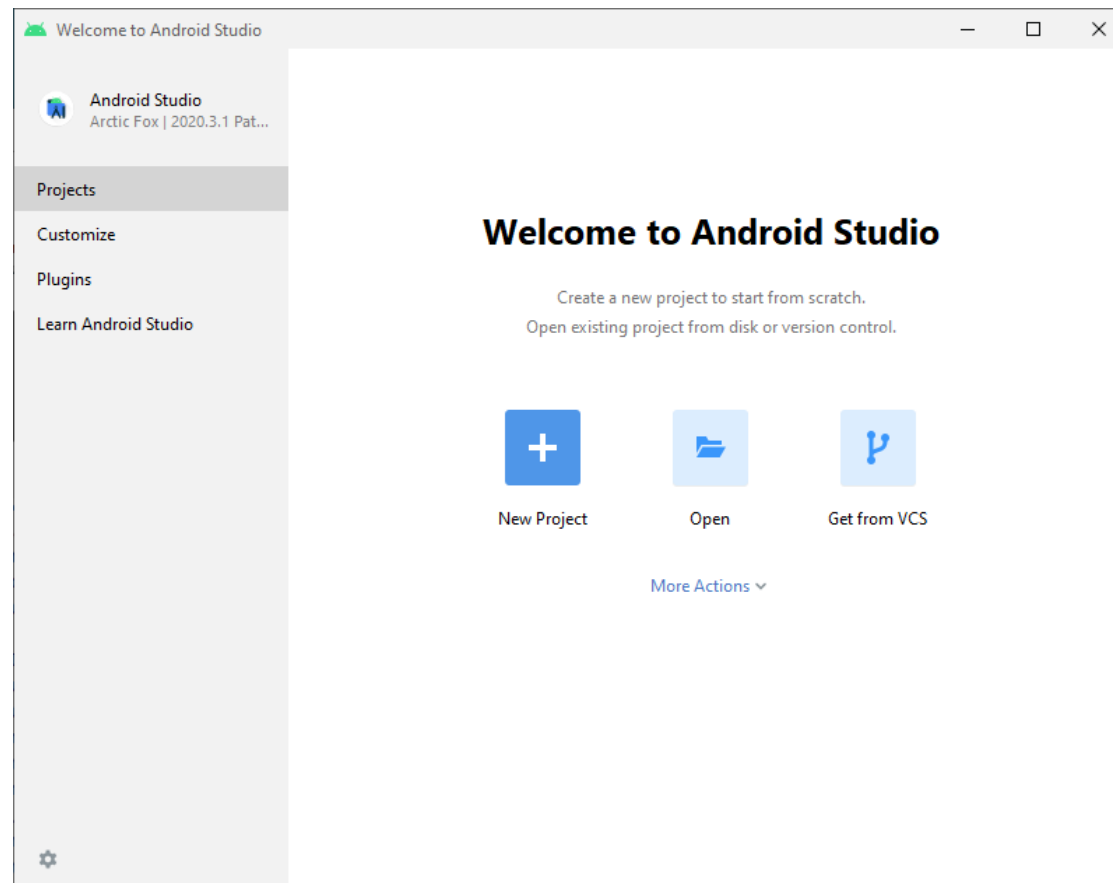


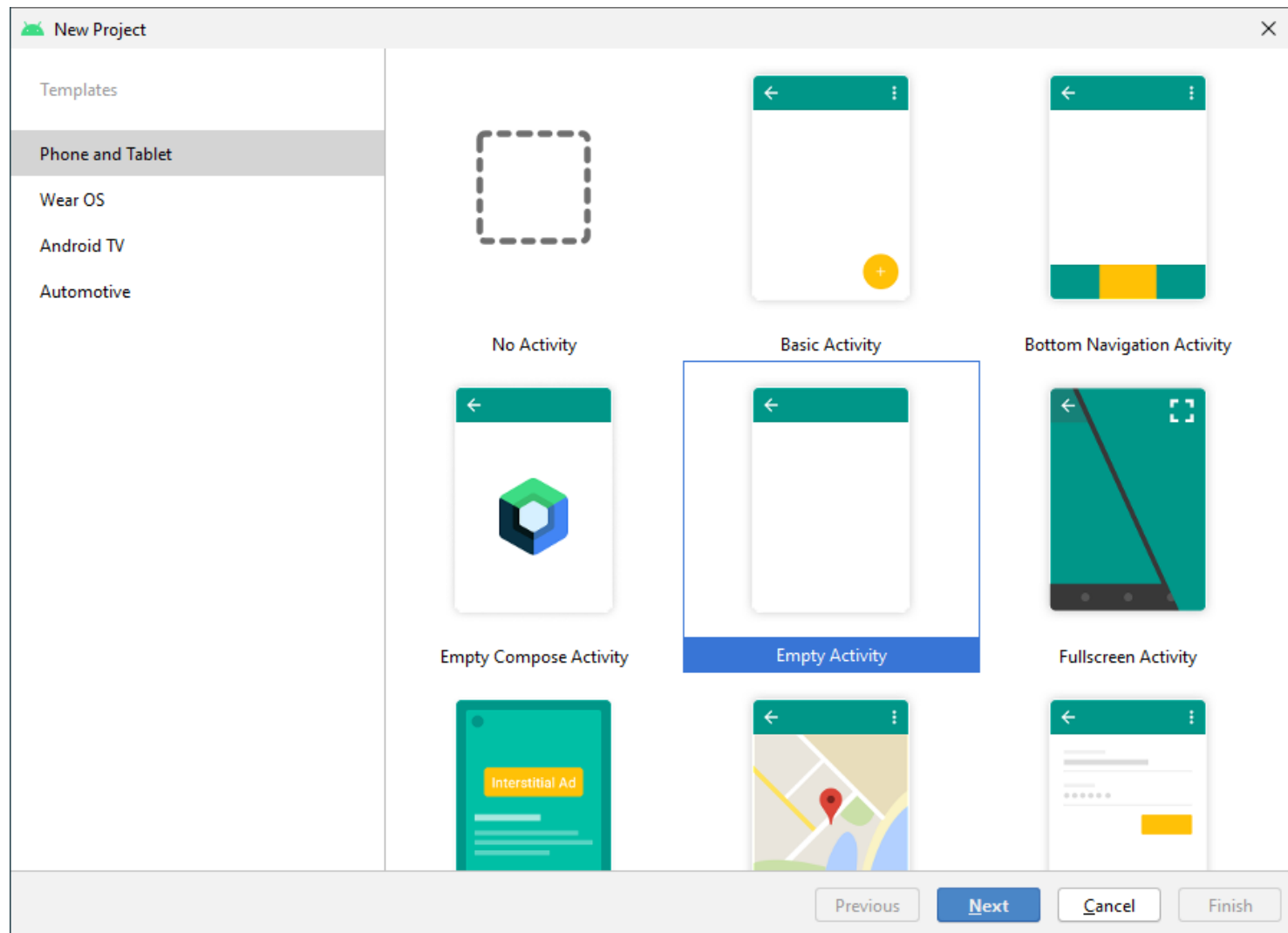
Configurazione e Prima Esecuzione di una App con ANDROID STUDIO

(versione 2020.3.1.6 win64)

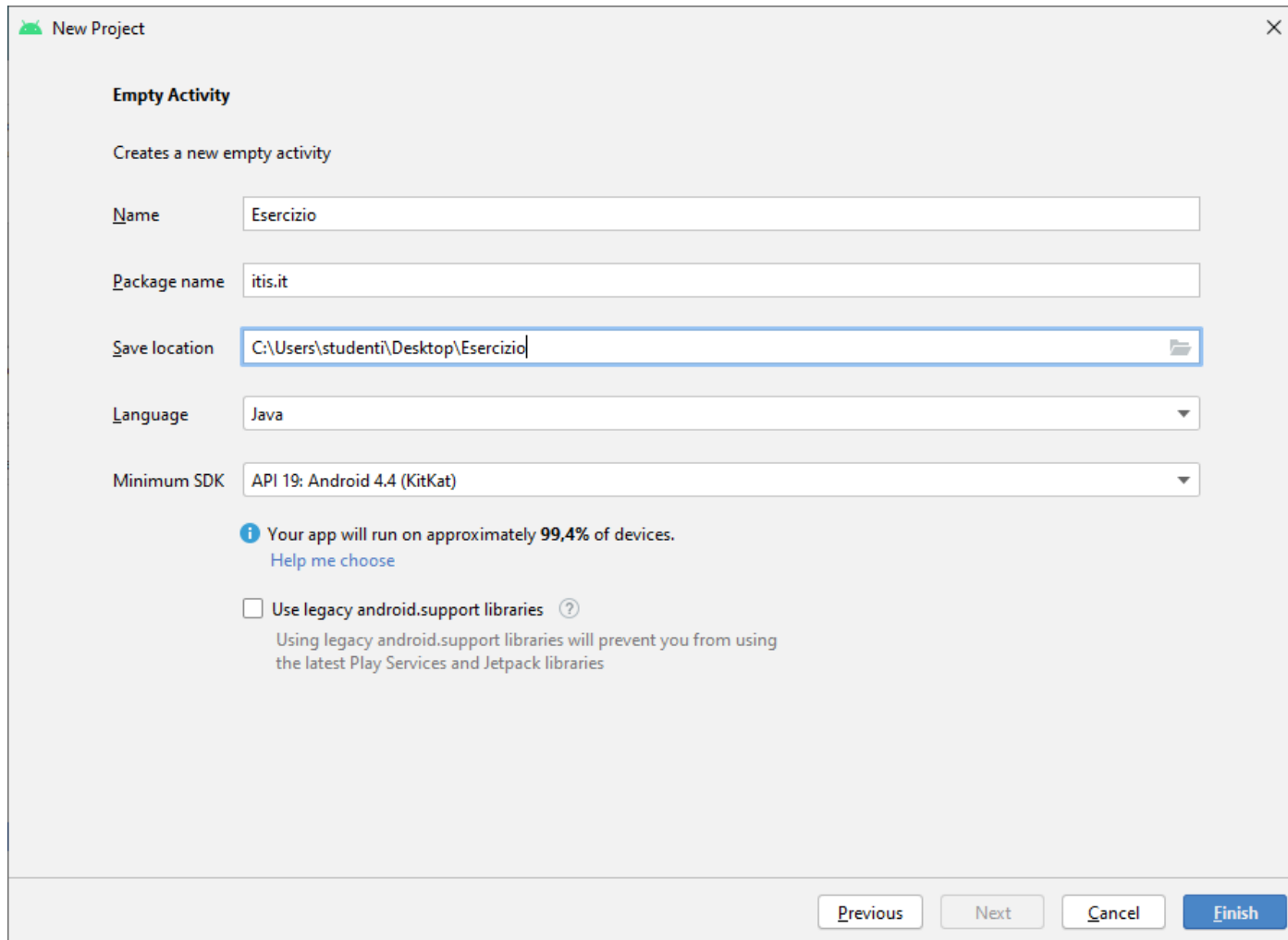
Una volta installato Android Studio, al primo avvio, sono necessarie delle **Operazioni di Configurazione**.
Creare il primo progetto, con un click su **New Project ...**



Come *tipo di progetto (template)*, scegliere **Phone e Tablet** e **Empty Activity** (schermata vuota)



Specificare: il **Nome del Progetto** (es. **Esercizio**); il **Package** (es. **itis.it**);
il **Linguaggio** di Programmazione (**Java**);
la **minima Versione di Android** su cui la App dovrà funzionare (es. **API 19 - Android 4.4**)



New Project

Empty Activity

Creates a new empty activity

Name: Esercizio

Package name: itis.it

Save location: C:\Users\studenti\Desktop\Esercizio

Language: Java

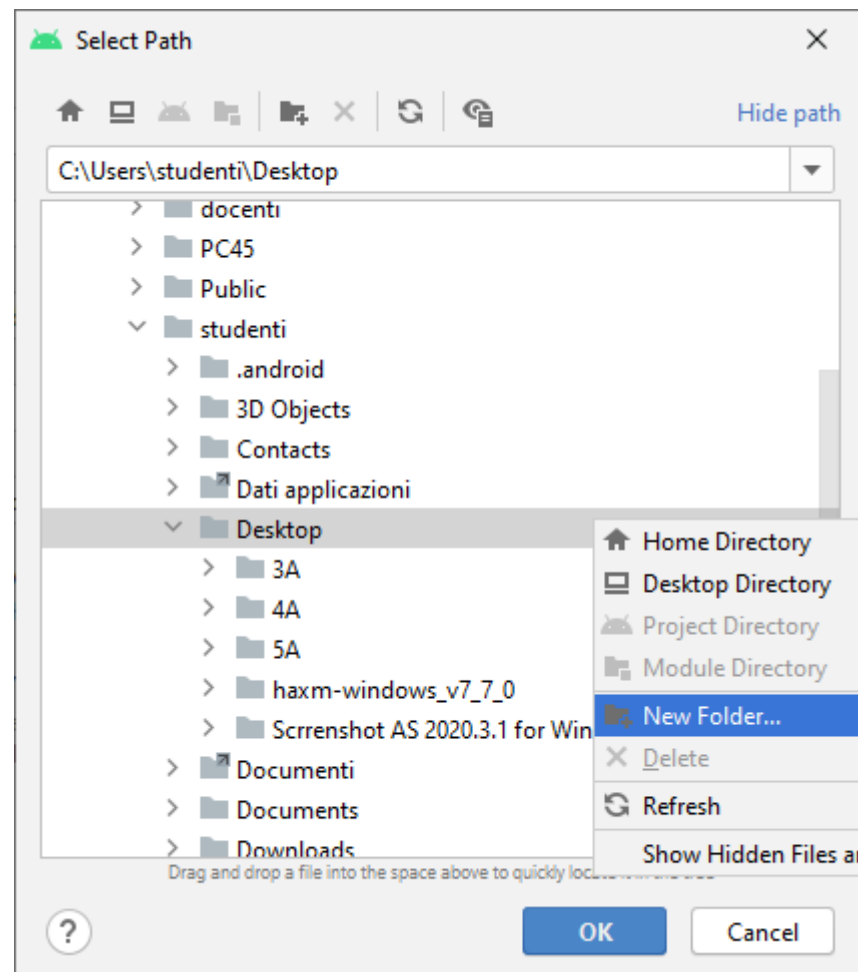
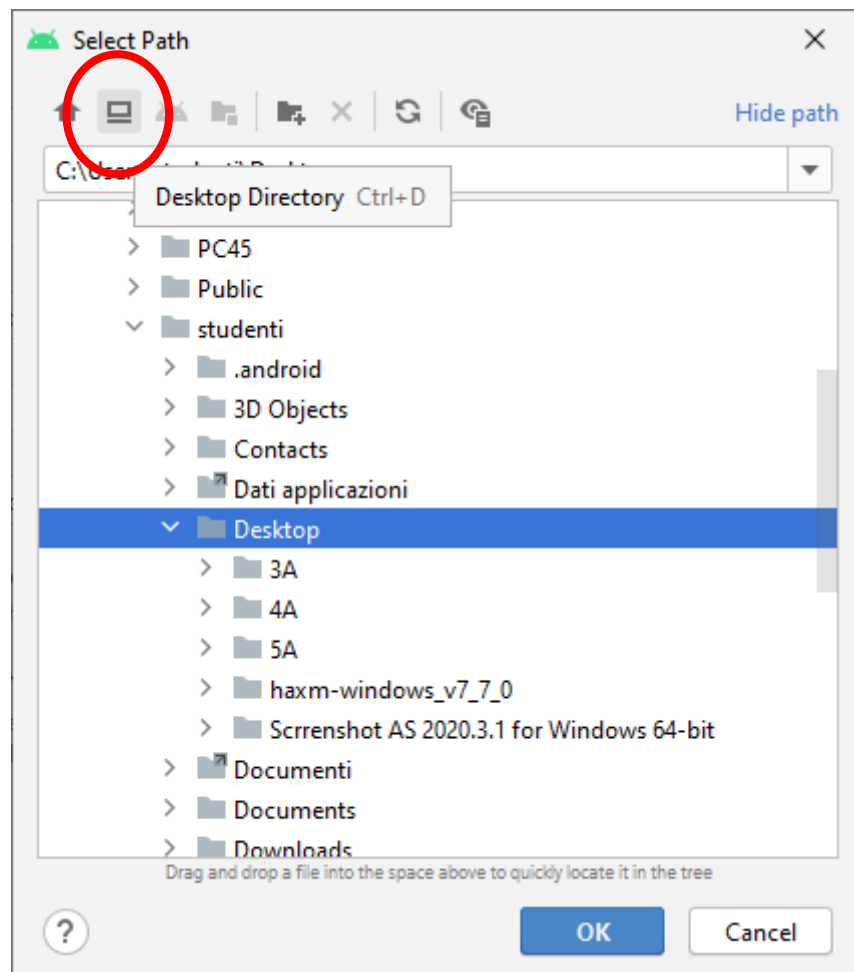
Minimum SDK: API 19: Android 4.4 (KitKat)

i Your app will run on approximately **99,4%** of devices.
[Help me choose](#)

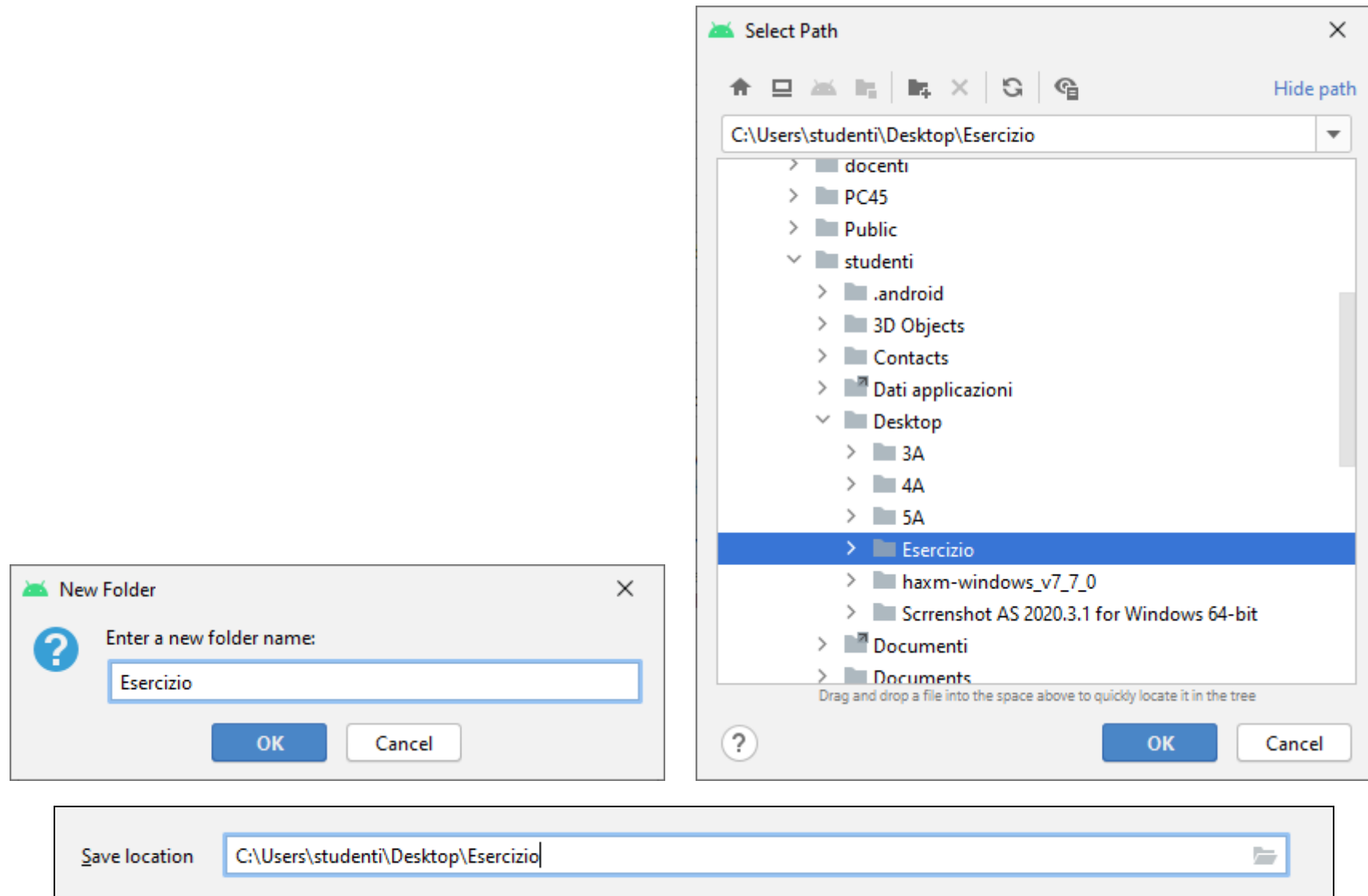
Use legacy android.support libraries **?**
Using legacy android.support libraries will prevent you from using the latest Play Services and Jetpack libraries

Previous Next Cancel **Finish**

Specificare anche la **Cartella in cui Memorizzare il Progetto** (*save location*).
E' preferibile **CREARE** una cartella specifica per il progetto,
magari sul **Desktop** ...



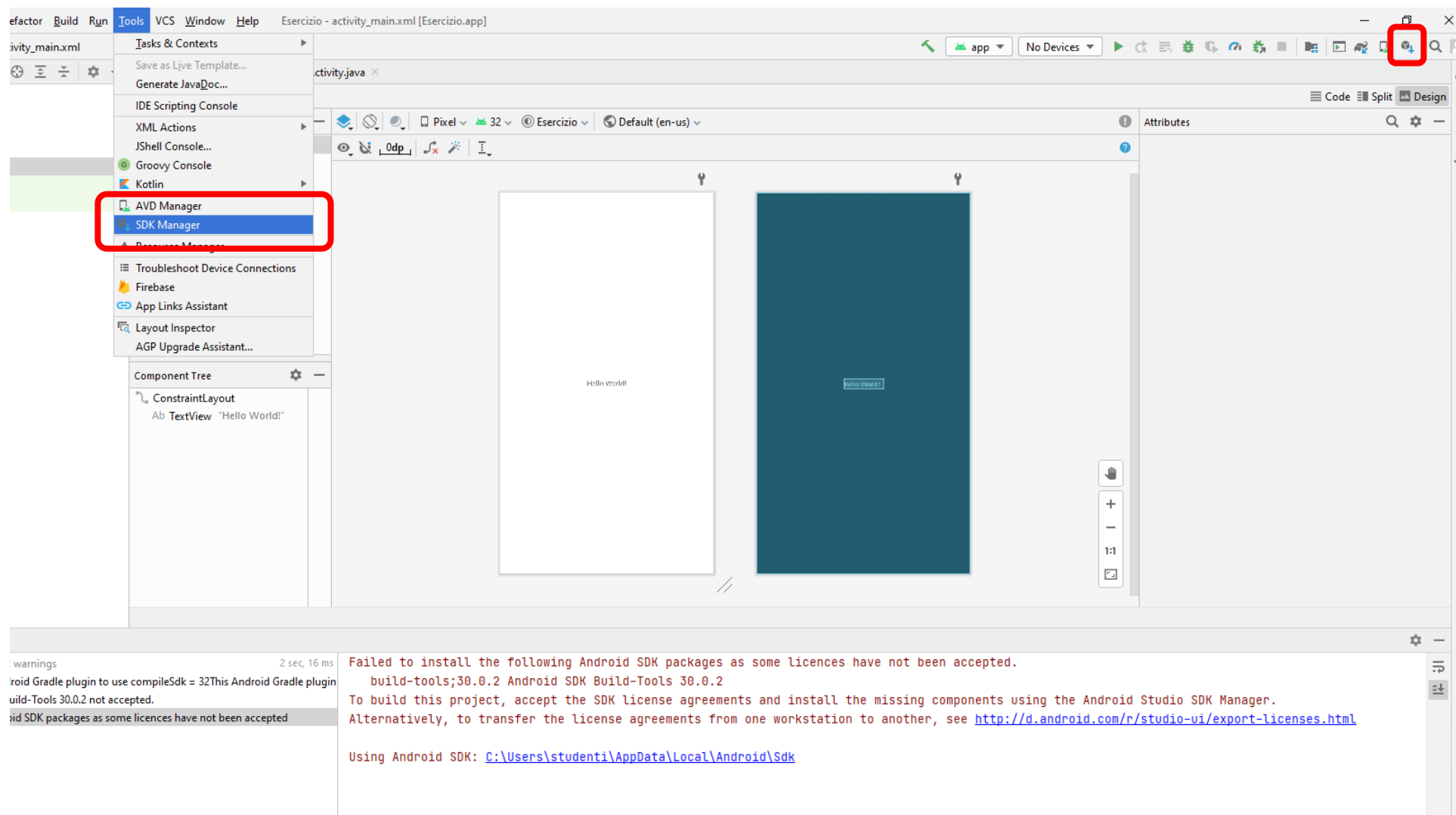
... attribuendole lo stesso nome del progetto (es. **Esercizio**):



Alla creazione/costruzione (**Build**) del primo progetto, si genera un errore ...

The screenshot displays the Android Studio interface during a build process. The top toolbar shows the 'Build' button (a hammer icon) highlighted. The main workspace is in Design mode, showing a preview of the app's layout with a white background containing the text 'Hello world!' and a dark blue background containing a button with the text 'Hello world!'. The left sidebar shows the Project and Resource Manager views. The bottom panel is split into two sections: 'Build Output' on the left and 'Logcat' on the right. The 'Build Output' section shows a red error message: 'Build: failed At 31/12/2021 17:22 with 2 warnings'. The 'Logcat' section shows the following error message: 'Failed to install the following Android SDK packages as some licences have not been accepted. build-tools;30.0.2 Android SDK Build-Tools 30.0.2 To build this project, accept the SDK license agreements and install the missing components using the Android Studio SDK Manager. Alternatively, to transfer the license agreements from one workstation to another, see <http://d.android.com/r/studio-ui/export-licenses.html> Using Android SDK: C:\Users\studenti\AppData\Local\Android\Sdk'. The status bar at the bottom indicates 'Gradle build failed in 2 s 26 ms (moments ago)'.

Per risolvere l'errore si accede all' **SDK Manager** (📦), che consente di effettuare il **download degli elementi** necessari per l'**Android SDK**

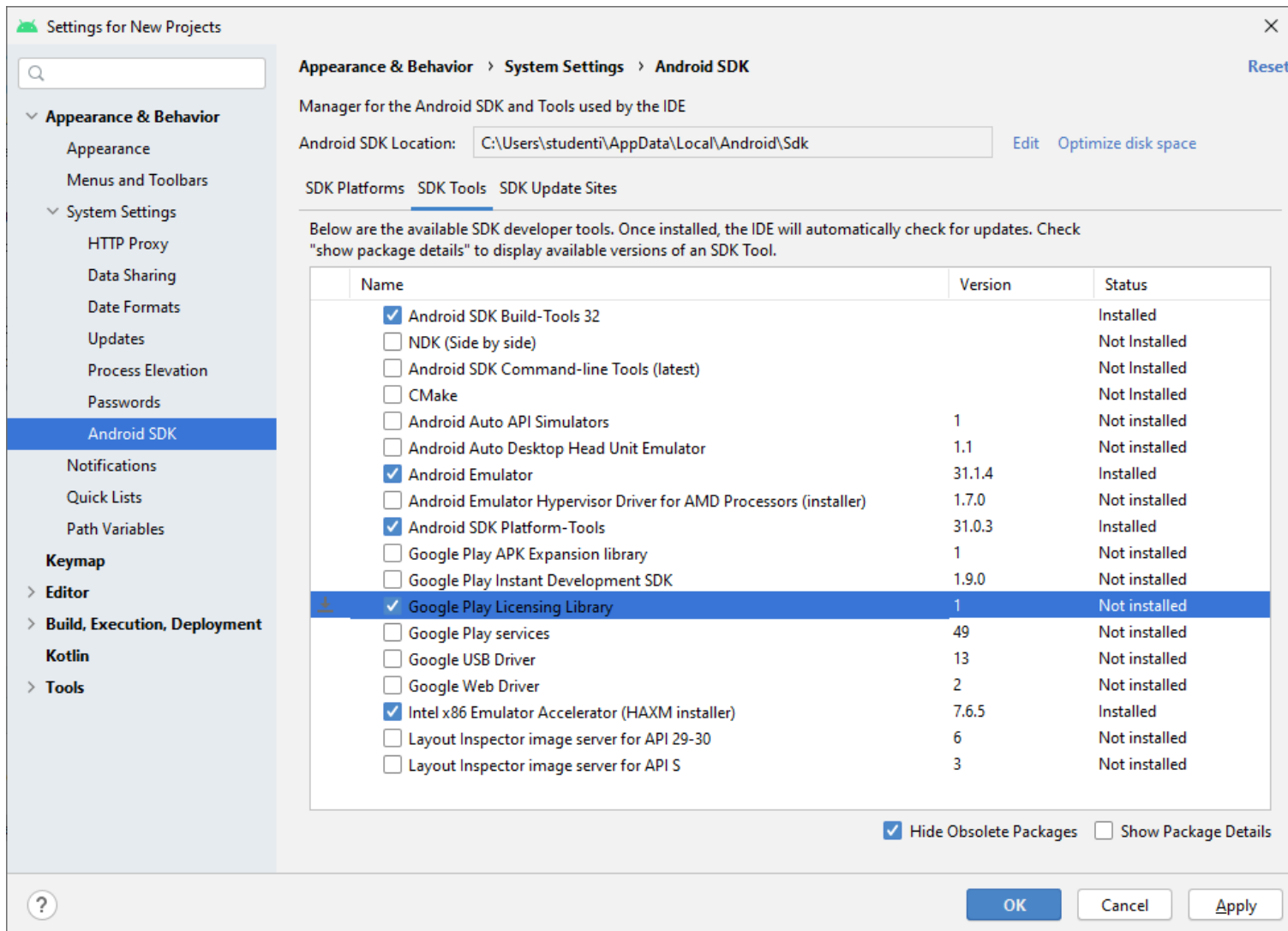


The screenshot displays the Android Studio interface. The 'Tools' menu is open, and the 'SDK Manager' option is highlighted with a red box. The main workspace shows two device emulators, one white and one dark blue, both displaying 'Hello World!'. The bottom console shows a warning message:

```
Warnings: 2 sec, 16 ms
Failed to install the following Android SDK packages as some licences have not been accepted.
  build-tools;30.0.2 Android SDK Build-Tools 30.0.2
To build this project, accept the SDK license agreements and install the missing components using the Android Studio SDK Manager.
Alternatively, to transfer the license agreements from one workstation to another, see http://d.android.com/r/studio-ui/export-licenses.html

Using Android SDK: C:\Users\studenti\AppData\Local\Android\Sdk
```

Nell'Android SDK, accedere alla **scheda SDK Tools** e selezionare la voce **"Google Play Licensing Library"**, quindi fare click su **Apply**



Settings for New Projects

Appearance & Behavior > System Settings > Android SDK

Manager for the Android SDK and Tools used by the IDE

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

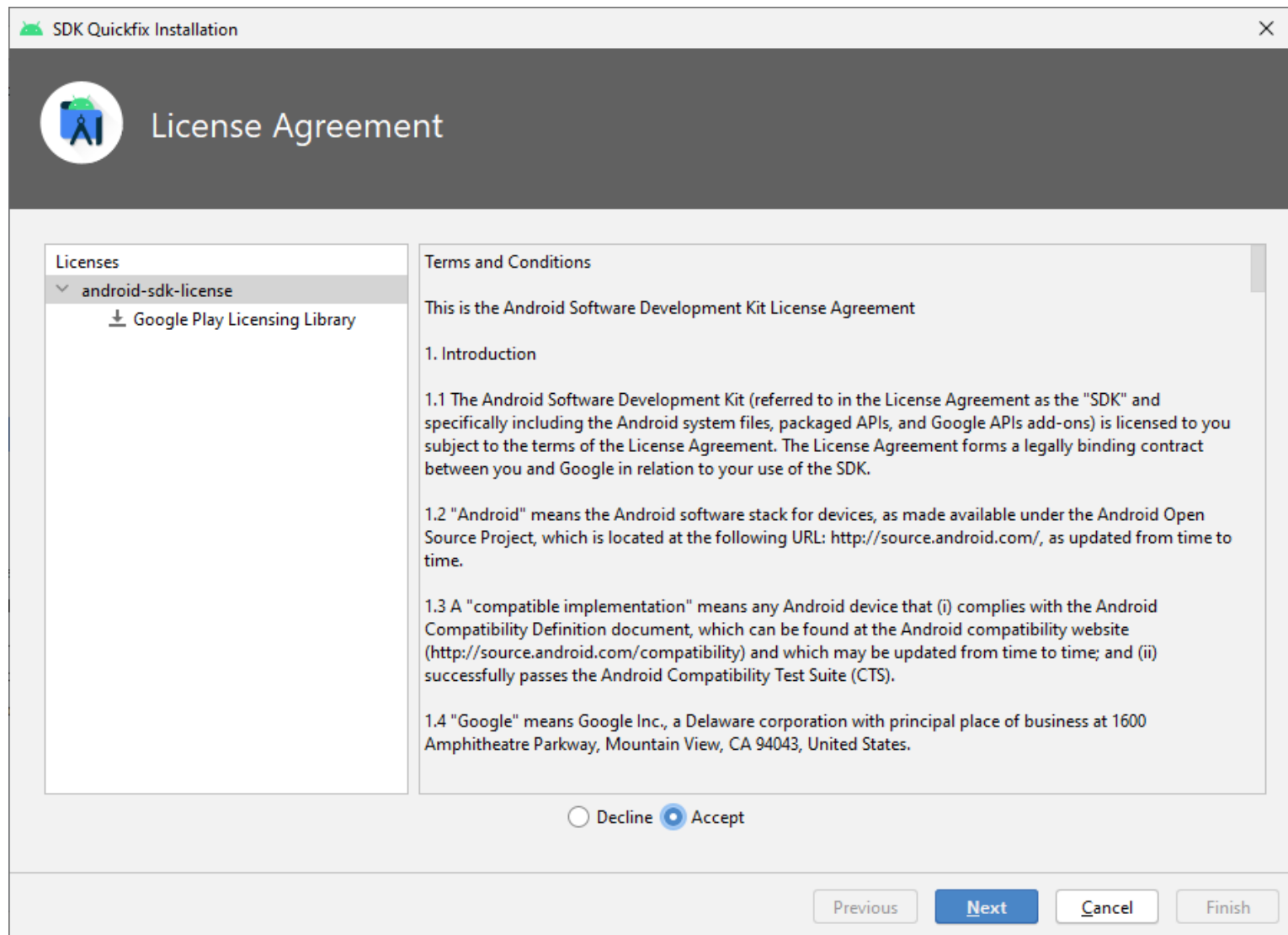
SDK Platforms | **SDK Tools** | SDK Update Sites

Below are the available SDK developer tools. Once installed, the IDE will automatically check for updates. Check "show package details" to display available versions of an SDK Tool.

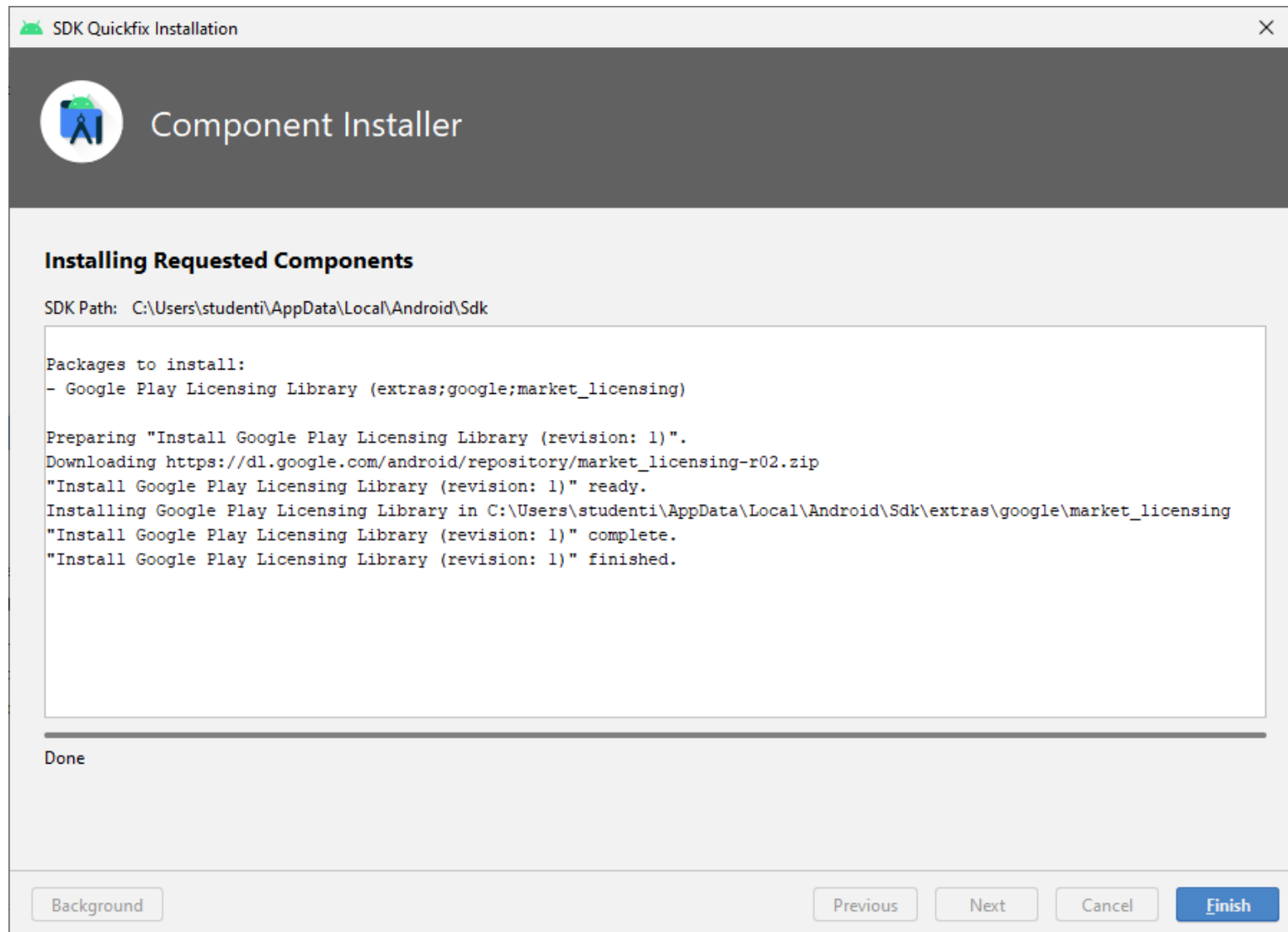
| Name | Version | Status |
|--|---------|---------------|
| <input checked="" type="checkbox"/> Android SDK Build-Tools 32 | | Installed |
| <input type="checkbox"/> NDK (Side by side) | | Not Installed |
| <input type="checkbox"/> Android SDK Command-line Tools (latest) | | Not Installed |
| <input type="checkbox"/> CMake | | Not Installed |
| <input type="checkbox"/> Android Auto API Simulators | 1 | Not installed |
| <input type="checkbox"/> Android Auto Desktop Head Unit Emulator | 1.1 | Not installed |
| <input checked="" type="checkbox"/> Android Emulator | 31.1.4 | Installed |
| <input type="checkbox"/> Android Emulator Hypervisor Driver for AMD Processors (installer) | 1.7.0 | Not installed |
| <input checked="" type="checkbox"/> Android SDK Platform-Tools | 31.0.3 | Installed |
| <input type="checkbox"/> Google Play APK Expansion library | 1 | Not installed |
| <input type="checkbox"/> Google Play Instant Development SDK | 1.9.0 | Not installed |
| <input checked="" type="checkbox"/> Google Play Licensing Library | 1 | Not installed |
| <input type="checkbox"/> Google Play services | 49 | Not installed |
| <input type="checkbox"/> Google USB Driver | 13 | Not installed |
| <input type="checkbox"/> Google Web Driver | 2 | Not installed |
| <input checked="" type="checkbox"/> Intel x86 Emulator Accelerator (HAXM installer) | 7.6.5 | Installed |
| <input type="checkbox"/> Layout Inspector image server for API 29-30 | 6 | Not installed |
| <input type="checkbox"/> Layout Inspector image server for API S | 3 | Not installed |


Hide Obsolete Packages Show Package Details

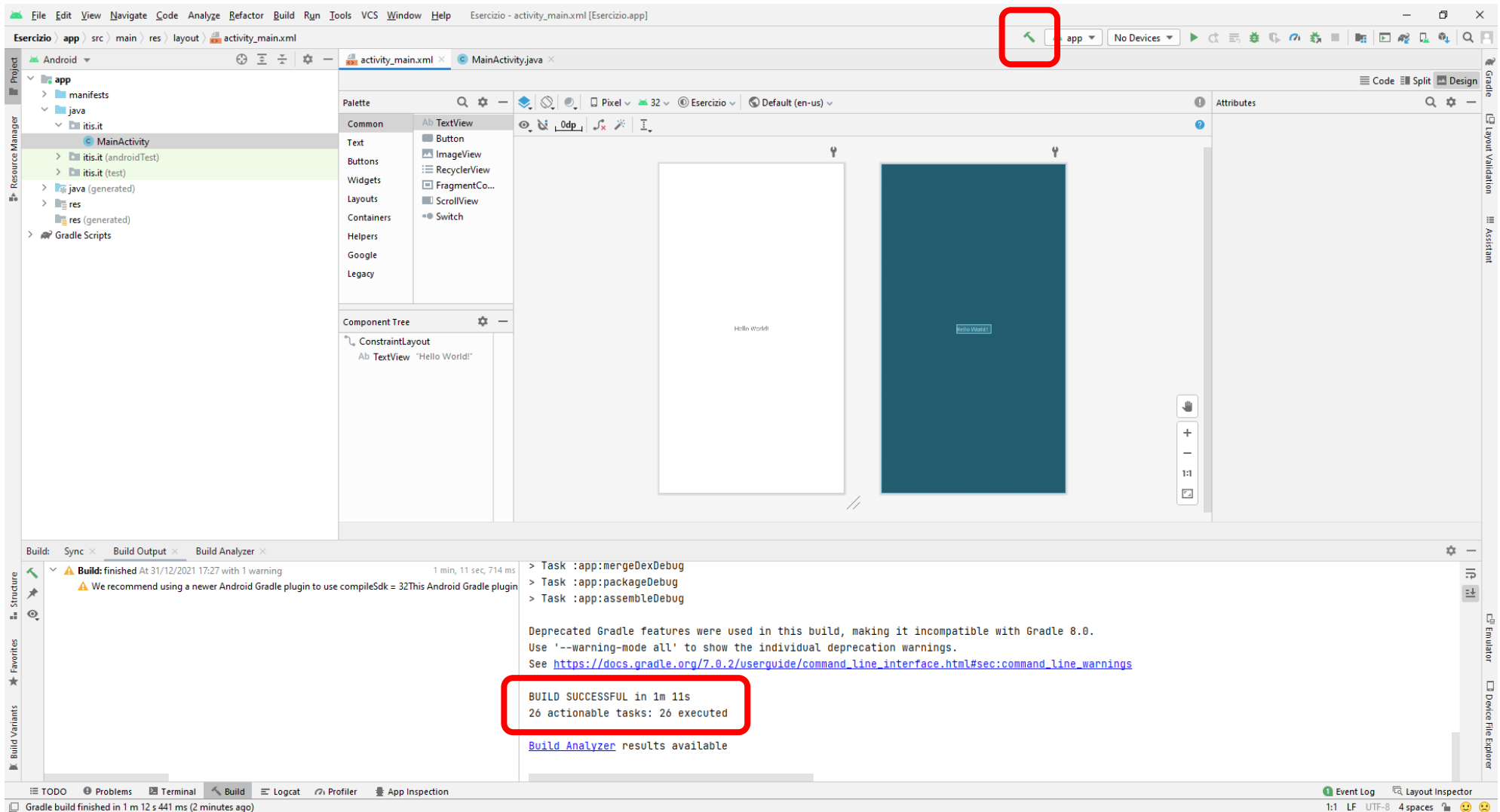
OK Cancel Apply

... accettare le **Condizioni della Licenza** ...

... e attendere la conclusione del Download, verificandone l'esito positivo



Ripetere la **Costruzione del Progetto** (menù **Build / Make Build** oppure click su ):
ora la costruzione ha avuto successo.



The screenshot shows the Android Studio interface. The top toolbar has a red box around the 'Run' button (a green play icon). The main editor shows the design view of an Android app with a 'Hello World!' text view. The bottom 'Build' tab shows the following output:

```
Build: Sync x Build Output x Build Analyzer x
> Task :app:mergeDexDebug
> Task :app:packageDebug
> Task :app:assembleDebug

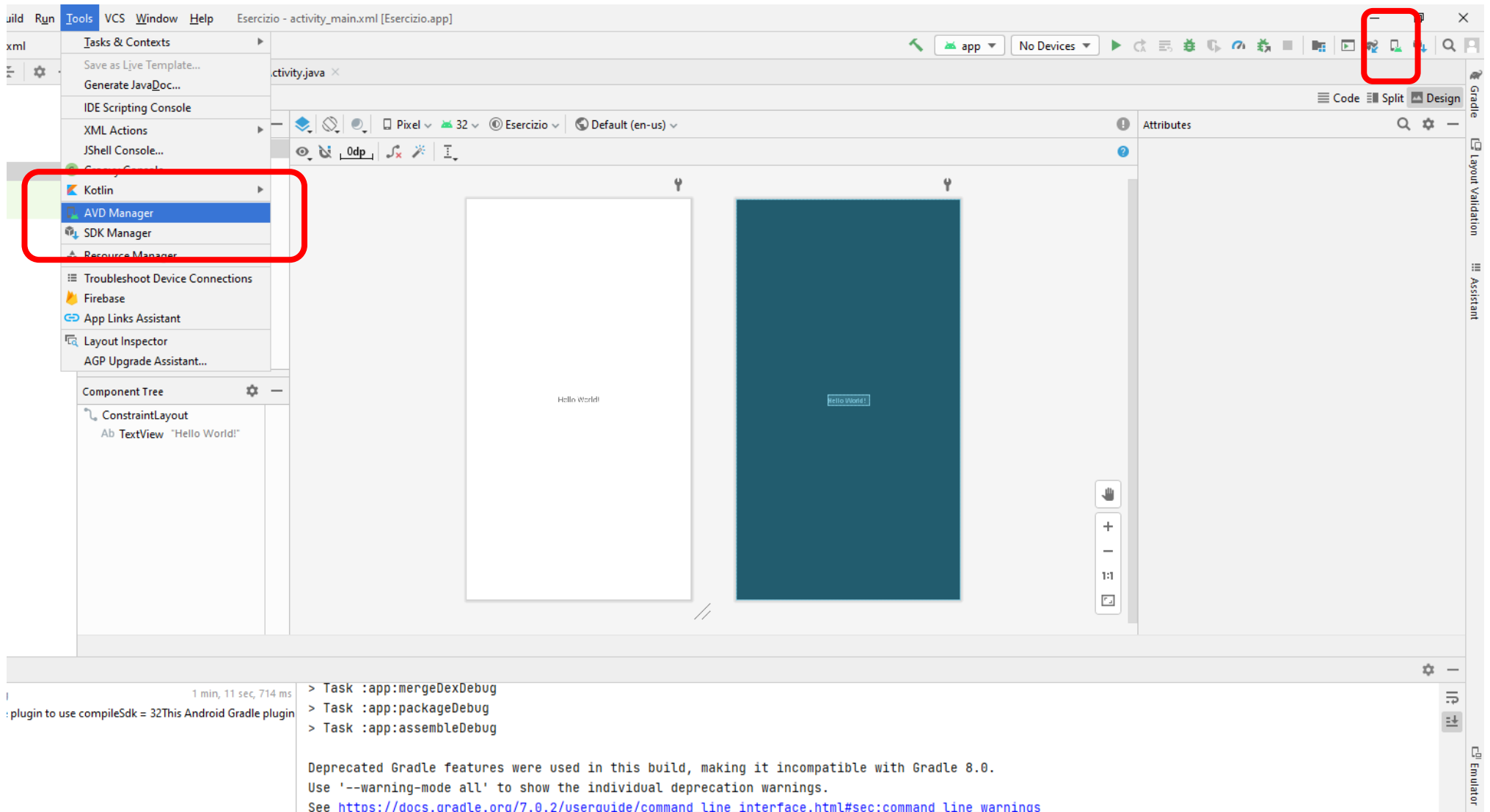
Deprecated Gradle features were used in this build, making it incompatible with Gradle 8.0.
Use '--warning-mode all' to show the individual deprecation warnings.
See https://docs.gradle.org/7.0.2/userguide/command\_line\_interface.html#sec:command\_line\_warnings

BUILD SUCCESSFUL in 1m 11s
26 actionable tasks: 26 executed

Build Analyzer results available
```

The 'BUILD SUCCESSFUL' line is highlighted with a red box. The status bar at the bottom indicates 'Gradle build finished in 1 m 12 s 441 ms (2 minutes ago)'.

E' ora necessario creare un **Dispositivo Virtuale** per il test dell'App Android.
Accedere all'**Android Virtual Device Manager (AVD Manager **)...



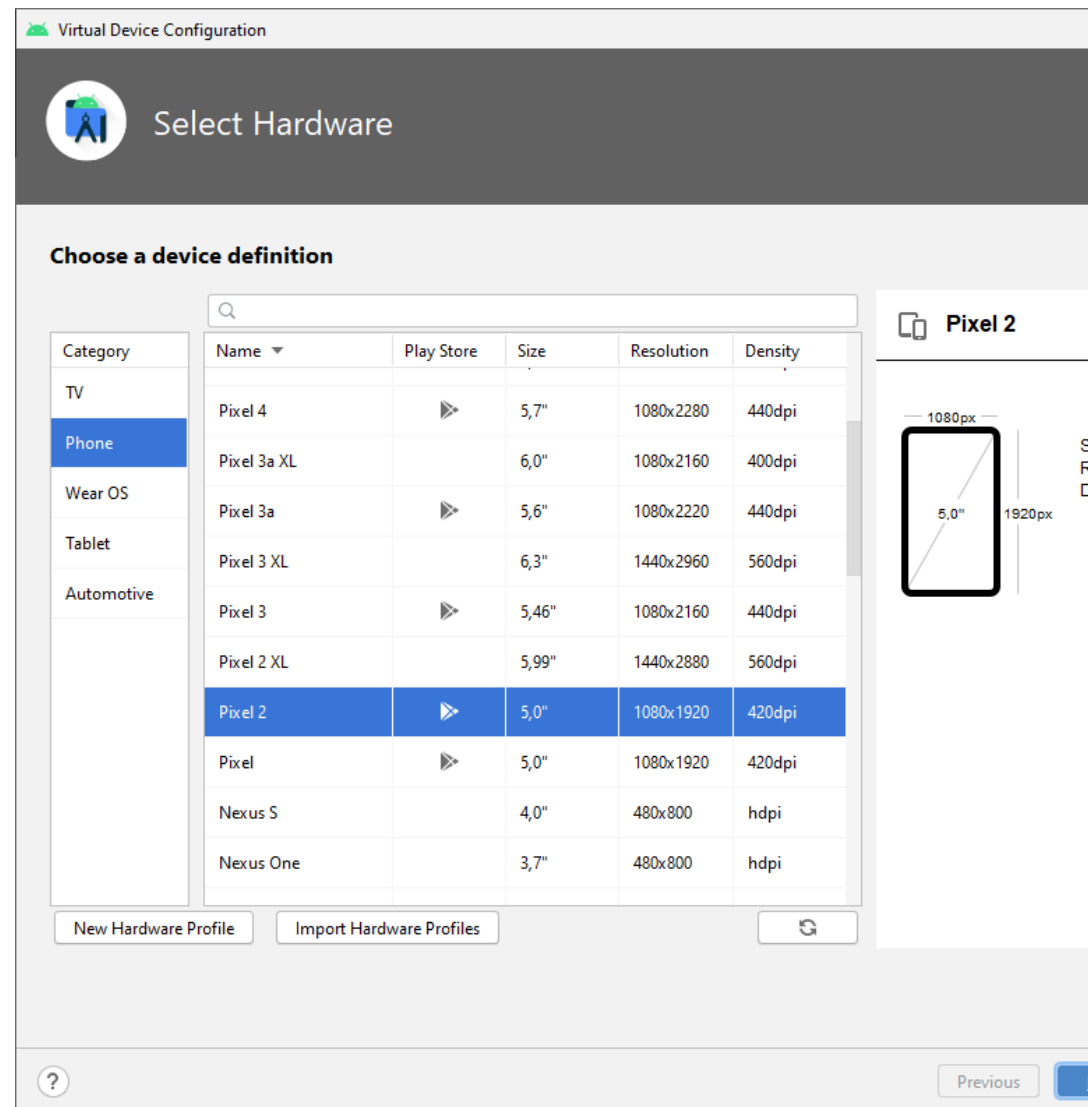
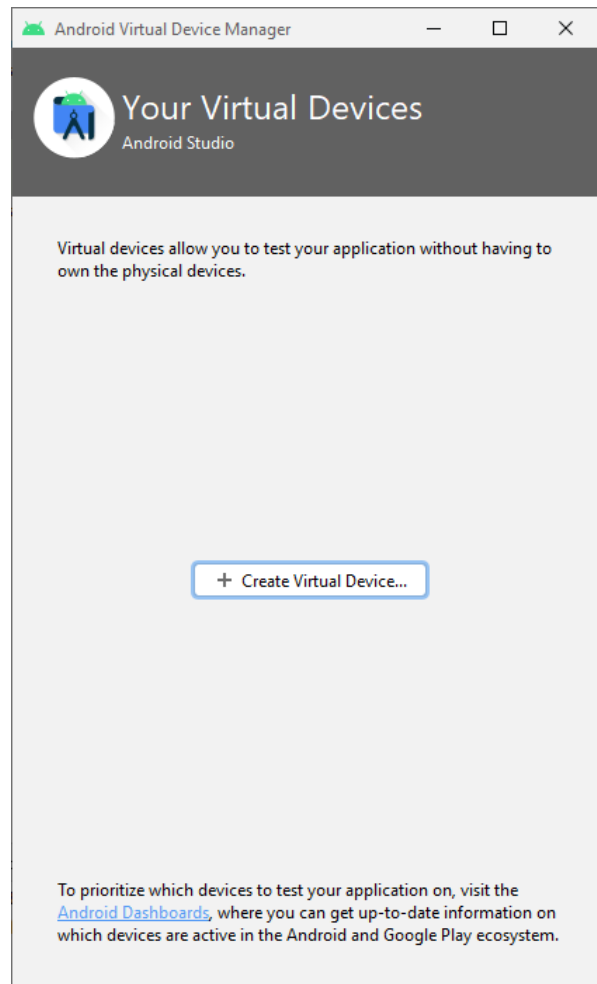
The screenshot shows the Android Studio IDE. The 'Tools' menu is open, and the 'AVD Manager' option is highlighted with a red box. Another red box highlights the AVD Manager icon in the top right toolbar. The main workspace displays two device emulators: a white one with 'Hello World!' and a dark blue one with 'Hello World!'. The bottom panel shows the build output with the following tasks:

```
> Task :app:mergeDexDebug
> Task :app:packageDebug
> Task :app:assembleDebug
```

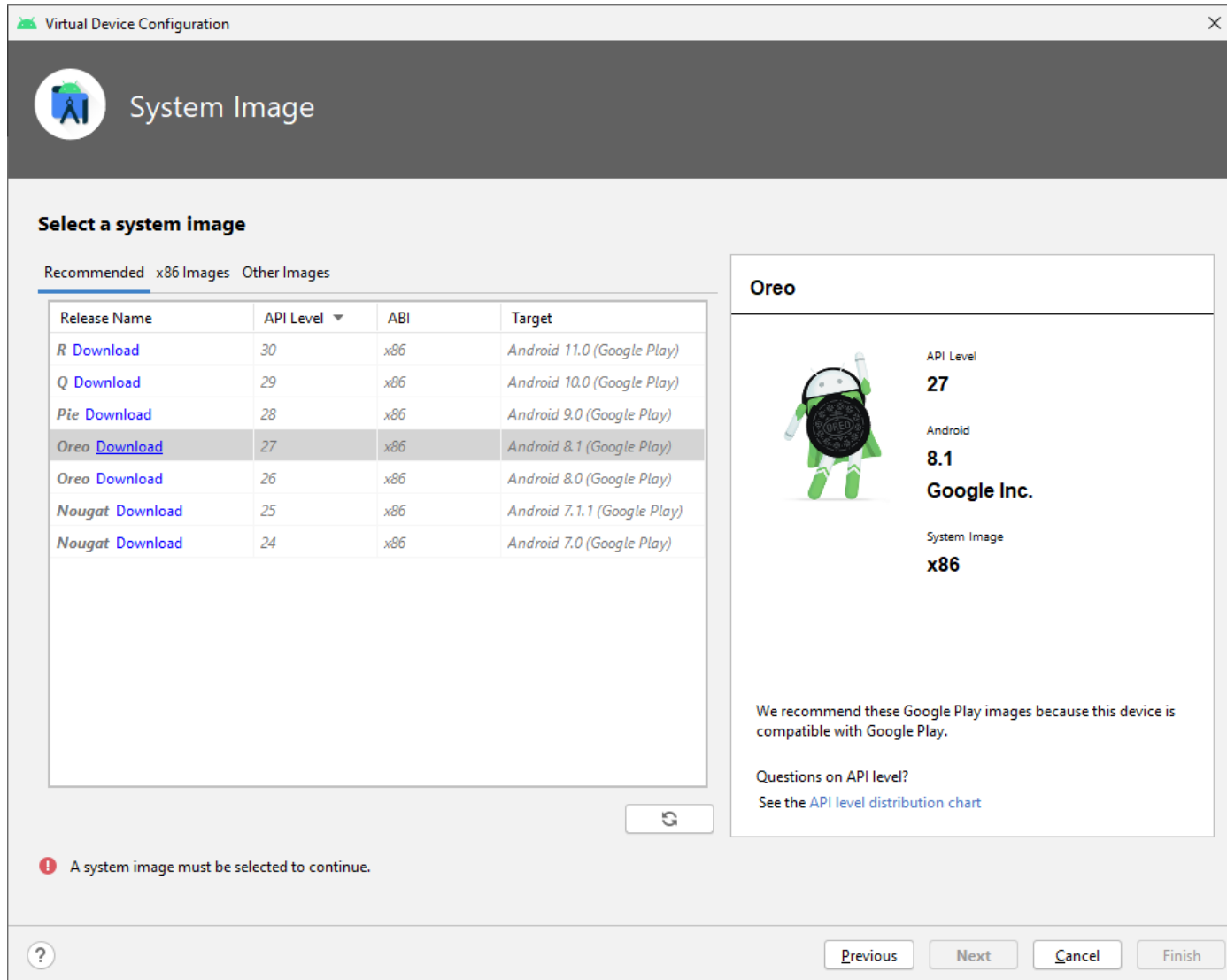
Below the tasks, there is a deprecation warning:

```
Deprecated Gradle features were used in this build, making it incompatible with Gradle 8.0.
Use '--warning-mode all' to show the individual deprecation warnings.
See https://docs.gradle.org/7.0.2/userguide/command\_line\_interface.html#sec:command\_line\_warnings
```

Cliccare su **“Create Virtual Device”** e selezionare il dispositivo **Pixel 2 ...**



Selezionare la **Versione di Android / API Level** (es. **Android 10.0 / API 29**)
da far funzionare sul Dispositivo Virtuale e procedere ...



Virtual Device Configuration


System Image

Select a system image

Recommended x86 Images Other Images

| Release Name | API Level | ABI | Target |
|--------------------------------------|-----------|------------|----------------------------------|
| R Download | 30 | x86 | Android 11.0 (Google Play) |
| Q Download | 29 | x86 | Android 10.0 (Google Play) |
| Pie Download | 28 | x86 | Android 9.0 (Google Play) |
| Oreo Download | 27 | x86 | Android 8.1 (Google Play) |
| Oreo Download | 26 | x86 | Android 8.0 (Google Play) |
| Nougat Download | 25 | x86 | Android 7.1.1 (Google Play) |
| Nougat Download | 24 | x86 | Android 7.0 (Google Play) |

Oreo



API Level
27

Android
8.1

Google Inc.

System Image
x86

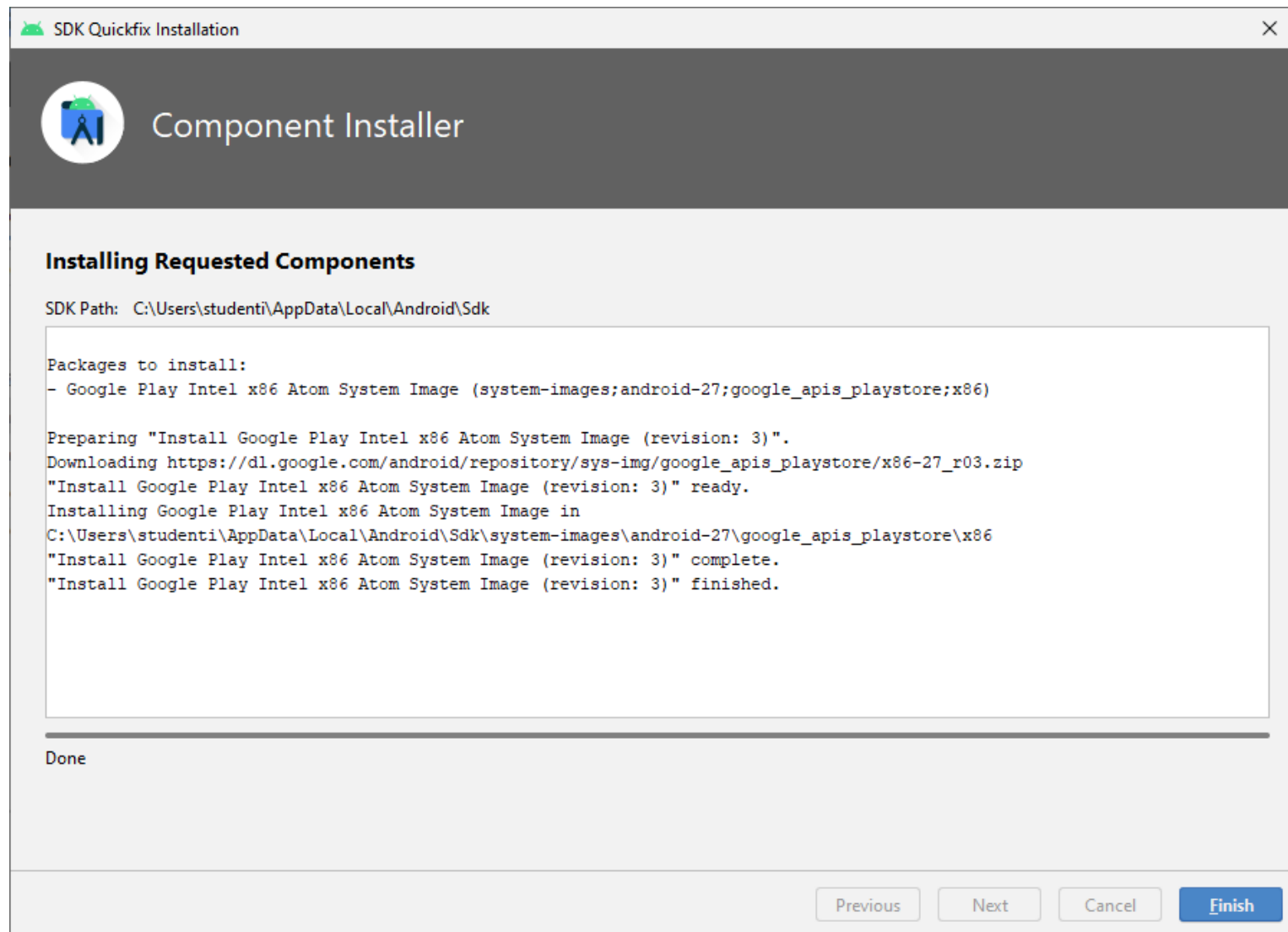
We recommend these Google Play images because this device is compatible with Google Play.

Questions on API level?
[See the API level distribution chart](#)

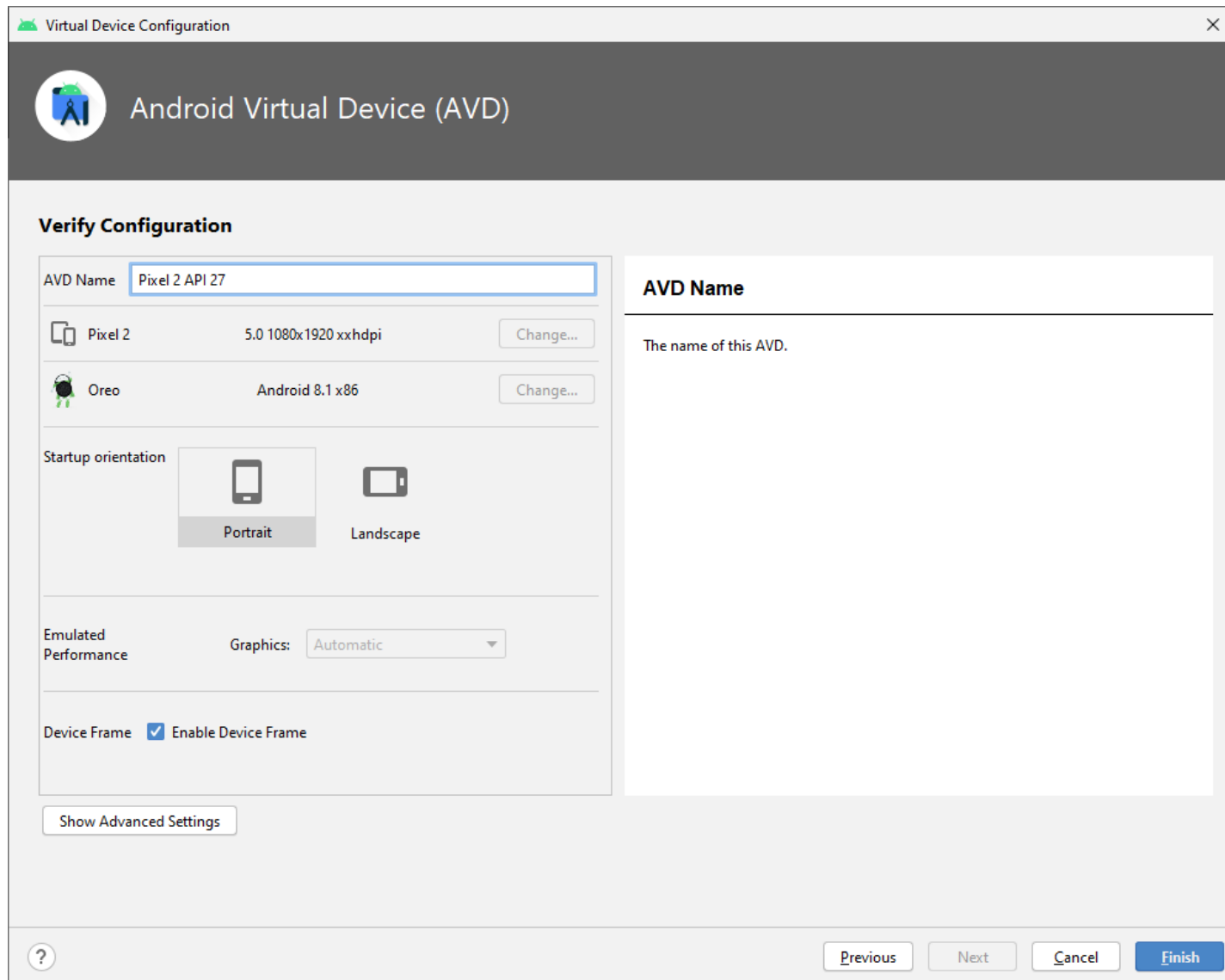
! A system image must be selected to continue.

Previous Next Cancel Finish

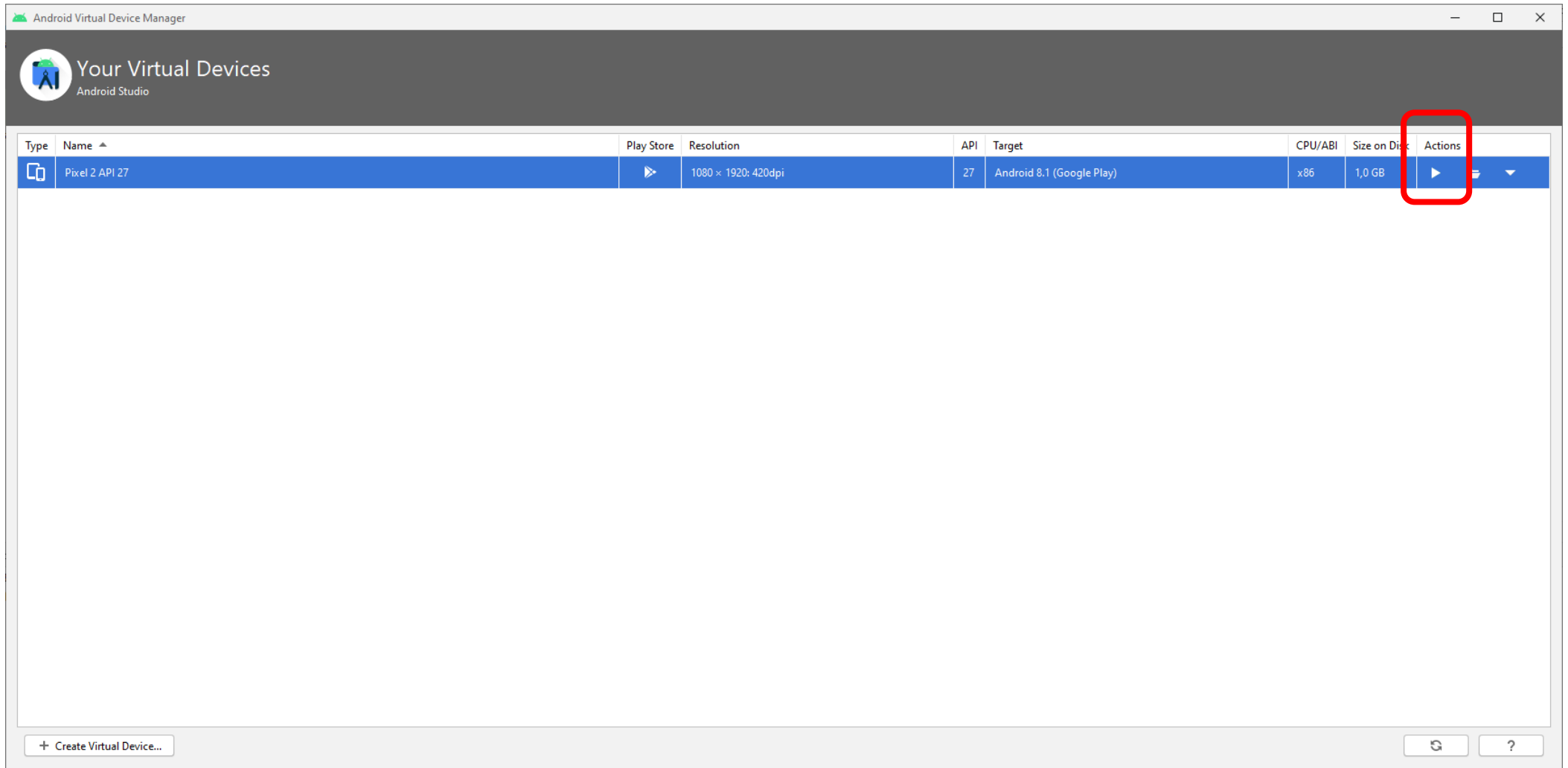
Attendere il completamento di Download e Installazione dei **Componenti dell'SDK** necessari al funzionamento del Dispositivo Virtuale e verificarne l'esito positivo



Completare la definizione del Dispositivo Virtuale **confermando le impostazioni proposte**



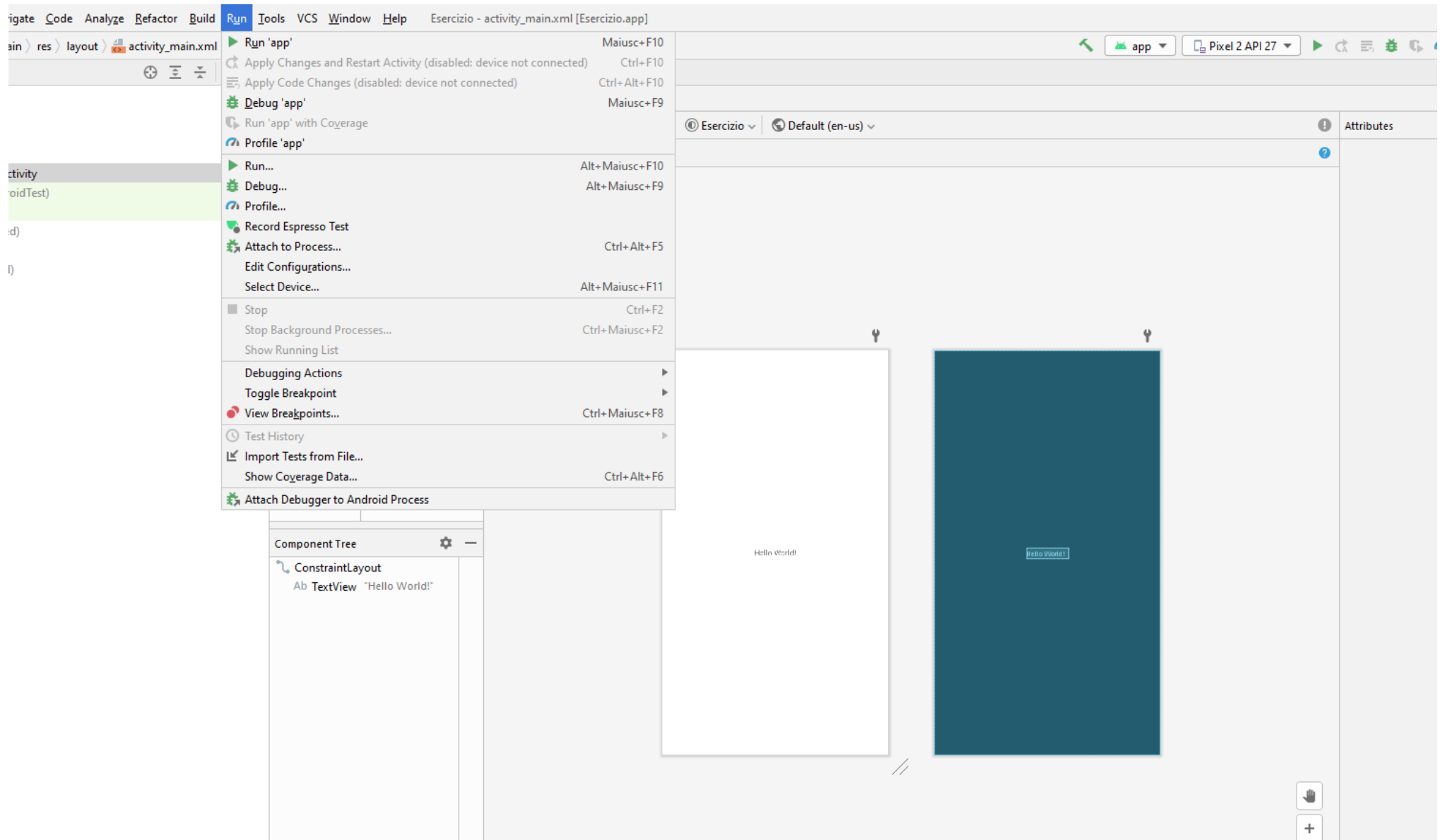
Ora il Dispositivo Virtuale **“Pixel 2 API 27”** è disponibile.
E' possibile **Avviare il Dispositivo Virtuale** con un click sul **Pulsante di Avvio** (▶)



L'**Emulatore Android** avvia il Dispositivo Virtuale che appare in una sua finestra offrendo tutte le funzionalità di un **dispositivo smartphone reale**.



Ora è possibile **Avviare l'App** utilizzando il **menù Run / Run App** oppure il **Pulsante di Avvio** 



The screenshot displays the Android Studio interface. The top menu bar includes 'Run'. The 'Run' menu is open, showing options such as 'Run \'app\'', 'Debug \'app\'', and 'Profile \'app\''. The 'Run \'app\'' option is highlighted. The main workspace shows a preview of the app's UI, which consists of a white background with the text 'Hello World!' and a dark blue background with the text 'Hello World!'. The Component Tree on the left shows a 'ConstraintLayout' containing a 'TextView' with the text 'Hello World!'. The bottom right corner of the preview area has a hand icon and a plus sign.

Viene effettuato il **Build del Progetto** e **l'App viene "installata" e avviata** sul Dispositivo Virtuale che consentirà di utilizzarla e di testarne il corretto funzionamento

