

# Build your first app

Lesson 1



# 1.1 Your first Android app



# Contents

- Android Studio
- Creating "Hello World" app in Android Studio
- Basic app development workflow with Android Studio
- Running apps on virtual and physical devices



# Prerequisites

- Java Programming Language
- Object-oriented programming
- XML - properties / attributes
- Using an IDE for development and debugging



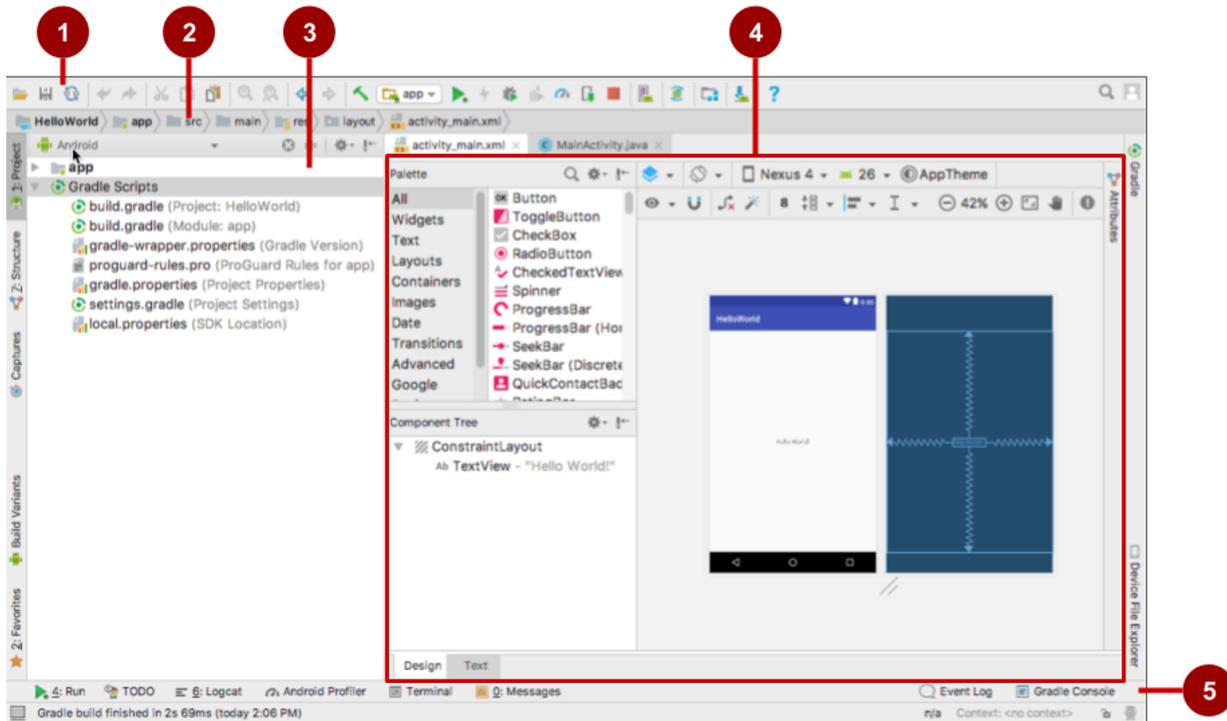
# Android Studio

# 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



# Android Studio interface



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

# Installation Overview

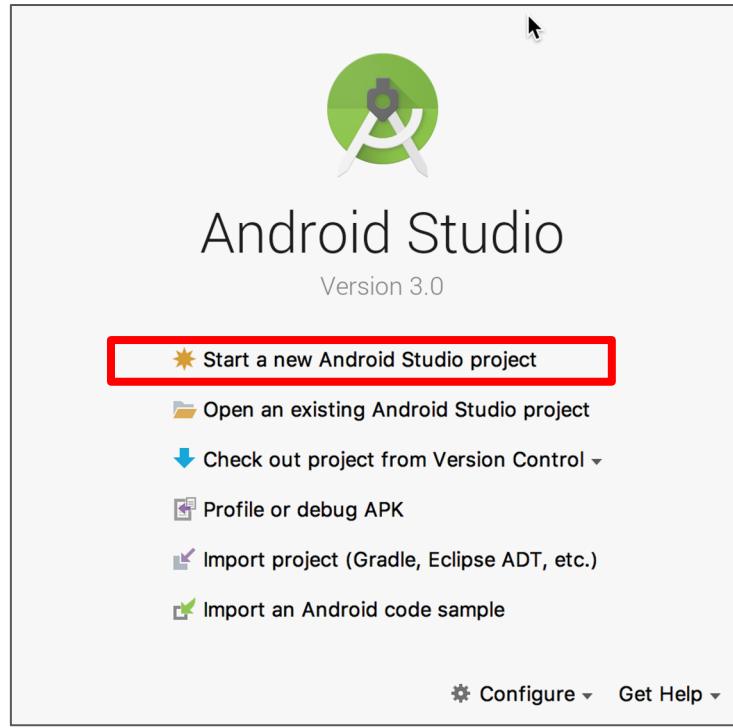
- Mac, Windows, or Linux
- Download and install Android Studio from  
<https://developer.android.com/studio/>
- See [1.1 P: Android Studio and Hello World](#)



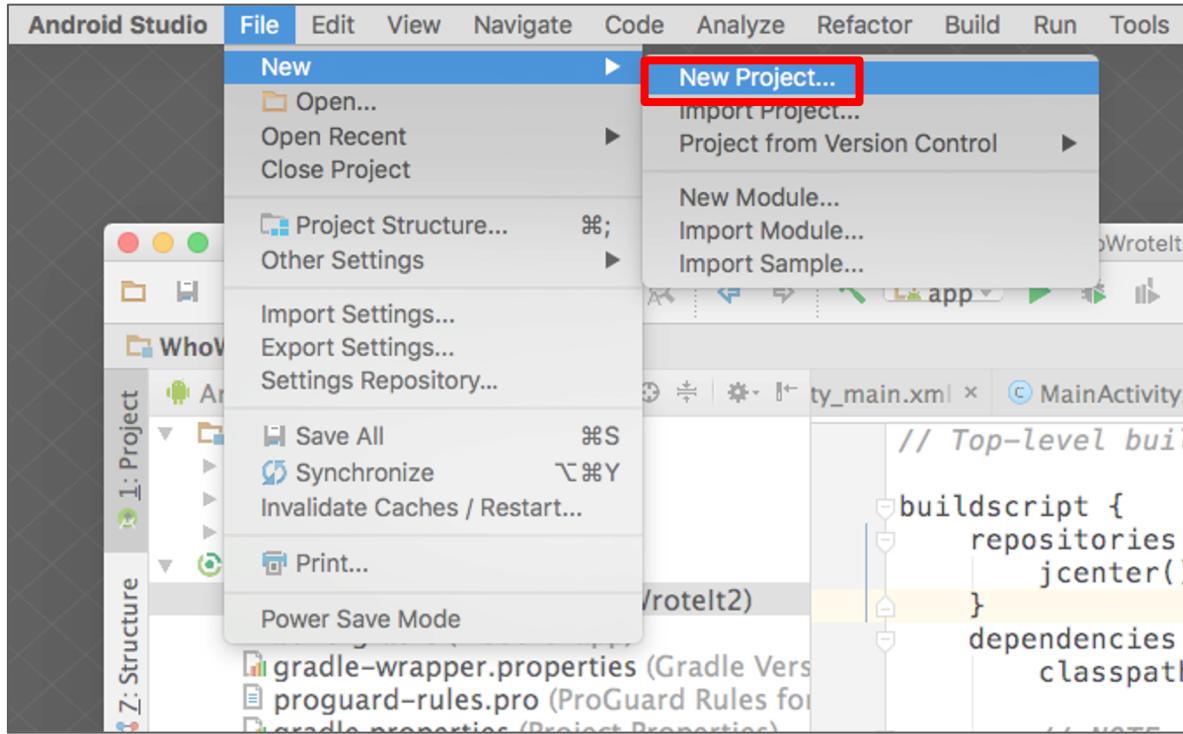
# Creating your first Android app



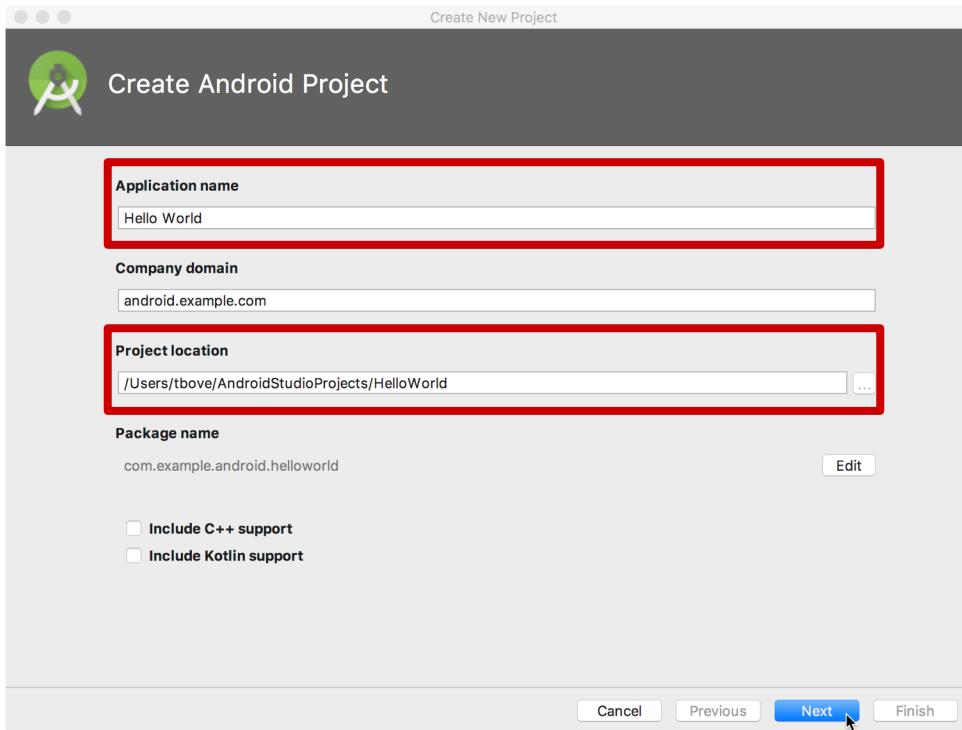
# Start Android Studio



# Create a project inside Android Studio



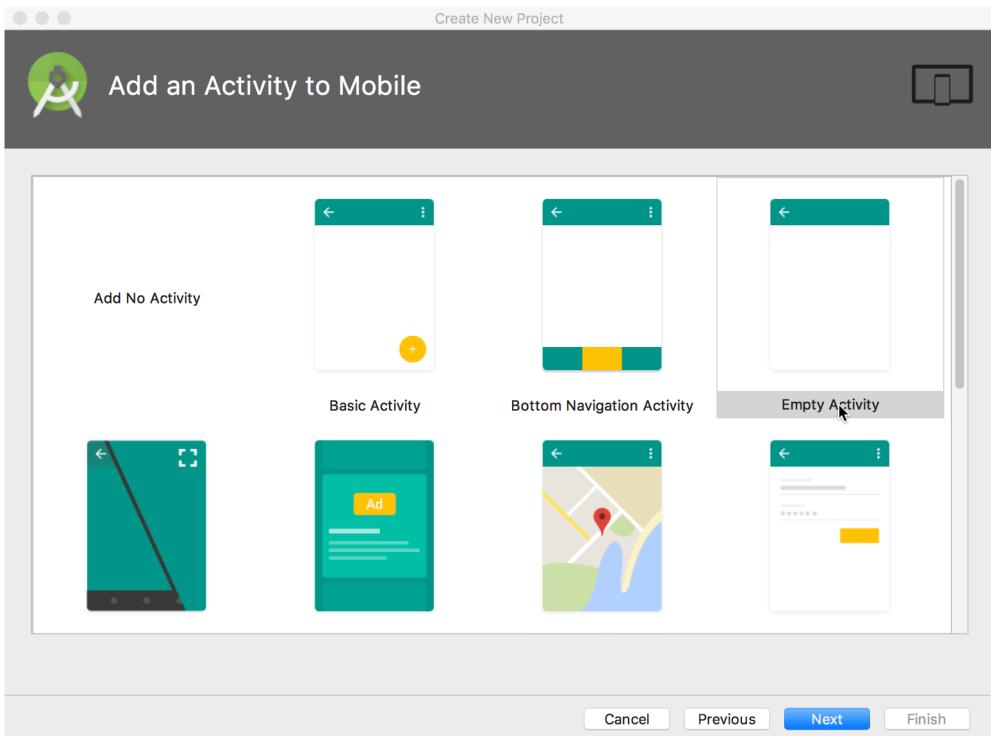
# Name your app



# Pick activity template

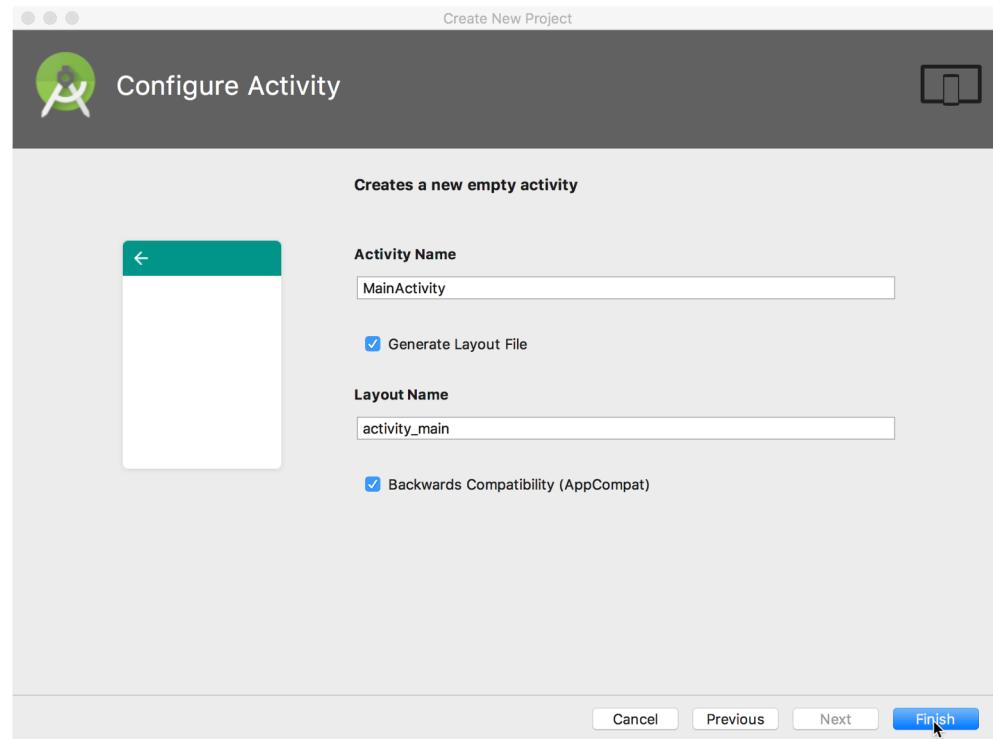
Choose templates for common activities, such as maps or navigation drawers.

Pick Empty Activity or Basic Activity for simple and custom activities.



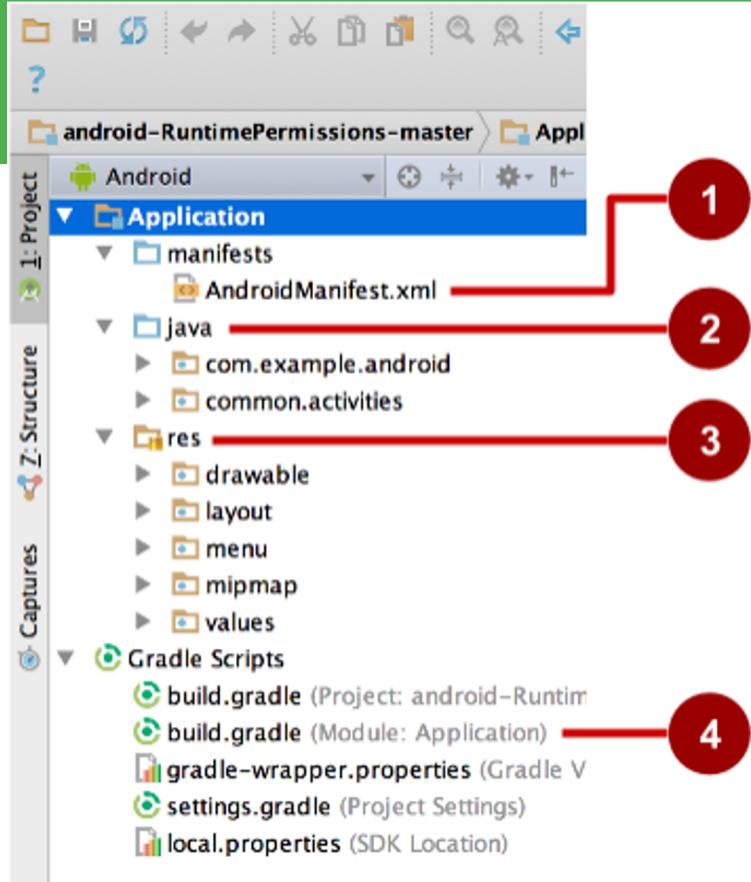
# Name your activity

- Good practice:
  - Name main activity  
`MainActivity`
  - Name layout  
`activity_main`
- Use AppCompat
- Generating layout file is convenient



# Project folders

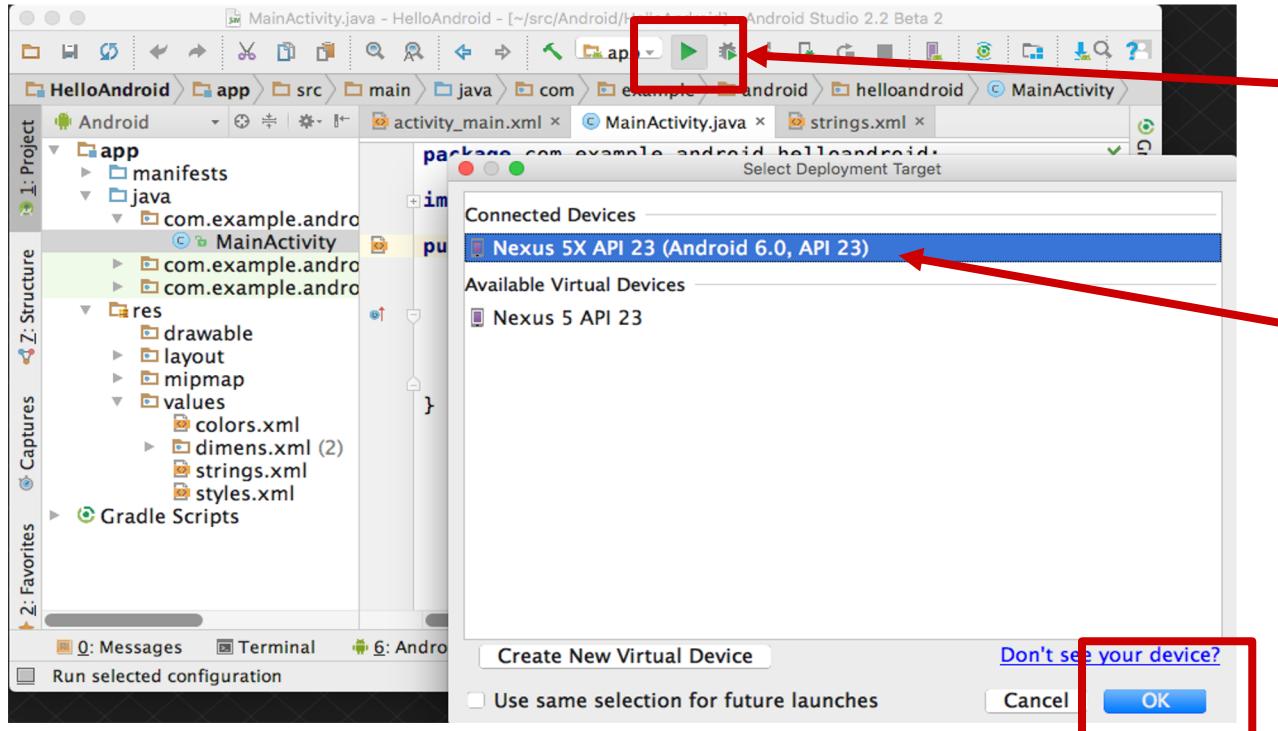
- 1. manifests**—Android Manifest file - description of app read by the Android runtime
- 2. java**—Java source code packages
- 3. res**—Resources (XML) - layout, strings, images, dimensions, colors...
- 4. build.gradle**—Gradle build files



# Gradle build system

- Modern build subsystem in Android Studio
- Three build.gradle:
  - project
  - module
  - settings
- Typically not necessary to know low-level Gradle details
- Learn more about gradle at <https://gradle.org/>

# Run your app



1. Run

2. Select virtual  
or physical  
device

3. OK

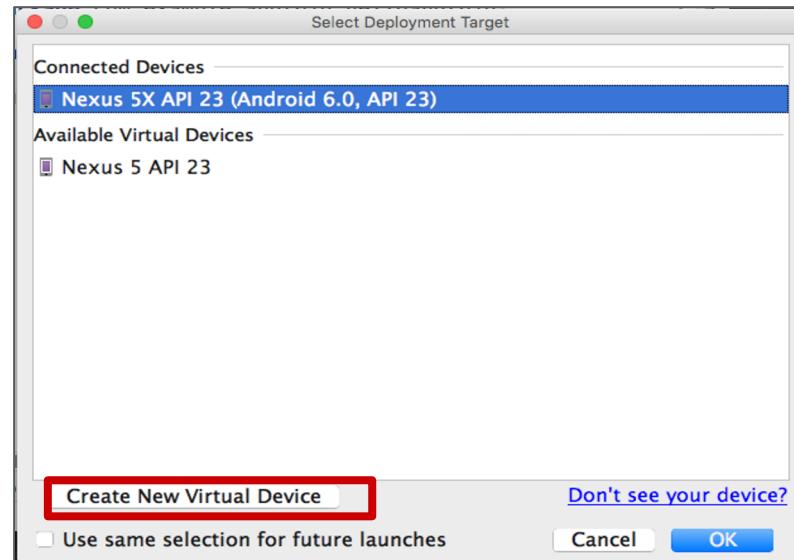
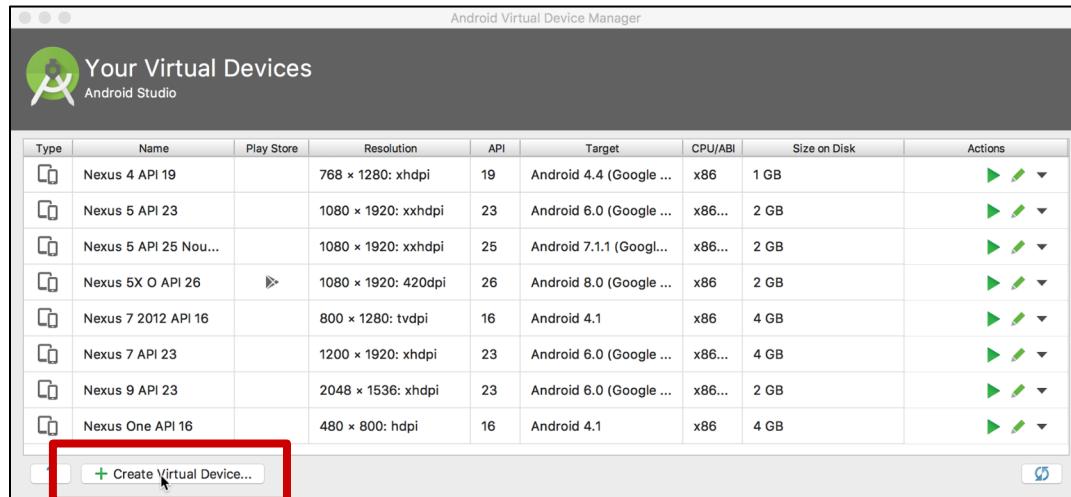


# Create a virtual device

Use emulators to test app on different versions of Android and form factors.

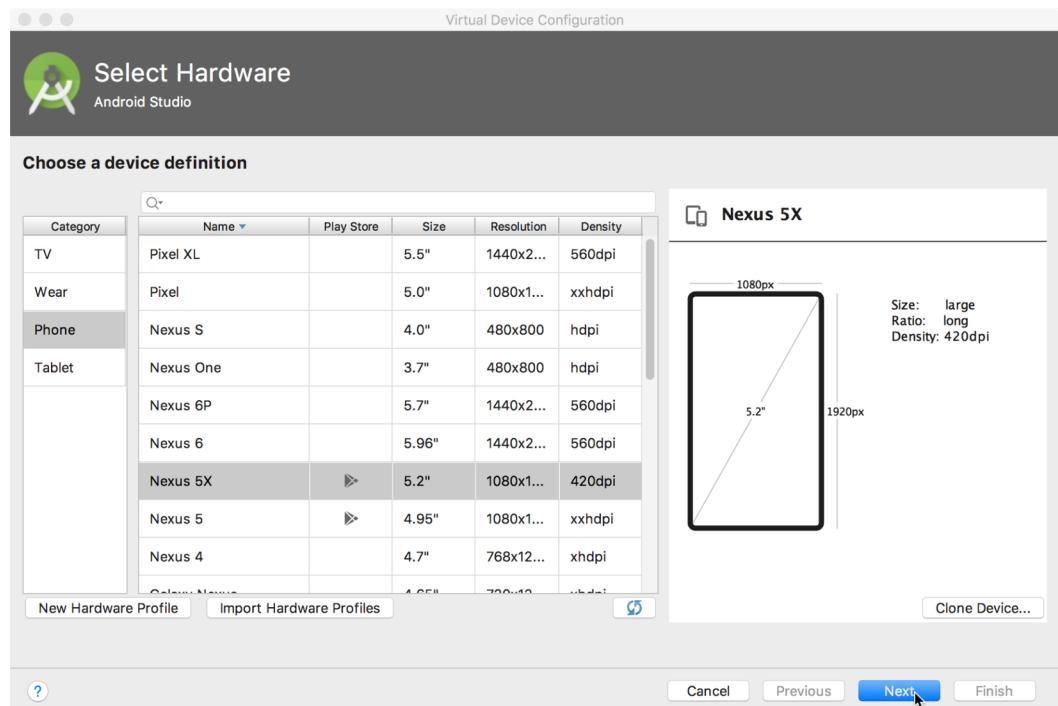
Tools > Android > AVD Manager

or:

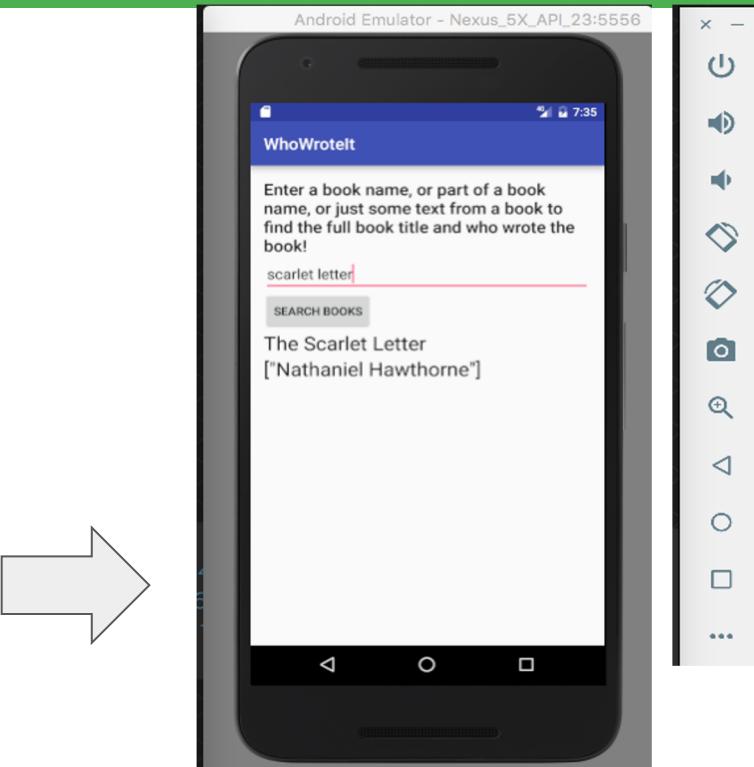


# Configure virtual device

1. Choose hardware
2. Select Android version
3. Finalize



# Run on a virtual device



# Run on a physical device

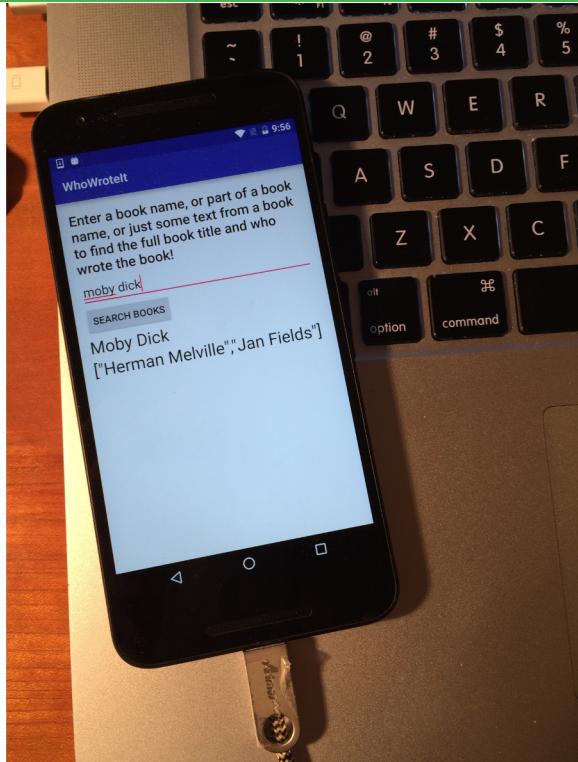
1. Turn on Developer Options:
  - a. **Settings > About phone**
  - b. Tap **Build number** seven times
2. Turn on USB Debugging
  - a. **Settings > Developer Options > USB Debugging**
3. Connect phone to computer with cable

Windows/Linux additional setup:

- [Using Hardware Devices](#)

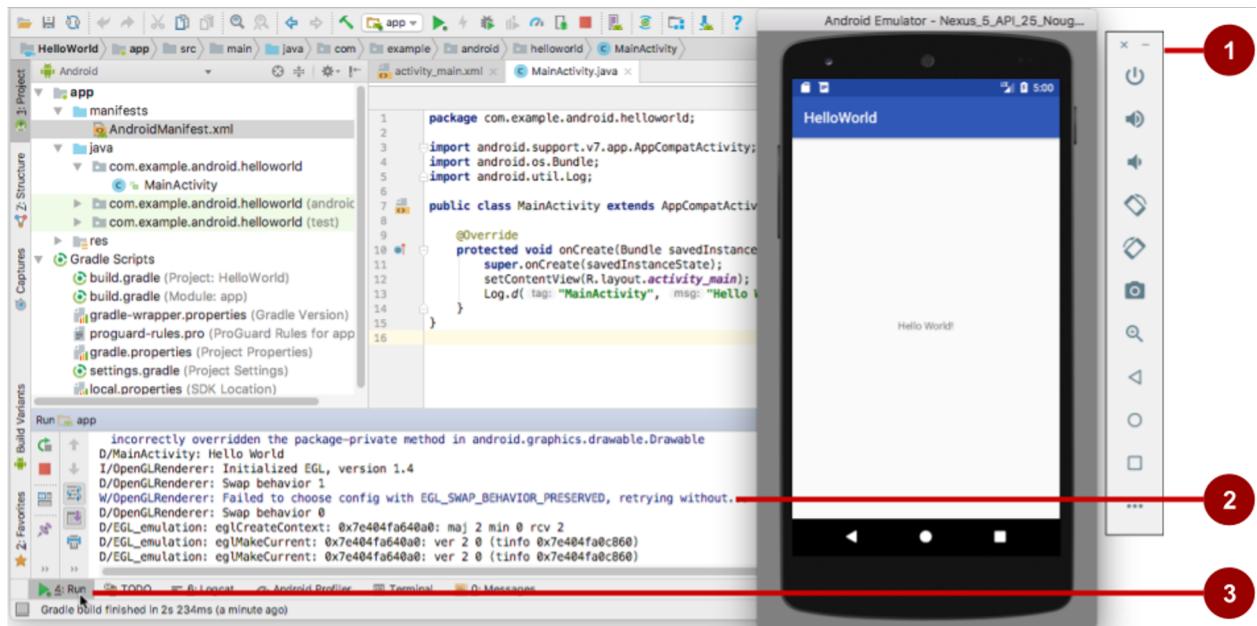
Windows drivers:

- [OEM USB Drivers](#)



# Get feedback as your app runs

1. Emulator running the app
2. Run pane
3. Run tab to open or close the Run pane



# Adding logging to your app

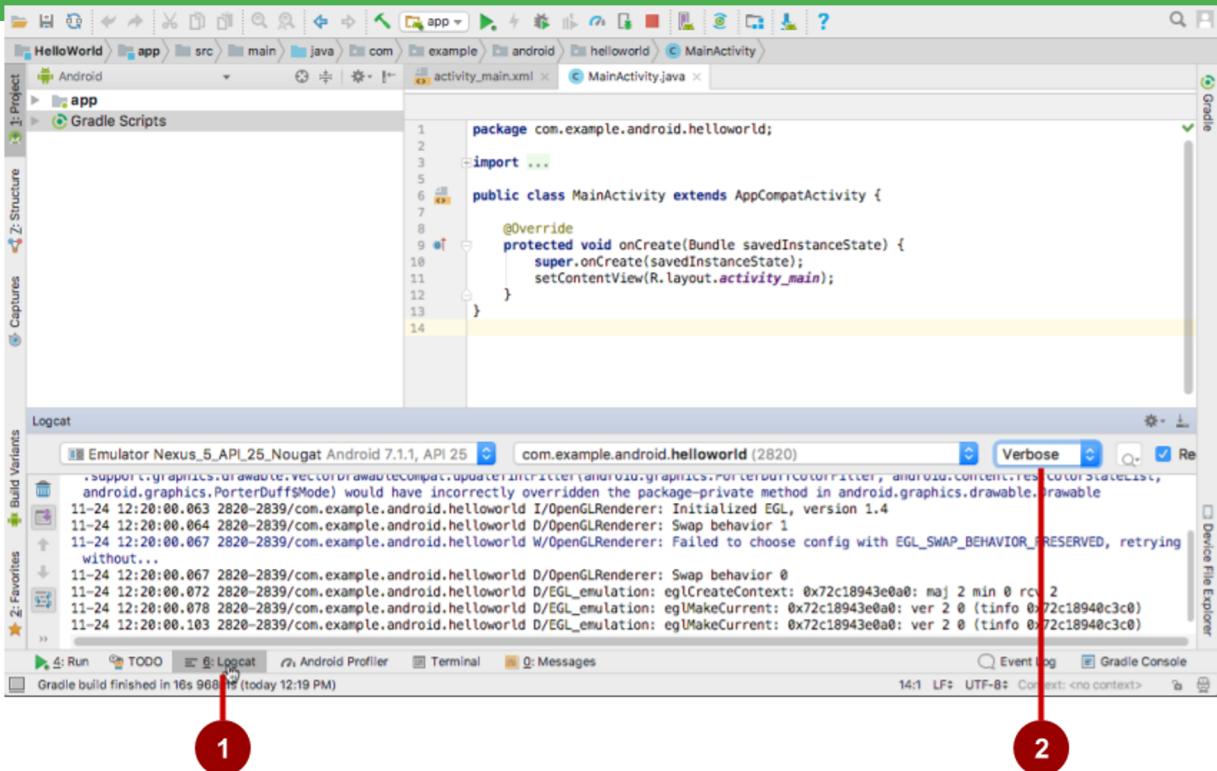
- As the app runs, the **Logcat** pane shows information
- Add logging statements to your app that will show up in the Logcat pane
- Set filters in **Logcat** pane to see what's important to you
- Search using tags



# The Logcat pane

1. Logcat tab to show Logcat pane

2. Log level menu



# Logging statement

```
import android.util.Log;  
  
// Use class name as tag  
private static final String TAG =  
    MainActivity.class.getSimpleName();  
  
// Show message in Android Monitor, logcat pane  
// Log.<log-level>(TAG, "Message");  
Log.d(TAG, "Creating the URI...");
```



# Learn more

- [Meet Android Studio](#)
- Official Android documentation at [developer.android.com](#)
- [Create and Manage Virtual Devices](#)
- [Supporting Different Platform Versions](#)
- [Supporting Multiple Screens](#)



# Learn even more

- [Gradle Wikipedia page](#)
- [Google Java Programming Language style guide](#)
- Find answers at [Stackoverflow.com](#)



# What's Next?

- Concept Chapter: [1.1 Your first Android app](#)
- Practical: [1.1 Android Studio and Hello World](#)



# END

