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## App Creation on Android Studio

## Some notions

### Project

- a project contains all the elements that define the app:

- source codes,
- build files,
- test codes,
- resources,
- Android Manifest files

⇒ a structure is required for compiling and packaging the app ⇒ notion of modules

## Modules

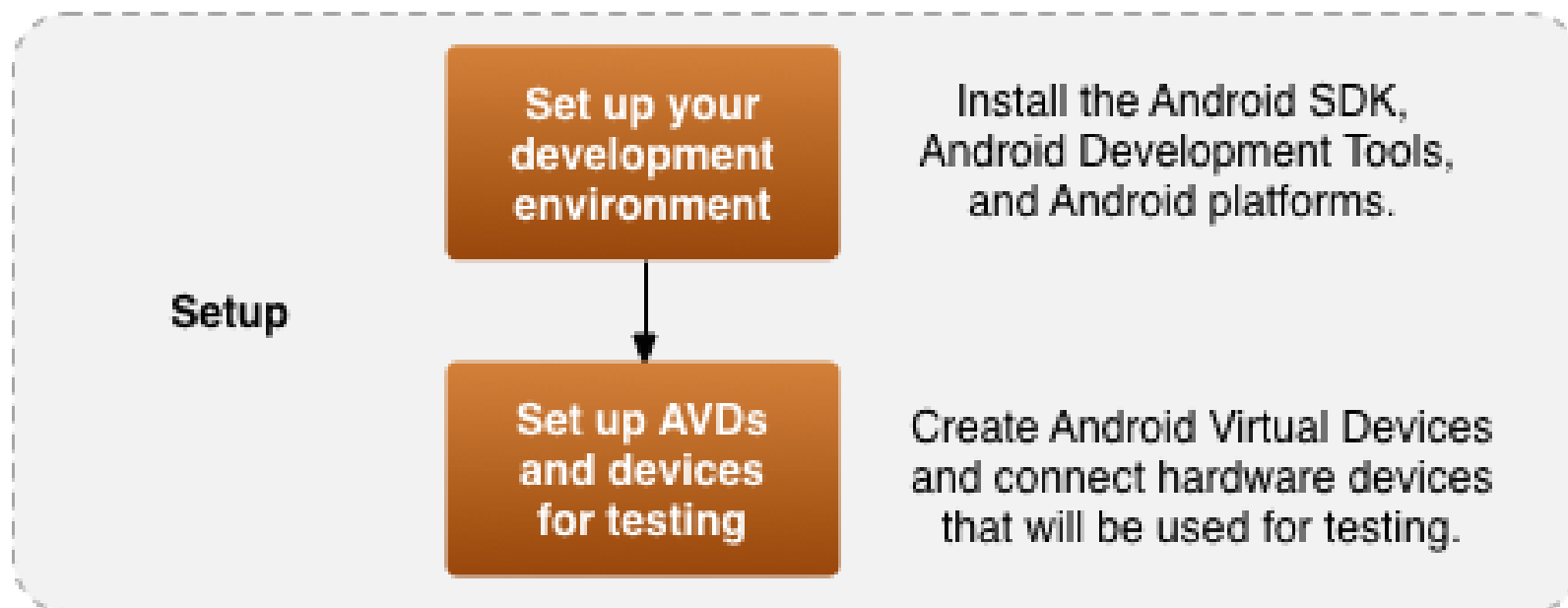
- Four types: Android App Modules, Test Modules, Library Modules and App Engine Modules
- Android App Module contains all the elements needed by your app: source codes, resources files, Android Manifest and the build files
- Test Modules are source codes for testing the application,
- Library Modules contain source codes and resources that can be shared by several apps (e.g. a game engine used in different games). A library is not an .apk file but can be inserted in each .apk of apps using that library
- App Engine Modules: development of Google Cloud backend apps (backup, messaging).

⇒ **one project contains several modules**

## Android App Creation: Workflow

- Four steps:
  - Setting up the environment
  - App development
  - Debugging and testing
  - Publishing your app

- Four steps:
  - **Setting up the environment**
    - installation of Android Studio + related tools → done!
    - creation of AVDs / test of real devices → next slides
  - App development
  - Debugging and testing
  - Publishing your app



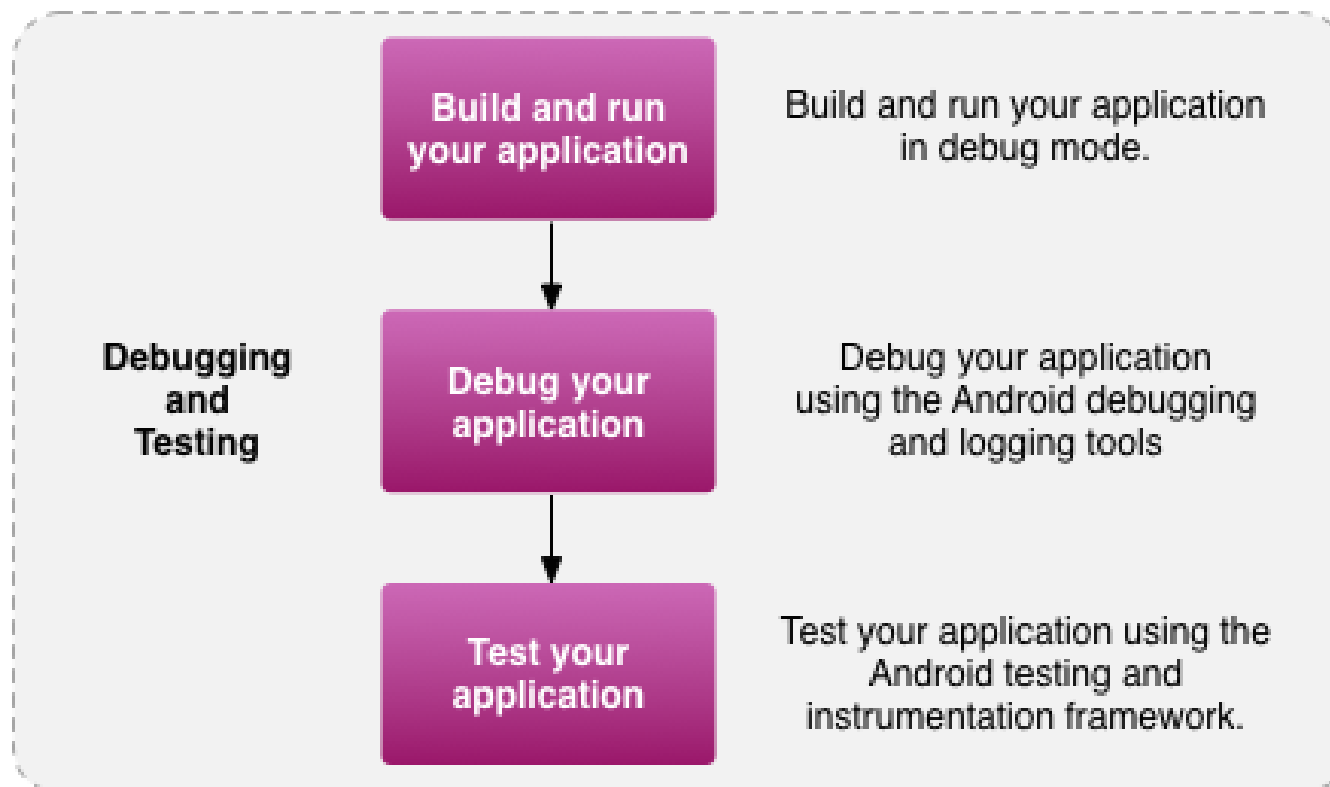
- Four steps:
  - Setting up the environment
  - **App development**
    - core part of the lectures/labs
    - mainly java + XML
    - broadcast receiver, content providers, services, etc.
  - Debugging and testing
  - Publishing your app

**Development**

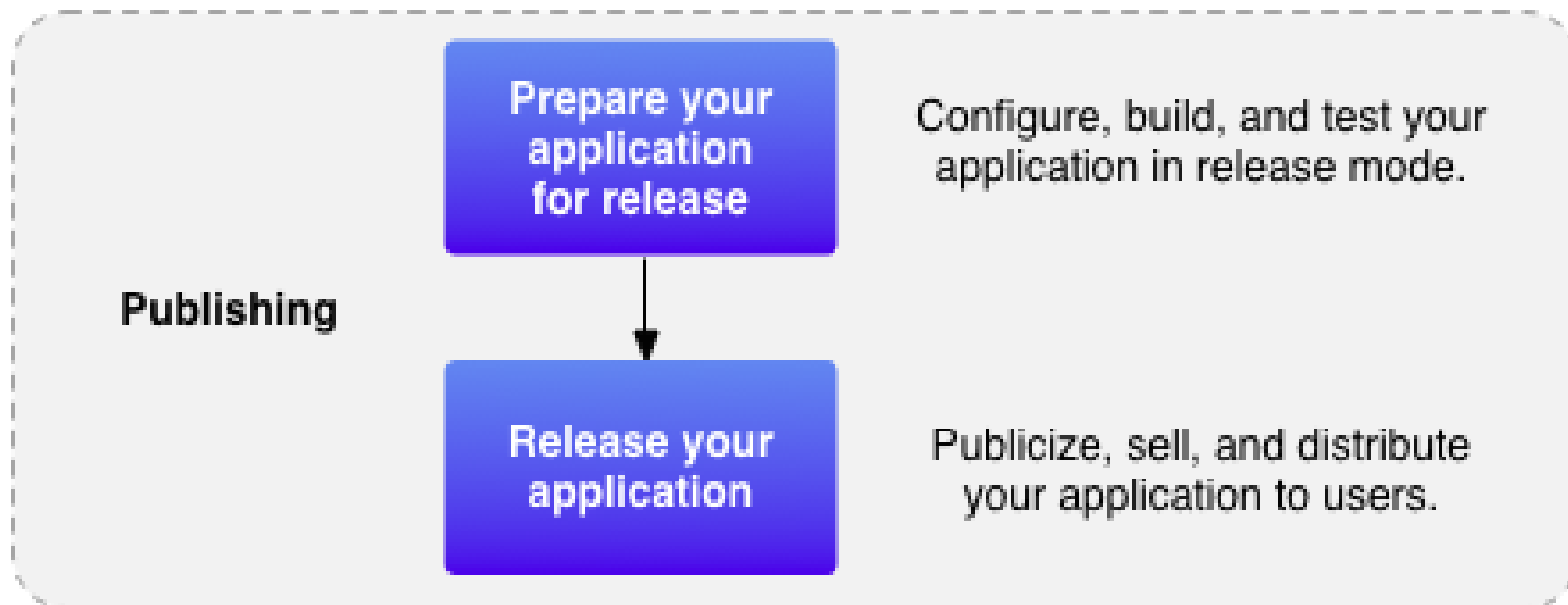
**Create your  
application**

Create an Android project with  
your source code, resource files,  
and Android manifest file.

- Four steps:
  - Setting up the environment
  - App development
  - **Debugging and testing**
    - debugging → next slides
    - testing → according to needs: online lecture/tutorial
  - Publishing your app



- Four steps:
  - Setting up the environment
  - App development
  - Debugging and testing
  - Publishing your app
    - debug mode → release mode
    - how to drop your app on Google Play





## App Creation using Android Studio

### Outline

- creating an application from scratch
- **development** → description of the Android Studio Interface
- **building** the project → (very short) introduction to Gradle
- **running** → creation of Android Virtual Devices
- **debugging** → using the debug mode of AS
- testing and publishing are not covered by this lecture

## Creating a first application using Android Studio

- launching the wizard for the app creation
- the process is also described here:

*<http://developer.android.com/sdk/installing/create-project.html>*



# Welcome to Android Studio

## Recent Projects

No Project Open Yet

## Quick Start



Start a new Android Studio project



Open an existing Android Studio project



Check out project from Version Control



Import project (Eclipse ADT, Gradle, etc.)



Import an Android code sample



Configure



Docs and How-Tos



Android Studio 1.4.1 Build 141.2343393. [Check for updates now.](#)

Start a new Android Studio Project



### Configure your new project

Application name:

Company Domain:

Package name:  [Edit](#)

Project location:

Previous

Next

Cancel

Finish

Give the **name of your app**, the name of the **package** and the **directory** where it should be placed



## Target Android Devices

### Select the form factors your app will run on

Different platforms may require separate SDKs

Phone and Tablet

Minimum SDK

API 15: Android 4.0.3 (IceCreamSandwich)

Lower API levels target more devices, but have fewer features available. By targeting API 15 and later, your app will run on approximately **94,0%** of the devices that are active on the Google Play Store.

[Help me choose](#)

Wear

Minimum SDK

API 21: Android 5.0 (Lollipop)

TV

Minimum SDK

API 21: Android 5.0 (Lollipop)

Android Auto

Glass (Not Installed)

[Download](#)

Minimum SDK

Previous

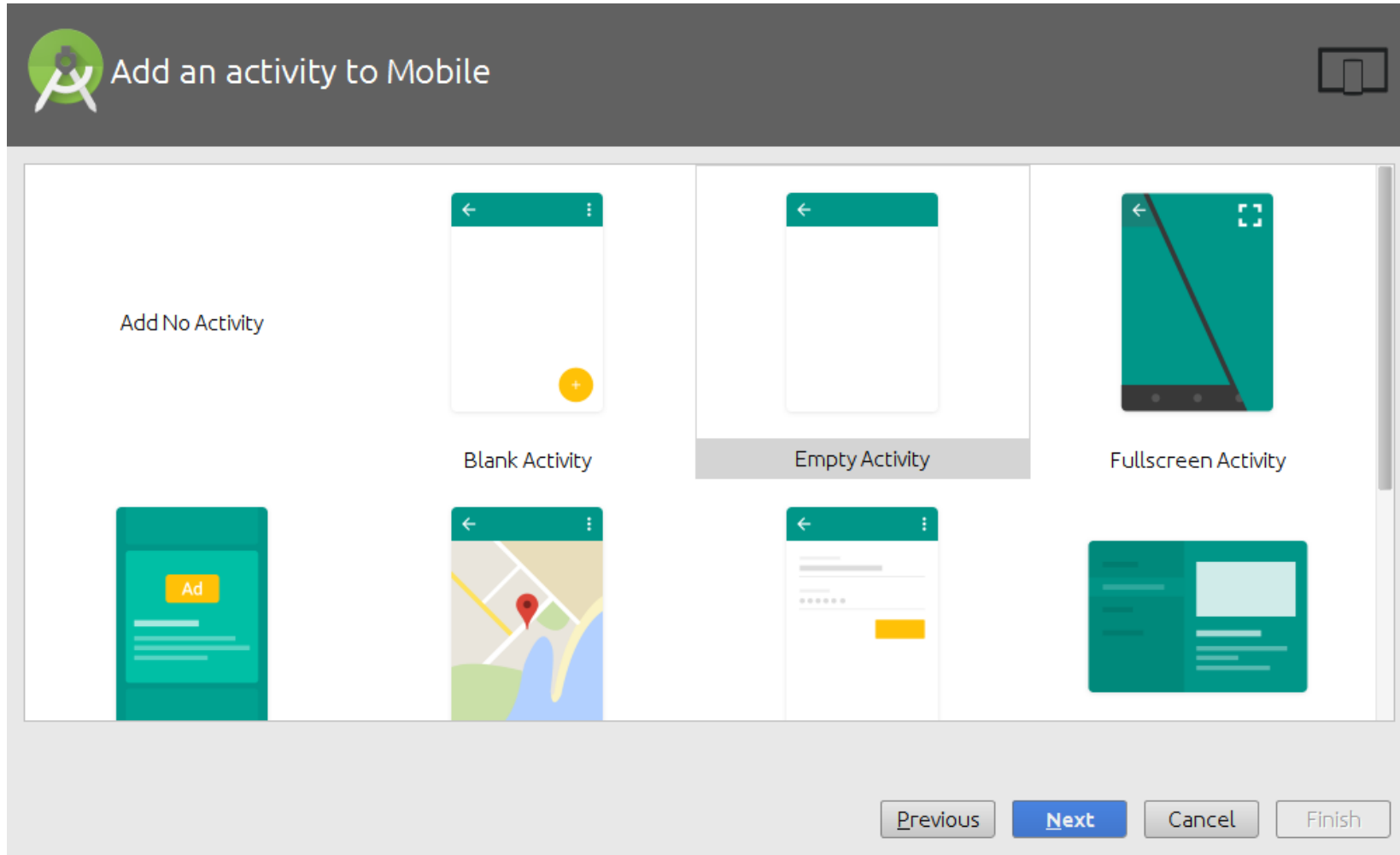
Next

Cancel

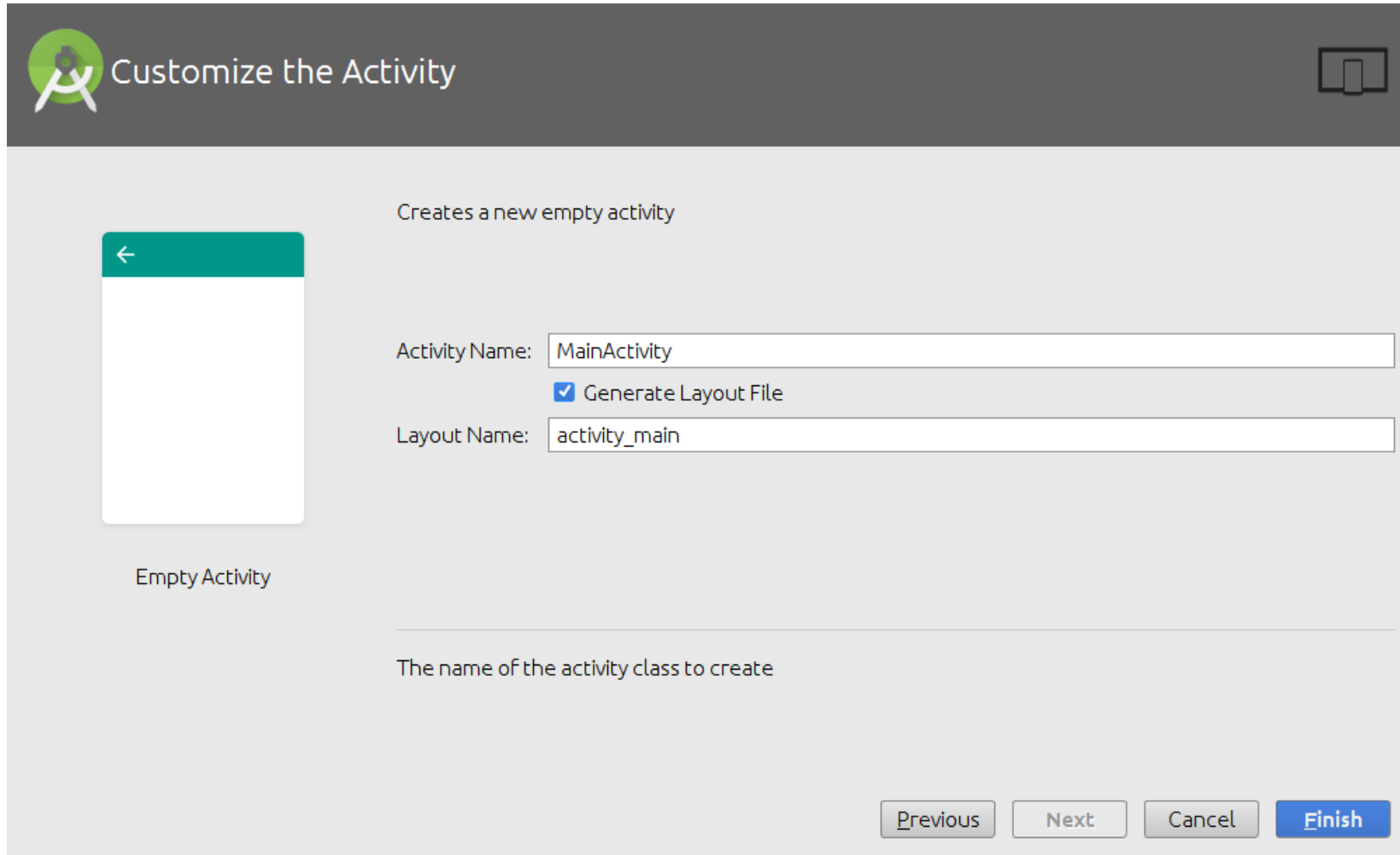
Finish

Choose the **min SDK** (just click next)

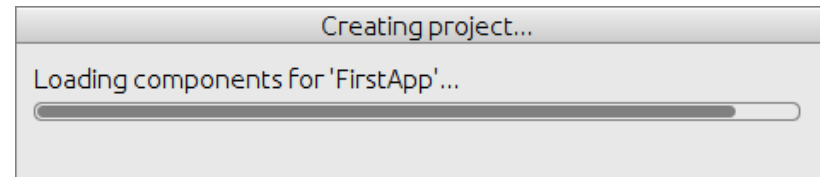




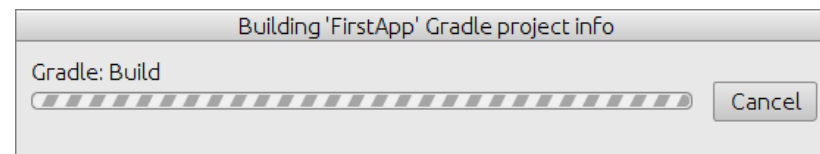
Choose the **Empty Activity type** for your app



Choose the **Activity name**

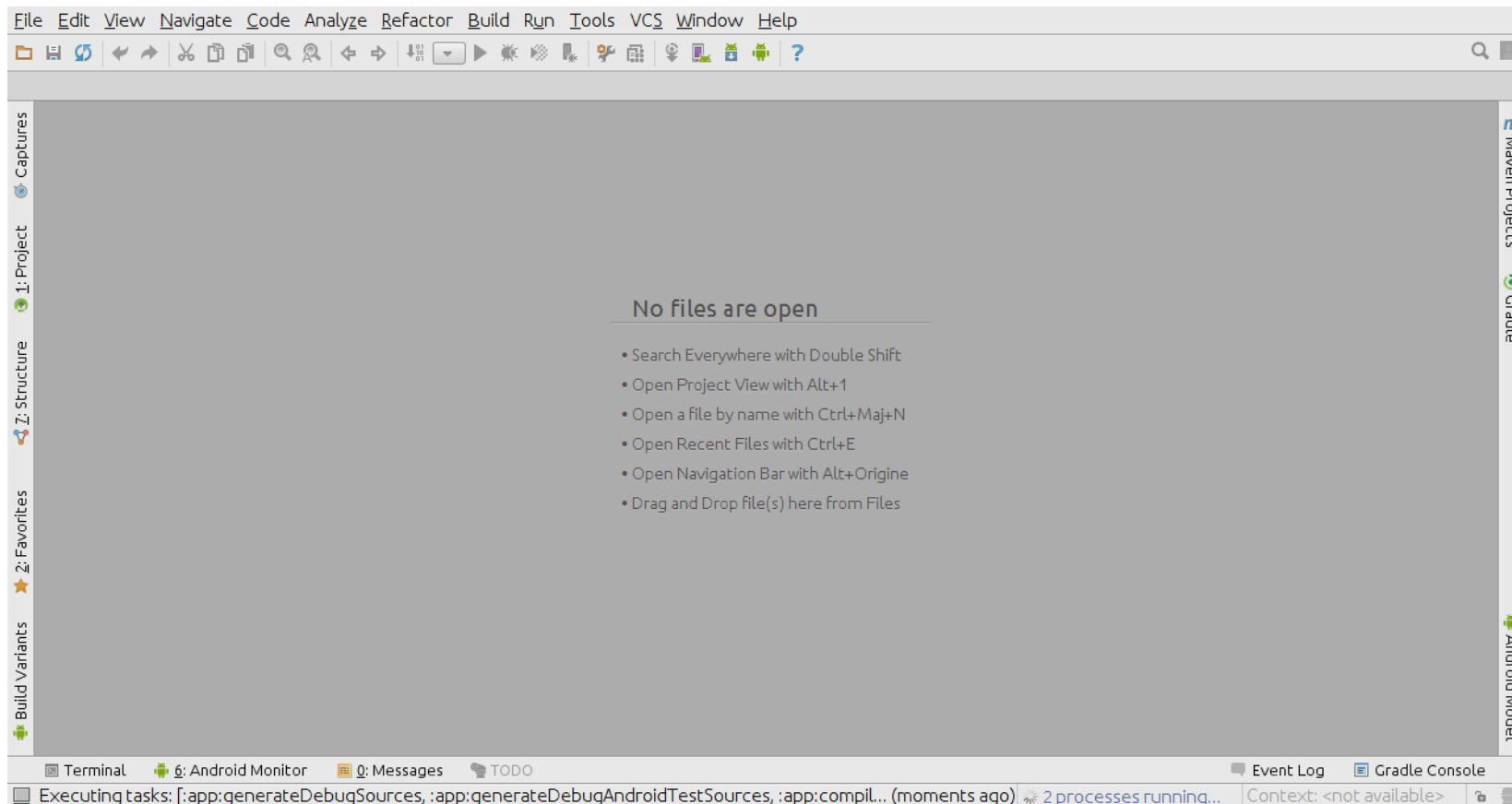


the Android Studio machinery starts

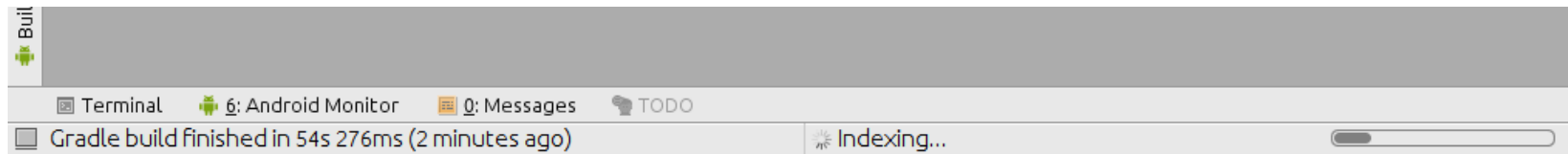


Gradle builds the project





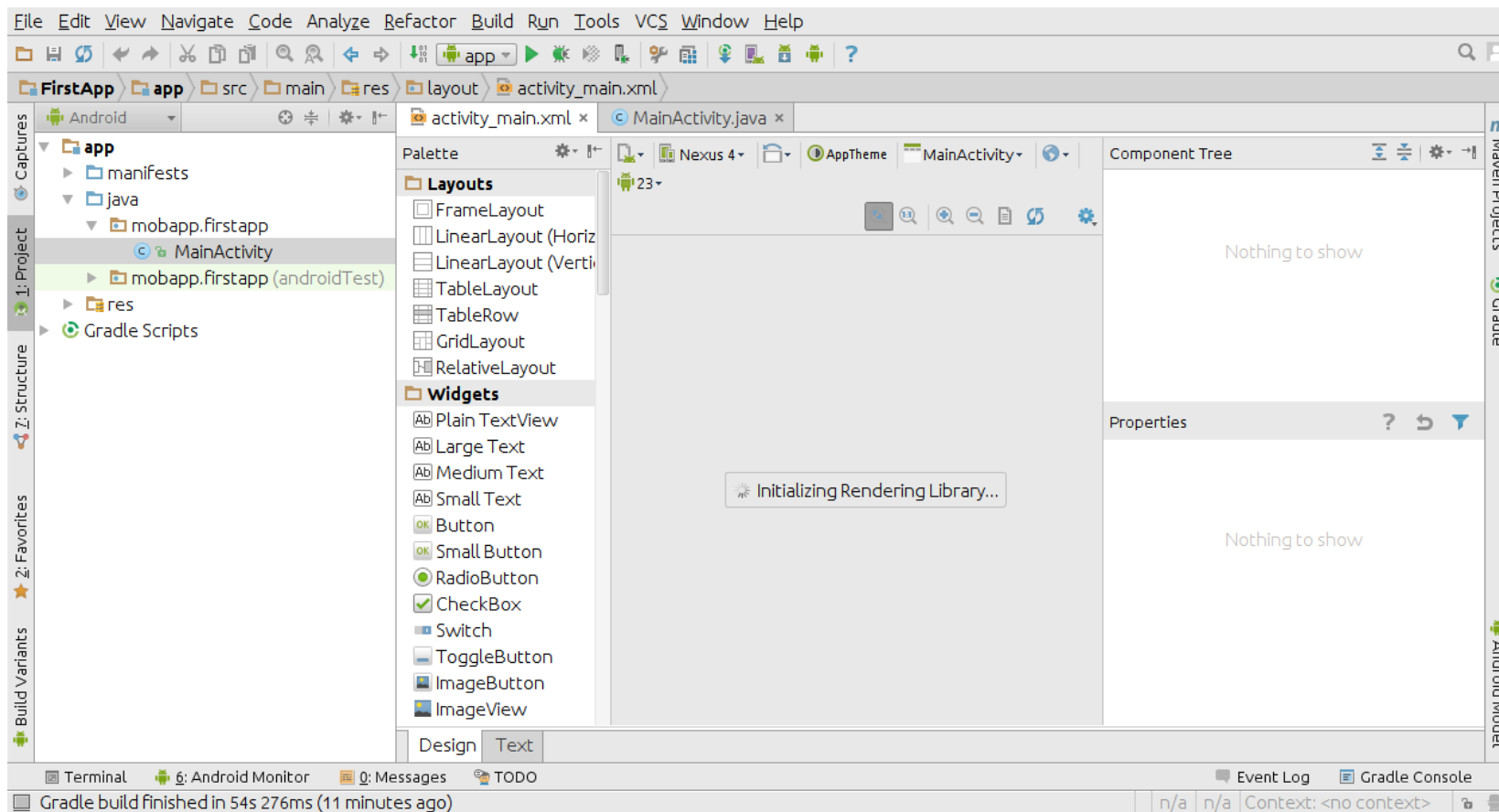
After a while the main window opens but...



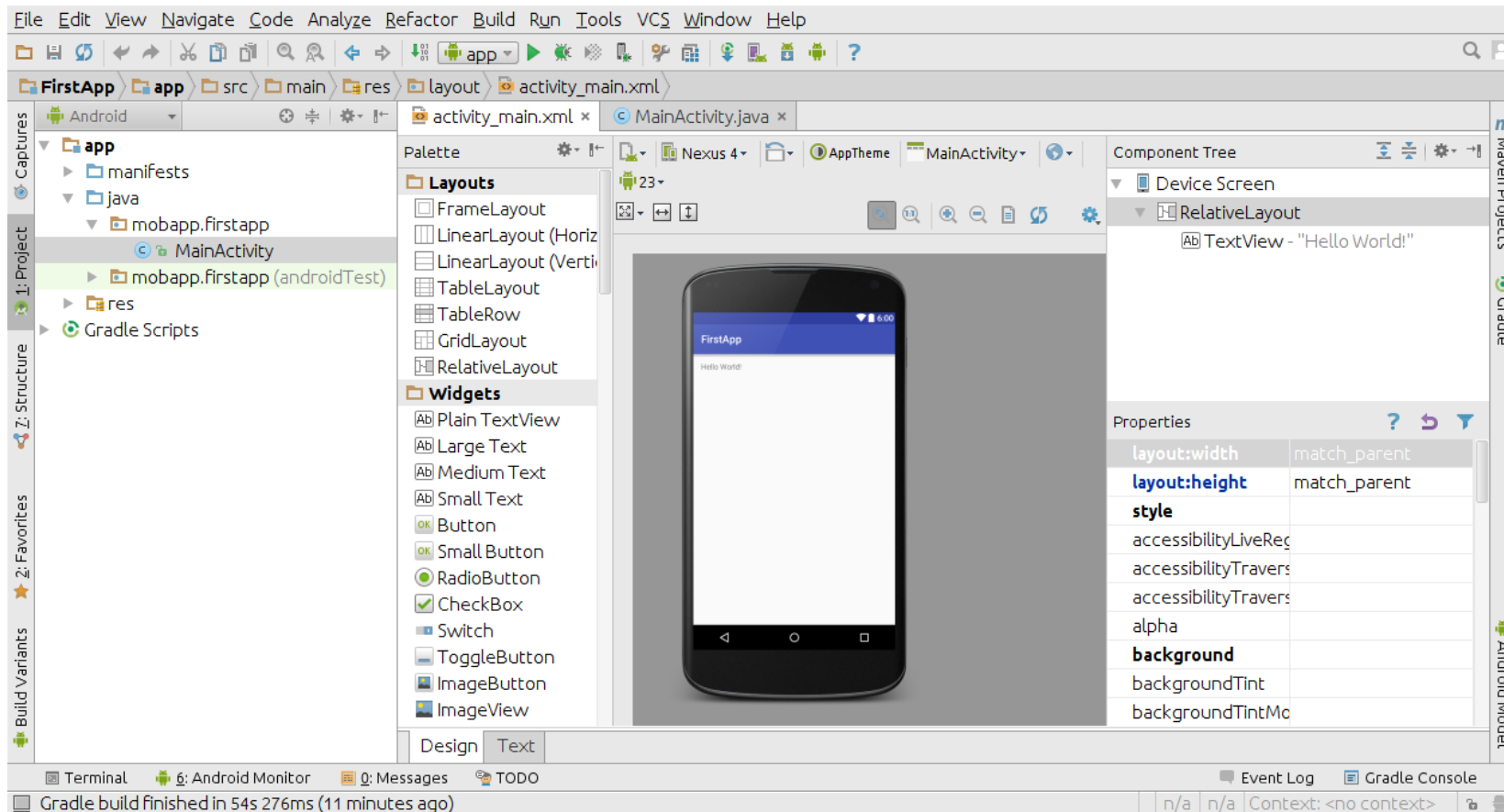
you still have to wait for a moment...

```
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
activity_main.xml x MainActivity.java x
app
  Gradle Scripts
package mobapp.firstapp;
import ...
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
Terminal Android Monitor Messages TODO Event Log Gradle Console
Gradle build finished in 54s 276ms (6 minutes ago) 1:1 LF+ UTF-8+ Context: <no context>
```

before the project is ready, the code is displayed



the layout could be displayed...



after a while