My\_Application.app.main]

p Pixel 5 API 30

java com example myapplication MainActivity

activity\_main.xml MainActivity.kt

```
1 package com.example.myapplication
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 }
```

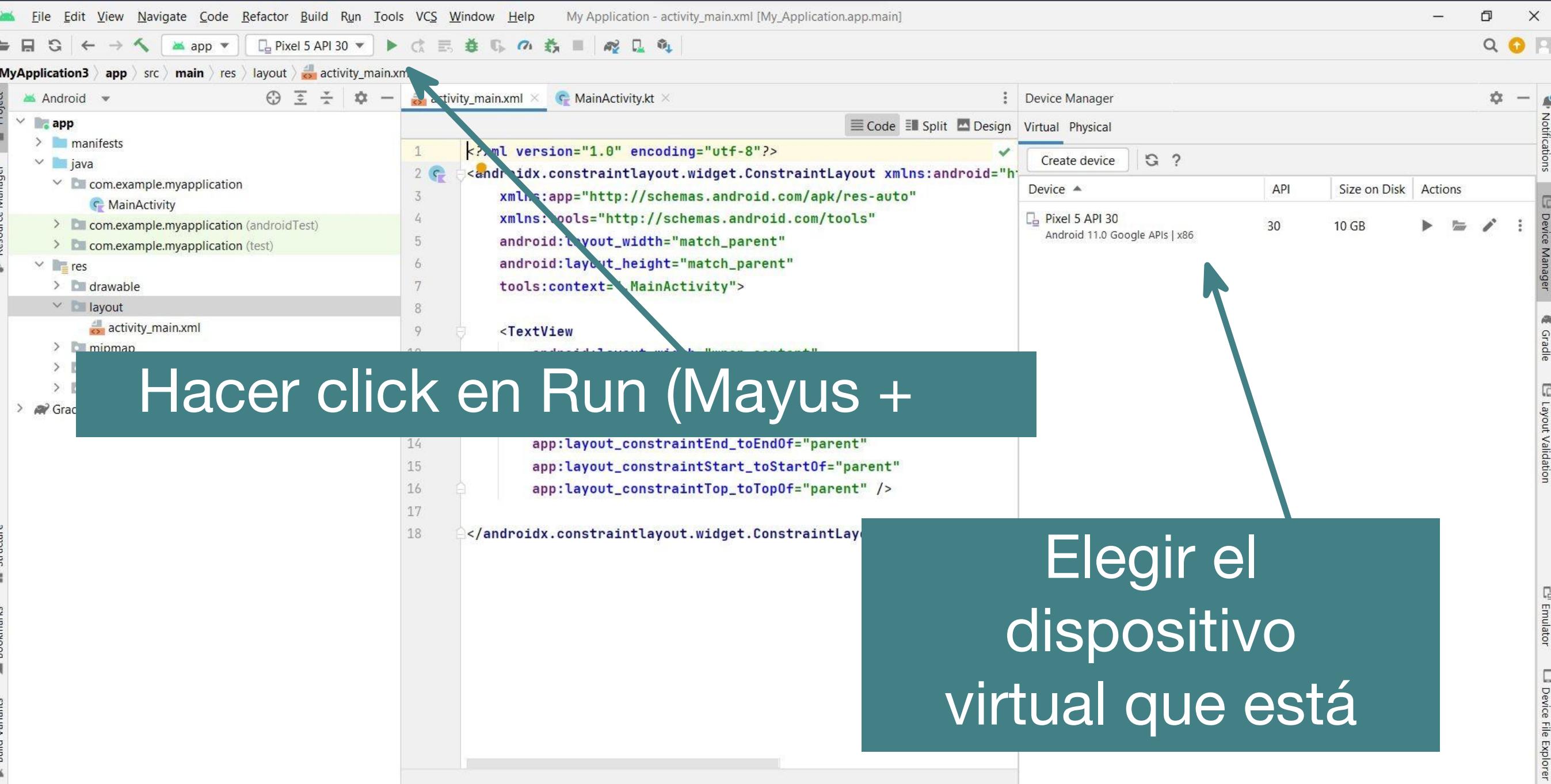
Inicie el AVD Manager y corra el emulador del dispositivo

Android Emulator - Nexus 4 API\_24:5554

The screenshot shows the Android Studio interface. On the left, the code editor displays the MainActivity.kt file with the provided code. A green arrow points from the text "Inicie el AVD Manager y corra el emulador del dispositivo" to the run button in the toolbar. On the right, the Android Emulator window shows a Nexus 4 device with a pink home screen, displaying a Google search bar and several app icons.

Problems Terminal App Inspection Logcat App Quality Insights Services Build Profiler

(9 minutes ago)



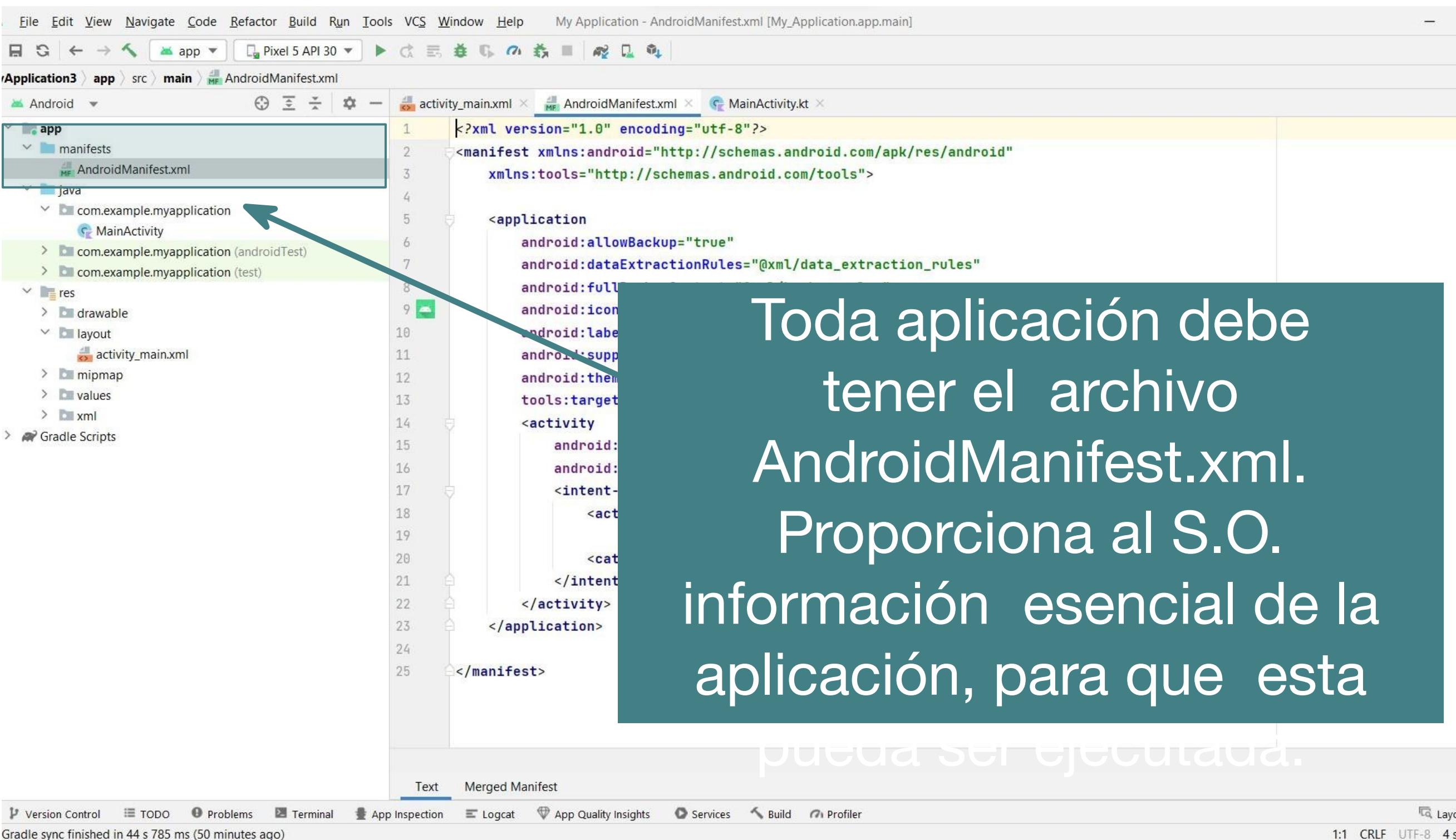
Hacer click en Run (Mayus +)

Elegir el dispositivo virtual que está

Device	API	Size on Disk	Actions
Pixel 5 API 30 • Android 11.0 Google APIs   x86	30	10 GB	

Es posible detener la aplicación haciendo

# AndroidManifest.xml



The screenshot shows the Android Studio interface with the project 'My Application' open. The left sidebar displays the project structure under 'app': 'manifests' (selected), 'Java' (containing 'MainActivity'), and 'res' (containing 'drawable', 'layout' with 'activity\_main.xml', 'mipmap', 'values', and 'xml'). The right pane shows the 'AndroidManifest.xml' file's XML code:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:supportRtl="true"
        android:theme="@style/AppTheme"
        tools:targetSdkVersion="30" >

        <activity
            android:name=".MainActivity"
            android:label="@string/app_name" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

A red arrow points from the explanatory text on the right towards the 'AndroidManifest.xml' file in the project tree.

Toda aplicación debe tener el archivo **AndroidManifest.xml**. Proporciona al S.O. información esencial de la aplicación, para que esta pueda ser ejecutada.

Version Control TODO Problems Terminal App Inspection Logcat App Quality Insights Services Build Profiler Layout Inspector

Gradle sync finished in 44 s 785 ms (50 minutes ago)

1:1 CRLF UTF-8 4 spaces

# AndroidManifest.xml

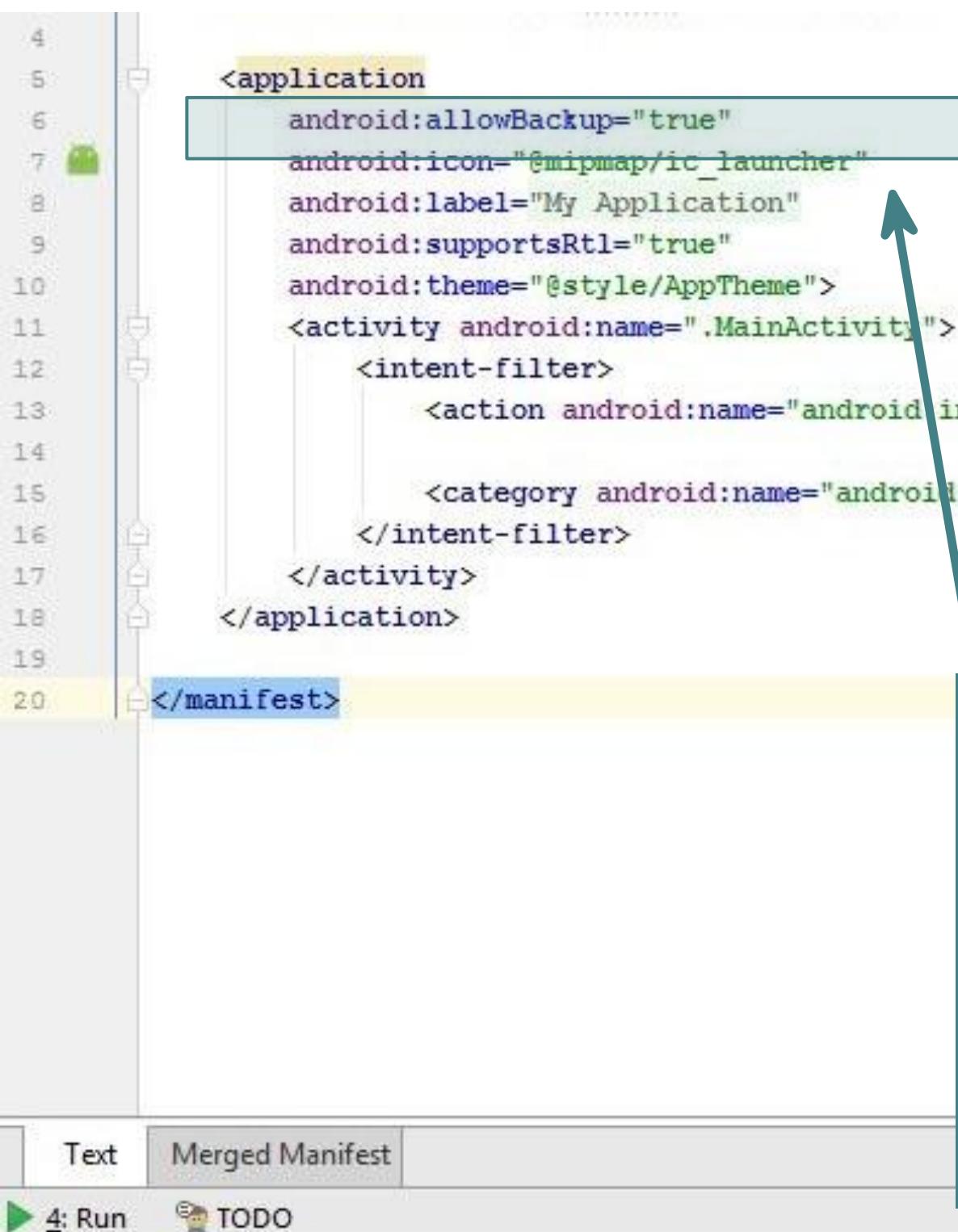
The screenshot shows the Android Studio interface with the project 'MyApplication3' open. The 'app' module is selected in the Project Navigators. The 'AndroidManifest.xml' file is the active tab in the code editor. The code in the editor is:

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="My Application"
        android:supportsRtl="true"
        android:theme="@style/Theme.MyApplication"
        tools:targetApi="31">
        <activity
            android:name=".MainActivity"
            android:exported="true">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

The code editor includes tabs for 'Text' and 'Merged Manifest'. Below the editor, the bottom navigation bar of Android Studio is visible, featuring icons for Version Control, TODO, Problems, Terminal, App Inspection, Logcat, App Quality Insights, Services, Build, and Profiler.

# AndroidManifest.xml



```
4
5 <application
6     android:allowBackup="true"
7     android:icon="@mipmap/ic_launcher"
8     android:label="My Application"
9     android:supportsRtl="true"
10    android:theme="@style/AppTheme">
11        <activity android:name=".MainActivity">
12            <intent-filter>
13                <action android:name="android.intent.action.MAIN" />
14
15                <category android:name="android.intent.category.LAUNCHER" />
16            </intent-filter>
17        </activity>
18    </application>
19
20 </manifest>
```

Cuando esta propiedad vale *true* se hace un respaldo de los datos de la aplicación en la cuenta de GoogleDrive del usuario

# AndroidManifest.xml

```
4
5     <application
6         android:allowBackup="true"
7             android:icon="@mipmap/ic_launcher"
8             android:label="My Application"
9             android:supportsRtl="true"
10            android:theme="@style/AppTheme">
11                <activity android:name=".MainActivity">
12                    <intent-filter>
13                        <action android:name="android.intent.action.MAIN" />
14
15                        <category android:name="android.intent.category.LAUNCHER" />
16                    </intent-filter>
17                </activity>
18            </application>
19
20        </manifest>
```

Ícono de la aplicación

# AndroidManifest.xml

application3] - [app] - ...\\app\\src\\main\\AndroidManifest.xml - Android Studio 2.3

Run Tools VCS Window Help



Manifest.xml >

activity\_main.xml x MainActivity.java x AndroidManifest.xml x

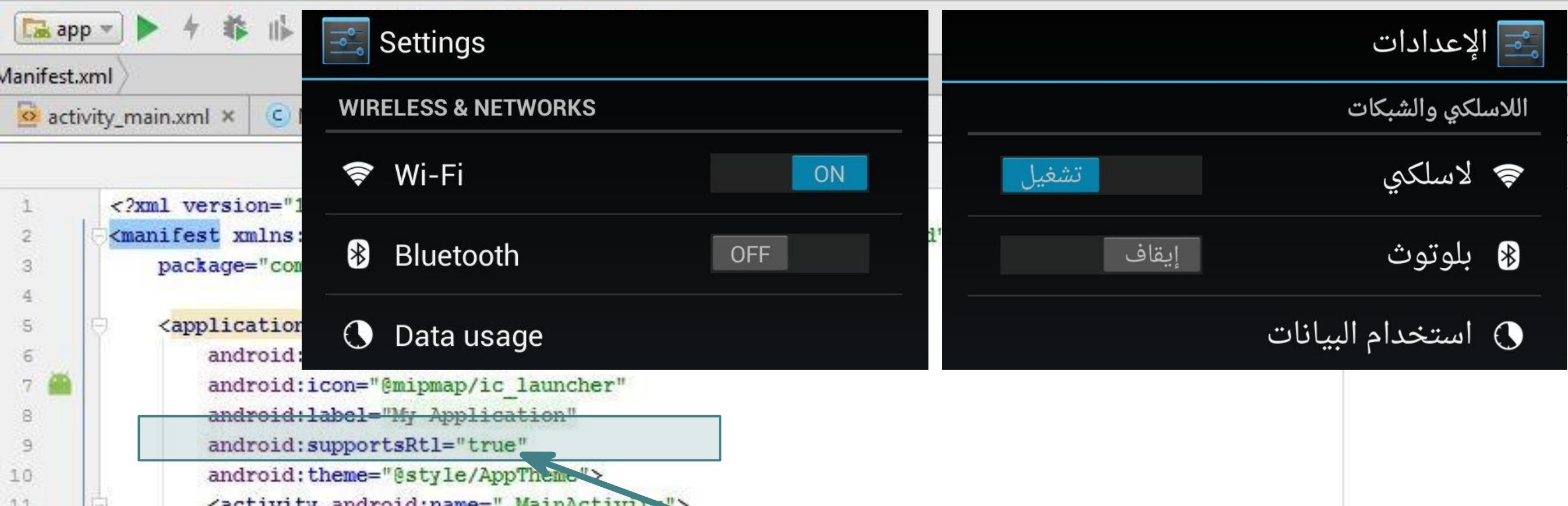
```
1  <?xml version="1.0" encoding="utf-8"?>
2  <manifest xmlns:android="http://schemas.android.com/apk/res/android"
3      package="com.example.ldelia.myapplication">
4
5      <application
6          android:allowBackup="true"
7          android:icon="@mipmap/ic_launcher"
8          android:label="My Application" // A light blue box surrounds this line
9          android:supportsRtl="true" // An arrow points from this line to the 'Título de la aplicación' callout
10         android:theme="@style/AppTheme">
11             <activity android:name=".MainActivity">
12                 <intent-filter>
13                     <action android:name="android.intent.action.MAIN" />
14                     <category android:name="android.intent.category.LAUNCHER" />
15                 </intent-filter>
16             </activity>
17         </application>
18
19     </manifest>
```

Título de la aplicación

# AndroidManifest.xml

application3 - [app] - ...\\app\\src\\main\\AndroidManifest.xml - Android Studio 2.3

Run Tools VCS Window Help



Si la opción está habilitada, en caso de que el usuario configure el dispositivo con un idioma de lectura de derecha a izquierda (Right To Left) la interfaz se acomodará

# AndroidManifest.xml

application3] - [app] - ...\\app\\src\\main\\AndroidManifest.xml - Android Studio 2.3

Run Tools VCS Window Help

Manifest.xml >

activity\_main.xml x MainActivity.java x AndroidManifest.xml x

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

**Tema de estilos de la aplicación.**  
*En clases posteriores estudiaremos este tema*

# AndroidManifest.xml

application3] - [app] - ...\\app\\src\\main\\AndroidManifest.xml - Android Studio 2.3

Run Tools VCS Window Help



Manifest.xml

activity\_main.xml x MainActivity.java x

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

Además, describe como está compuesta la aplicación.

Más adelante estudiaremos que existen 4 tipos de componentes posibles (Activities, Services, Broadcast receivers, Content Providers)

# AndroidManifest.xml

application3] - [app] - ...\\app\\src\\main\\AndroidManifest.xml - Android Studio 2.3

Run Tools VCS Window Help



Manifest.xml >

activity\_main.xml x MainActivity.java x AndroidManifest.xml x

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

Información para el S.O. de  
cómo se invoca a la actividad.  
*Lo estudiaremos también próximamente.*

# Permisos de usuario en AndroidManifest.xml

The screenshot shows the AndroidManifest.xml file in the Android Studio manifest editor. The code is as follows:

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

A yellow box highlights the `<uses-permission android:name="android.permission.INTERNET" />` line. A blue arrow points from this highlighted line to a tooltip window.

android.permission.ACCESS\_CHECKIN\_PROPERTIES  
android.permission.ACCESS\_COARSE\_LOCATION  
android.permission.ACCESS\_FINE\_LOCATION  
android.permission.ACCESS\_LOCATION\_EXTRA\_COMMANDS  
android.permission.ACCESS\_NETWORK\_STATE  
android.permission.ACCESS\_NOTIFICATION\_POLICY  
android.permission.ACCESS\_WIFI\_STATE  
android.permission.ACOUNT\_MANAGER  
android.permission.BATTERY\_STATS  
android.permission.BIND\_ACCESSIBILITY\_SERVICE

Permisos que el usuario  
debe aceptar para que  
la aplicación pueda  
acceder a un recurso

# Permisos de usuario en AndroidManifest.xml

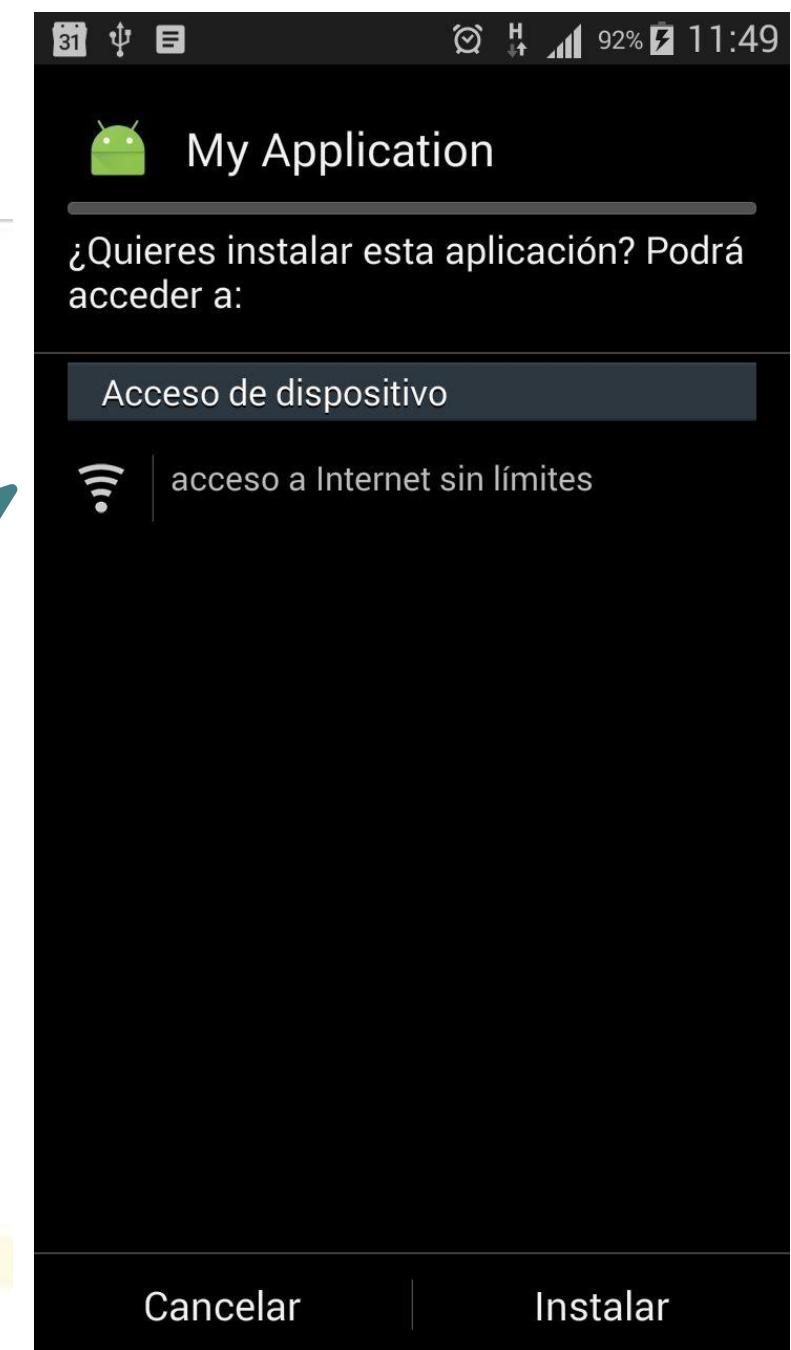
```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.ldelia.myapplication">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        an
        an
        an
        an
        <a
            <action android:name="android.intent.action.MAIN" />
            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>

</application>

<uses-permission android:name="android.permission.INTERNET"></uses-permission>
</manifest>
```

Ejemplo de acceso a internet



# Permisos de usuario en AndroidManifest.xml

- En versiones inferiores a Android 6 el usuario acepta los permisos en el momento de la instalación
- Desde Android 6 los usuarios aceptan los permisos cuando la aplicación se está ejecutando.
  - Simplifica el proceso de instalación.
  - El usuario tiene mayor control. Puede aceptar algunos permisos y otros no

