



2. Lesson 28/02/23

[01.1 Creating the first Android app.pdf](#)

What is Android Studio?

- Android integrated development environment (IDE)
- Project and Activity templates
- Layout editor
- Testing tools
- Gradle-based build
- Log console and debugger
- Emulators

Activity template

When you create a new project you can choose among different templates depending on what you want to implement.

You can also choose activities specific for wearable devices or TVs devices.

Name your project

Give a name to the project and then select the language used to develop the application. (Java or Kotlin)

Min API level for your app

You must select the minimum API level for your app, we will chose API 27. You choose it also considering what you're going to develop.

Project folders

1. **Manifest:** description of app read by the Android runtime
2. **Java:** Java source code packages
3. **Res:** Resources (XML) - layout, strings, images, dimensions, colors...
4. **build.gradle:** Gradle build files, provided files to compile the application

Gradle build system

- Modern build subsystem in Android Studio
- Not necessary to know low-level Gradle details, not necessary to modify these files.

Android Studio interface

1. Toolbar
2. Navigation bar
3. Project pane
4. Editor
5. Tabs for other panes

Run the app

Click the play button. You can run the app in a virtual device or in a physical device connected through an USB port. Suggestion: use the virtual device that you created following the instructions in the slides.

Virtual device: to create the virtual device you need to choose hardware, select the Android version and finalize the process.

Physical device: to run the app on a physical device you need to turn on the Developer Options and enable the USB Debugging.

Exercise one

Hello world application.

Very simple without interaction between user and interface.

Goal: want to change the name of the App (see xml files in “res” folder)

Solution: in order to change the name of the application I change the string with the id name = “app_name”.

```
// string.xml file in the res folder
<resources>
    <string name="app_name">Ex1_HelloWorld</string>
</resources>

// Change from "Ex1_HelloWorld" to "My First Application"
```

Exercise two

In this exercise we have an interaction between user and interface.

Goal: want to interact with the app using a button. If we tap on the button the text below will change.

1. Change the name of the app like done in the Ex1

2. Add a button and a textView in the activityMain.xml editor

Required Behavior:

When the User clicks on the button labelled «Change Text!» the textView must change its text from «Initial Text» to «Updated Text!!».

Solution:

- Write a method that implements such behavior (in java/MainActivity.java)
 1. When the user clicks on the button
 2. Find the textView element (using the ID)
 3. Assign the new text to it
- Associate such method to the button in the parameter “onClick”