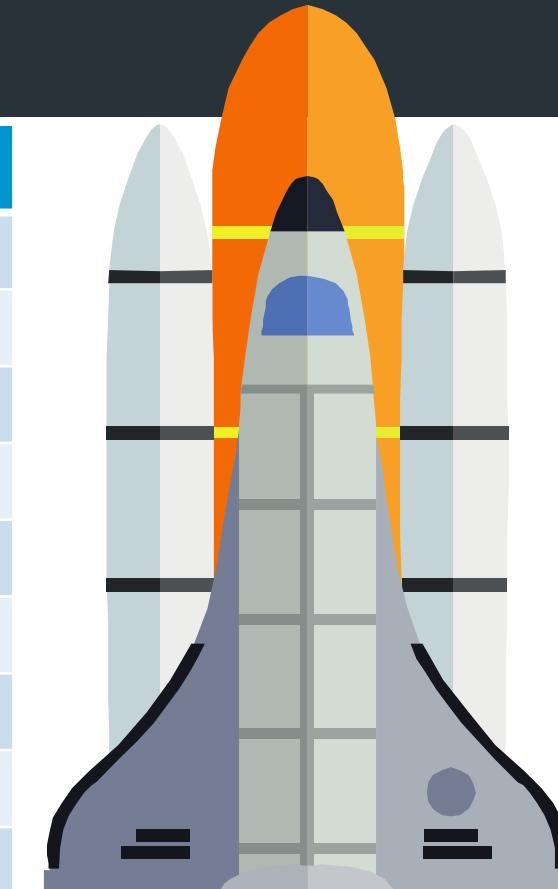


# 개발환경 구축과 맛보기 프로젝트

# 개발환경 구축 절차

2

주 차	수업 내용
1	수업 소개
2	<b>개발 환경 구축과 맛보기 프로젝트</b>
3	텍스트 출력과 레이아웃
4	이미지 출력
5	이벤트 처리와 액티비티 간 이동
6	오디오 재생
7	비디오 재생
8	<b>중간고사</b>
9	애니메이션
10	사물인터넷과 센서 – 터치 센서, 모션 센서
11	사물인터넷과 센서 – 위치 센서, 환경 센서
12	NFC 활용
13	공공 DB 오픈 API 활용
14	구글 맵과 위치 추적
15	<b>기말 고사</b>

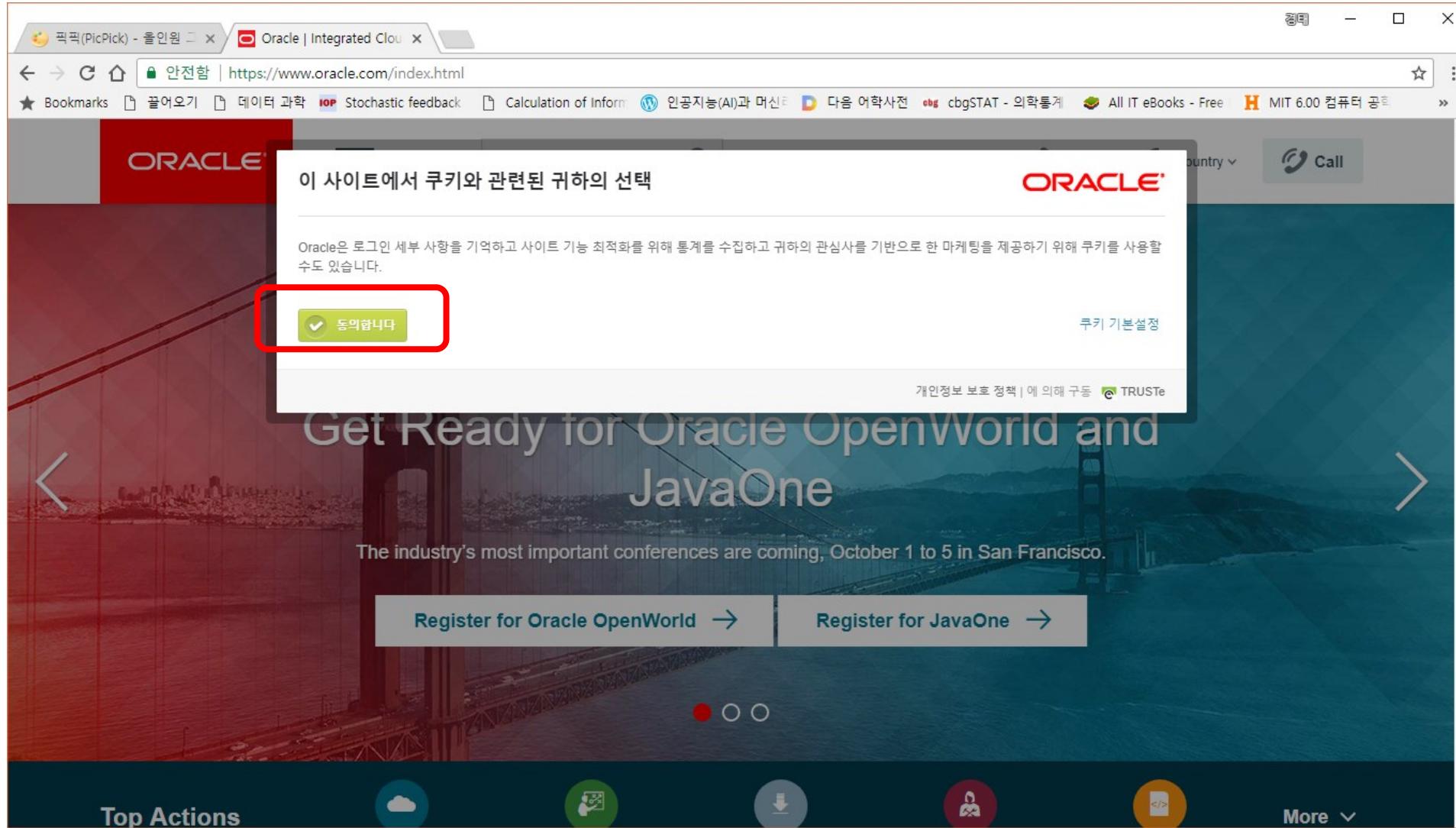


- JDK 설치
- Android Studio 설치
- 앱 실행 환경 구축

# 개발환경 구축

# Step 1. JDK 설치

- 다운로드: <https://www.oracle.com/>



# Continued

The screenshot shows the Oracle website's main navigation bar and a dropdown menu for 'Trials and Downloads' under the 'Java' section.

**Navigation Bar:**

- Oracle | Integrated Cloud
- Menu
- Sign In
- Country
- Call

**Left Sidebar:**

- Cloud
- Applications
- Database and Technologies
- IT Infrastructure
- Industry Solutions
- Small and Midsize Business
- Support and Services
- Training
- Partners
- Developers
- OTN
- Store
- Trials and Downloads** (highlighted)
- About Oracle
- Events

**Trials and Downloads Menu:**

- Java
- All Java Downloads → (highlighted with a blue box)
- Customer Downloads
- Developer Downloads
- Free Cloud Trials
- Database
- Developer Tools
- Enterprise Management
- Middleware
- Operating Systems
- Servers and Storage Systems

**Bottom Navigation:**

- www.oracle.com/technetwork/java/index.html
- More ▾

Oracle Technology Netw □ Oracle Technology Network > Java

Bookmarks 블로거 데이터 과학 Stochastic feedback Calculation of Inform 인공지능(AI)과 머신러닝 다음 어학사전 cbgSTAT - 의학통계 All IT eBooks - Free MIT 6.00 컴퓨터 공학

ORACLE Menu Search Sign In Country Call

Oracle Technology Network > Java

SPECIAL OFFER:  
CREATE YOUR FREE  
ORACLE CLOUD  
ACCOUNT TODAY

See what you can accomplish  
with \$300 in free credits towards  
Oracle Cloud services.

Software Downloads View All Downloads

Top Downloads

- Java SE
- Java EE and GlassFish
- JavaFX
- Java ME
- JDeveloper and ADF
- Enterprise Pack for Eclipse
- NetBeans IDE
- Pre-Built VM for Java Devs

New Downloads

- Java SE 8 Update 144  
Released 2017/07/26
- Java SE Embedded 8 Update 144  
Released 2017/07/26
- \*Java CPU and PSU Releases Explained
- Oracle Java ME Embedded 8.2  
Released 2015/09/17

Java Downloads

What's New Java in the Cloud: Rapidly develop and deploy Java business applications in the cloud. Start for free.

Essential Links

- About Us/Become a Member
- Java APIs
- Technical Articles
- New to Java
- Java Certification & Training
- Java Bug Database

Developer Spotlight

- Java EE—the Most Lightweight Enterprise Framework? - New!
- Modular and Reusable Java EE Architecture with Docker - New!
- Special Offer: Oracle Cloud for Java - New

Blogs

- 2017 Duke's Choice Award Nominations  
Posted: Aug 23
- Java 9 Modules Live Demos  
Posted: Aug 17
- Modular Development with JDK 9  
Posted: Jul 28
- Previewing the "Core Java Platform"

Technologies

- Java SE
- Java SE Support
- Java SE Advanced & Suite
- Java Embedded
- Java EE
- Java ME
- JavaFX

www.oracle.com/technetwork/java/javase/overview/index.html

# Continued

7

The screenshot shows a web browser window displaying the Oracle Java SE Downloads page. The URL in the address bar is [www.oracle.com/technetwork/java/javase/downloads/index.html](http://www.oracle.com/technetwork/java/javase/downloads/index.html). The page features a navigation menu on the left with links like Java SE, Java EE, Java ME, etc. The main content area is titled "Java SE Downloads" and includes sections for "Java Platform, Standard Edition" and "Java SE 8u144". A large orange box highlights the "Java Platform (JDK) 8u144" download button. To the right, there are sections for "Java SDKs and Tools" and "Java Resources". The bottom of the page shows a "JDK ReadMe" link.

Java SE Downloads

Java Platform (JDK) 8u144

Java Platform, Standard Edition

Java SE 8u144

Java Platform (JDK) 8u144

Java SE Products

Java ReadMe

Java APIs

Technical Articles

Demos and Videos

Forums

Java Magazine

Java.net

Developer Training

Tutorials

Java.com

# Continued

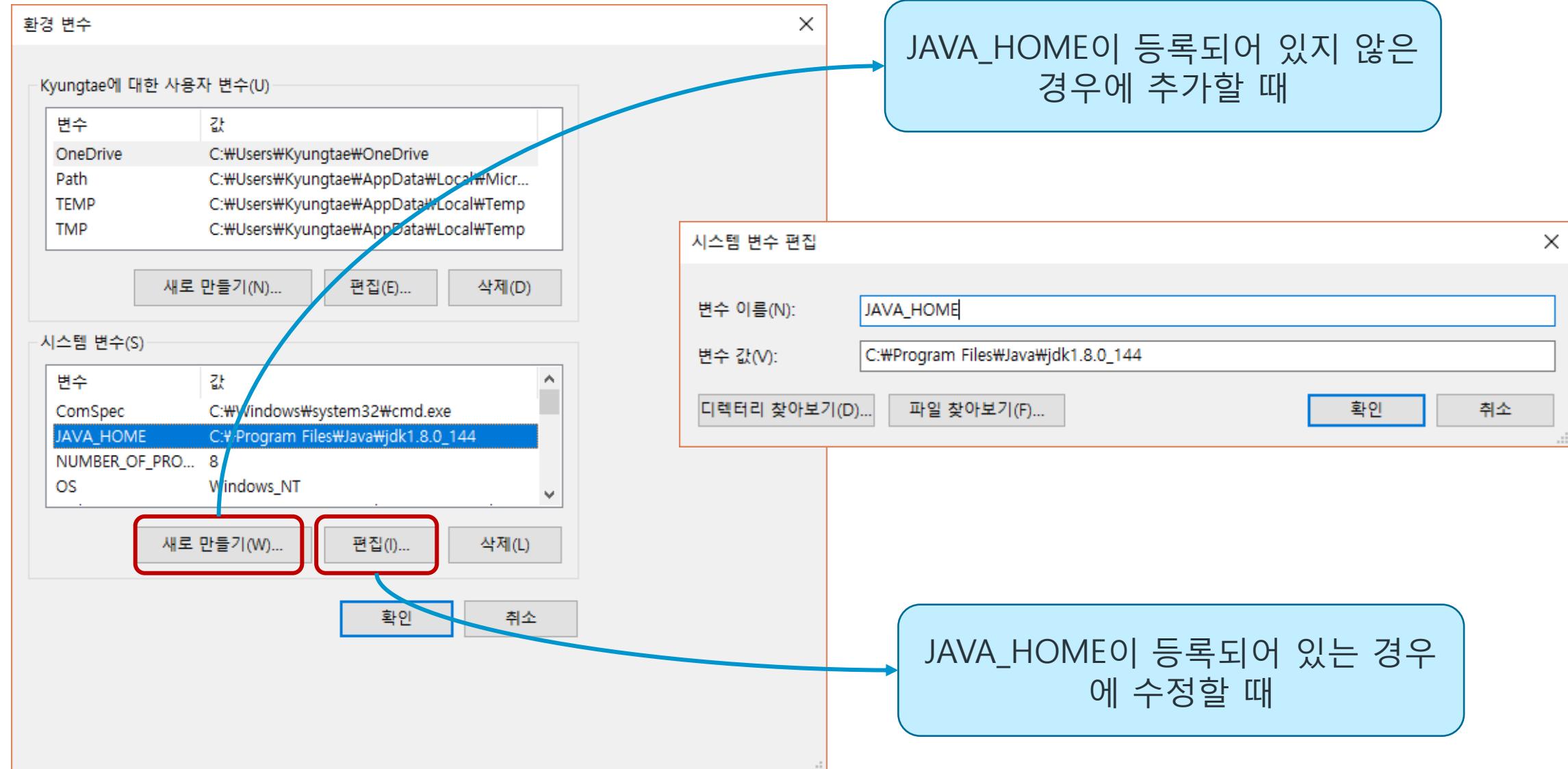
The screenshot shows a web browser window with the URL [www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html](http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html). The page title is "Java SE Development Kit 8 Downloads". On the left, there's a sidebar with links like Java SE, Java EE, Java ME, etc. The main content area has tabs for Overview, Downloads (which is selected), Documentation, Community, Technologies, and Training. Below the tabs, there's a section for "Java SE Development Kit 8u144". It says "You must accept the Oracle Binary Code License Agreement for Java SE to download this software." There are two radio buttons: "Accept License Agreement" (selected) and "Decline License Agreement". Below this is a table of download links:

Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.89 MB	<a href="#">jdk-8u144-linux-arm32-vfp-hf.tar.gz</a>
Linux ARM 64 Hard Float ABI	74.83 MB	<a href="#">jdk-8u144-linux-arm64-vfp-hf.tar.gz</a>
Linux x86	164.65 MB	<a href="#">jdk-8u144-linux-i586.rpm</a>
Linux x86	179.44 MB	<a href="#">jdk-8u144-linux-i586.tar.gz</a>
Linux x64	162.1 MB	<a href="#">jdk-8u144-linux-x64.rpm</a>
Linux x64	176.92 MB	<a href="#">jdk-8u144-linux-x64.tar.gz</a>
Mac OS X	226.6 MB	<a href="#">jdk-8u144-macosx-x64.dmg</a>
Windows x86	190.94 MB	<a href="#">jdk-8u144-windows-i586.exe</a>
Windows x64	197.78 MB	<a href="#">jdk-8u144-windows-x64.exe</a>
Windows x64	197.78 MB	<a href="#">jdk-8u144-windows-x64.exe</a>

A red arrow points to the "Windows x64" row.

# Continued – 자바홈(JAVA\_HOME) 환경설정

- 제어판>시스템>고급 시스템 설정>고급>환경변수

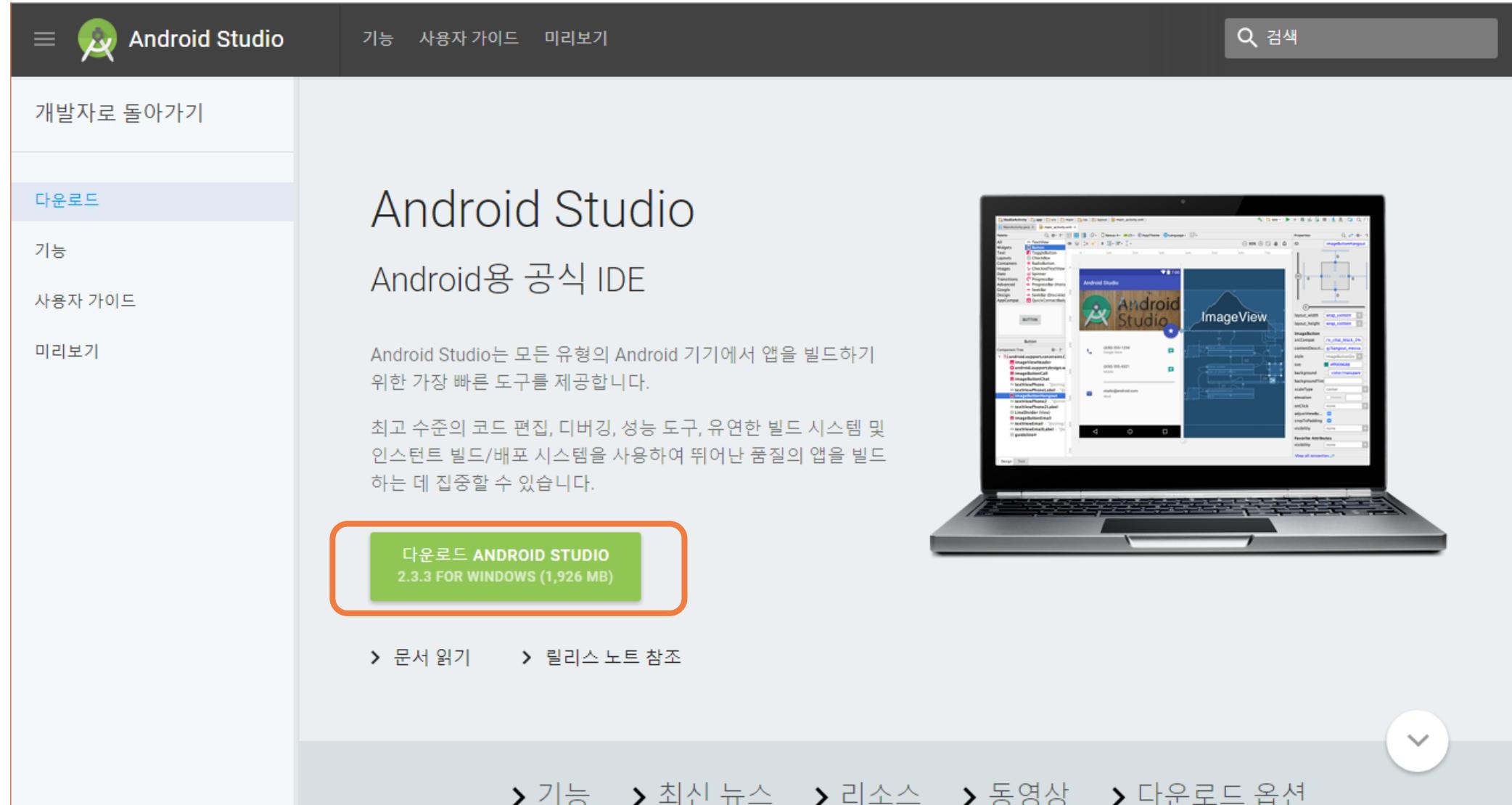


## Step 2. Android Studio 설치

# Download Android Studio

11

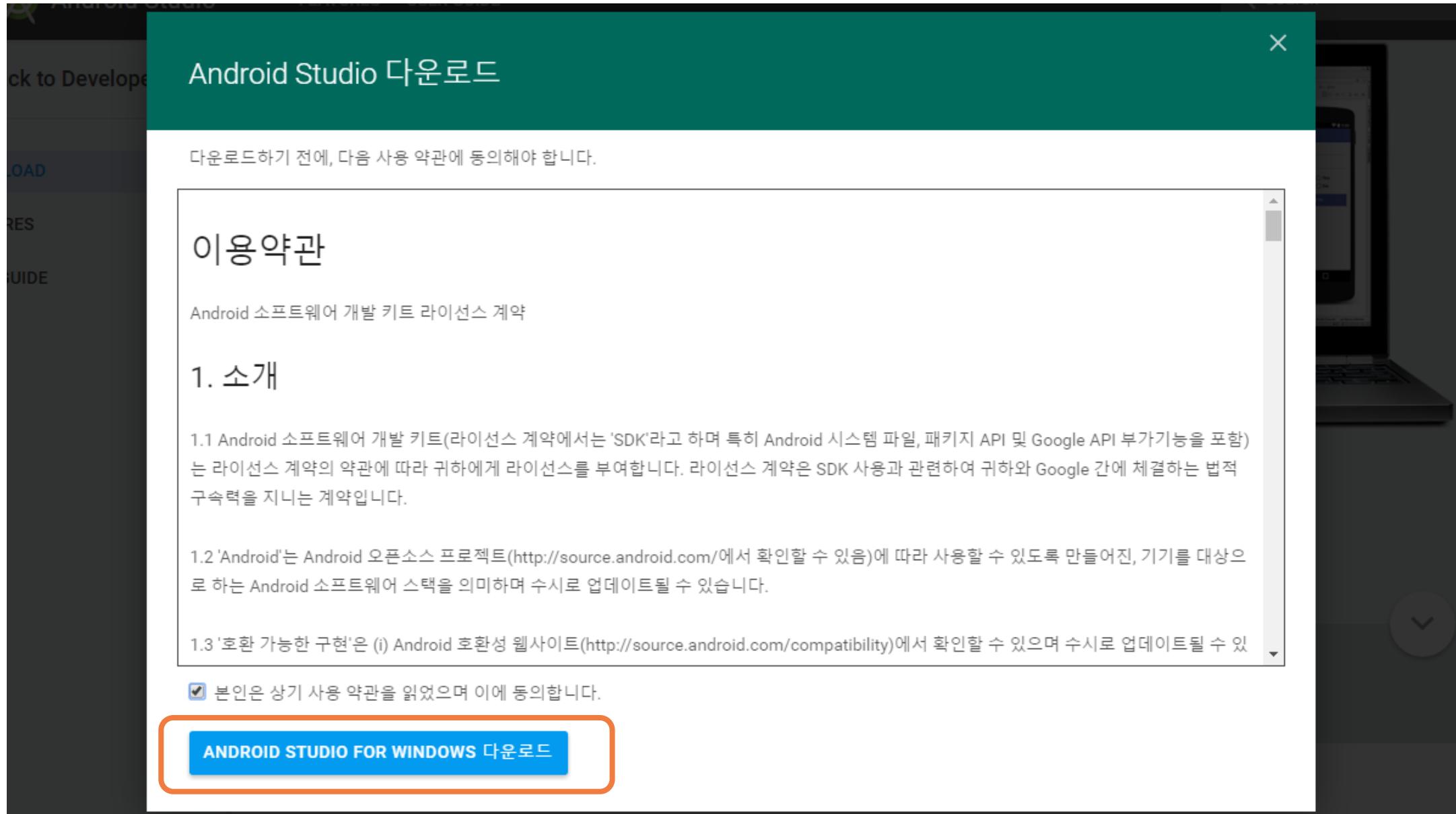
- <https://developer.android.com/studio/index.html>



The screenshot shows the official Android Studio download page. The top navigation bar includes the Android Studio logo, links for '기능' (Features), '사용자 가이드' (User Guide), and '미리보기' (Preview), and a search bar. On the left, a sidebar with a dark background lists '개발자로 돌아가기' (Developer), '다운로드' (Download) (which is highlighted in blue), '기능' (Features), '사용자 가이드' (User Guide), and '미리보기' (Preview). The main content area has a light gray background and features the text 'Android Studio' and 'Android용 공식 IDE'. Below this, it says 'Android Studio는 모든 유형의 Android 기기에서 앱을 빌드하기 위한 가장 빠른 도구를 제공합니다.' (Android Studio provides the fastest tool for building apps for all types of Android devices.) and '최고 수준의 코드 편집, 디버깅, 성능 도구, 유연한 빌드 시스템 및 인스턴트 빌드/배포 시스템을 사용하여 뛰어난 품질의 앱을 빌드하는 데 집중할 수 있습니다.' (Focuses on high-quality code editing, debugging, performance tools, flexible build systems, and instant build/deployment systems to build high-quality apps.) A large green button labeled '다운로드 ANDROID STUDIO 2.3.3 FOR WINDOWS (1,926 MB)' is centered at the bottom of the main content area, with a red box and border highlighting it. Below the button are links for '문서 읽기' (Read the documentation) and '릴리스 노트 참조' (Refer to the release notes). At the very bottom, there are navigation links: '기능' (Features), '최신 뉴스' (Latest news), '리소스' (Resources), '동영상' (Videos), and '다운로드 옵션' (Download options). A small circular icon with a downward arrow is located in the bottom right corner.

# Continued

12



# Continued

13

Android Studio

FEATURES USER GUIDE

Search

User Guide

Meet Android Studio

Workflow Basics

Manage Your Project

Write Your App

Build and Run Your App

Configure Your Build

Debug Your App

Test Your App

Profile Your App

Publish Your App

Command Line Tools

Release Notes

Troubleshoot

android-studio-bu...e 0.1/1.8GB, 4분 남음

전체 보기 X

## Android Studio 설치

Android Studio 설치는 몇 번의 클릭만으로 가능합니다. (이미 [Android Studio를 다운로드](#)했어야 합니다.)

운영 체제

Windows ▾

Android Studio를 Windows에 설치하려면 다음 단계를 진행하세요.

- 다운로드한 [.exe](#) 파일을 실행합니다.
- 설치 마법사의 안내에 따라 Android Studio와 필요한 SDK 도구를 설치합니다.

일부 Windows 시스템에서는 JDK가 설치된 위치를 런처 스크립트가 찾지 못합니다. 이 문제가 발생하면 올바른 위치를 나타내는 환경 변수를 설정해야 합니다.

Start 메뉴 > Computer > System Properties > Advanced System Properties를 선택합니다. 그런 다음 Advanced 탭 > Environment Variables를 열고 JDK 폴더(예: C:\Program Files\Java\jdk1.8.0\_77)를 가리키는 새 시스템 변수 JAVA\_HOME을 추가합니다.

다 되었습니다! 다음 동영상은 권장 설치 절차의 각 단계를 보여줍니다.



# Continued[설치 동영상]

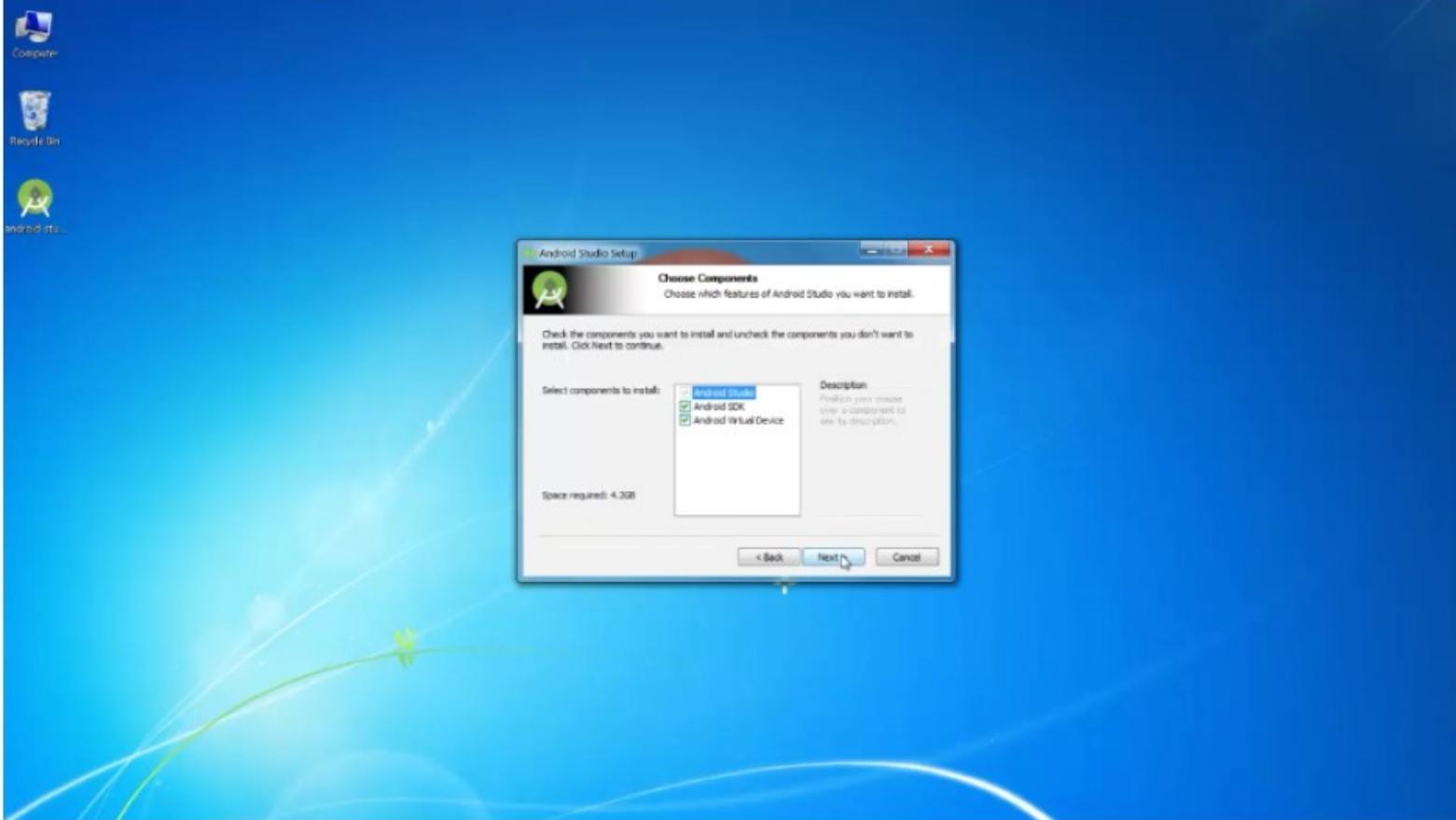
14

Android Studio FEATURES USER GUIDE Search

Start > Computer > System Properties > Advanced System Properties을 선택합니다. 그런 다음 Advanced 탭 > Environment Variables을 클릭합니다.

JDK 폴더(예: C:\Program Files\Java\jdk1.8.0\_77)를 가리키는 새 시스템 변수 JAVA\_HOME을 추가합니다.

다 되었습니다! 다음 동영상은 권장 설치 절차의 각 단계를 보여줍니다.



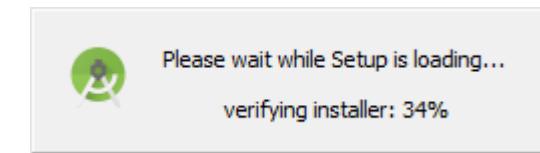
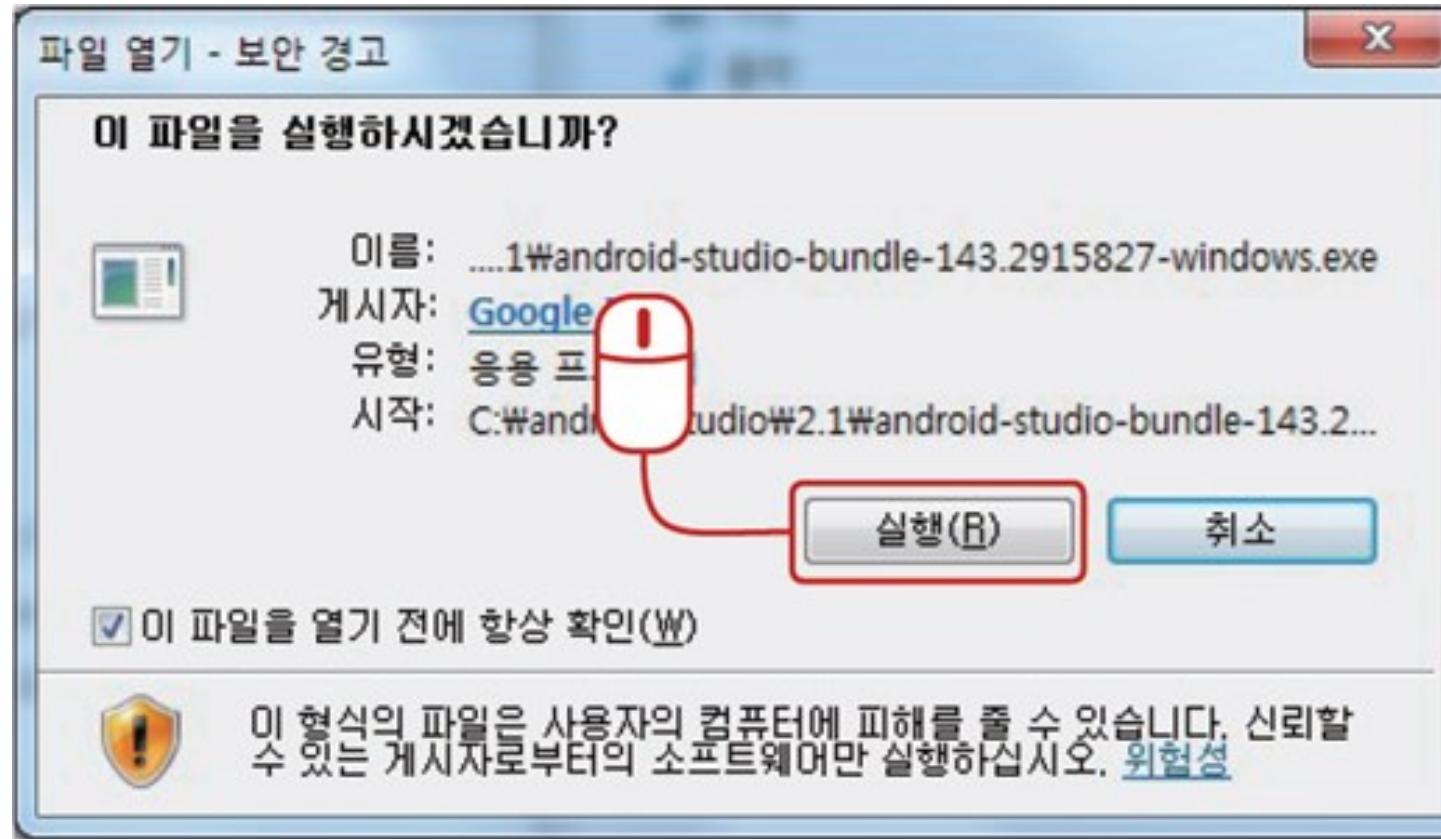
The screenshot shows the 'Choose Components' window of the Android Studio Setup. It displays a list of components to install, including 'Android Studio', 'Android SDK', and 'Android Virtual Device'. A tooltip for 'Android Studio' says: 'Provide your mouse over a component to see its description.' At the bottom, there are buttons for '< Back', 'Next >', and 'Cancel'.

새로운 도구와 기타 API가 나오게 되면, Android Studio가 팝업으로 알려줍니다. 또는 Help > Check for Update를 클릭하여 업데이트를 확인할 수 있습니다.

# Install Android Studio on windows

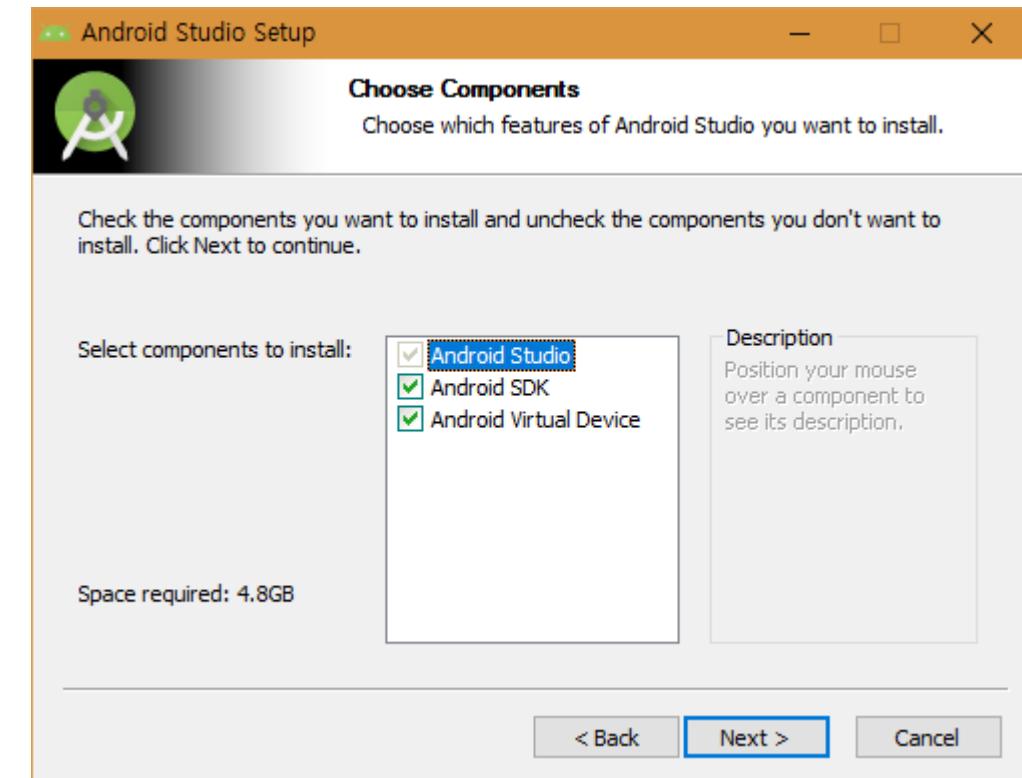
15

- 다운 받은 Android Studio 설치 파일을 클릭하여 ‘실행’ 버튼을 클릭한다.



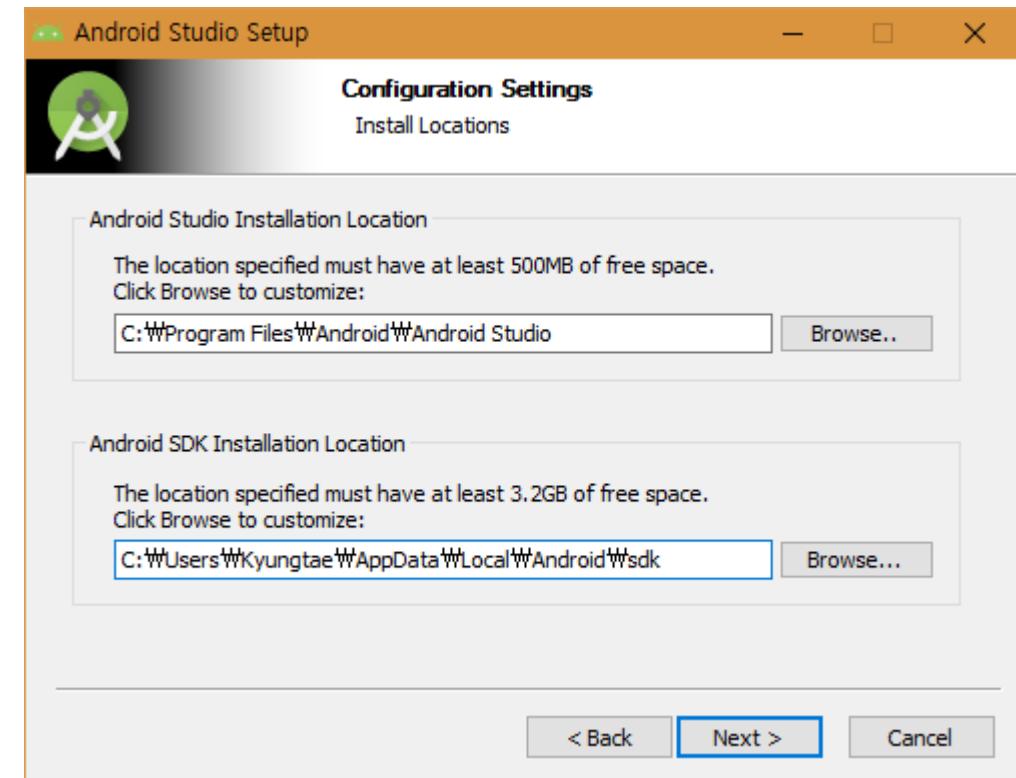
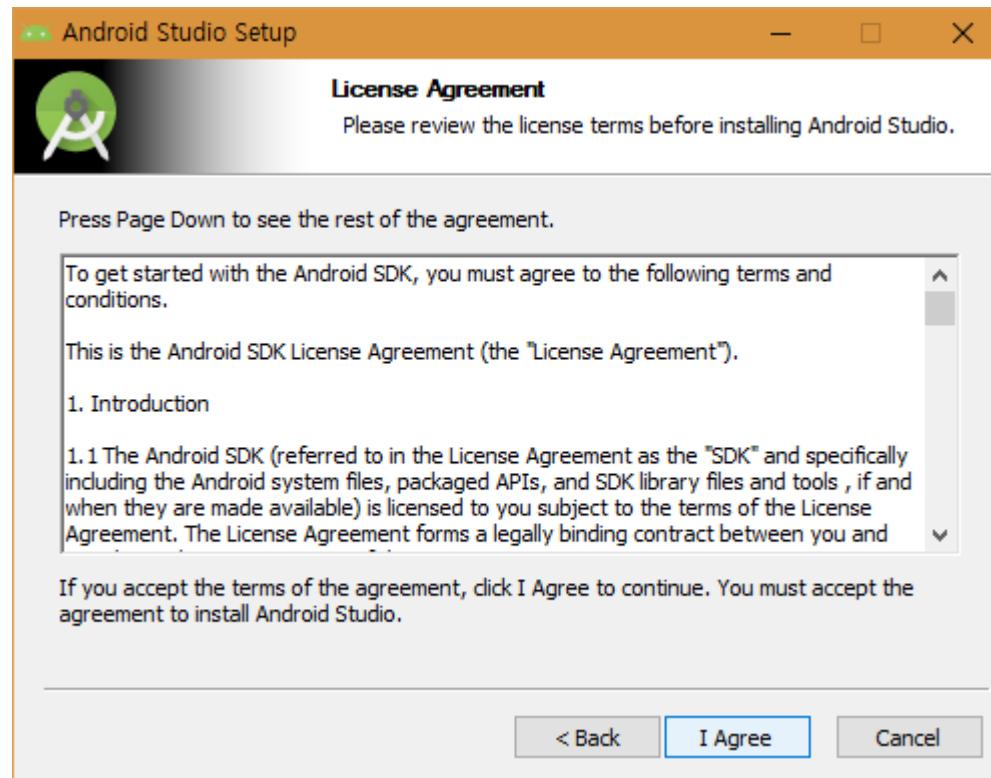
# Continued

16



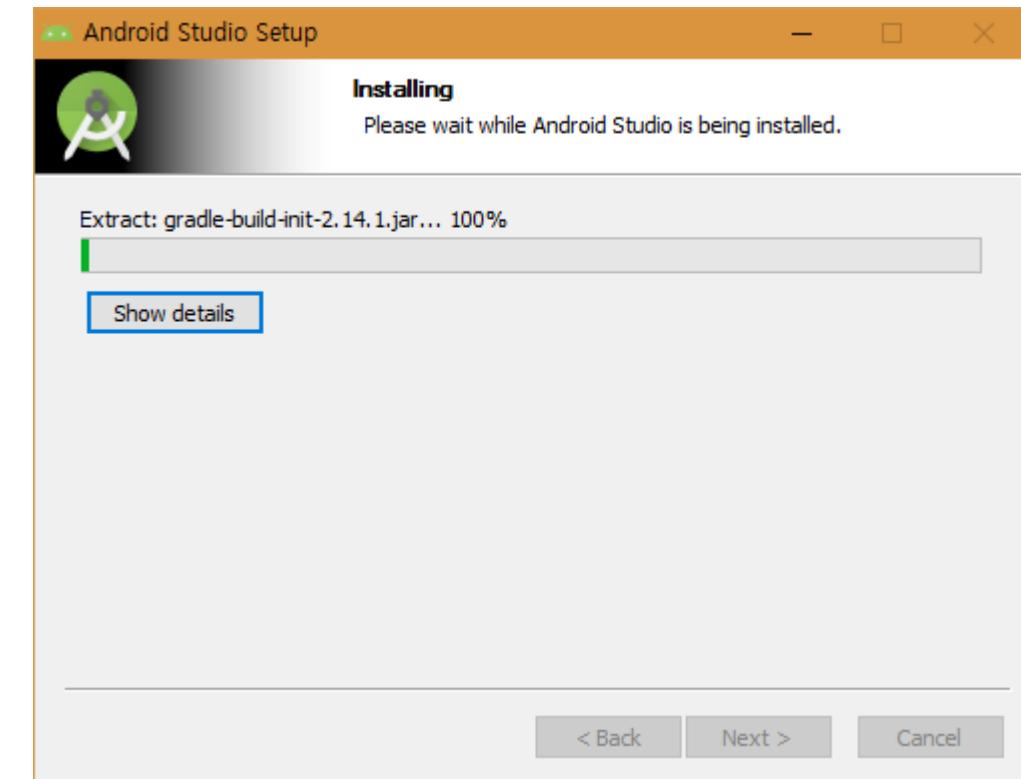
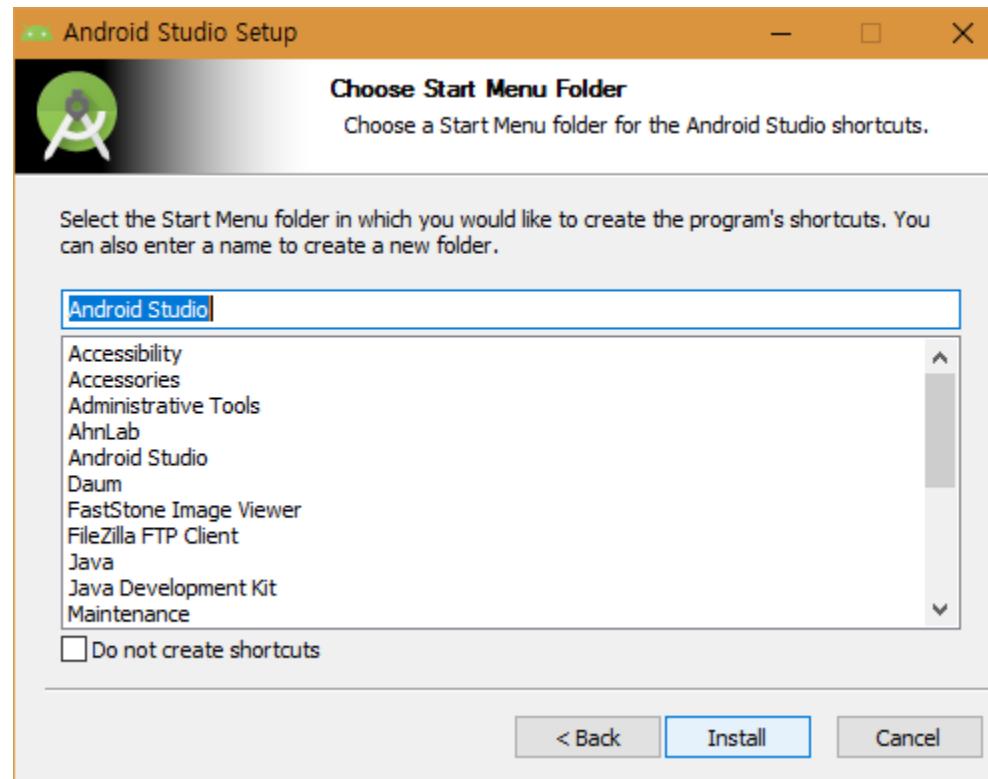
# Continued

17

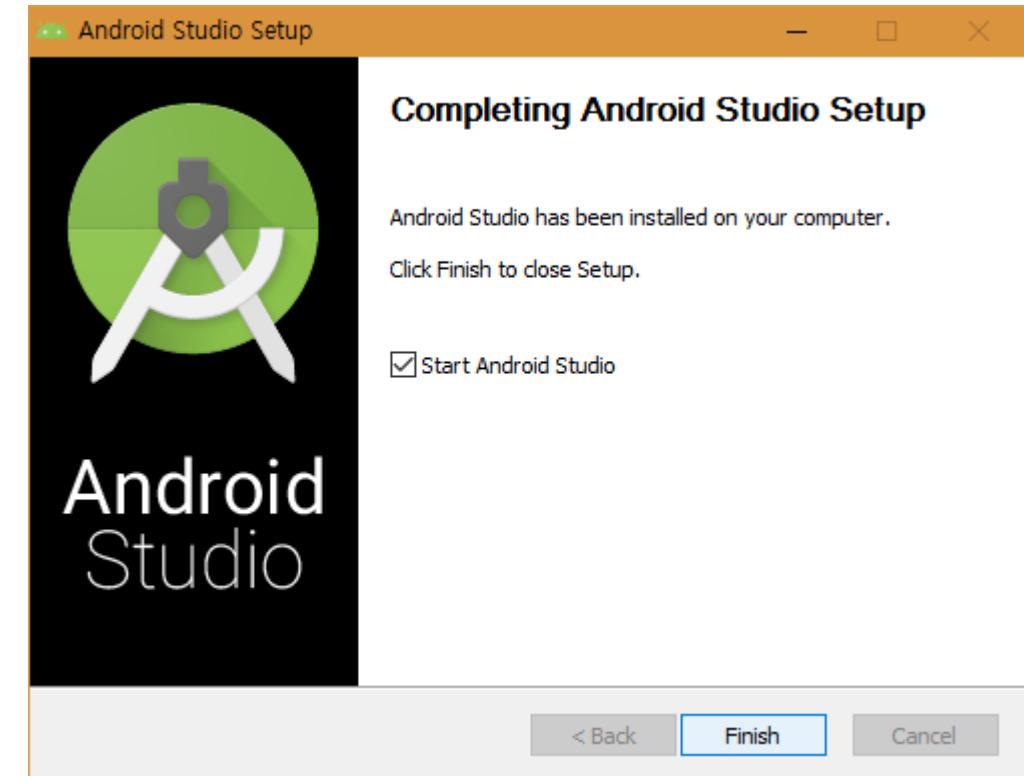
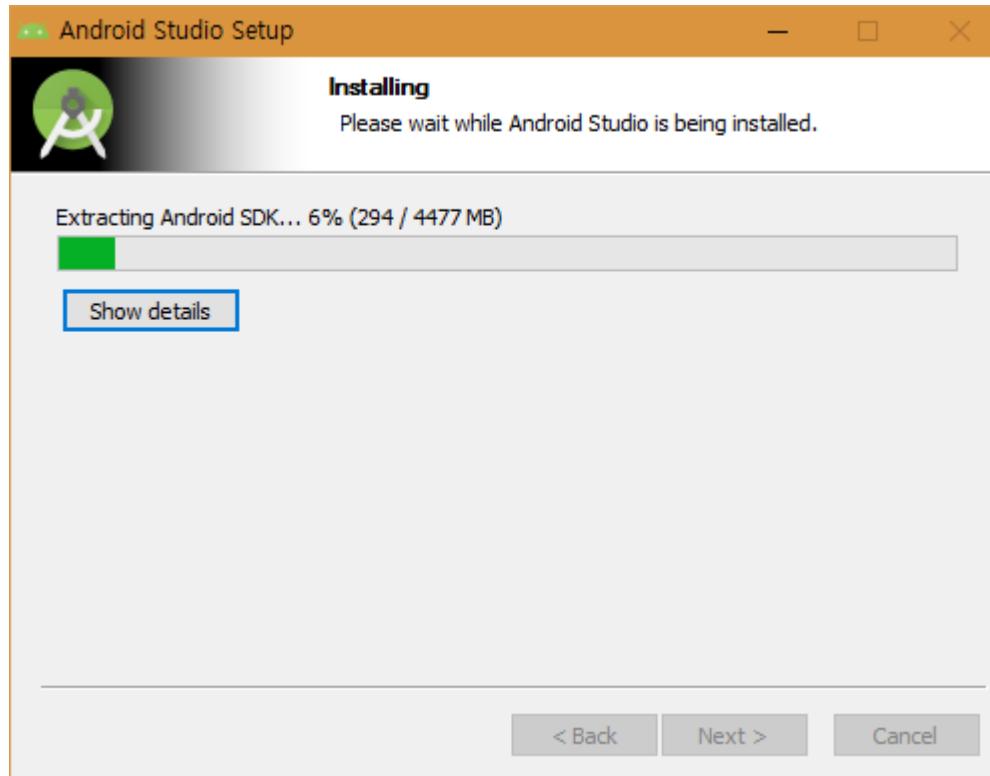


# Continued

18

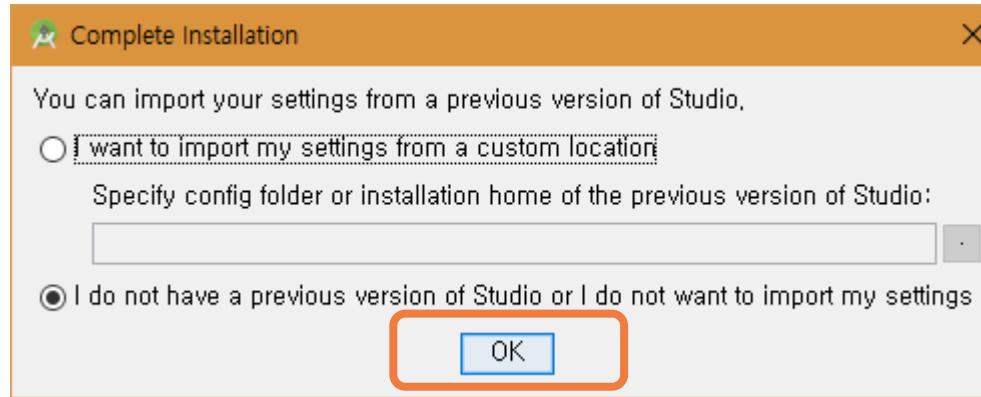


# Continued



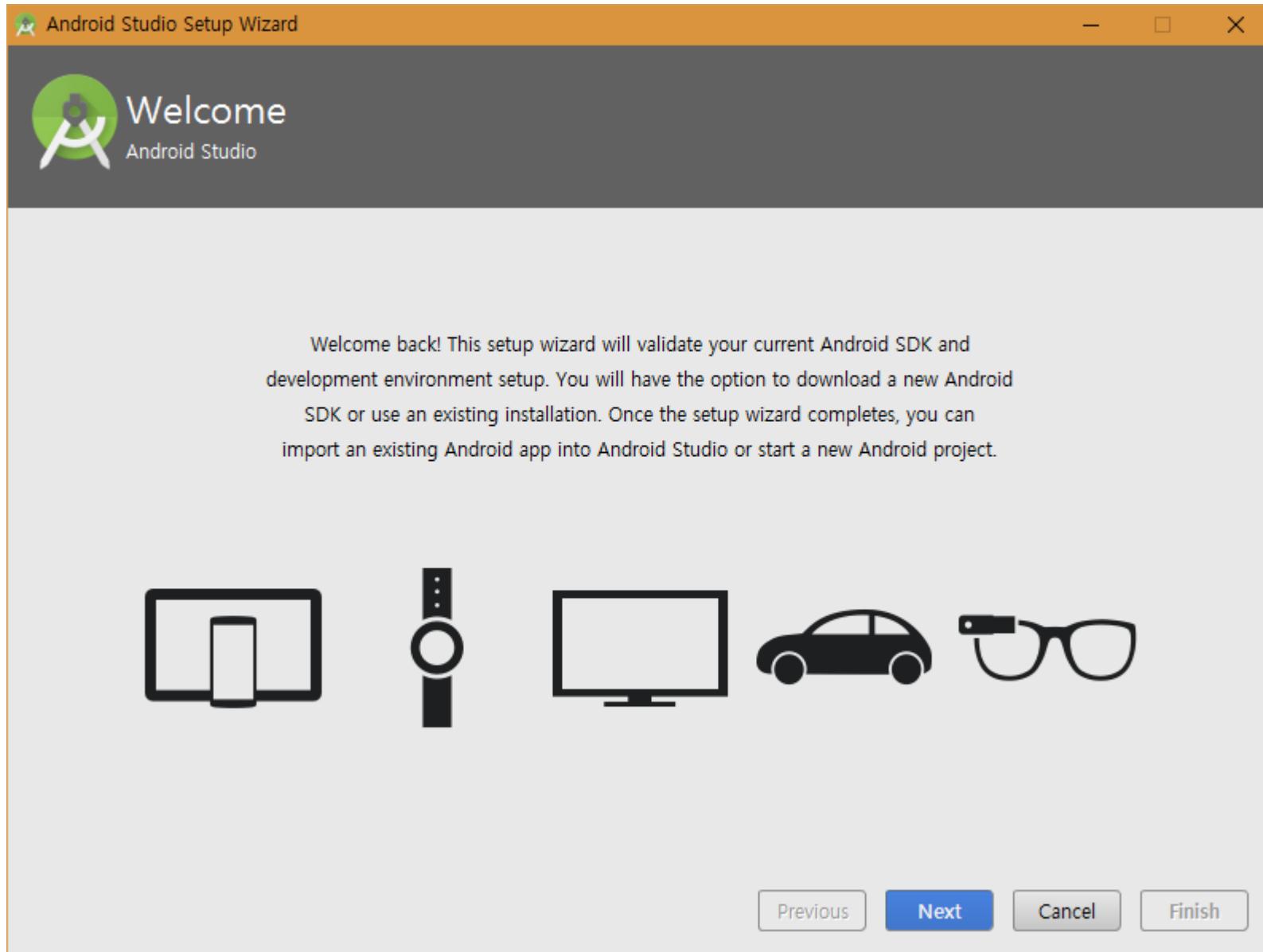
# Continued ... Complete installation

20



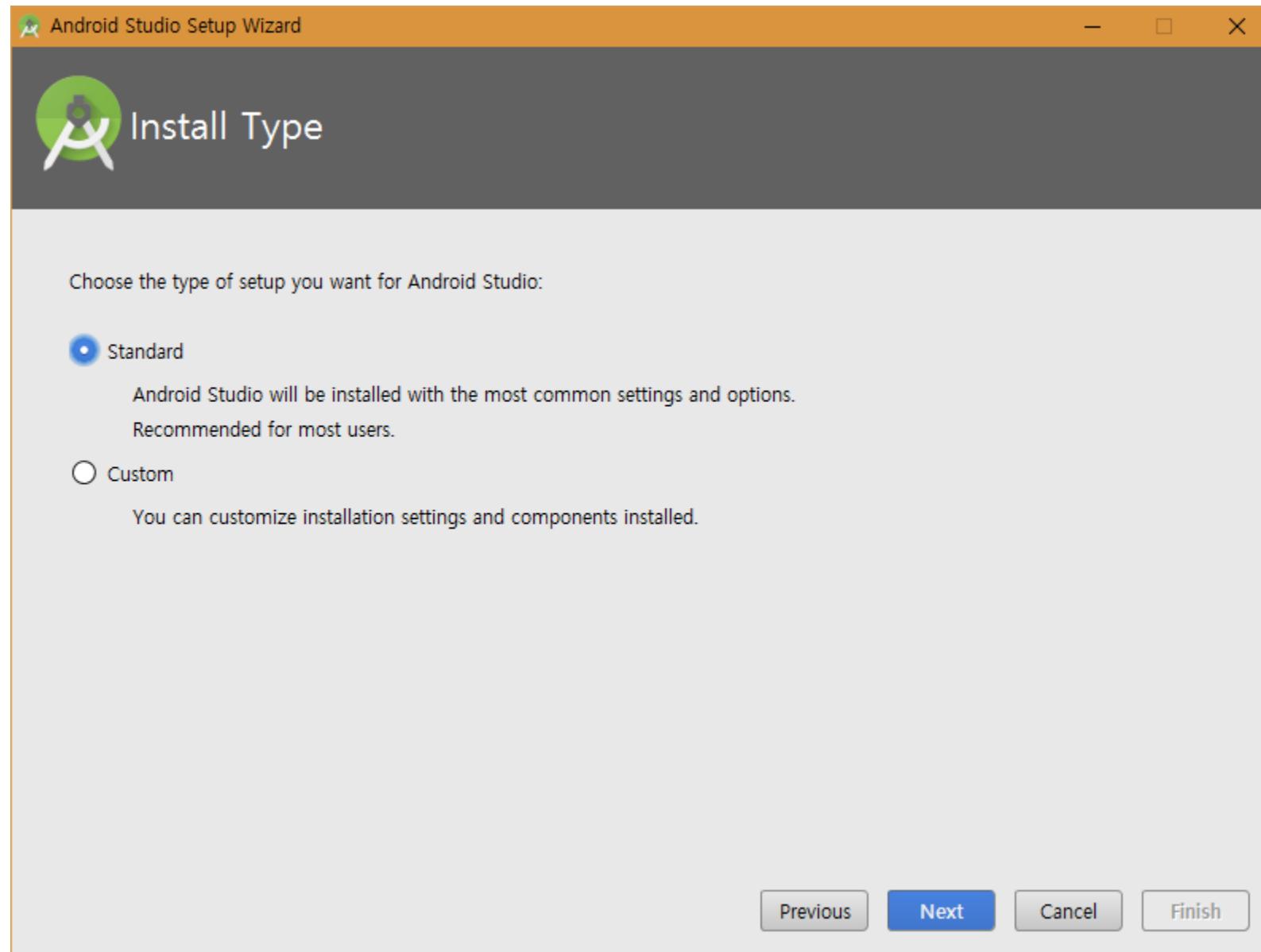
# Android Studio Setup Wizard

21



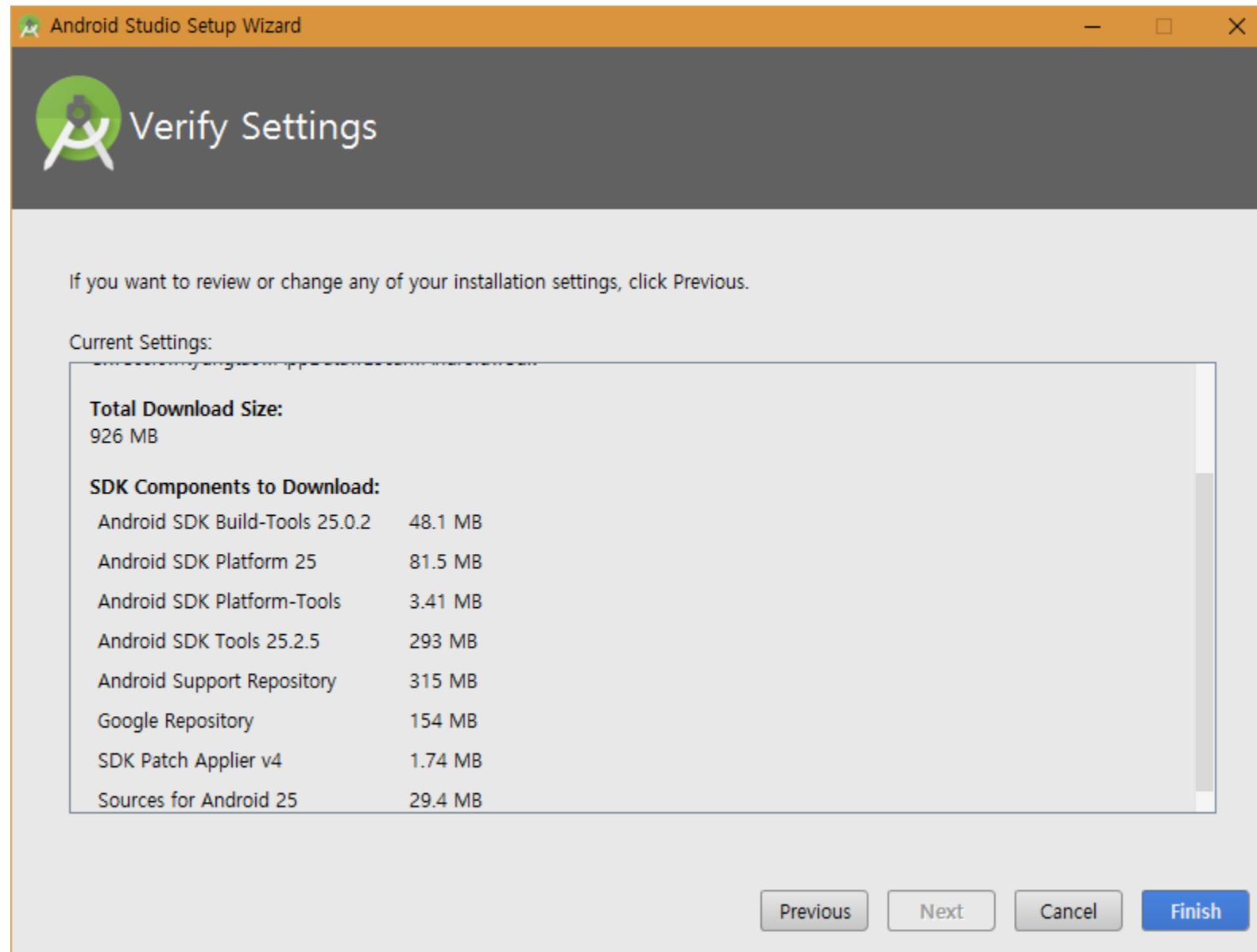
# Continued

22



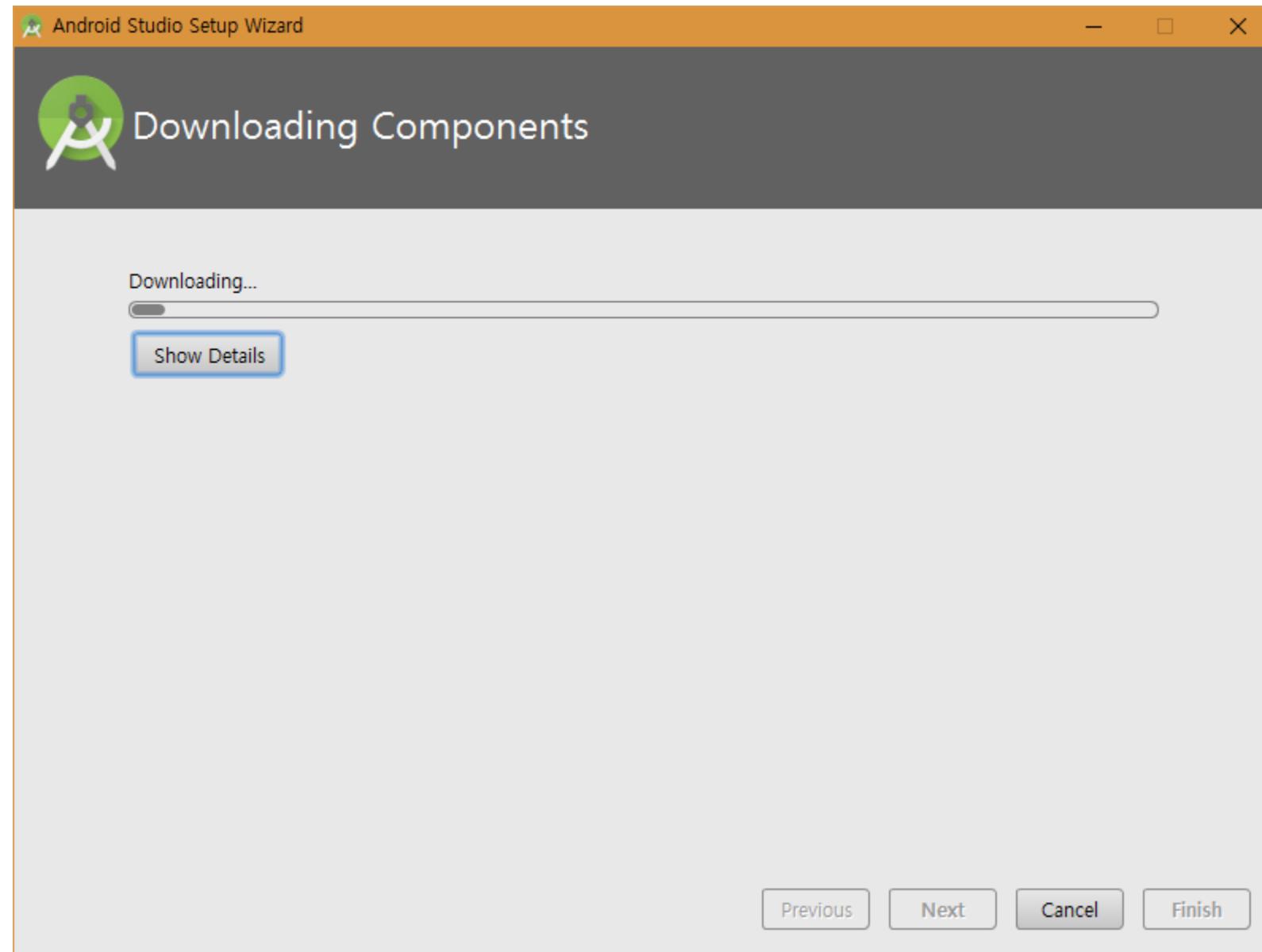
# Continued

23



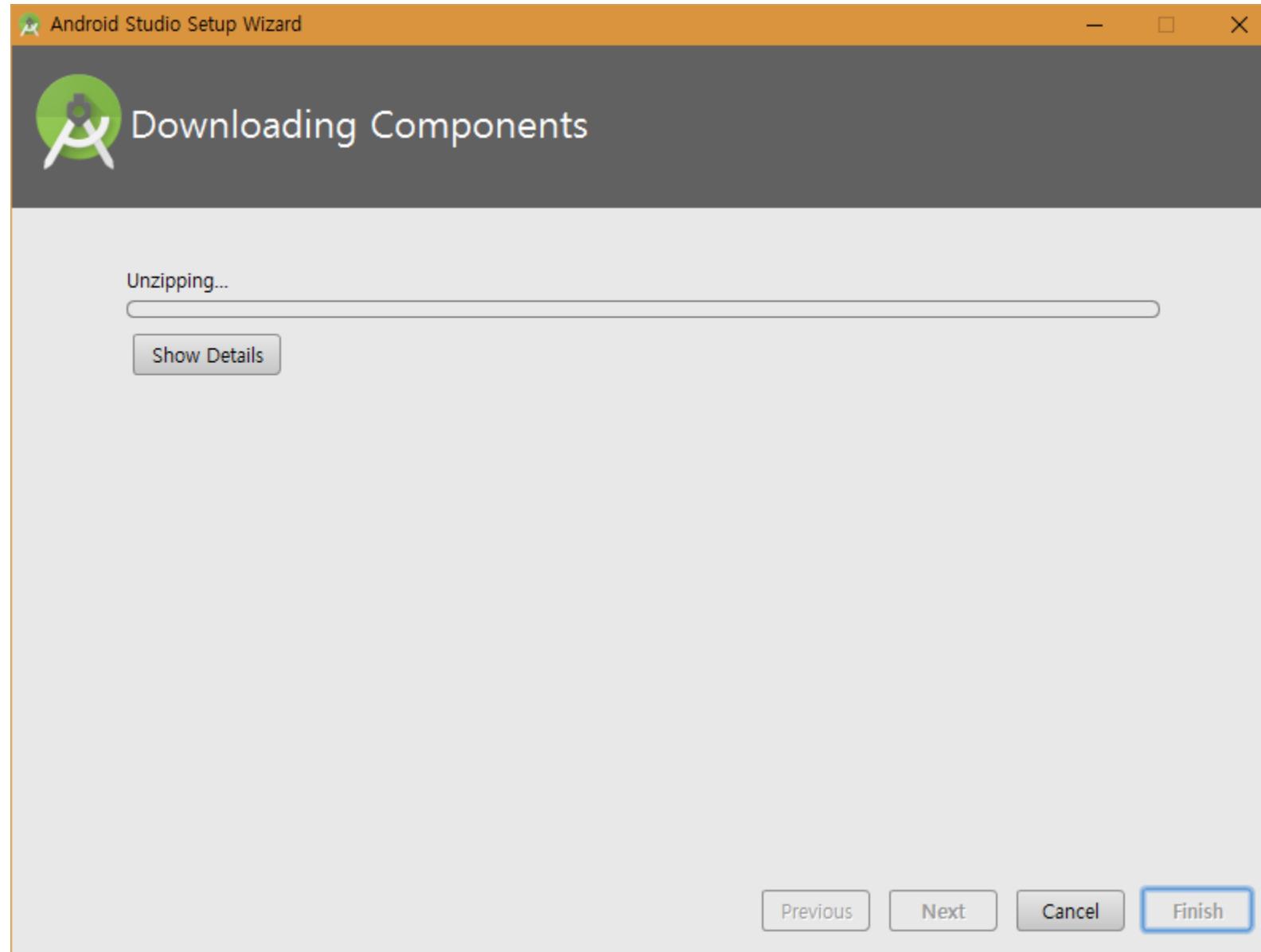
# Continued

24



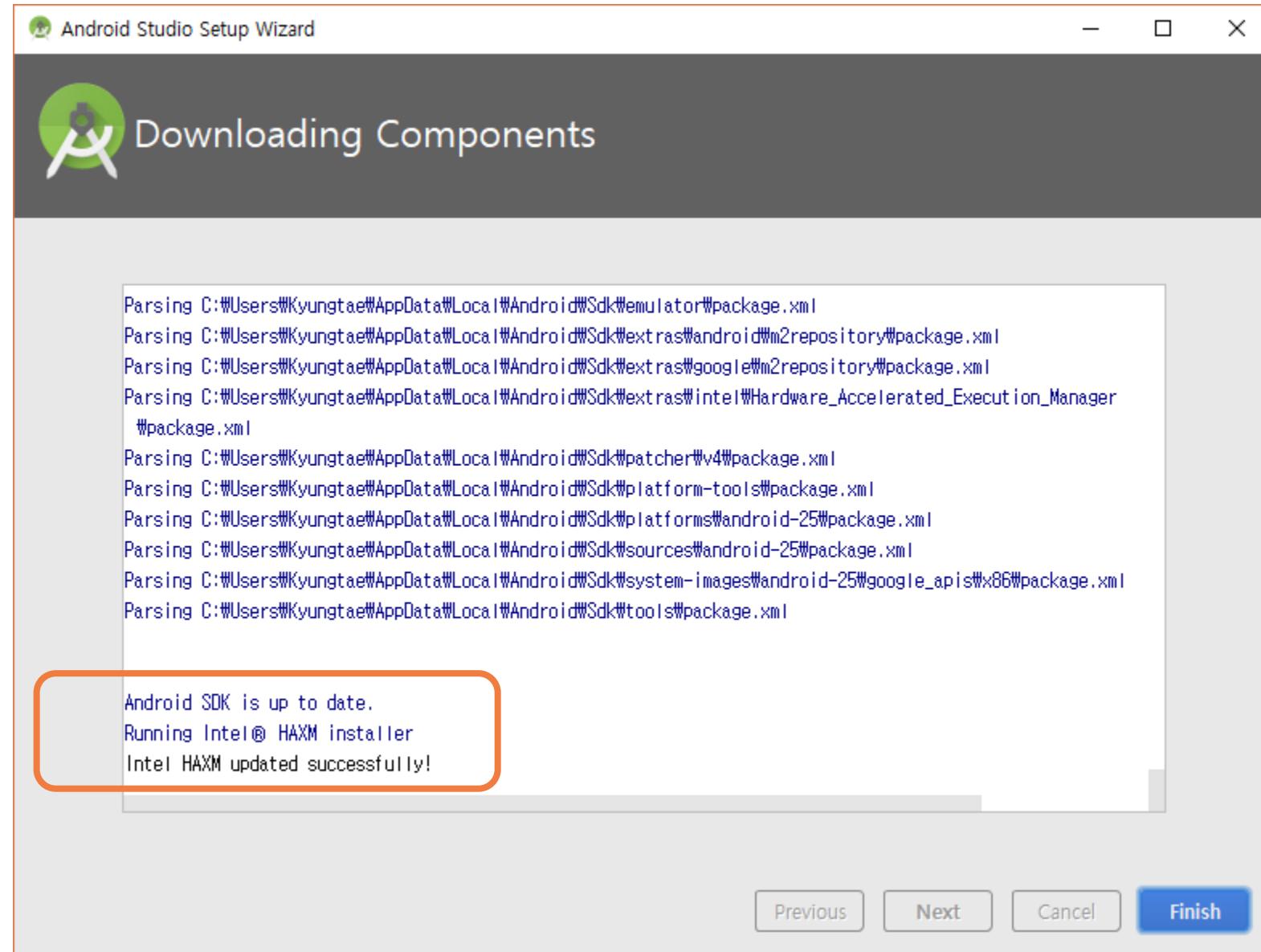
# Continued

25



# Continued

26



# Continued

27

- 설치 중에 “JAVA\_HOME” 경로 설정이 안 된 경우

## 주의 JAVA\_HOME 경로 설정이 안된 경우

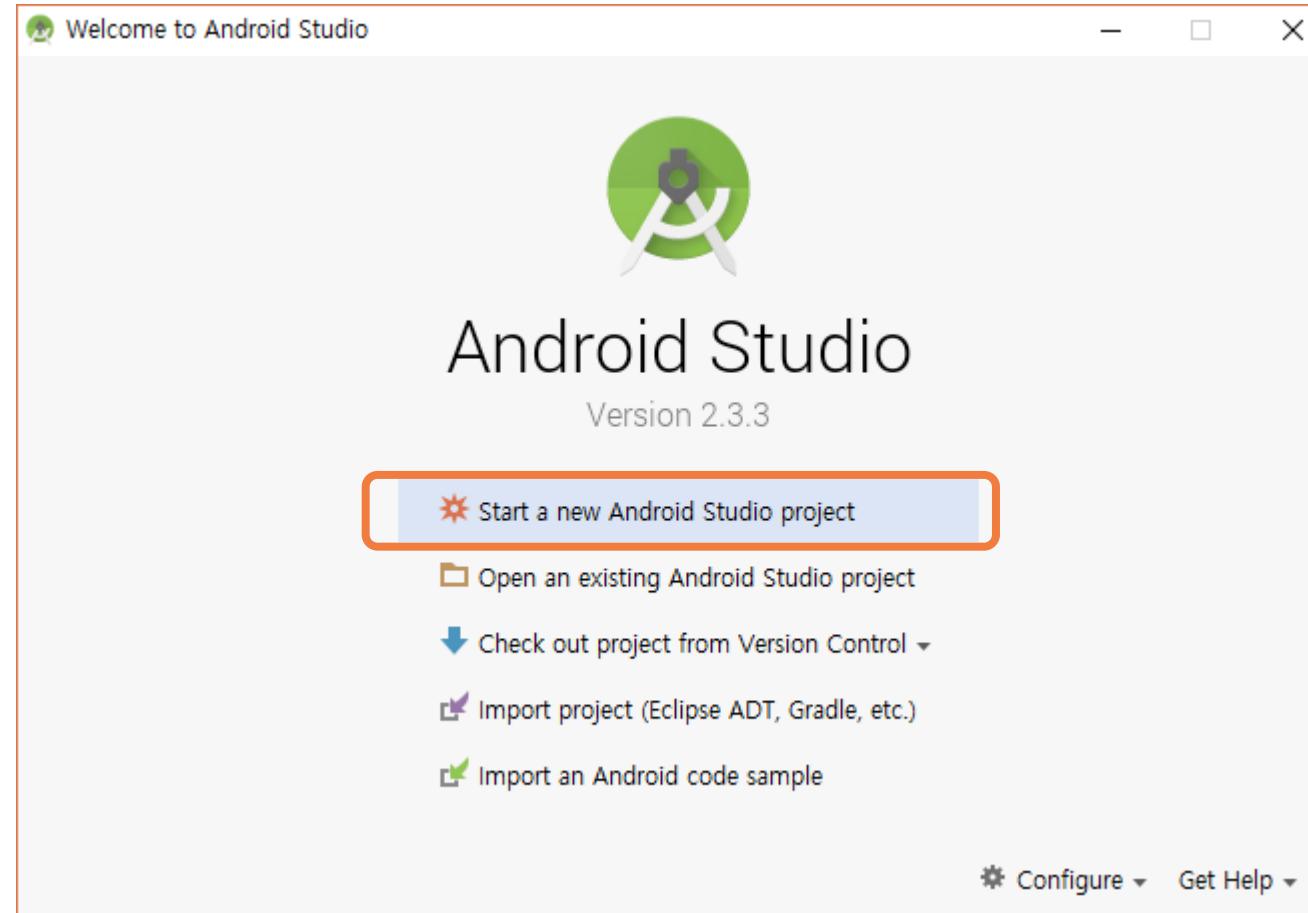
JAVA\_HOME 경로 설정이 되어 있지 않을 때 다음과 같은 경고창이 나타난다. 경로 설정 후에 Android Studio를 다시 설치하면 된다.



# Create New Project

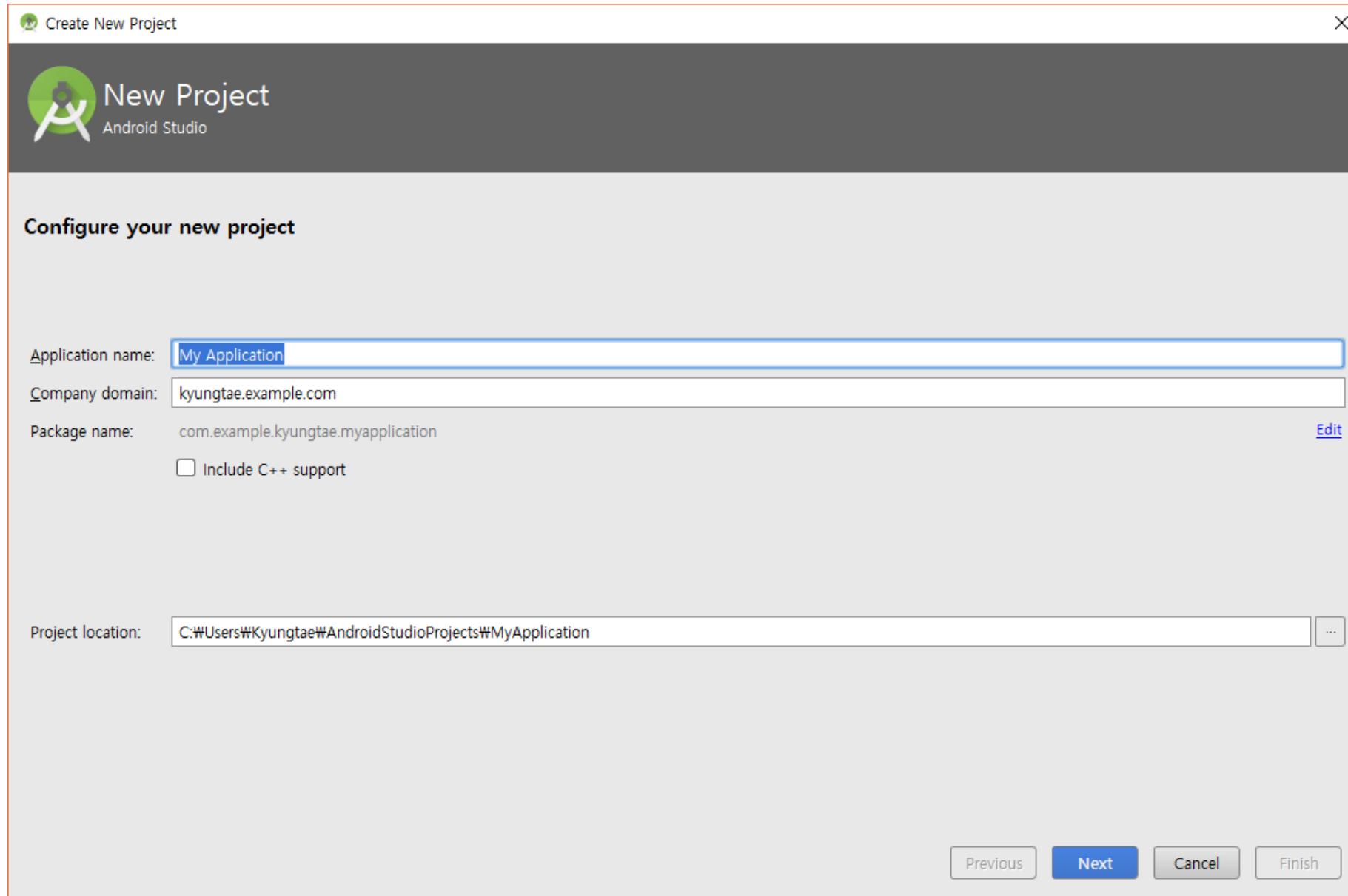
28

- Start a new Android Studio project 메뉴 클릭



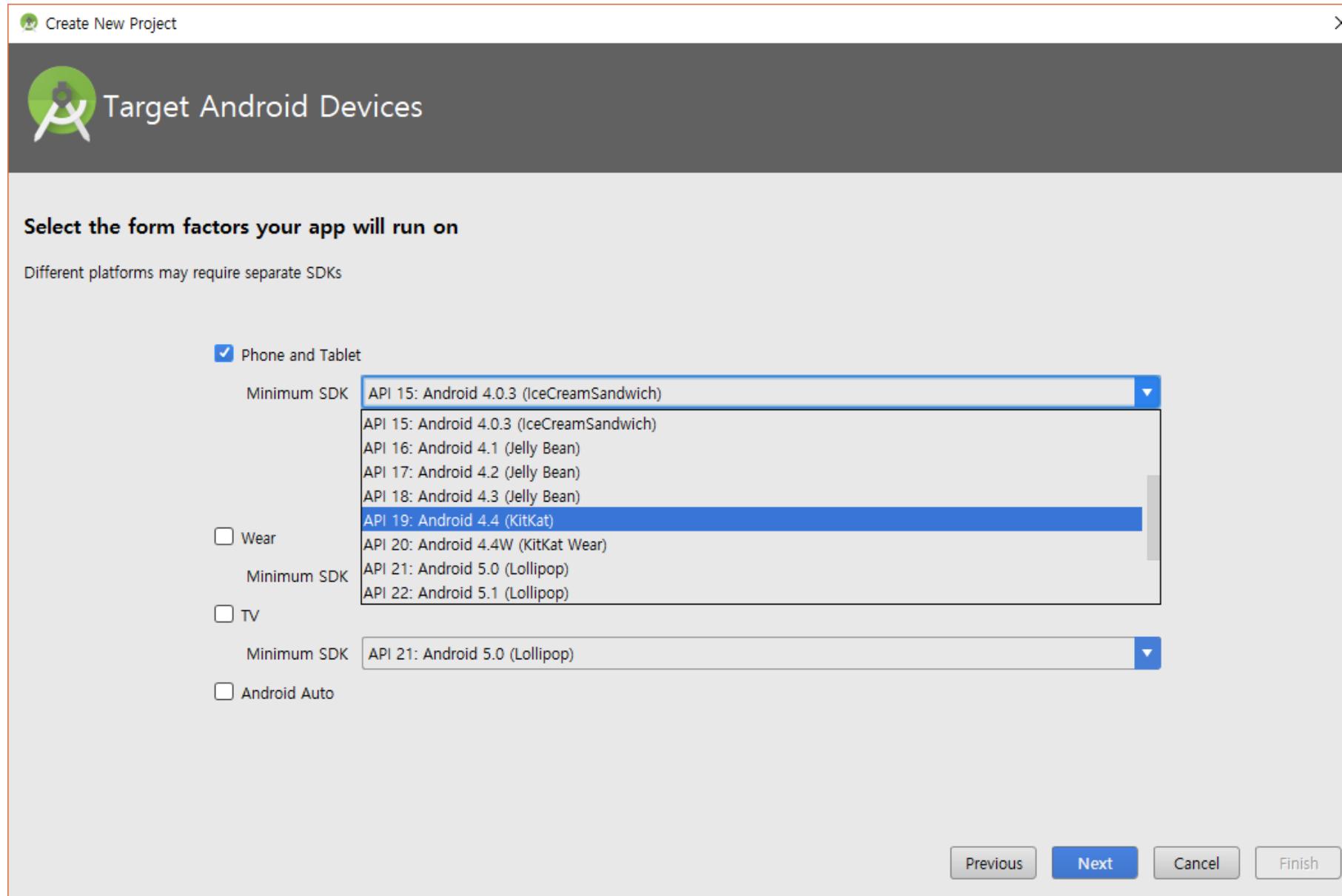
# Continued

29



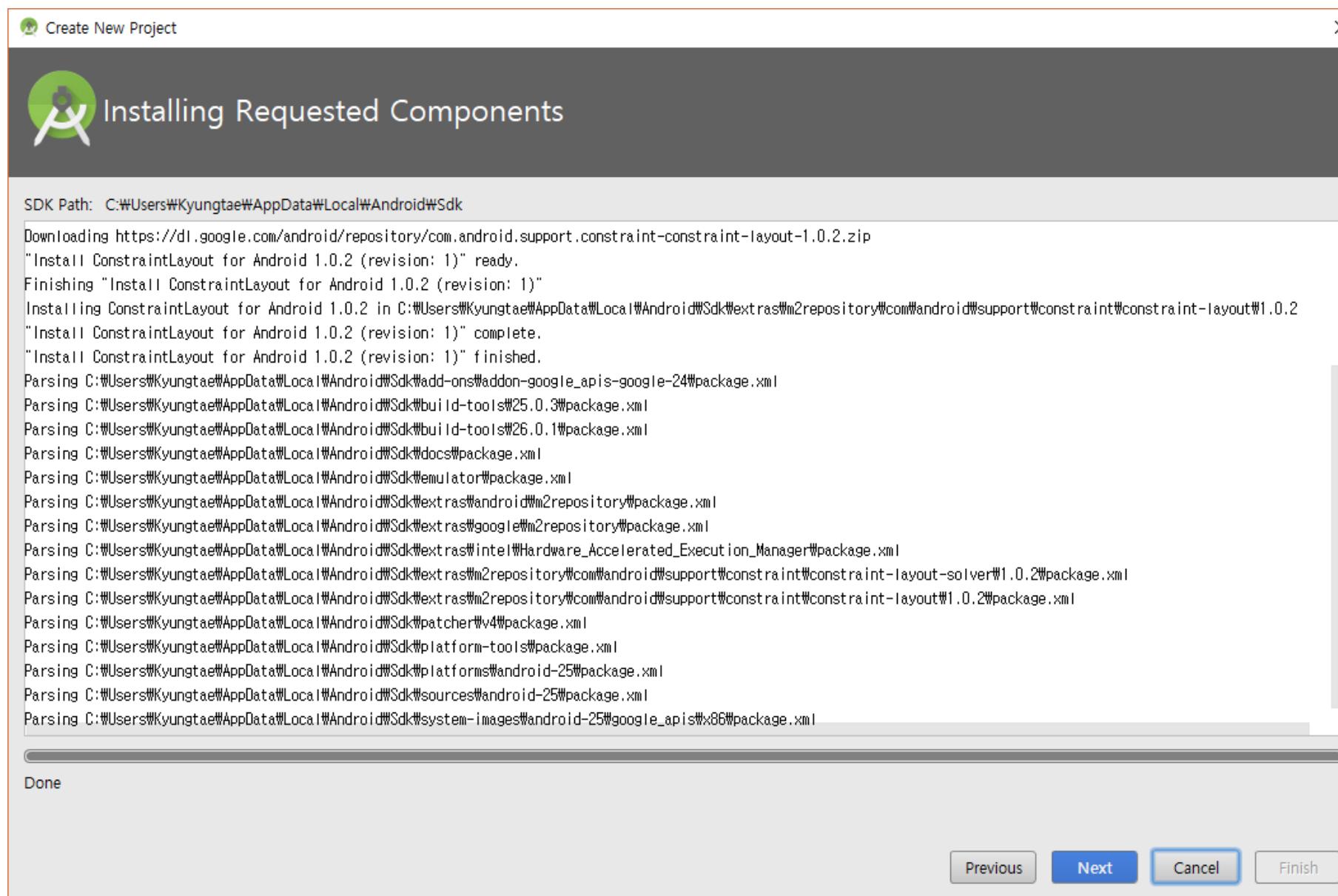
# Continued

30



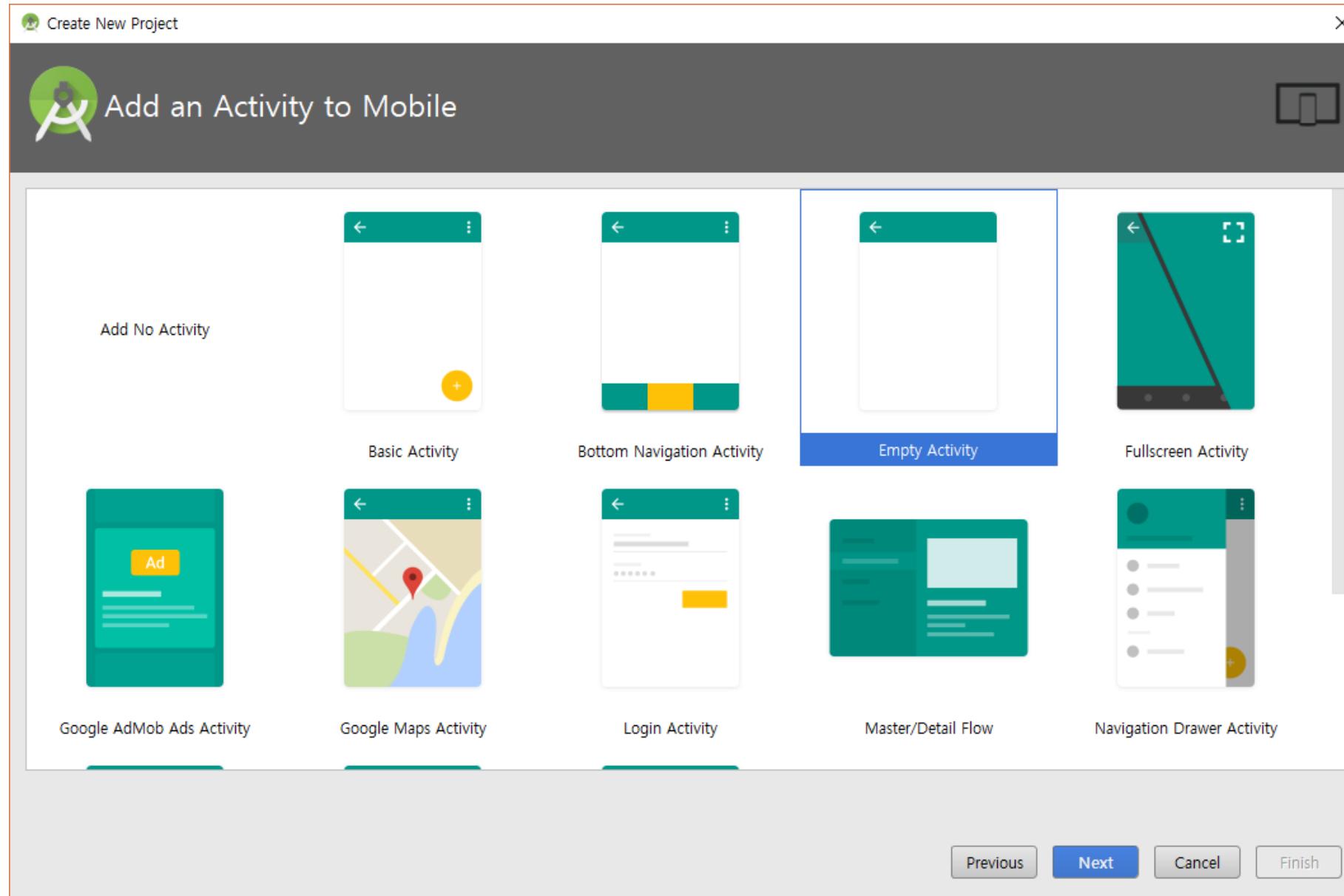
# Continued

31



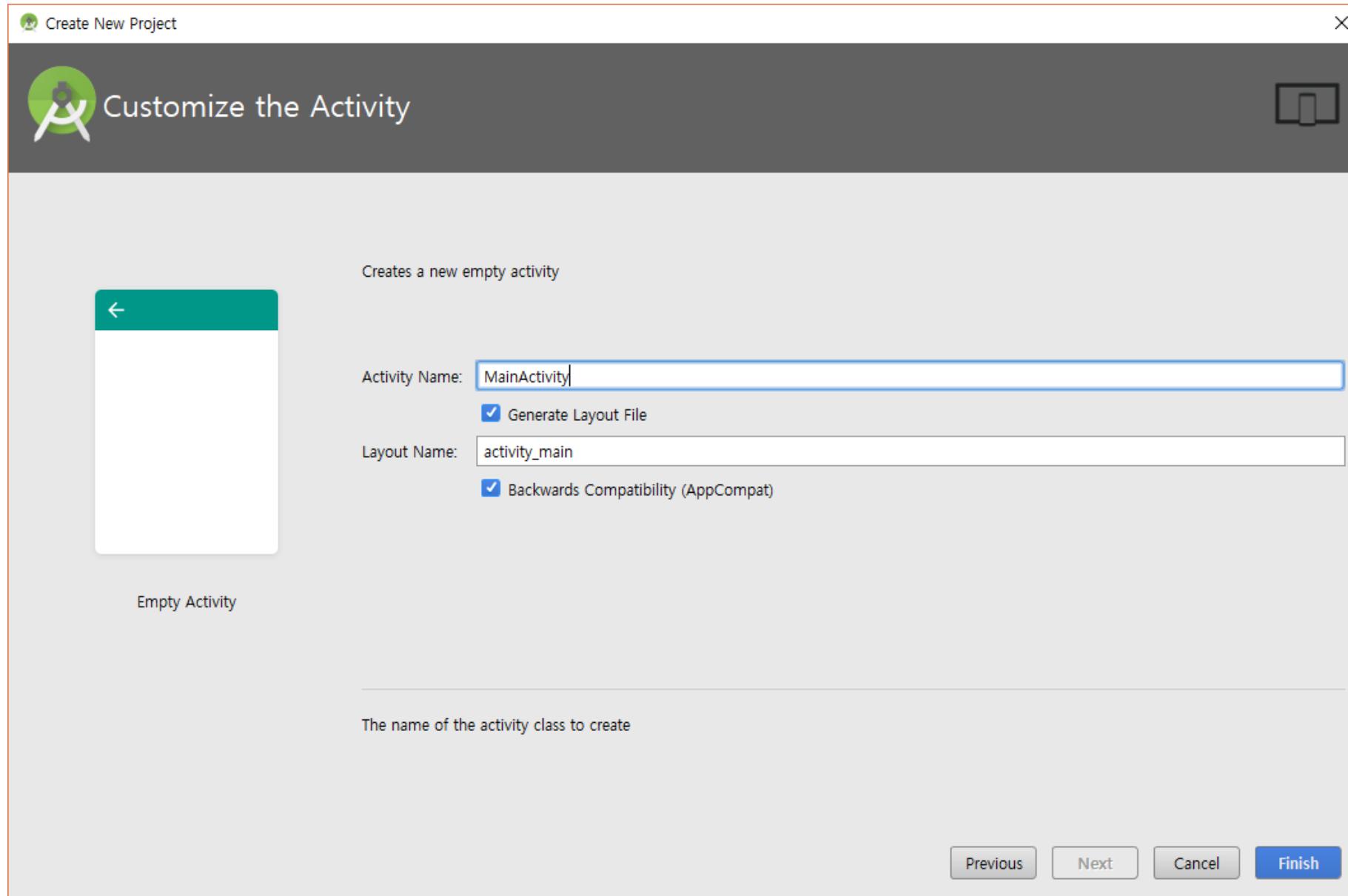
# Continued

32

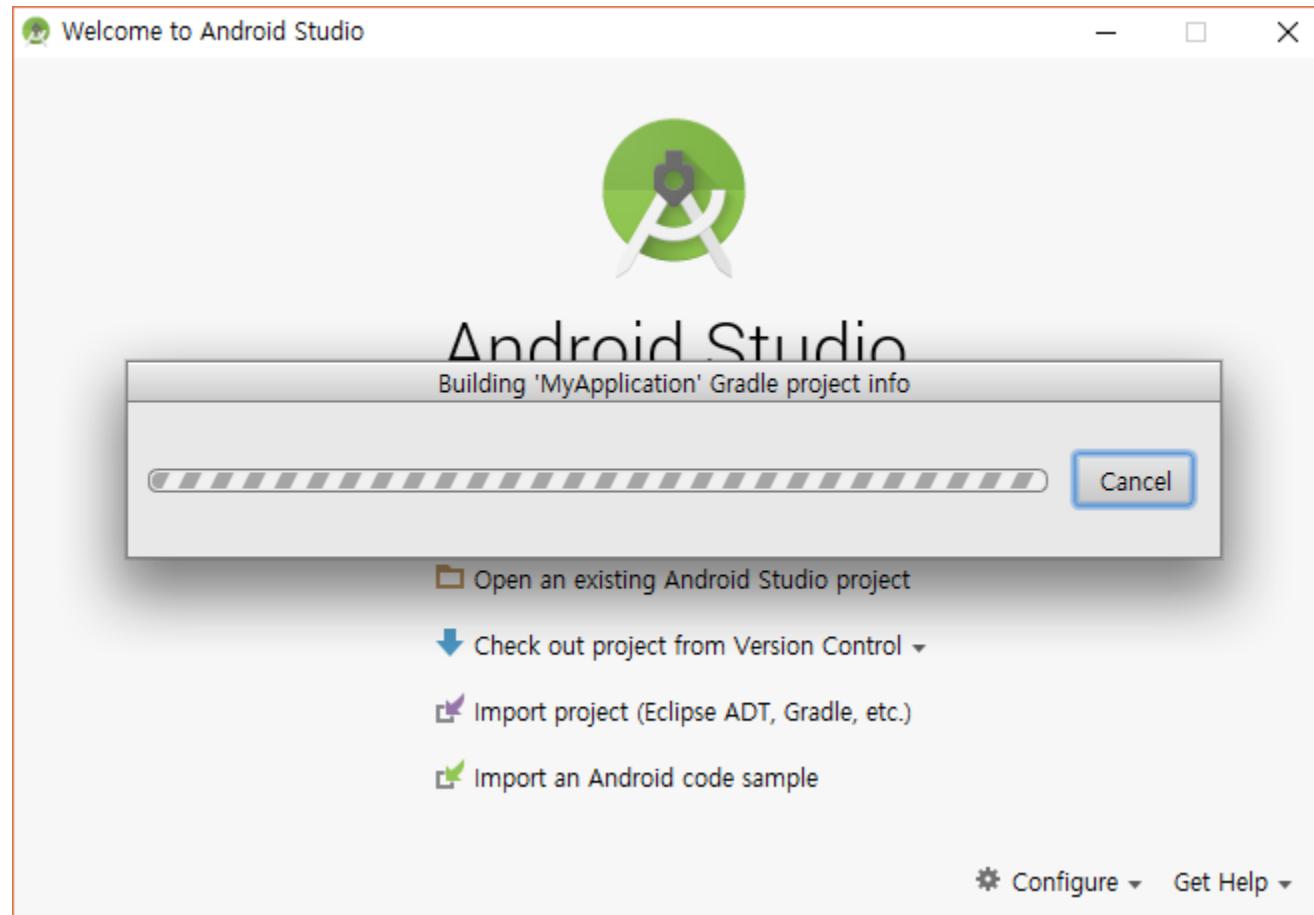


# Continued

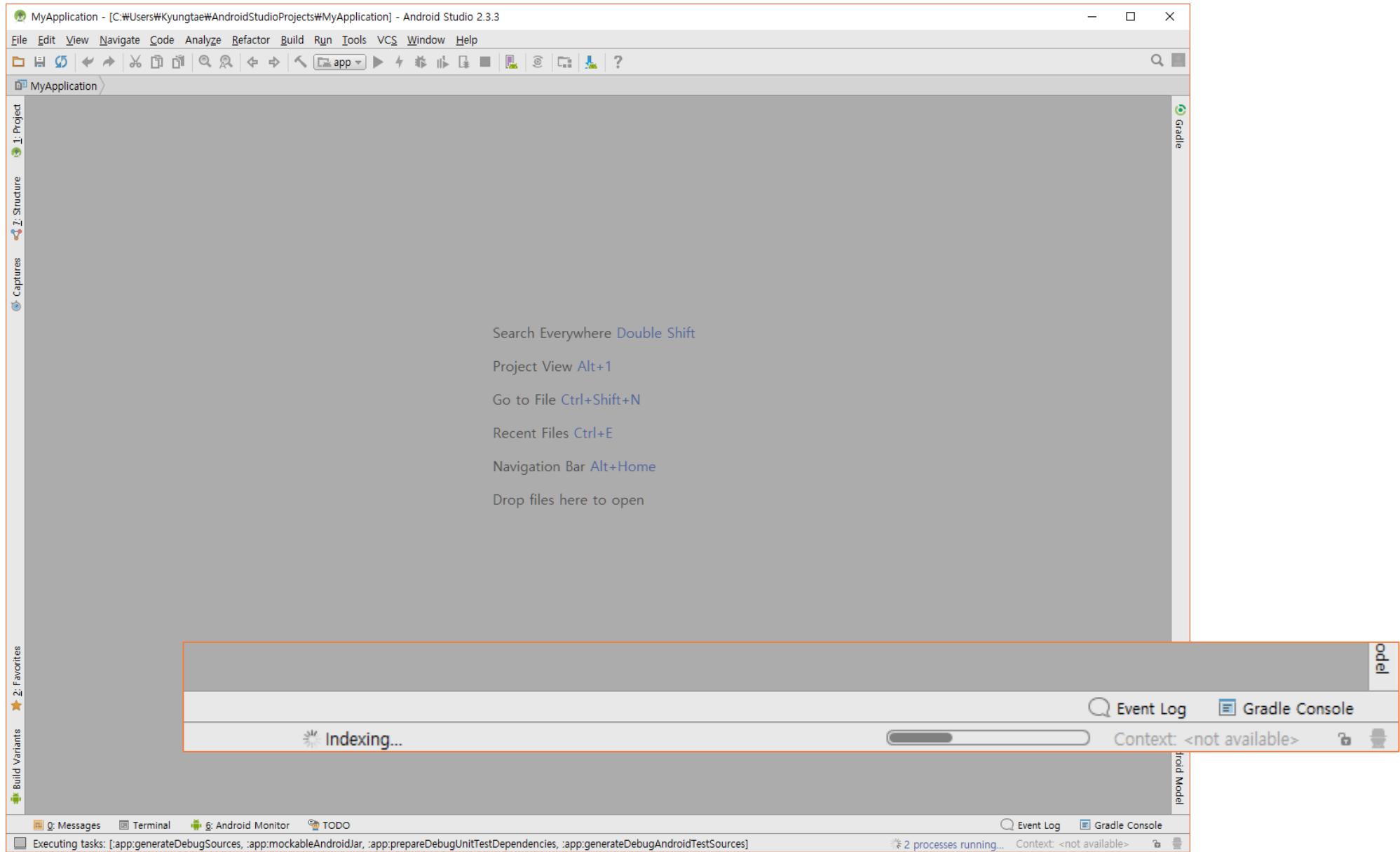
33



# Continued

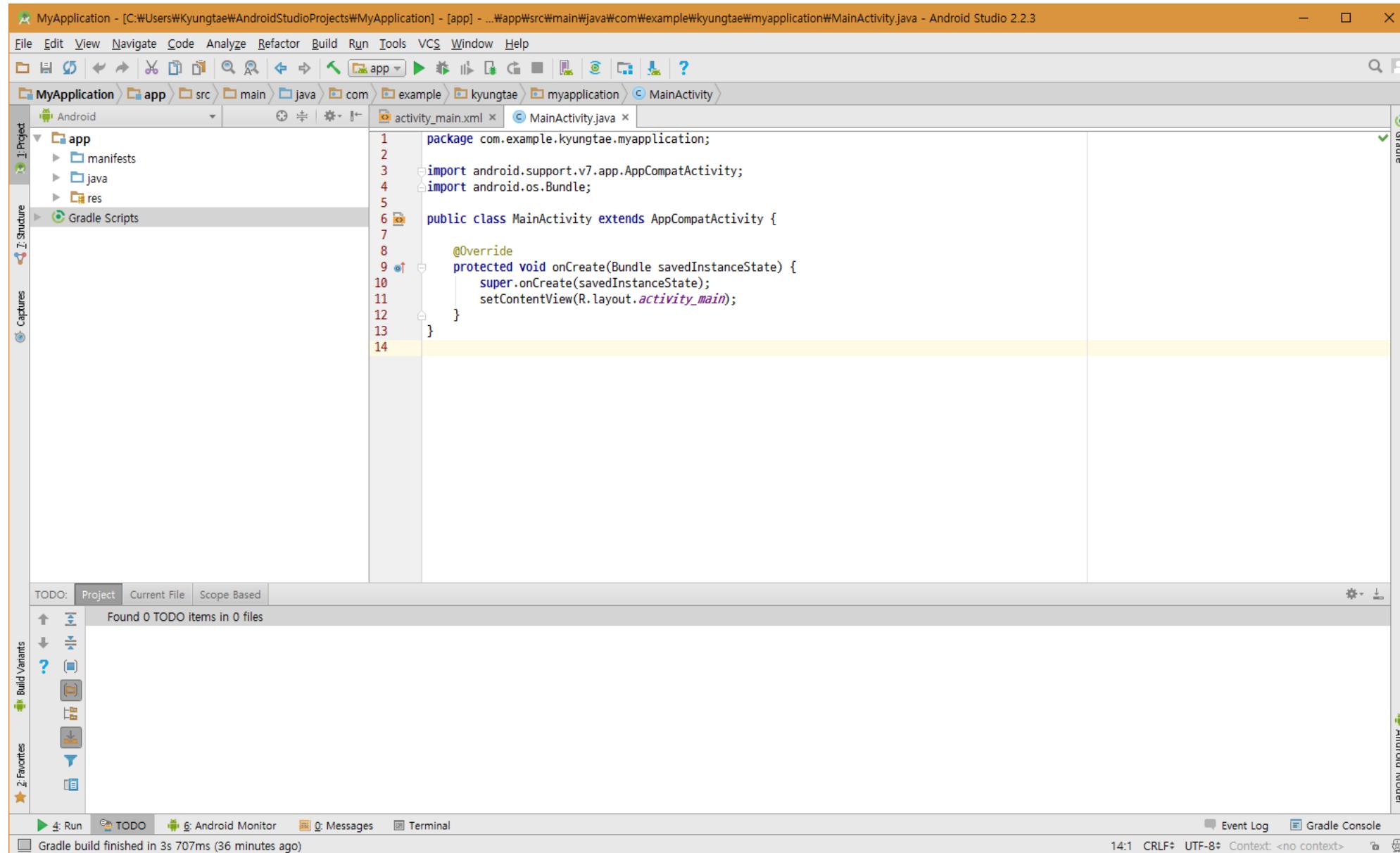


# Continued



# Completion – Android Studio 개발환경

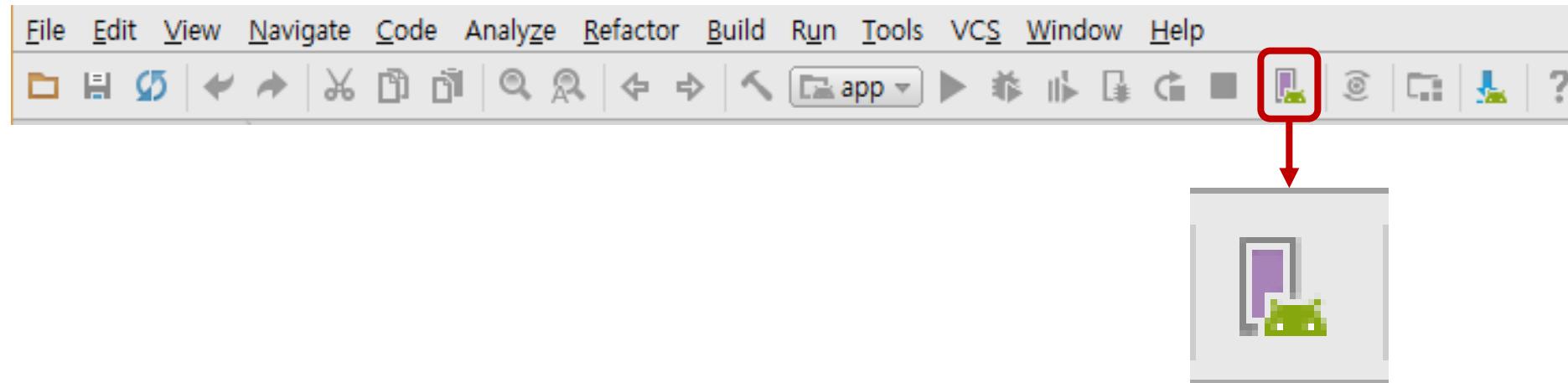
36



# Continued···AVD

37

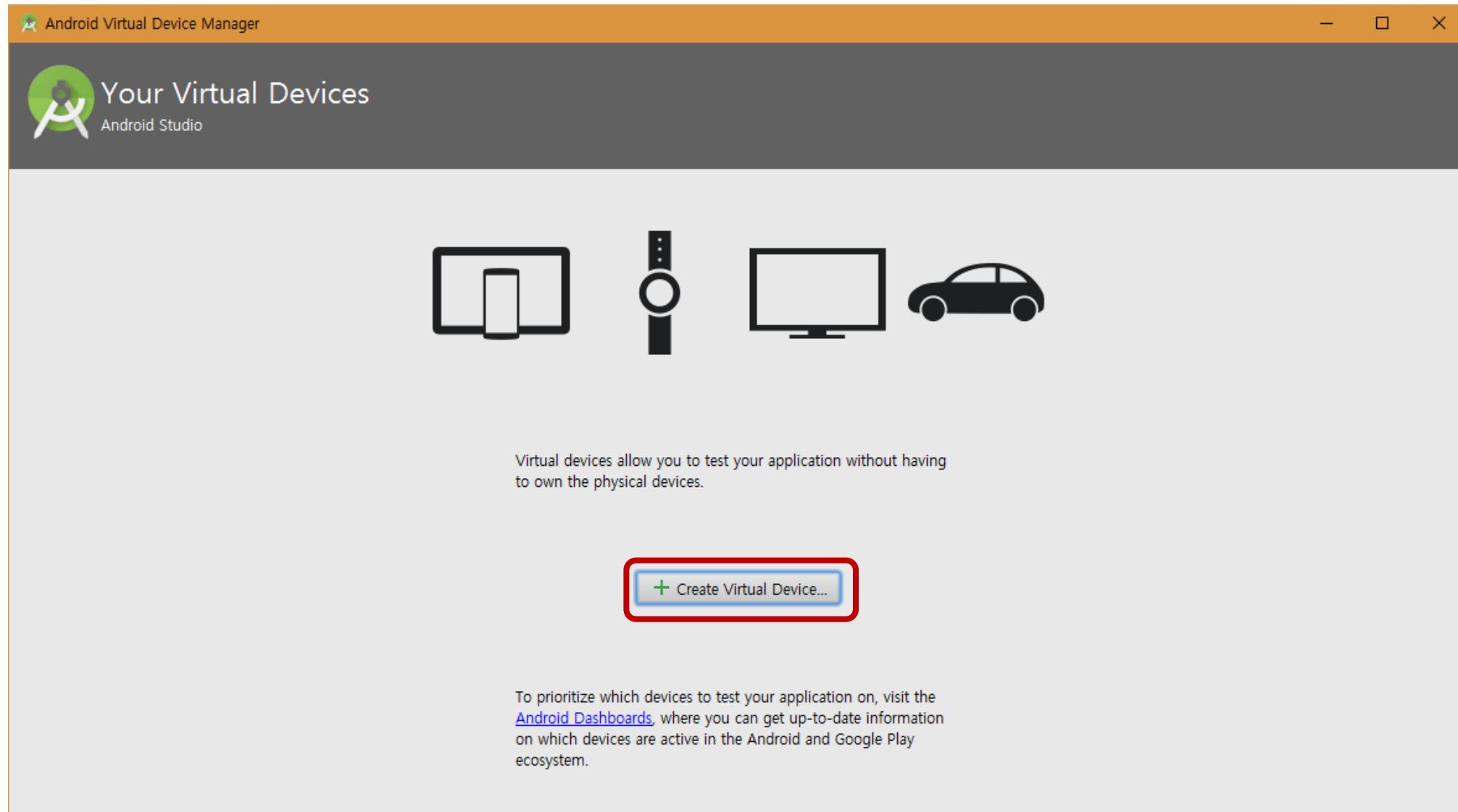
- Android Studio 실행 후 AVD Manager 실행



# Continued···AVD

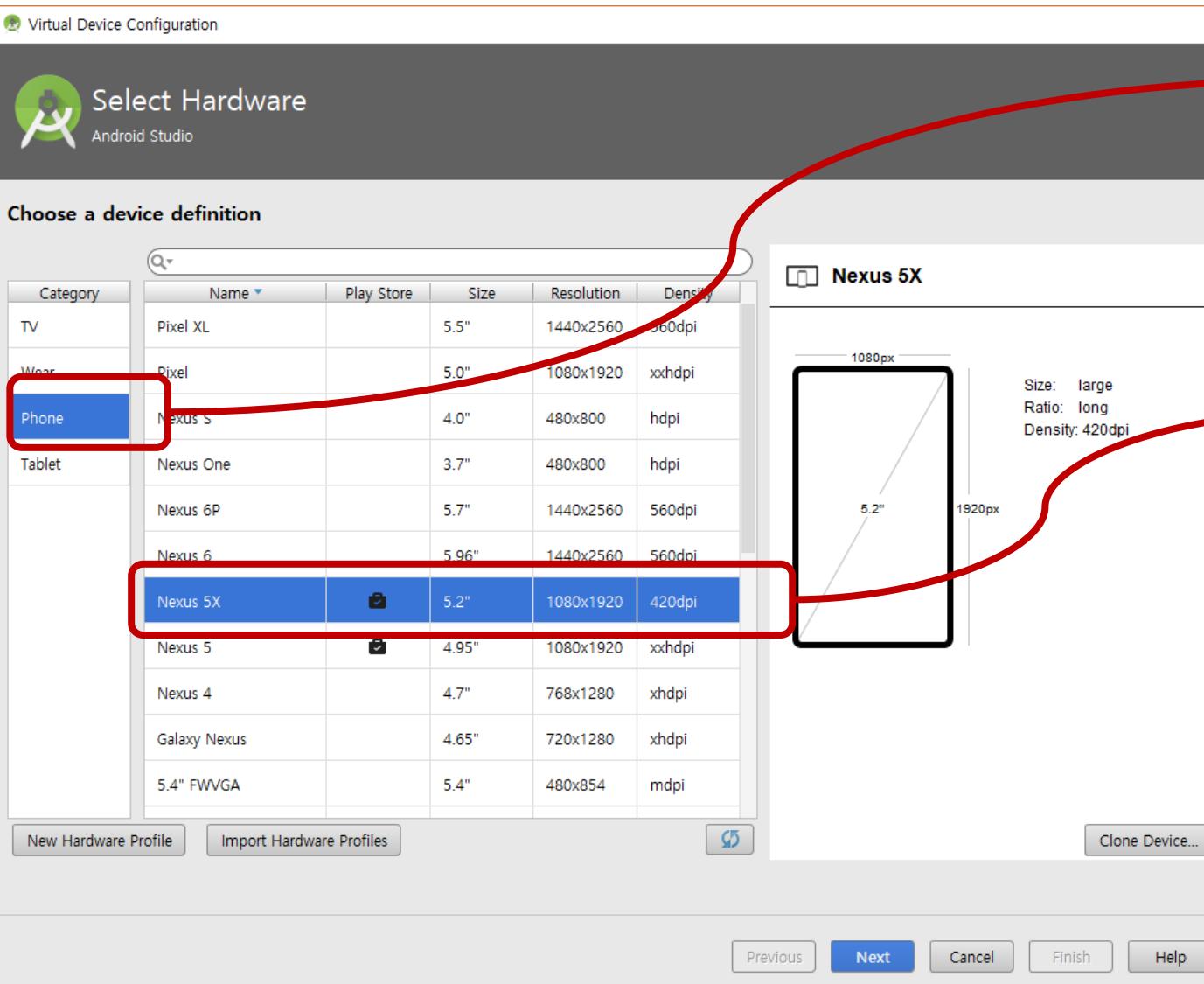
38

- AVD 추가하기



# Continued

- 장비 추가하기



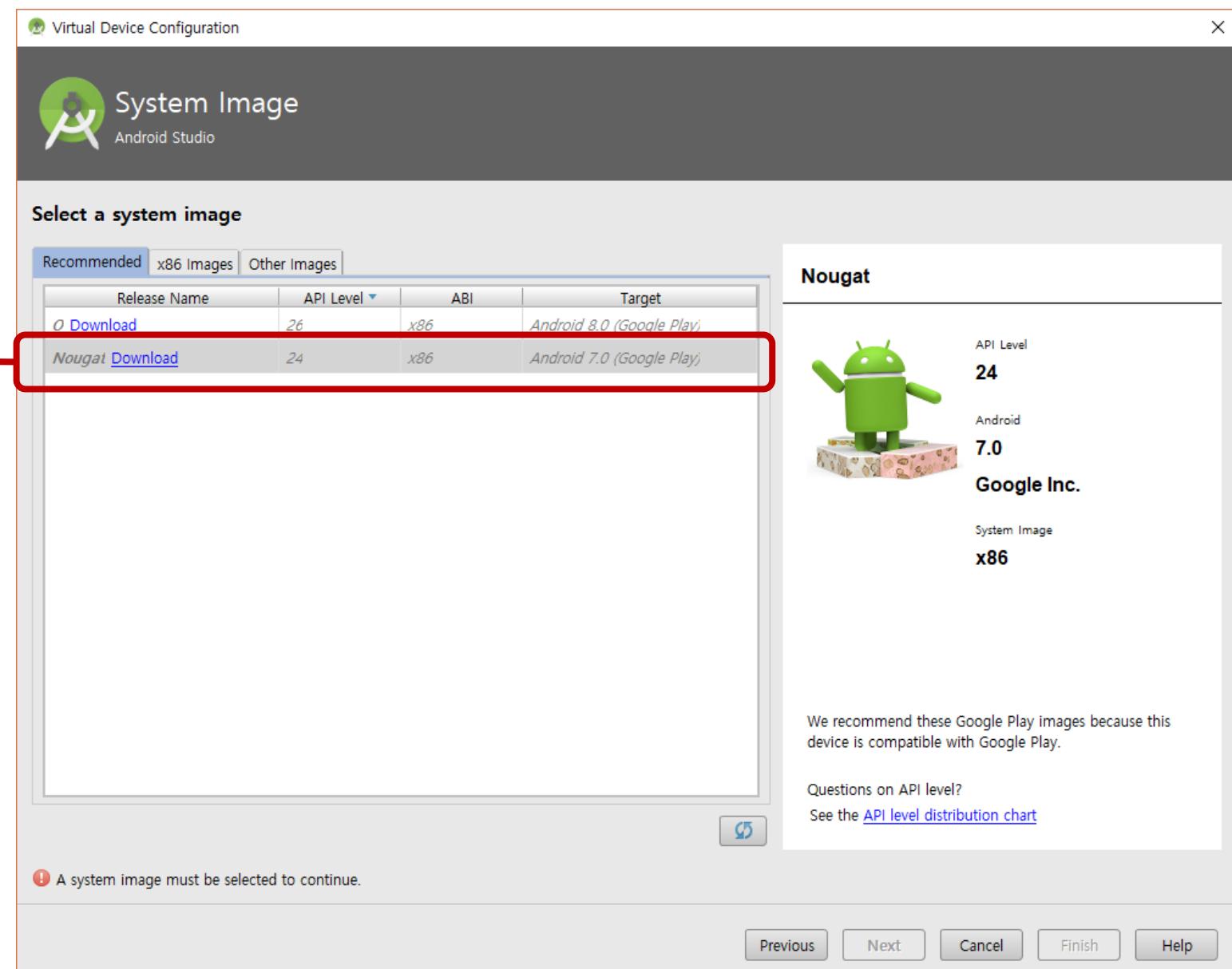
Category – Phone

Device – Nexus 5X

# Continued

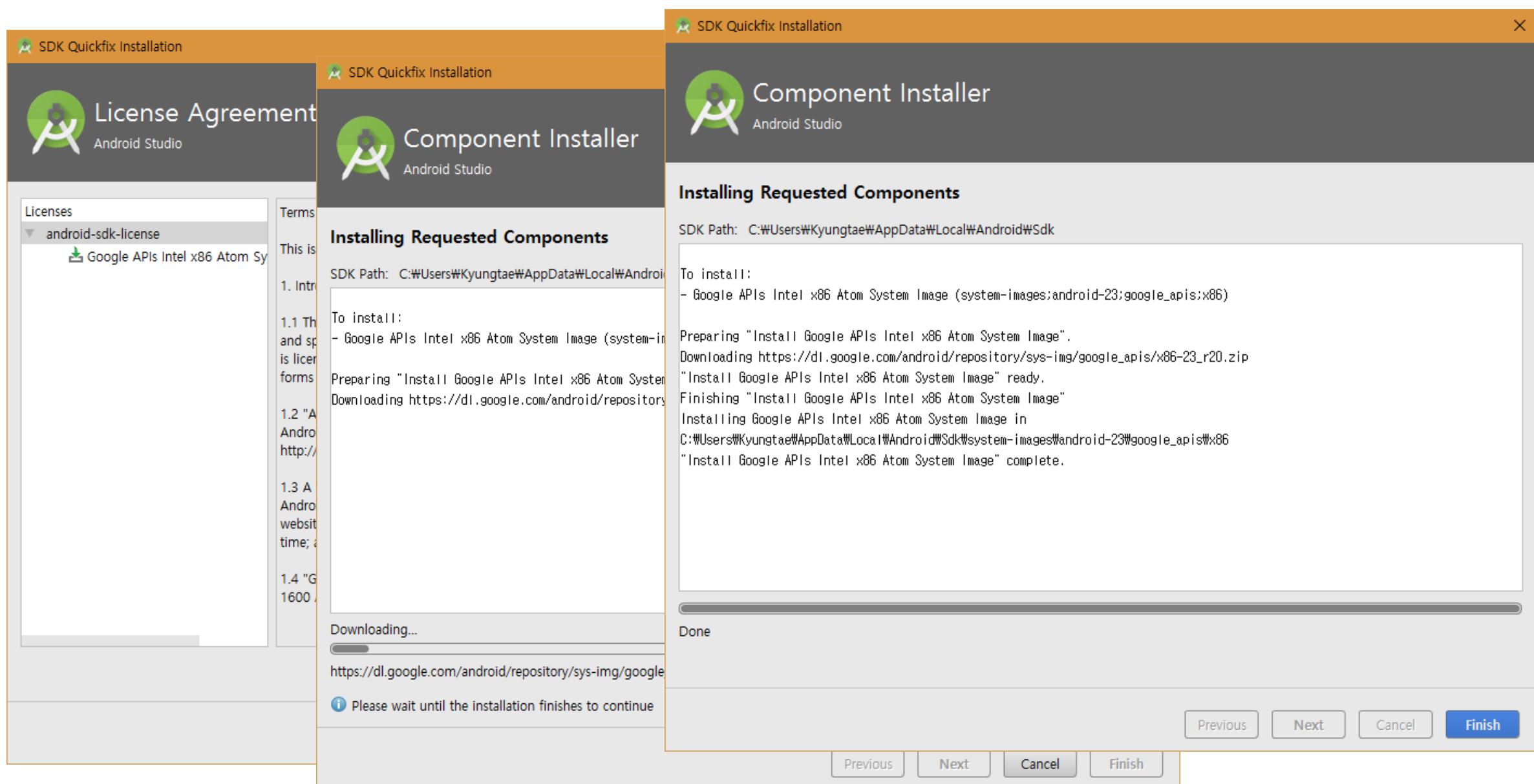
- System 선택

개발 시스템이 설치가 되어 있지  
않다면 '[Download](#)' 눌러 설치



# Continued

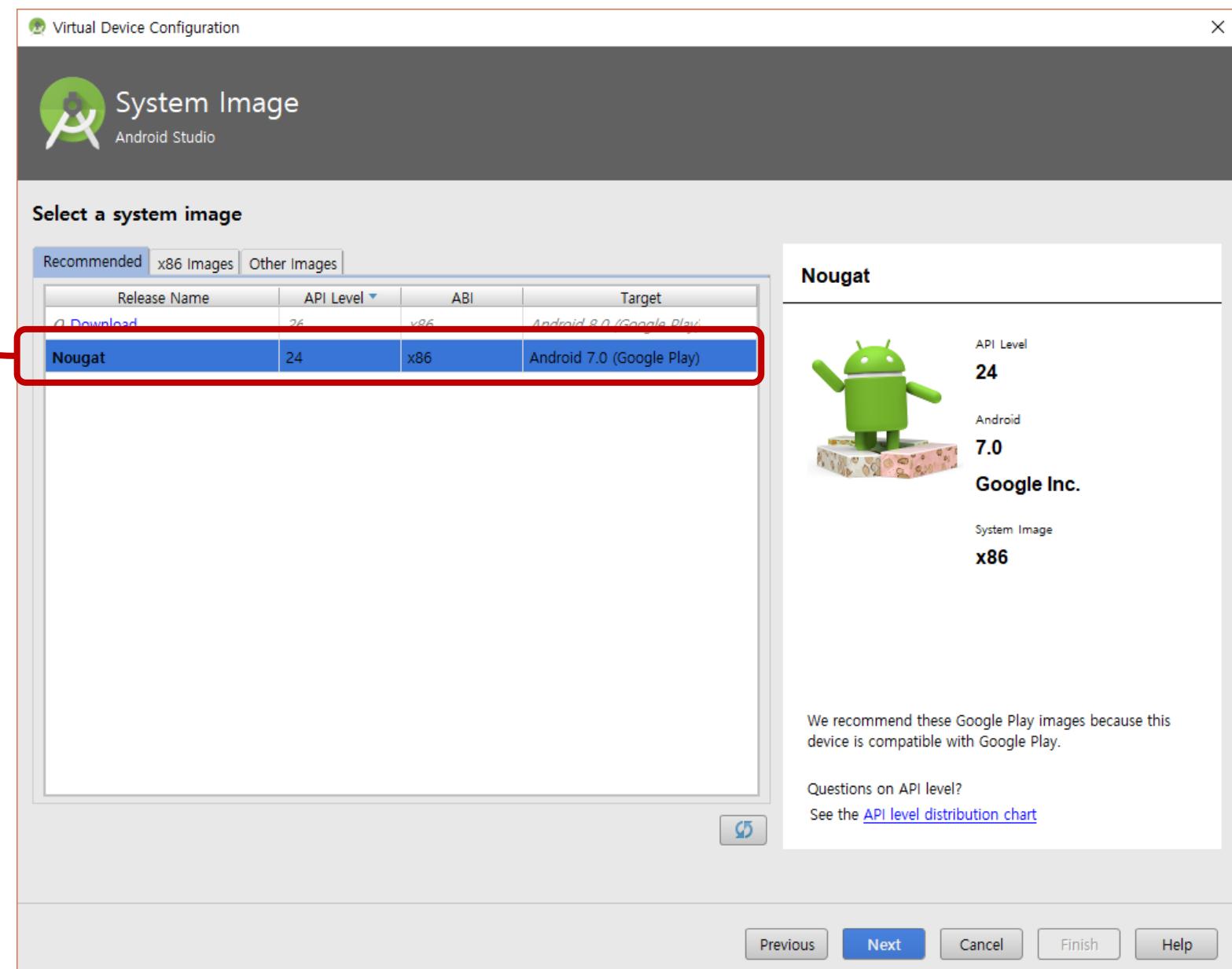
41



# Continued

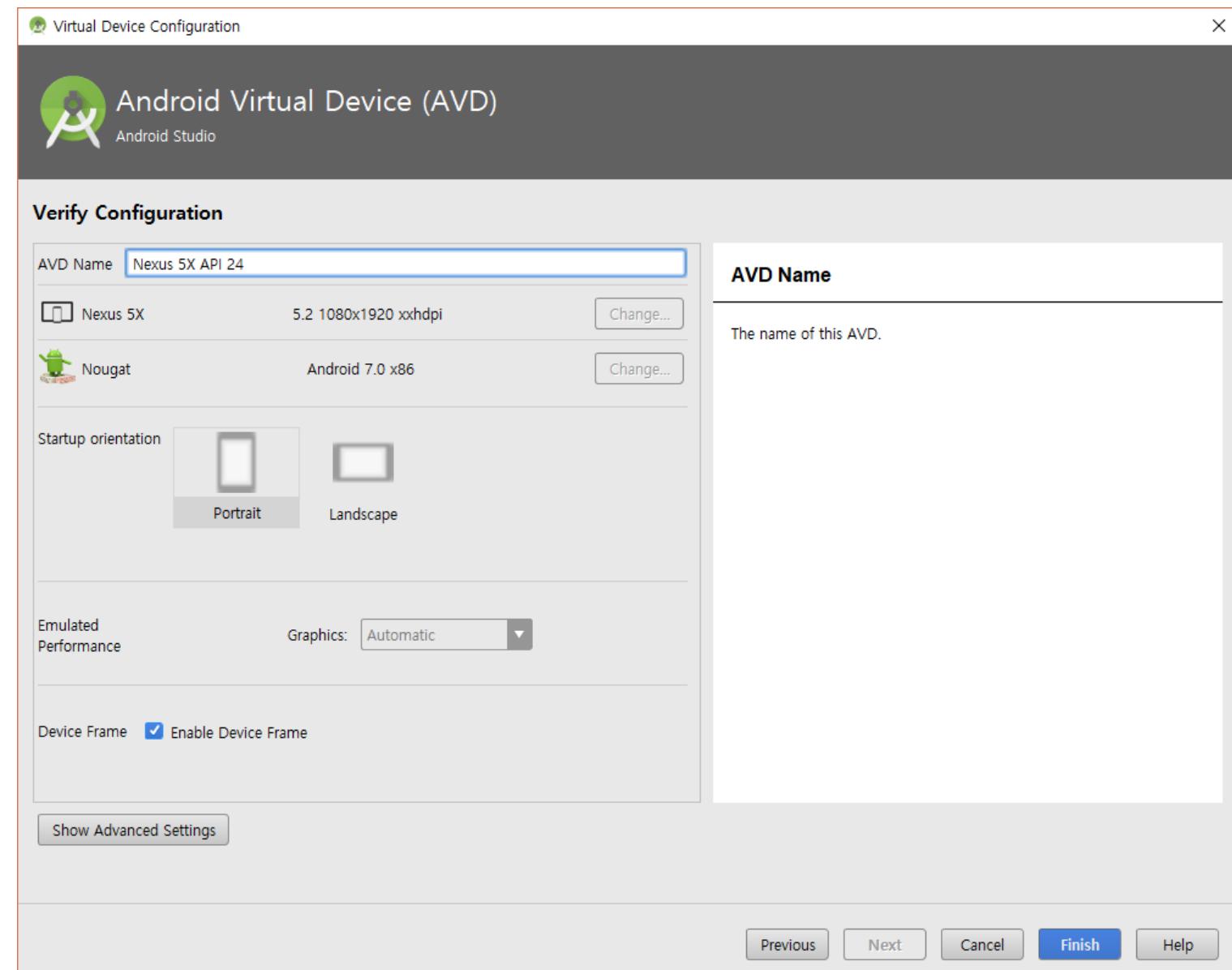
## • 시스템 선택

선택



# Continued

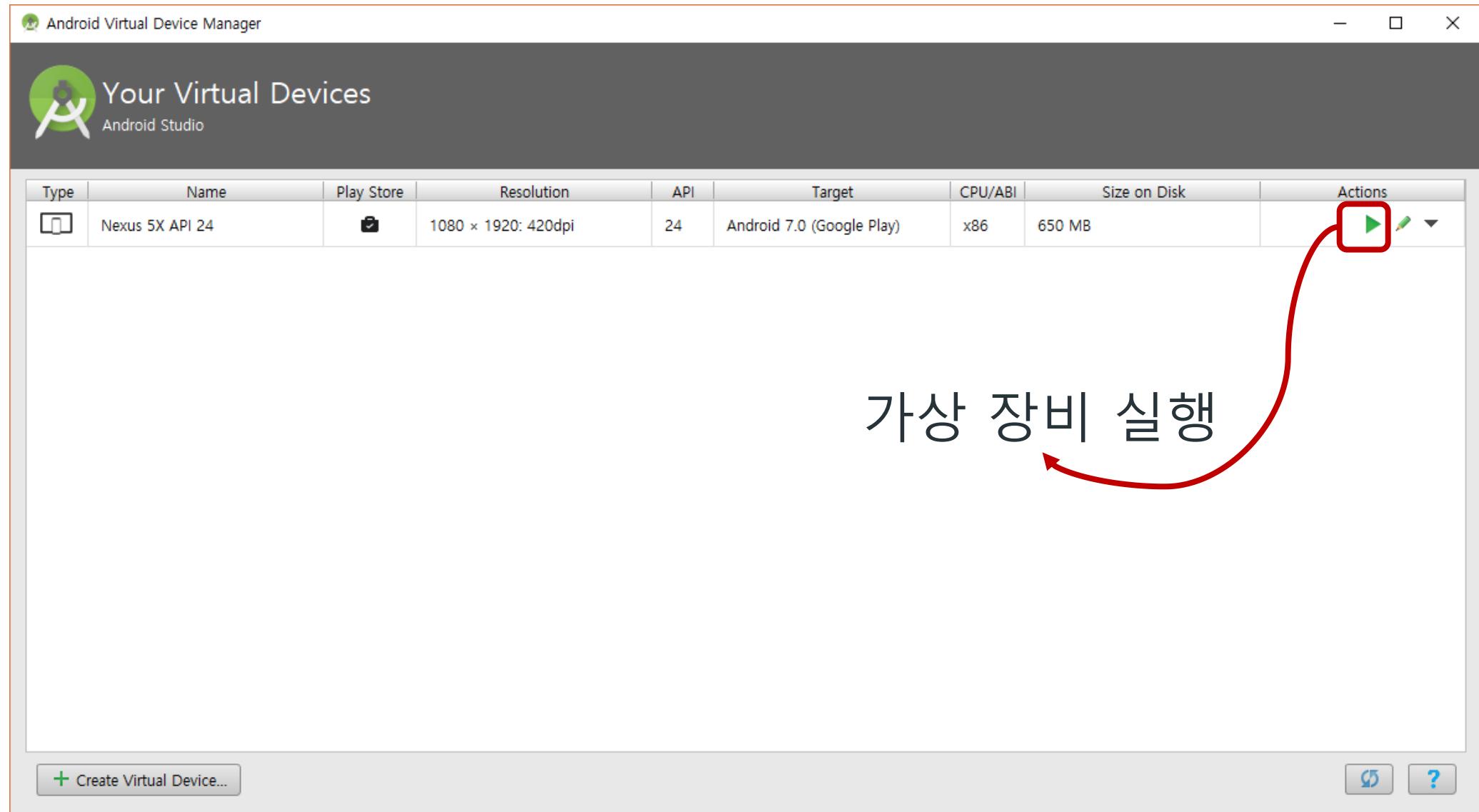
- AVD 검증



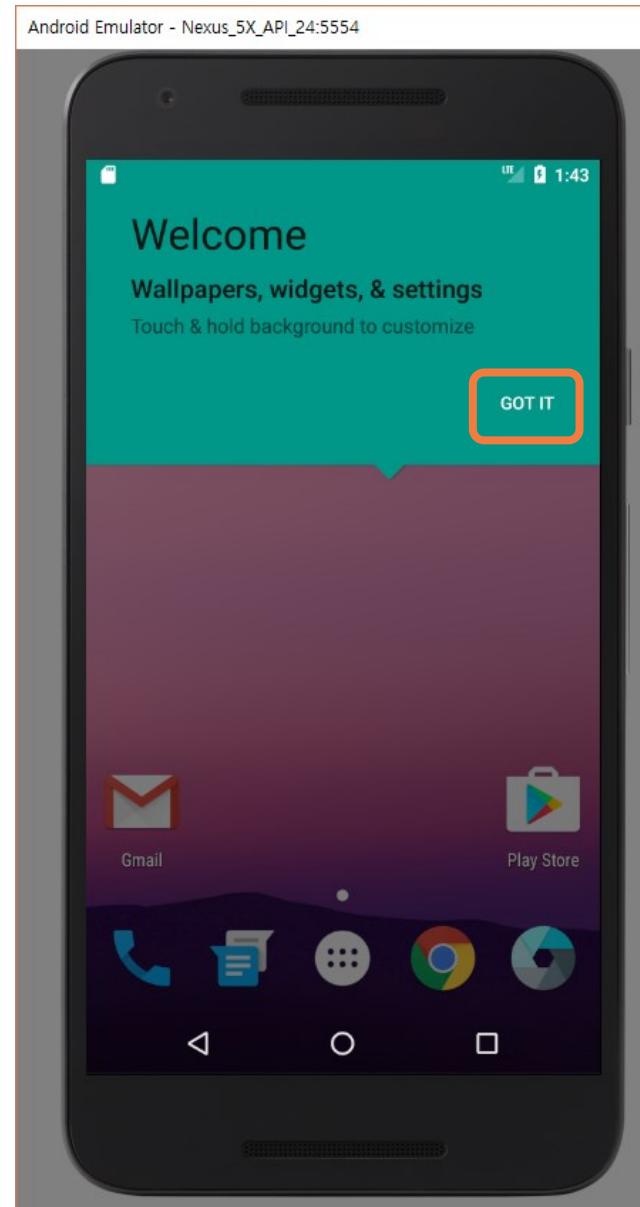
# Continued

44

- 완료된 가상 장비(에뮬레이터)

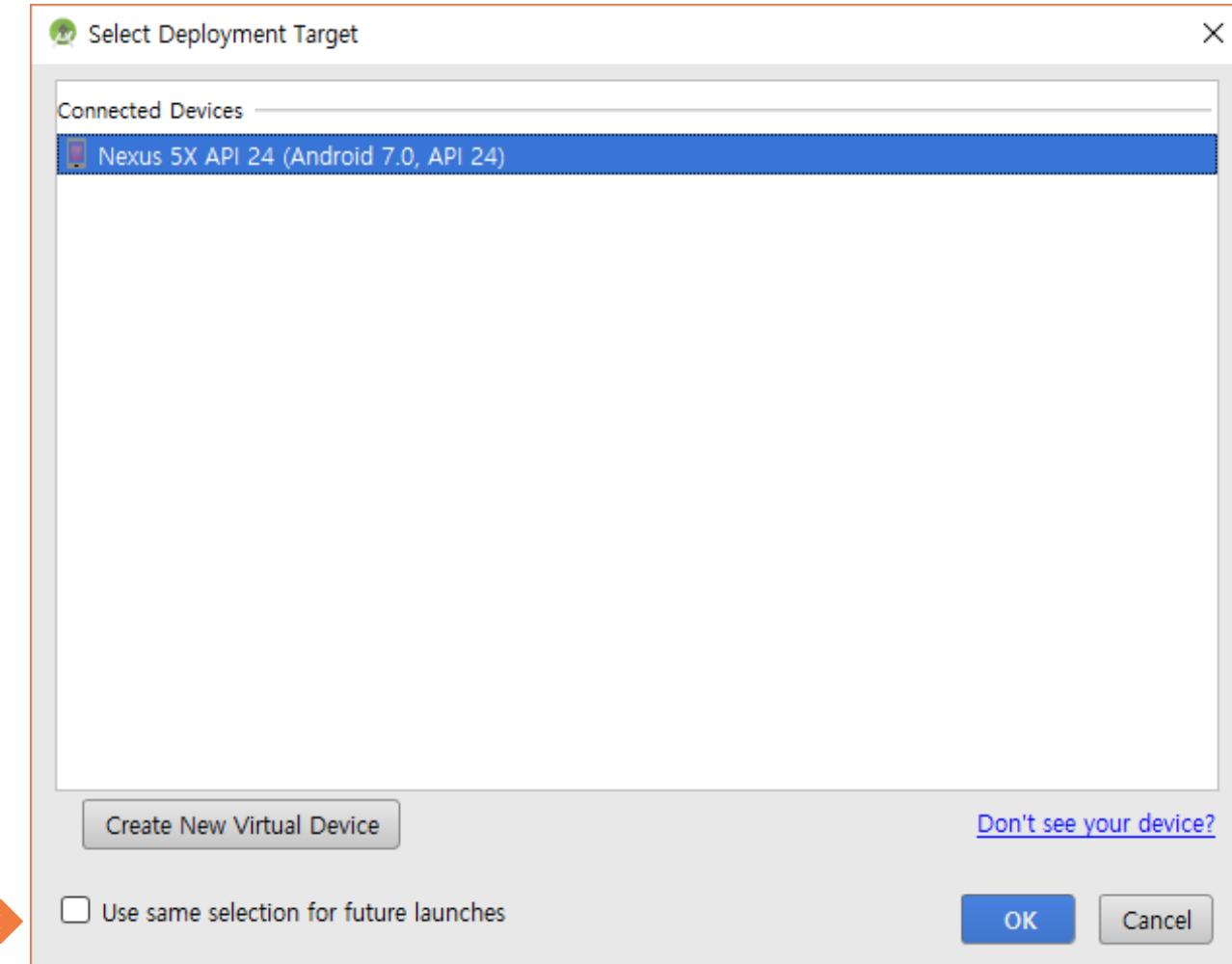
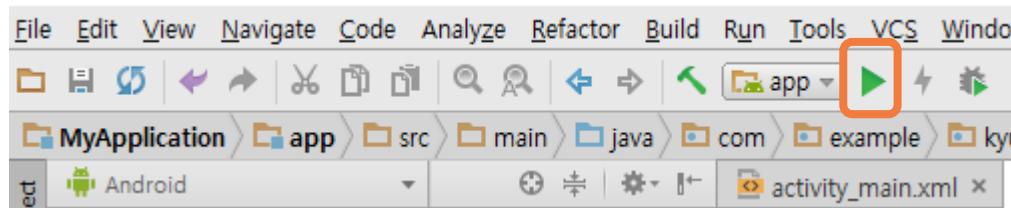


# Continued



# Continued

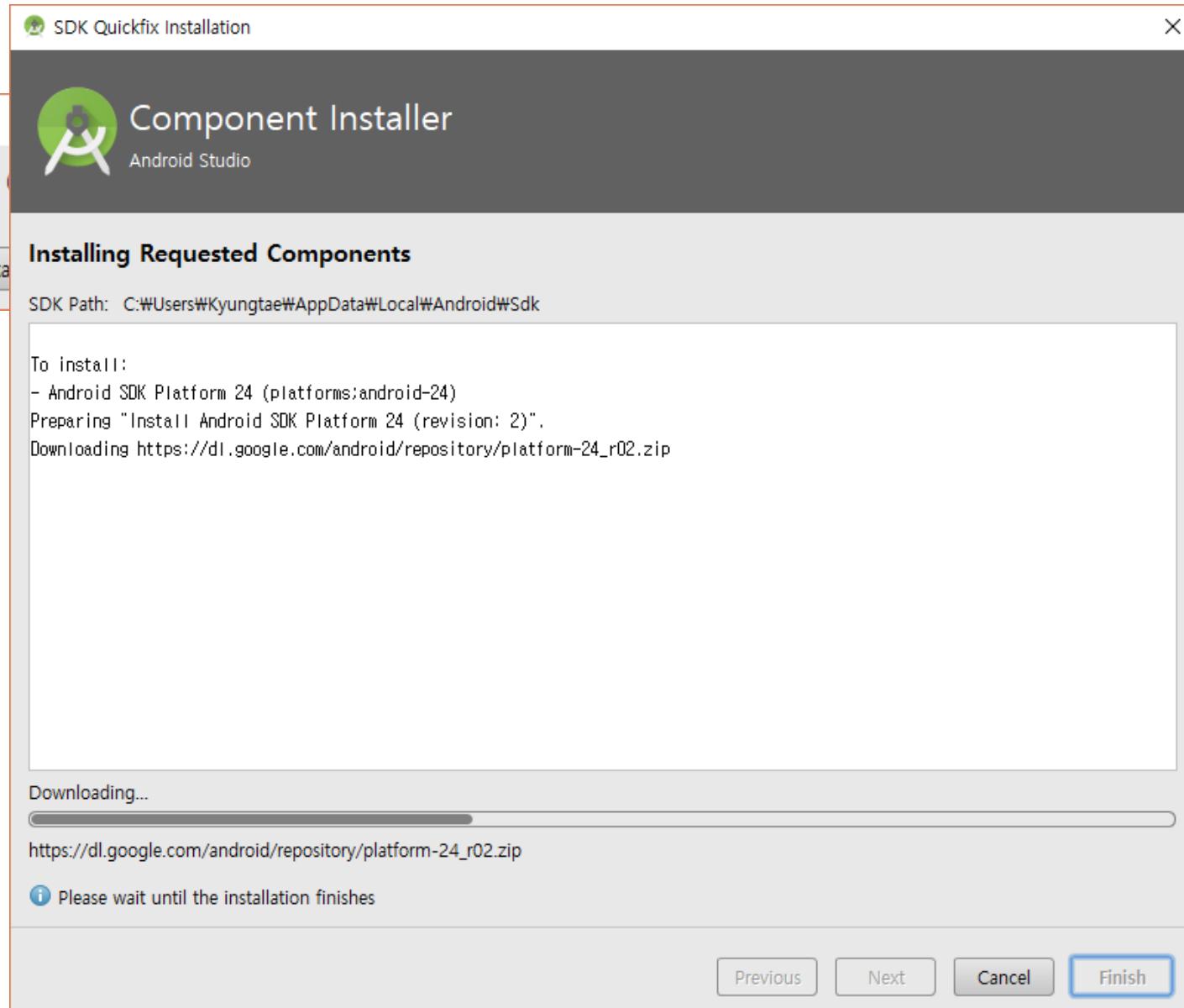
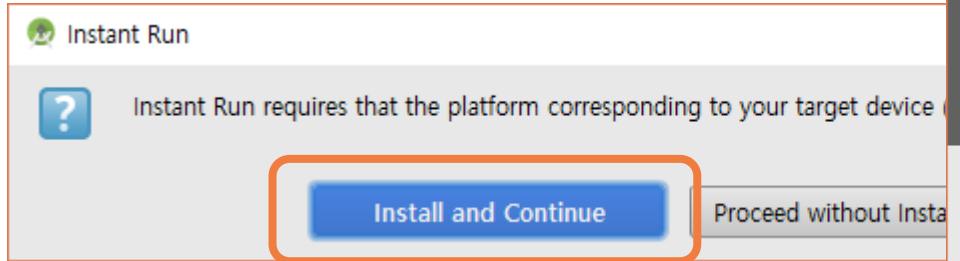
- Nexus 5X의 가상 머신 실행



Target Device 선택 →

# Continued

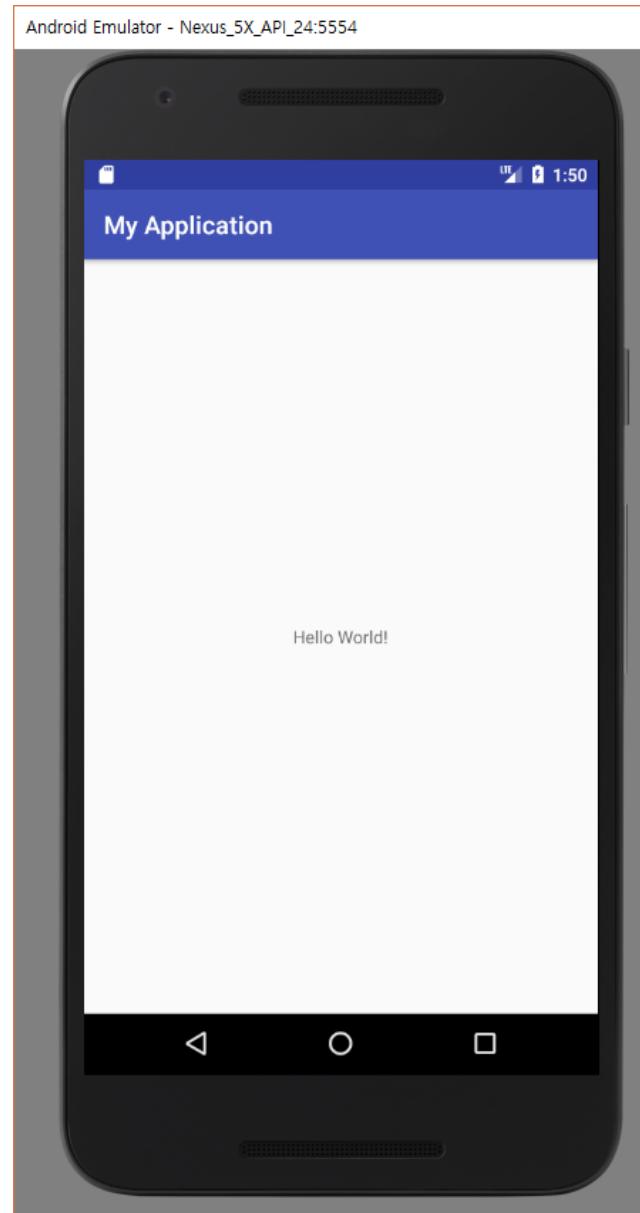
- Instant Run



Target Device 선택 ➔

# 실행 결과

48



# Continued

- Nexus 5X의 가상 머신의 실행 상태 보기



AVD 실행 과정을 log로 부여 준다.

A screenshot of the Android Studio Logcat tab. The log output shows the following:

```
08/30 22:50:31: Launching app
$ adb install-multiple -r C:\Users\Kyungtae\AndroidStudioProjects\MyApplication\app\build\intermediates\split\apks\...
Split APKs installed
$ adb shell am start -n "com.example.kyungtae.myapplication/com.example.kyungtae.myapplication.MainActivity"
Client not ready yet. Waiting for process to come online
Connected to process 4464 on device Nexus_5X_API_24 [emulator-5554]
```

A red box highlights the line "Connected to process 4464 on device Nexus\_5X\_API\_24 [emulator-5554]". A red arrow points from this line to the text "현재 실행 중인 AVD를 볼 수 있다." (You can see the currently running AVD) located below the log.



# Continued

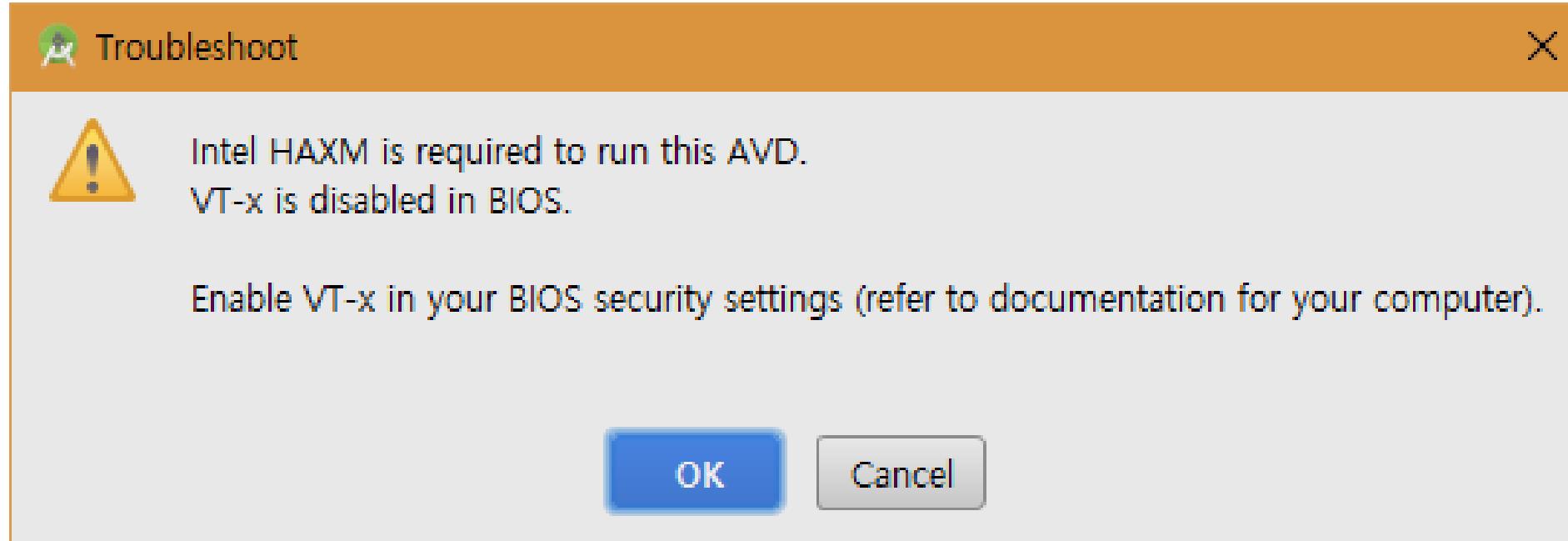
- AVD는 어플리케이션 개발 시에 지정한 **최소 SDK 버전 이상**만 되면 실행 가능하다.



# Intel HAXM…AVD를 실행하기 위해 필요

51

- BIOS에서 VT-x 옵션 설정 필요



## Step 3. 앱 실행 환경 구축

# Step 3. 앱 실행 환경 구축

53

- 삼성 스마트폰([http://local.sec.samsung.com/comLocal/support/down/kies\\_main.do?kind=usb](http://local.sec.samsung.com/comLocal/support/down/kies_main.do?kind=usb))

모바일 TV/AV 가전 IT 스토어



고객지원 비즈니스 로그인

Home / 고객지원 / 통합USB

## 통합 USB 드라이버

통합 USB 드라이버

휴대폰관련 문의

NPS, Kies 설치시 기본적으로 함께 제공되며, 이에 따로 설치하실 필요는 없습니다.  
별도 설치가 필요한 경우에만 이용하시기 바랍니다.

통합 USB 드라이버 ▶



### 통합 USB 드라이버 설치방법

! 자세한 내용은 통합 USB 드라이버 가이드를 클릭하여 확인 하실 수 있습니다.

- 파일을 다운로드 하여 PC의 임의의 폴더에 저장합니다.
- 휴대폰과 USB케이블이 분리된 상태에서 설치를 시작합니다.
- 다운로드 받은 USB 드라이버 설치 프로그램 실행

# Continued

54

- LG 스마트폰 (<http://www.lge.co.kr/lgekor/download-center/downloadCenterList.do>)

## ○ 소프트웨어 다운로드

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LG Bridge (LG 360 캠 포함)  
스마트폰, 태블릿과 연동하여 멀티미디어 콘텐츠 및 애플리케이션을 손쉽게 관리해 보세요.

[Windows용 다운로드](#) [Mac용 다운로드](#) [상세보기](#)



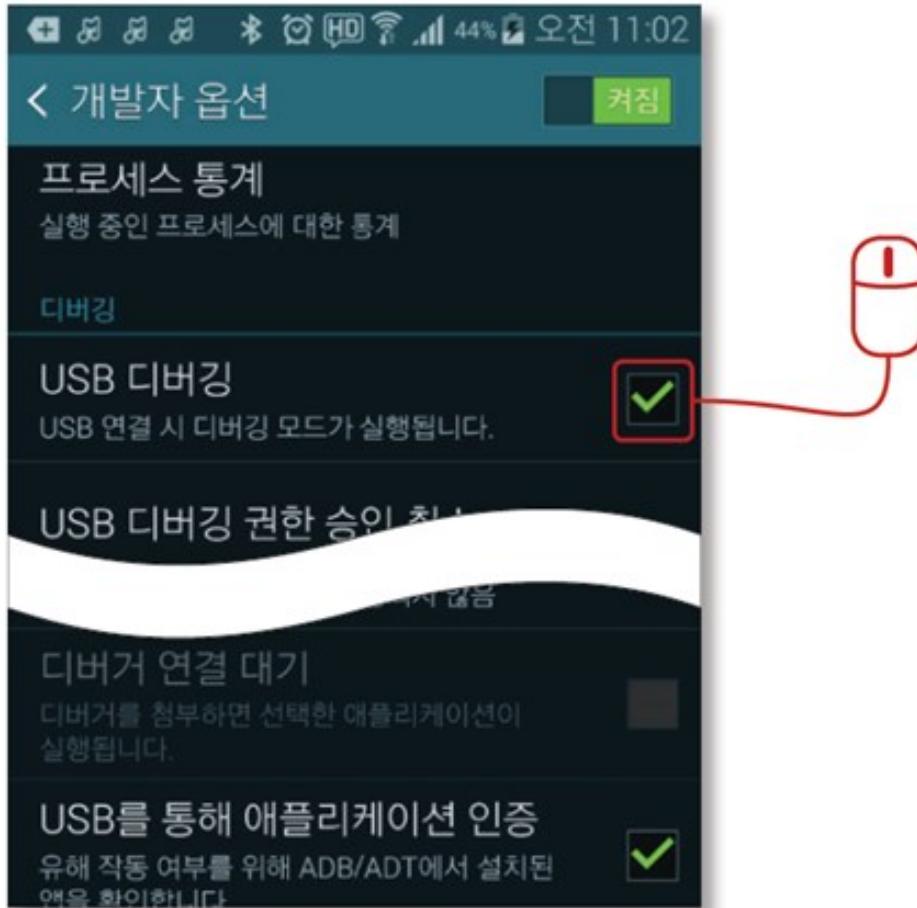
LG United Mobile Driver(LG 360 캠 포함)  
LG United Mobile Driver는 사용자의 안드로이드 휴대폰을 최신 버전의 휴대폰 소프트웨어로 업그레이드 할 때 필요한 프로그램입니다.

[다운로드](#) [상세보기](#)

# Continued…스마트폰의 환경 설정

55

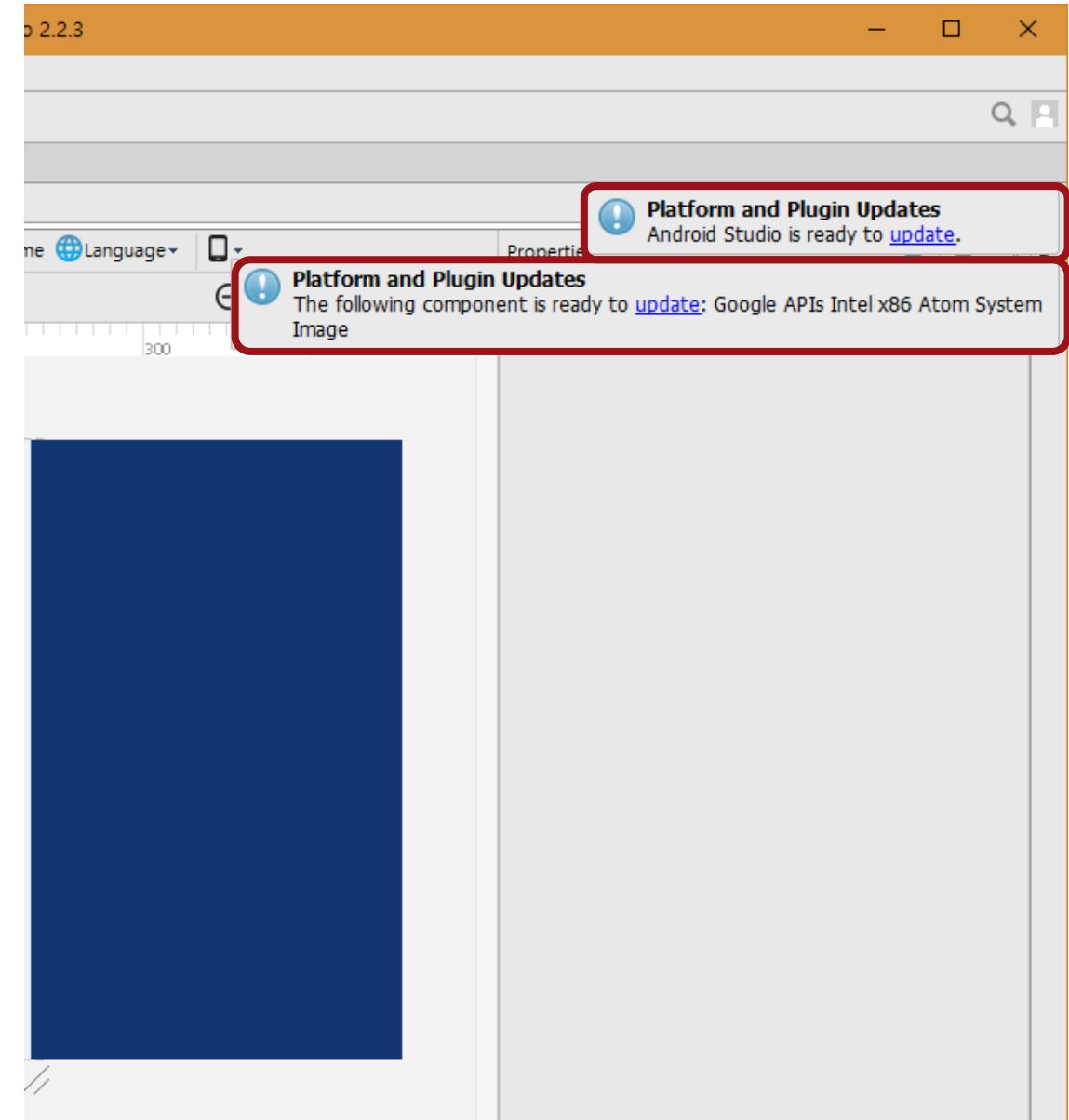
- 설정 > 개발자 옵션에서 ‘USB 디버깅’을 실행 가능하도록 체크



기타...

# Android Studio updates...

- Update 수행하지 말 것  
(무시하세요)



# Android Developers Homepage

58

- <https://developer.android.com/design/index.html>

The screenshot shows the Android Developers homepage with the 'DESIGN' tab selected in the navigation bar. The main content area features a large title '머티리얼 디자인으로 시작하고 실행' (Start and execute with Material Design) and a sub-section about the new design philosophy. Below this are six cards illustrating various aspects of Material Design:

- MATERIAL DESIGN Animation
- MATERIAL DESIGN Style
- MATERIAL DESIGN Layout
- MATERIAL DESIGN Components
- MATERIAL DESIGN Patterns
- MATERIAL DESIGN Usability

On the right side of the page, there are three images of Android devices (two phones and one tablet) displaying the Material Design interface.