

Homework 1

1. Final project proposal (*.ppt, *.doc, *.pdf, ...) (80%)
2. Design your UI in Unity for your final project on PC (10%)
(your project folder *.zip)
3. Build Unity on the mobile device with your game UI design (10%)
 - Install Java Development Kit (JDK)
 - Install Android Software Development Kit (SDK)
 - Build a Unity program on your mobile device

Deadline: 11/24 20:00



Unity Engine Course

Unity Building Guide for Android



Install JDK

- <http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

Java SE

Java EE

Java ME

Java SE Advanced & Suite

Java Embedded

Java DB

Web Tier

Java Card

Java TV

New to Java

Community

Java Magazine

Overview

Downloads

Documentation

Community

Technologies

Training

Java SE Development Kit 8 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, applets, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

See also:

- [Java Developer Newsletter](#): From your Oracle account, select **Subscriptions**, expand **Technology**, and subscribe to **Java**.
- [Java Developer Day hands-on workshops \(free\) and other events](#)
- [Java Magazine](#)

JDK 8u151 [checksum](#)
JDK 8u152 [checksum](#)

Java SDKs and Tools

Java SE

Java EE and Glassfish

Java ME

Java Card

NetBeans IDE

Java Mission Control

Java Resources

Java APIs

Technical Articles

Demos and Videos

Forums

Java Magazine

Developer Training

Tutorials

Java.com

Java SE Development Kit 8u151

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

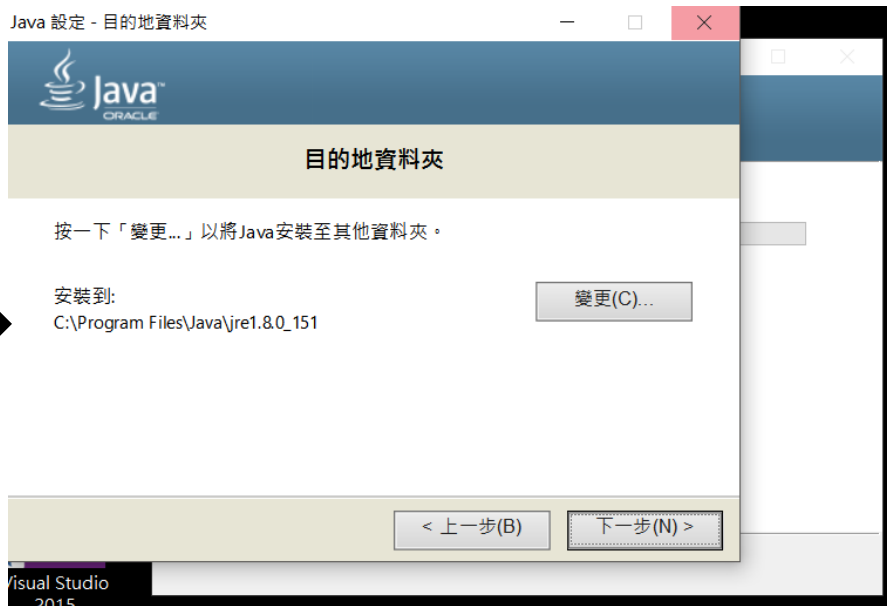
☒ Accept License Agreement ☐ Decline License Agreement

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.9 MB	jdk-8u151-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	74.85 MB	jdk-8u151-linux-arm64-vfp-hflt.tar.gz
Linux x86	168.95 MB	jdk-8u151-linux-i586.rpm
Linux x86	183.73 MB	jdk-8u151-linux-i586.tar.gz
Linux x64	166.1 MB	jdk-8u151-linux-x64.rpm
Linux x64	180.95 MB	jdk-8u151-linux-x64.tar.gz
macOS	247.06 MB	jdk-8u151-macosx-x64.dmg
Solaris SPARC 64-bit	140.06 MB	jdk-8u151-solaris-sparcv9.tar.Z
Solaris SPARC 64-bit	99.32 MB	jdk-8u151-solaris-sparcv9.tar.gz
Solaris x64	140.65 MB	jdk-8u151-solaris-x64.tar.Z
Solaris x64	97 MB	jdk-8u151-solaris-x64.tar.gz
Windows x86	198.04 MB	jdk-8u151-windows-i586.exe
Windows x64	205.95 MB	jdk-8u151-windows-x64.exe

Java SE Development Kit 8u152

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

Install JDK



Install Android SDK

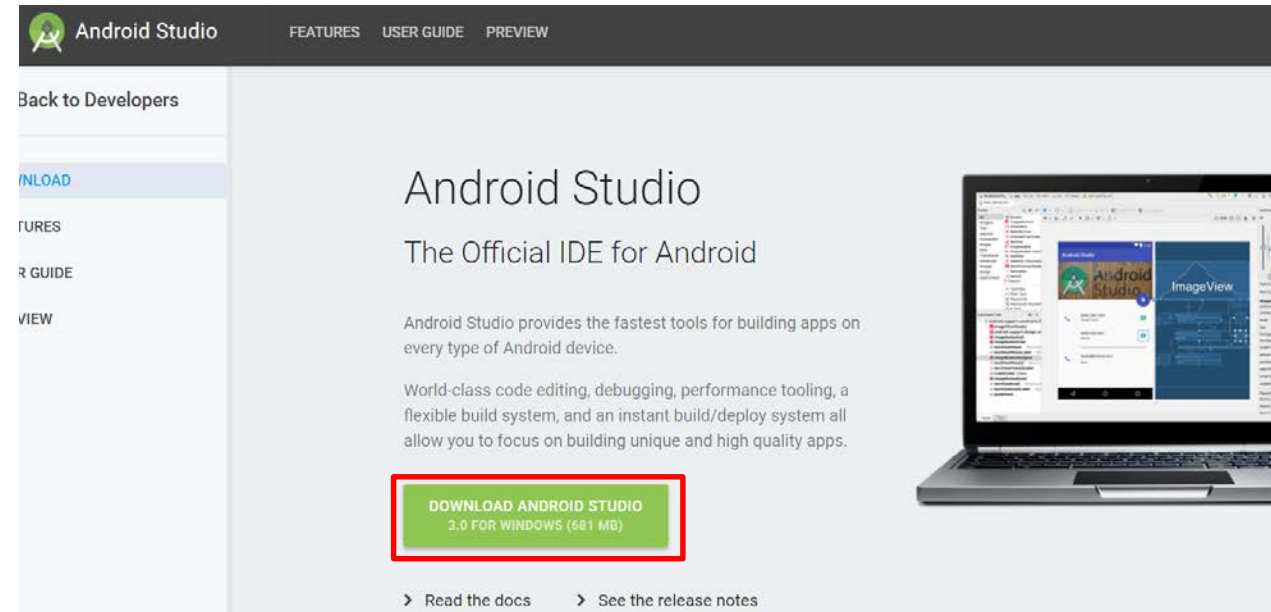
<Option1> Install android studio and use Android SDK manager GUI (p.5 ~ p.9)

<Option2> Download and extract the “*.zip” file to a new created folder (p.10 ~ p.14)

Install Android Studio

<Option1> Install android studio and use Android SDK manager GUI

<https://developer.android.com/studio/index.html>



The screenshot shows the official Android Studio website. The header includes the Android Studio logo and navigation links for FEATURES, USER GUIDE, and PREVIEW. A left sidebar contains links for Back to Developers, DOWNLOAD, FEATURES, USER GUIDE, and VIEW. The main content area is titled 'Android Studio' and 'The Official IDE for Android'. It describes the IDE as providing the fastest tools for building apps on every type of Android device, highlighting world-class code editing, debugging, performance tooling, a flexible build system, and an instant build/deploy system. A green button with a red border is prominently displayed, labeled 'DOWNLOAD ANDROID STUDIO 3.0 FOR WINDOWS (681 MB)'. Below the button are links to 'Read the docs' and 'See the release notes'. On the right side of the page, there is an image of a laptop displaying the Android Studio interface.

Android Studio

FEATURES USER GUIDE PREVIEW

Back to Developers

DOWNLOAD

FEATURES

USER GUIDE

VIEW

Android Studio

The Official IDE for Android

Android Studio provides the fastest tools for building apps on every type of Android device.

World-class code editing, debugging, performance tooling, a flexible build system, and an instant build/deploy system all allow you to focus on building unique and high quality apps.

DOWNLOAD ANDROID STUDIO
3.0 FOR WINDOWS (681 MB)

> Read the docs > See the release notes

Install Android Studio

Start Installation

Android Studio Setup



Welcome to Android Studio Setup

Setup will guide you through the installation of Android Studio.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.

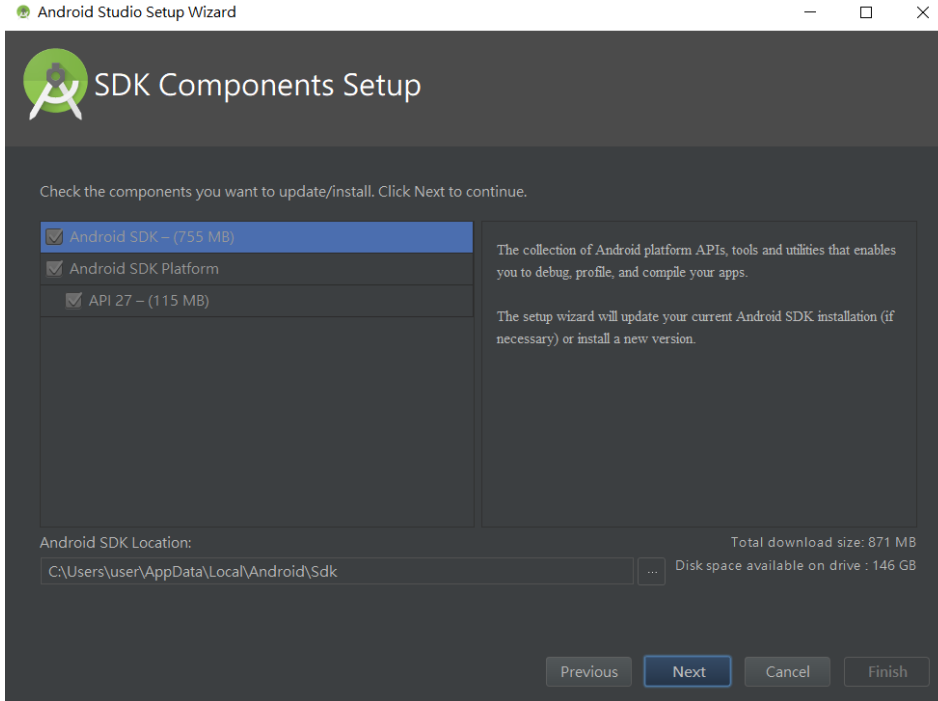
< Back

Next >

Cancel

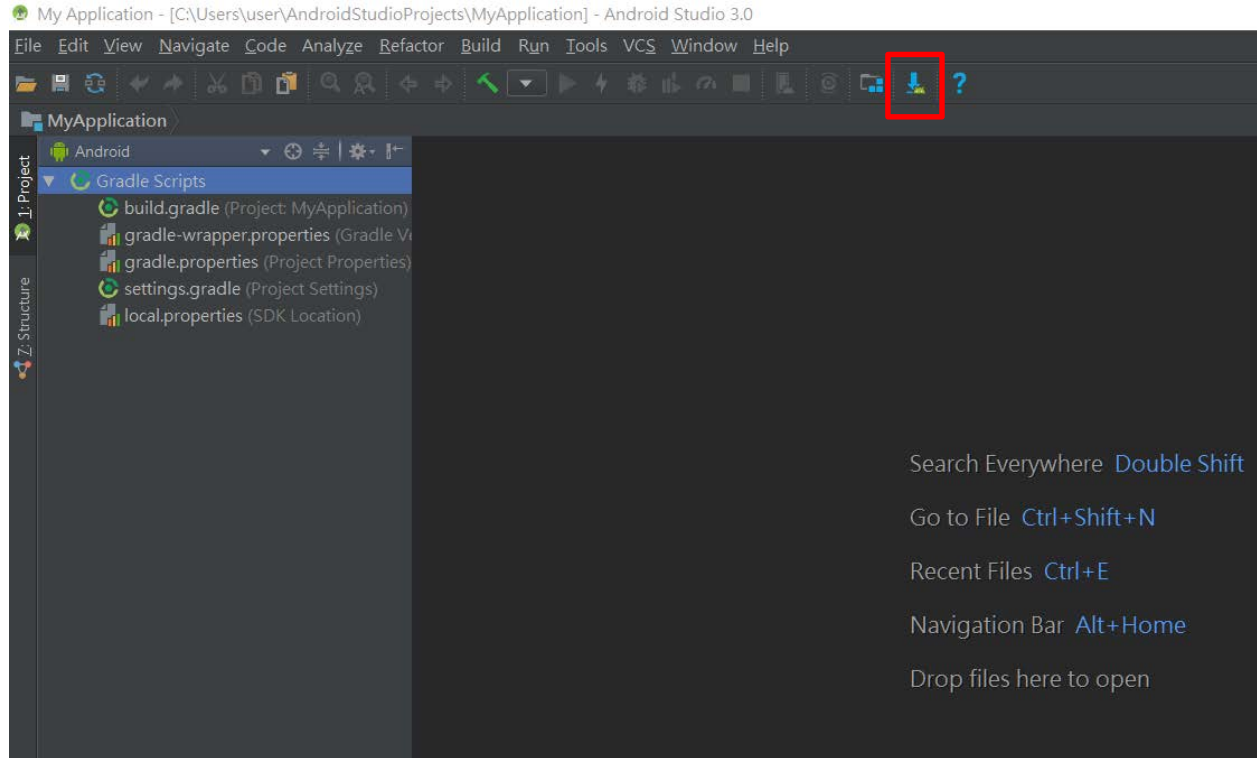
Install Android Studio

Run Android studio and install Android SDK



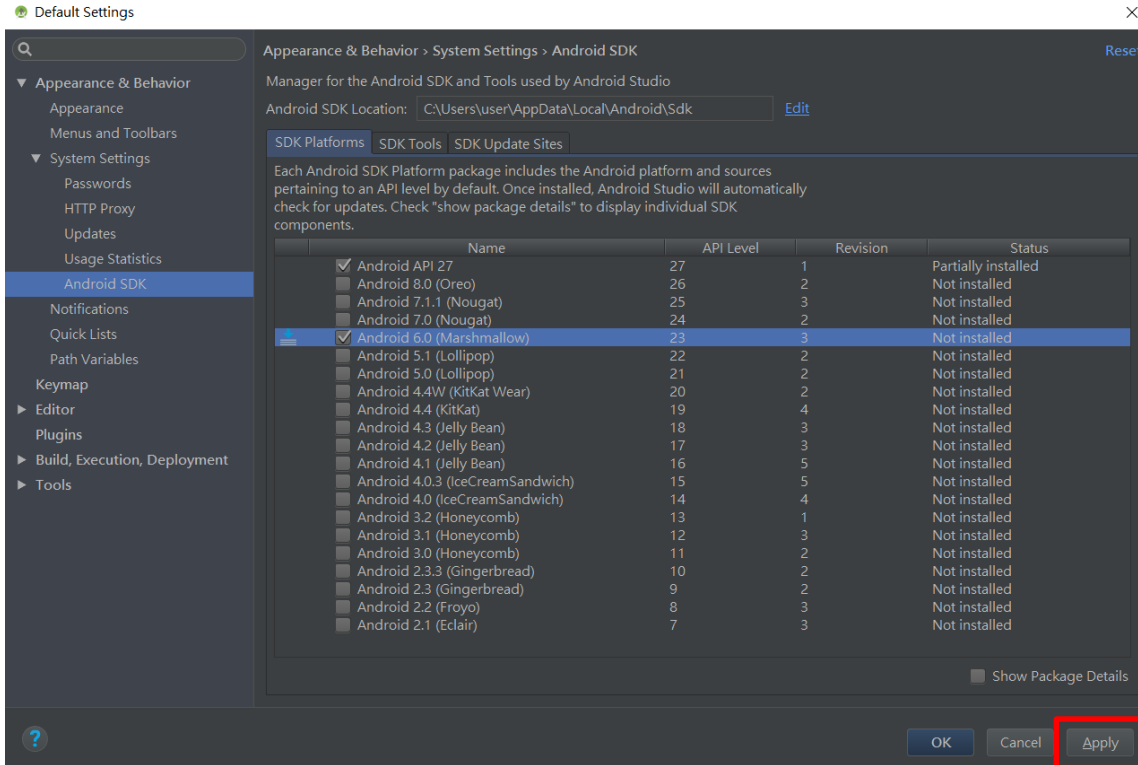
Install Android Studio

Create a new project and open the SDK manager



Install Android Studio

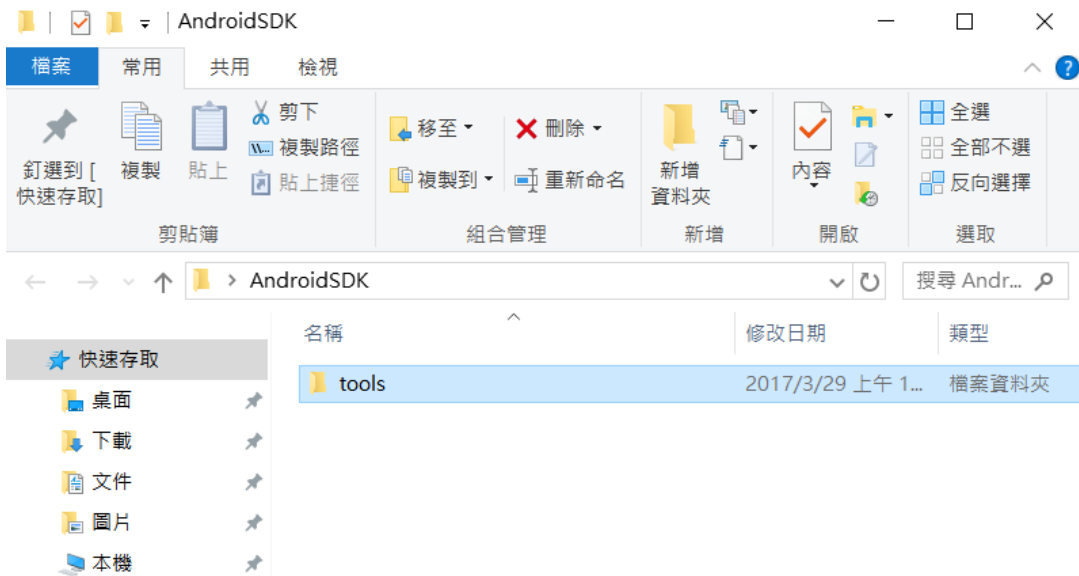
Select SDK to be installed: (according to your API level)



Install Android SDK

<Option2> Download and extract the “*.zip” file to a new created folder

http://dl-ssl.google.com/android/repository/tools_r25.2.5-windows.zip



Install Android SDK

- Go to “./tools/bin/”
- sdkmanager.bat --list

```
C:\Users\user\Desktop\Android-SDK\tools\bin>sdkmanager.bat --list
Warning: File C:\Users\user\.android\repositories.cfg could not be loaded.
```

Installed packages:

Path	Version	Description	Location
-----	-----	-----	-----
tools	25.2.5	Android SDK Tools 25.2.5	tools\

Available Packages:

Path	Version	Description
-----	-----	-----
add-ons;addon-g..._apis-google-15	3	Google APIs
add-ons;addon-g..._apis-google-16	4	Google APIs
add-ons;addon-g..._apis-google-17	4	Google APIs
add-ons;addon-g..._apis-google-18	4	Google APIs
add-ons;addon-g..._apis-google-19	20	Google APIs
add-ons;addon-g..._apis-google-21	1	Google APIs
add-ons;addon-g..._apis-google-22	1	Google APIs
add-ons;addon-g..._apis-google-23	1	Google APIs
add-ons;addon-g..._apis-google-24	1	Google APIs
add-ons;addon-g...e_gdk-google-19	11	Glass Development Kit Preview
build-tools;19.1.0	19.1.0	Android SDK Build-Tools 19.1

Install Android SDK

Install SDK: (according to your API level)

- sdkmanager.bat “build-tools;23.0.1” “platform-tools” “platforms;android-23”

```
C:\Users\user\Desktop\Android-SDK\tools\bin>sdkmanager.bat "build-tools;23.0.1" "platform-tools" "platforms;android-23"
Warning: File C:\Users\user\.android\repositories.cfg could not be loaded.
License android-sdk-license:
-----
Terms and Conditions

This is the Android Software Development Kit License Agreement

1. Introduction

1.1 The Android Software Development Kit (referred to in the License Agreement as the "SDK" and specifically including the Android system files, packaged APIs, and Google APIs add-ons) is licensed to you subject to the terms of the License Agreement. The License Agreement forms a legally binding contract between you and Google in relation to your use of the SDK.

1.2 "Android" means the Android software stack for devices, as made available under the Android Open Source Project, which is located at the following URL: http://source.android.com/, as updated from time to time.

1.3 A "compatible implementation" means any Android device that (i) complies with the Android Compatibility Definition document, which can be found at the Android compatibility website (http://source.android.com/compatibility) and which may be updated from time to time; and (ii) successfully passes the Android Compatibility Test Suite (CTS).

1.4 "Google" means Google Inc., a Delaware corporation with principal place of business at 1600 Amphitheatre Parkway, Mountain View, CA 94043, United States.
```

Install Android SDK

- Type “y”

14.3 If any court of law, having the jurisdiction to decide on this matter, rules that any provision of the License Agreement is invalid, then that provision will be removed from the License Agreement without affecting the rest of the License Agreement. The remaining provisions of the License Agreement will continue to be valid and enforceable.

14.4 You acknowledge and agree that each member of the group of companies of which Google is the parent shall be third party beneficiaries to the License Agreement and that such other companies shall be entitled to directly enforce, and rely upon, any provision of the License Agreement that confers a benefit on (or rights in favor of) them. Other than this, no other person or company shall be third party beneficiaries to the License Agreement.

14.5 EXPORT RESTRICTIONS. THE SDK IS SUBJECT TO UNITED STATES EXPORT LAWS AND REGULATIONS. YOU MUST COMPLY WITH ALL DOMESTIC AND INTERNATIONAL EXPORT LAWS AND REGULATIONS THAT APPLY TO THE SDK. THESE LAWS INCLUDE RESTRICTIONS ON DESTINATIONS, END USERS AND END USE.

14.6 The rights granted in the License Agreement may not be assigned or transferred by either you or Google without the prior written approval of the other party. Neither you nor Google shall be permitted to delegate their responsibilities or obligations under the License Agreement without the prior written approval of the other party.

14.7 The License Agreement, and your relationship with Google under the License Agreement, shall be governed by the laws of the State of California without regard to its conflict of laws provisions. You and Google agree to submit to the exclusive jurisdiction of the courts located within the county of Santa Clara, California to resolve any legal matter arising from the License Agreement. Notwithstanding this, you agree that Google shall still be allowed to apply for injunctive remedies (or an equivalent type of urgent legal relief) in any jurisdiction.

November 20, 2015

Accept? (y/N): y

Install Android SDK

Check the installed packages:

- `sdkmanager.bat --list`

```
C:\Users\user\Desktop\Android-SDK\tools\bin>sdkmanager.bat --list
Warning: File C:\Users\user\.android\repositories.cfg could not be loaded.
Installed packages:
```

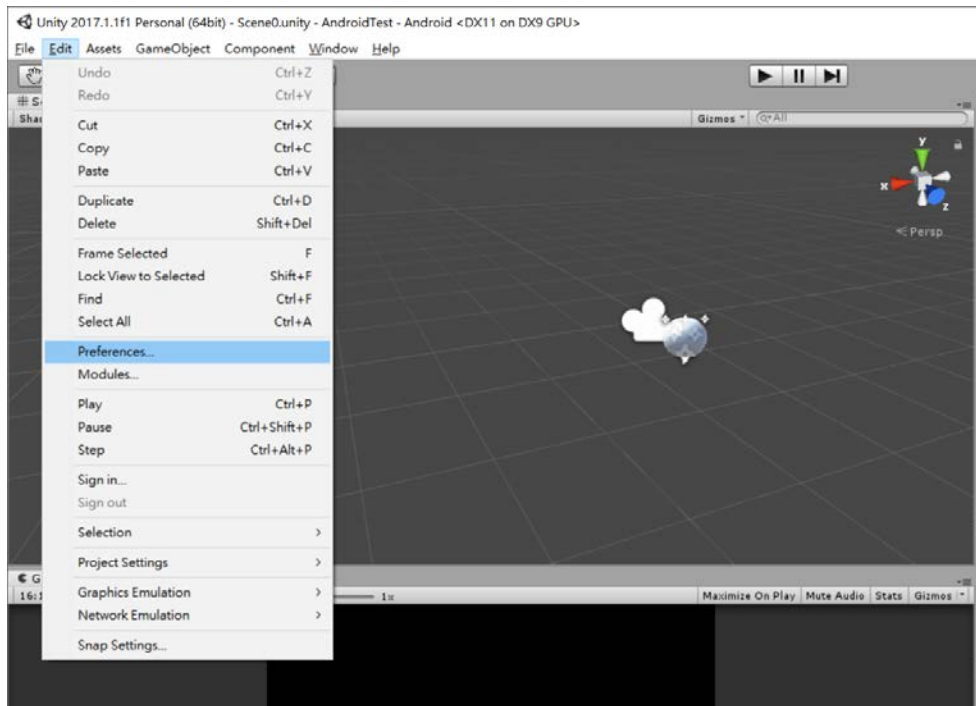
Path	Version	Description	Location
build-tools;23.0.1	23.0.1	Android SDK Build-Tools 23.0.1	build-tools\23.0.1\
platform-tools	26.0.2	Android SDK Platform-Tools	platform-tools\
platforms;android-23	3	Android SDK Platform 23	platforms\android-23\
tools	25.2.5	Android SDK Tools 25.2.5	tools\

```
Available Packages:
```

Path	Version	Description
add-ons;addon-g..._apis-google-15	3	Google APIs
add-ons;addon-g..._apis-google-16	4	Google APIs
add-ons;addon-g..._apis-google-17	4	Google APIs
add-ons;addon-g..._apis-google-18	4	Google APIs
add-ons;addon-g..._apis-google-19	20	Google APIs
add-ons;addon-g..._apis-google-21	1	Google APIs
add-ons;addon-g..._apis-google-22	1	Google APIs
add-ons;addon-g..._apis-google-23	1	Google APIs
add-ons;addon-g..._apis-google-24	1	Google APIs
add-ons;addon-g...e_gdk-google-19	11	Glass Development Kit Preview
build-tools;19.1.0	19.1.0	Android SDK Build-Tools 19.1
build-tools;20.0.0	20.0.0	Android SDK Build-Tools 20
build-tools;21.1.2	21.1.2	Android SDK Build-Tools 21.1.2
build-tools;22.0.1	22.0.1	Android SDK Build-Tools 22.0.1

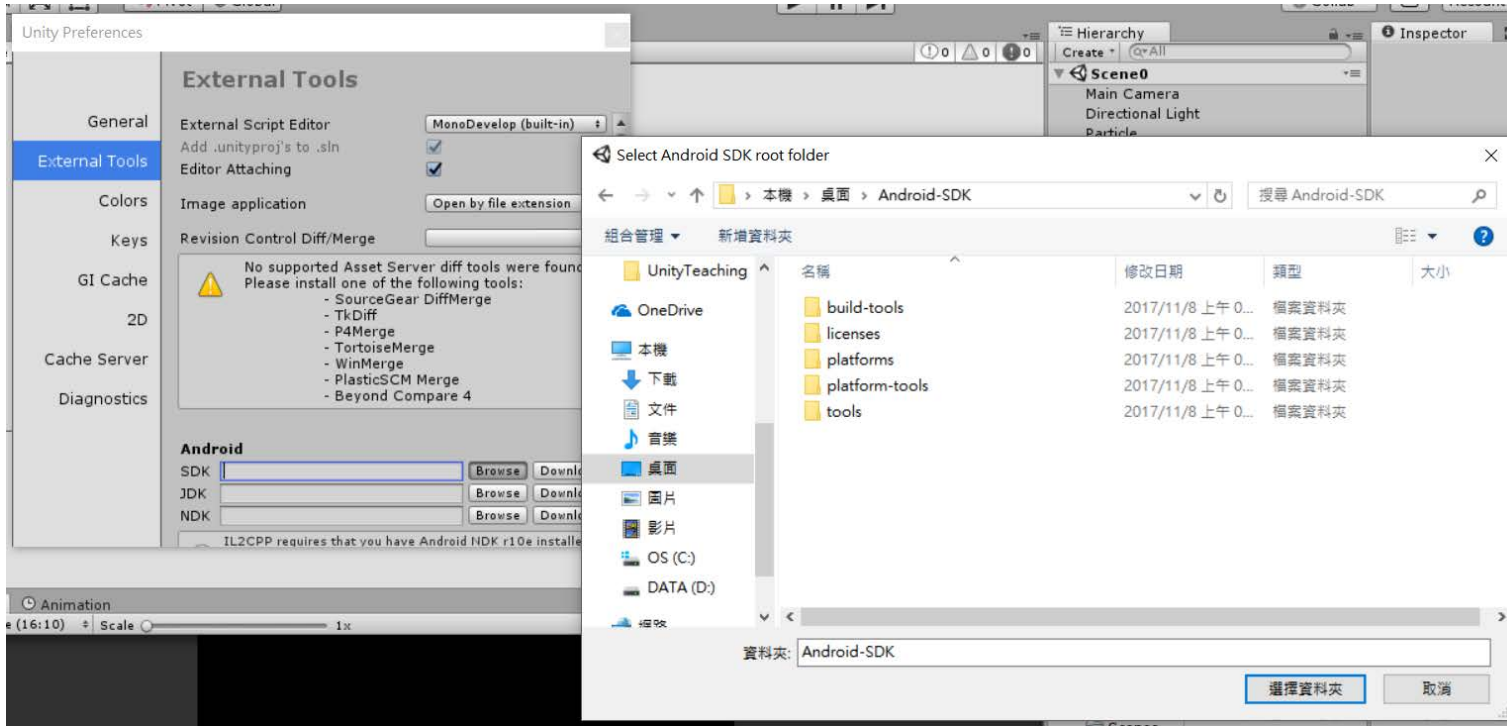
Build Unity APK

Edit > Preferences > External Tools



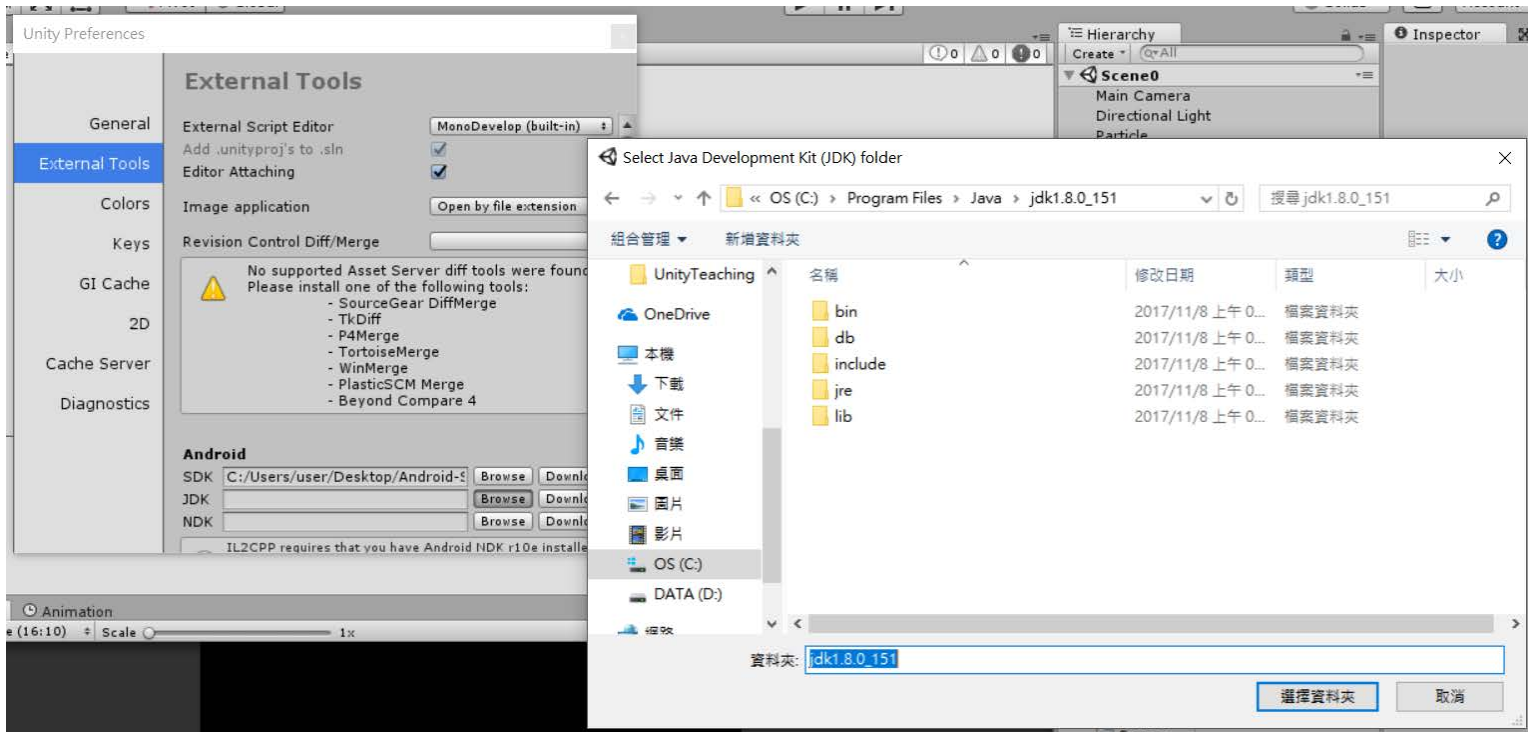
Build Unity APK

Select the folder where the Android SDK is installed



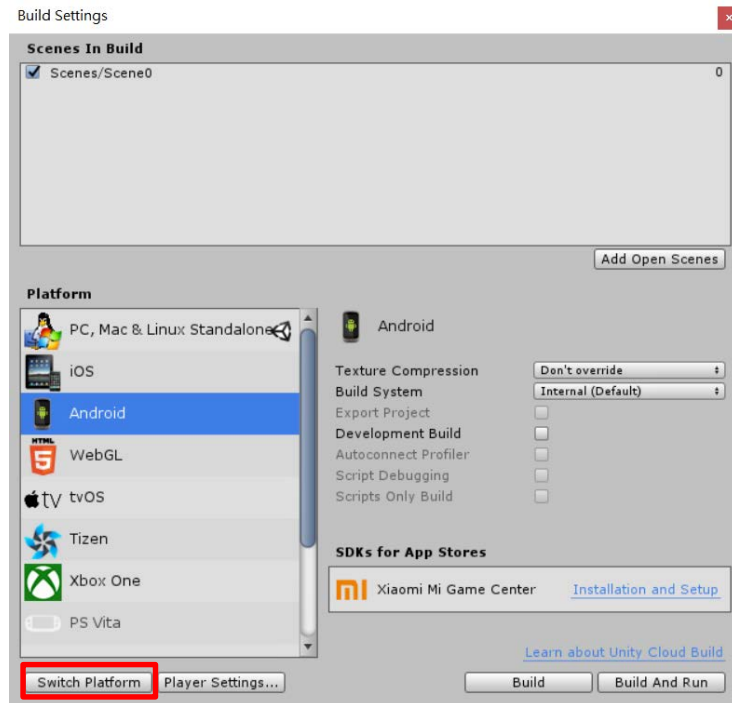
Build Unity APK

Select the folder where the JDK is installed



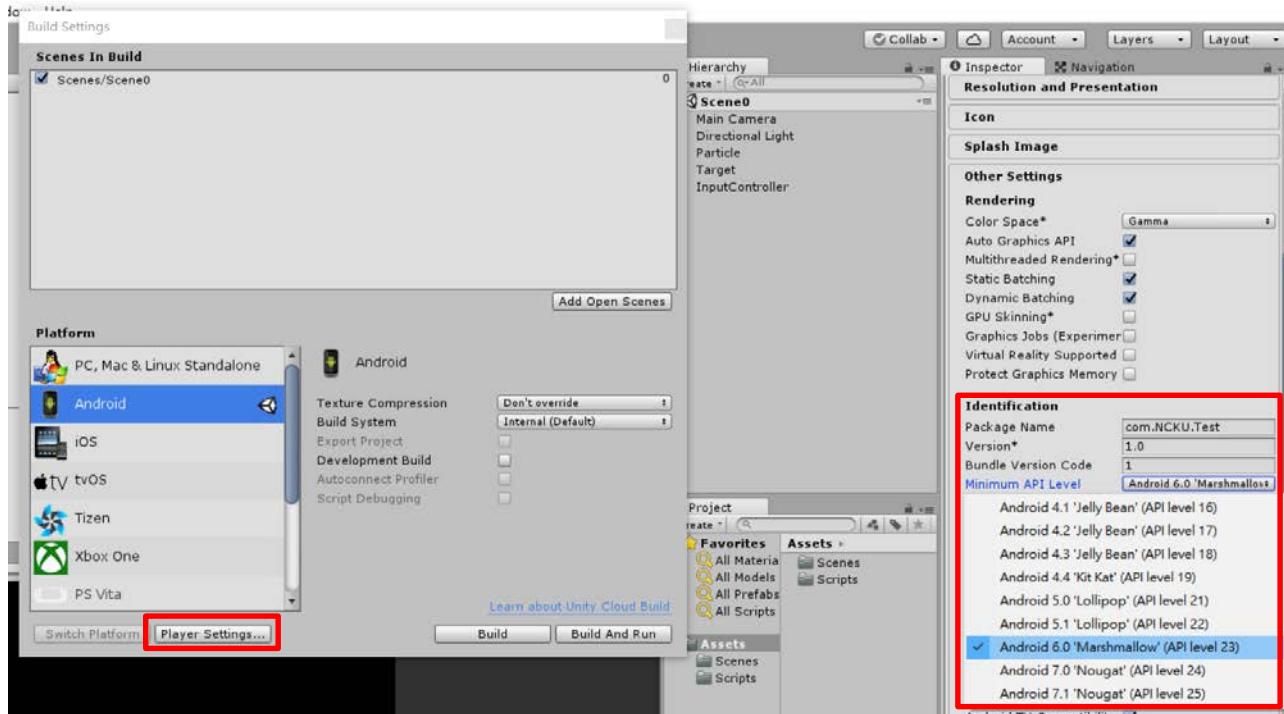
Build Unity APK

File > Build Settings > Android > Switch Platform



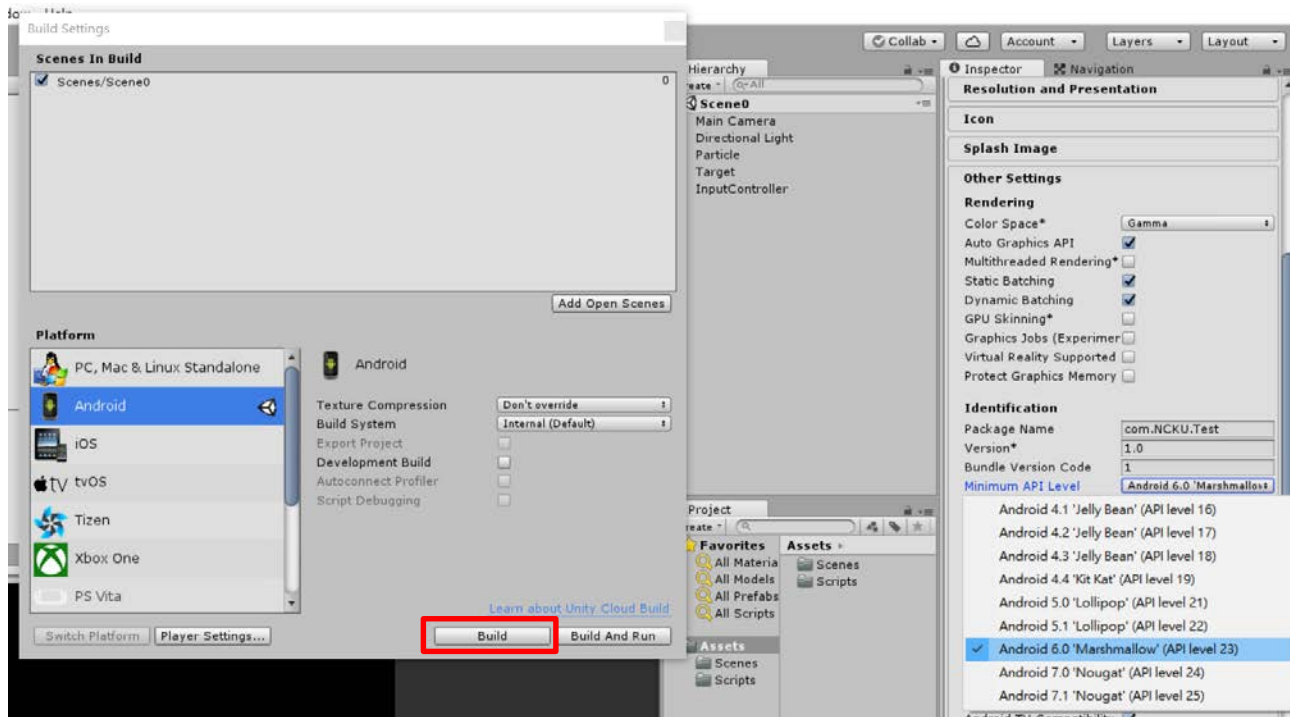
Build Unity AKP

File > Build Settings > Android > Player Settings > Other Settings > Identification
Change your Package Name and select your Android API Level



Build Unity APK

File > Build Settings > Android > Build



Build Unity APK

You will see the *.apk file and install it on your mobile device

 Assets	2017/11/2 下午 0...	檔案資料夾	
 Library	2017/11/8 上午 0...	檔案資料夾	
 obj	2017/11/2 下午 0...	檔案資料夾	
 Packages	2017/11/2 下午 0...	檔案資料夾	
 ProjectSettings	2017/11/8 上午 0...	檔案資料夾	
 Temp	2017/11/8 上午 0...	檔案資料夾	
 AndroidTest.sln	2017/11/2 下午 0...	Microsoft Visual ...	3 KB
 AndroidTest.userprefs	2017/11/8 下午 0...	USERPREFS 檔案	1 KB
 Assembly-CSharp.csproj	2017/11/8 上午 0...	Visual C# Project ...	6 KB
 Test.apk	2017/11/8 上午 0...	APK 檔案	21,172 KB



Unity Engine Course

Unity Remote Tutorial



Unity Remote

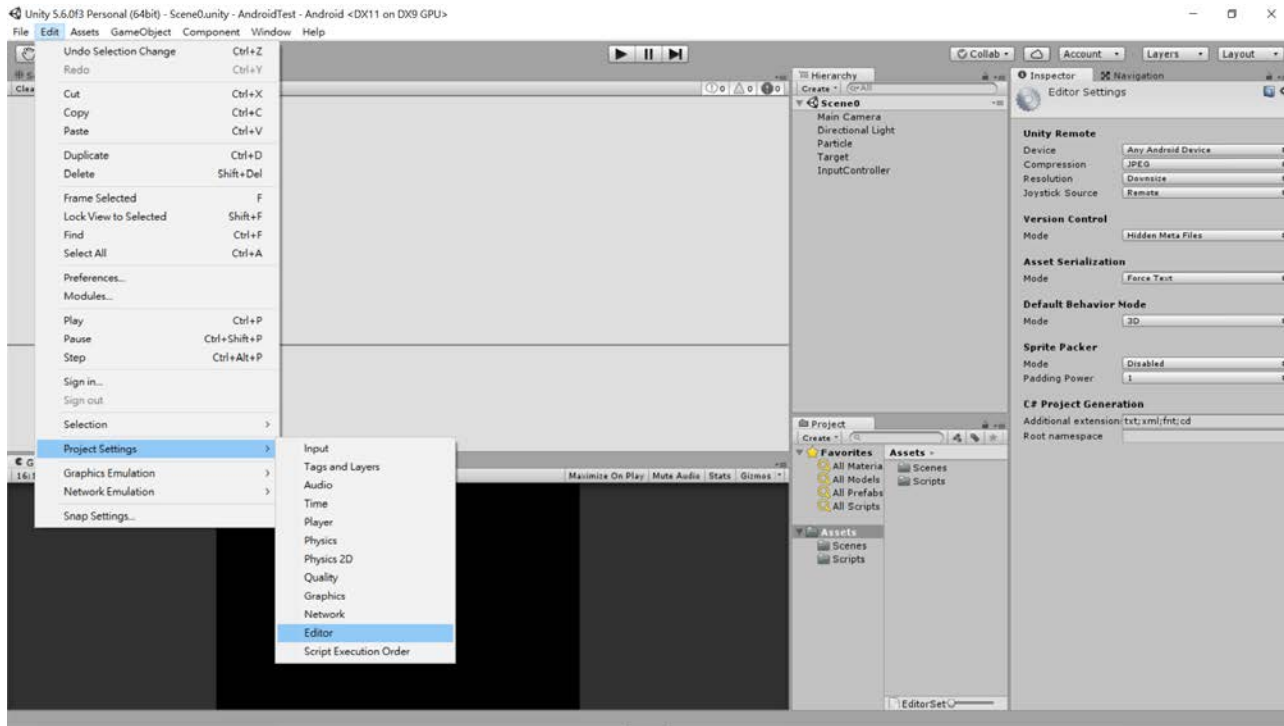
Unity Remote is an app for Android remote debugging

- You can download “Unity Remote” from Google Play



Unity Remote

- Edit > Project Setting > Editor



Unity Remote

- Set the device to “Any Android Device”
- Connect your mobile device to your PC with USB
- Press start button for remote debugging

