

Step by Step

안드로이드 프로그래밍

안드로이드 스튜디오로 시작하는 앱 개발

전면개정판

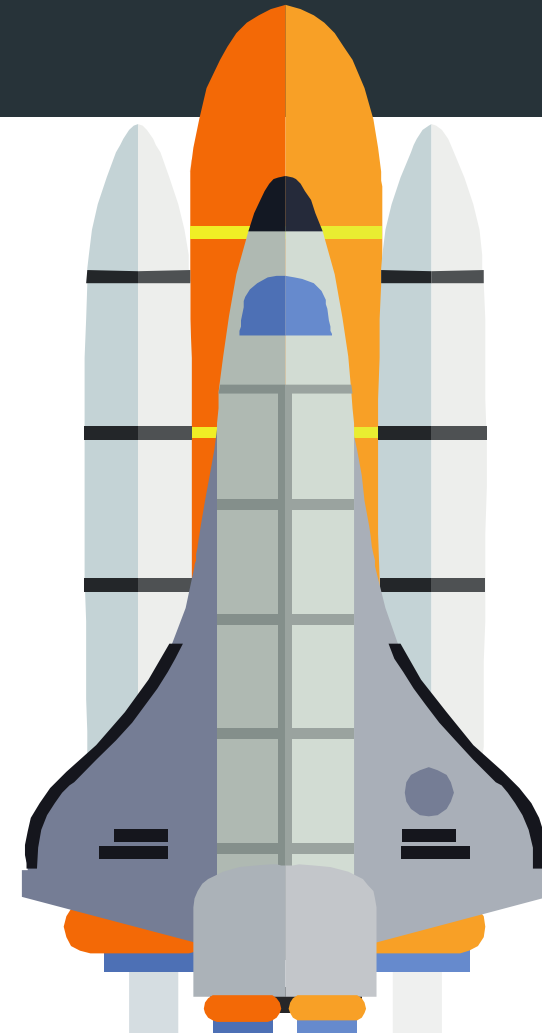
| 장용식·성낙현 공저 |



개발환경 구축과
맛보기 프로젝트

개발환경 구축 절차

주 차	수 업 내 용
1	수업 소개
2	개발 환경 구축과 맛보기 프로젝트
3	텍스트 출력과 레이아웃
4	이미지 출력
5	이벤트 처리와 액티비티 간 이동
6	오디오 재생
7	비디오 재생
8	중간고사
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	기말 고사



Lecture Notes: <https://goo.gl/vSdwLq>

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The screenshot shows a web browser window displaying the GitHub repository page for 'hopypark / LectureNotes'. The browser's address bar shows the URL 'https://github.com/hopypark/LectureNotes/tree/master/AndroidApp'. The repository page includes a header with the repository name, a search bar, and navigation links like 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below the header, there are buttons for 'Unwatch', 'Star', and 'Fork'. The main content area shows a list of files and their commit history. The files listed are 'README.md', 'Week02.Chap02.앱 개발환경 구축.pdf', and 'Week02.Chap03.앱 프로젝트 구조와 실행원리.pdf'. The commit history shows that 'hopypark' committed 'Add lecture notes' for the first two files 'a minute ago' and '6 minutes ago' respectively. The 'README.md' file is currently selected, and its content is displayed in a large text area.

LectureNotes/AndroidApp

GitHub, Inc. [US] | <https://github.com/hopypark/LectureNotes/tree/master/AndroidApp>

Bookmarks: 끌어오기, 데이터 과학, 세상의 모든 기록, Calculation of Inform, 인공지능(AI)과 머신러닝, 다음 어학사전, cbgSTAT - 의학통계, All IT eBooks - Free

This repository Search Pull requests Issues Marketplace Explore

hopypark / LectureNotes Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Settings Insights

Branch: master LectureNotes / AndroidApp / Create new file Upload files Find file History

hopypark committed on GitHub Add lecture notes ... Latest commit #2c82ec a minute ago

..

README.md	Create readme.md	6 minutes ago
Week02.Chap02.앱 개발환경 구축.pdf	Add lecture notes	a minute ago
Week02.Chap03.앱 프로젝트 구조와 실행원리.pdf	Add lecture notes	a minute ago

README.md

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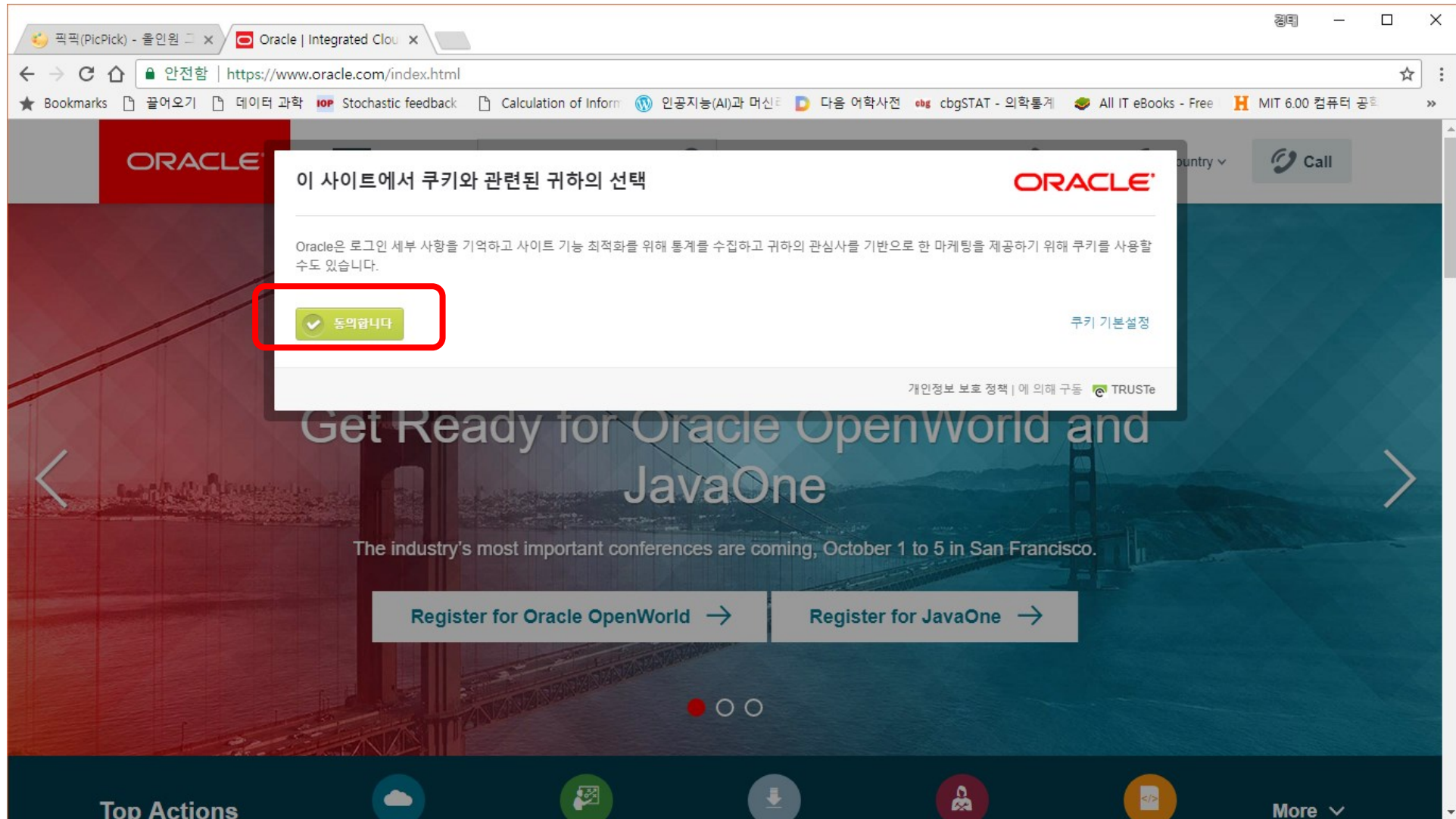
- JDK 설치
- Android Studio 설치
- 앱 실행 환경 구축

개발환경 구축

Step 1. JDK 설치

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- 다운로드: <https://www.oracle.com/>



The screenshot shows the Oracle website's main navigation menu. The menu is open, displaying various categories. The 'Java' category is selected, and its sub-menu is visible, with 'All Java Downloads' highlighted by a blue box. The background features a large orange banner with the text 'ORACLE CODE SAN' and 'er for'. The browser's address bar shows 'https://www.oracle.com/index.html'. The bottom of the page has a dark blue footer with icons for Cloud, Downloads, Support, and More.

Oracle | Integrated Cloud

안전함 | https://www.oracle.com/index.html

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

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Middleware

Operating Systems

Servers and Storage Systems

All Trials and Downloads

Java

Java Runtime Environment (JRE)

Java Cloud Trial

Java EE and GlassFish

All Java Downloads →

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one-day event focused on

ud apps.

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

More

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Oracle Technology Network > Java




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- 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

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Posted: Jul 28
- [Previewing the "Core Java Platform"](#)

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- [Java SE Advanced & Suite](#)
- [Java Embedded](#)
- [Java EE](#)
- [Java ME](#)
- [JavaFX](#)

www.oracle.com/technetwork/java/javase/overview/index.html | The Java Trove: Part II

픽픽(PicPick) - 올인원 Java SE - Downloads |

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

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


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Java SE Downloads


Java Platform (JDK) 8u144


NetBeans with JDK 8

Java Platform, Standard Edition

Java SE 8u144
Java SE 8u144 includes important bug fixes. Oracle strongly recommends that all Java SE 8 users upgrade to this release.
[Learn more](#)

- Installation Instructions
- Release Notes
- Oracle License
- Java SE Products
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[JDK ReadMe](#)

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JRE
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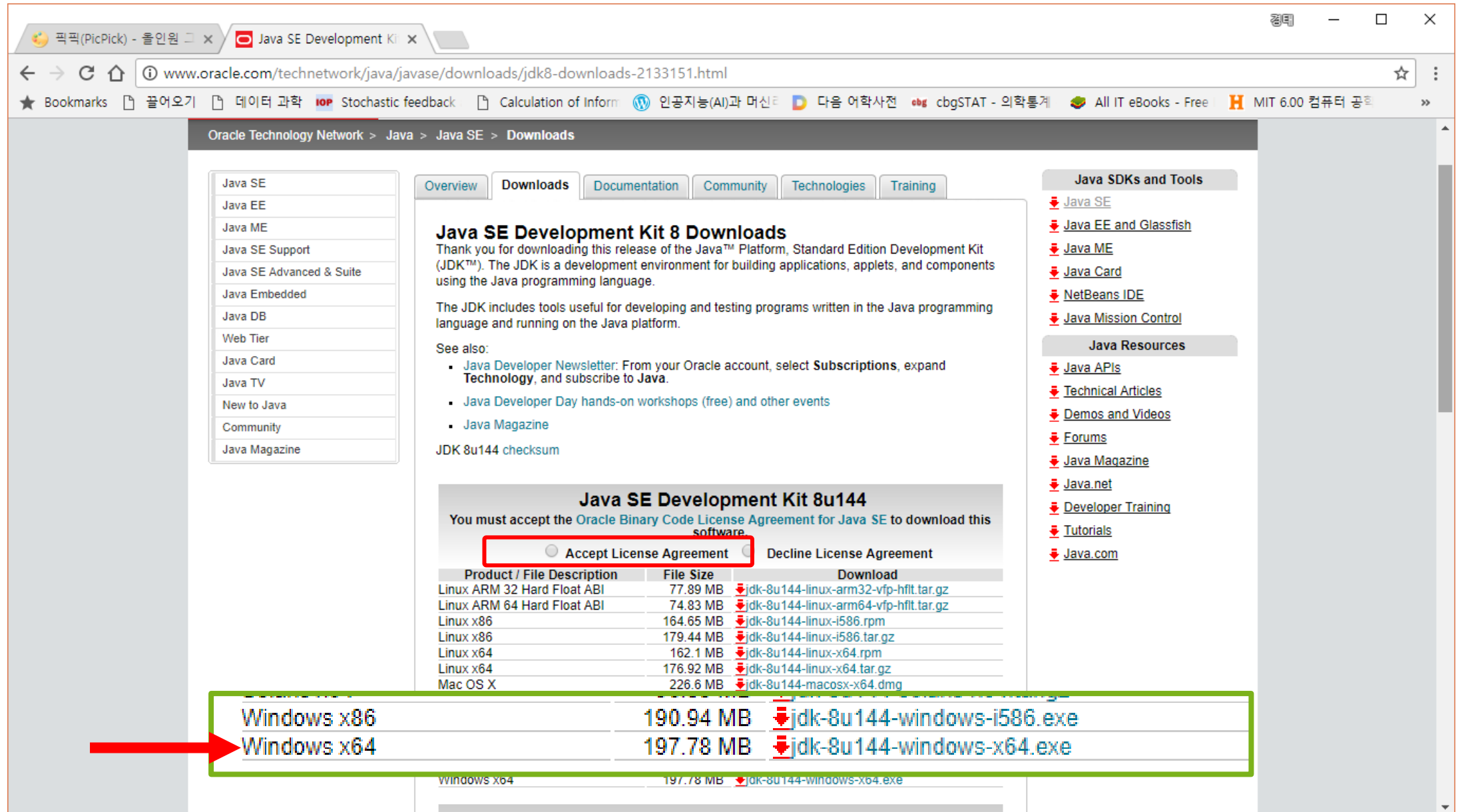
Java SDKs and Tools

- [Java SE](#)
- [Java EE and Glassfish](#)
- [Java ME](#)
- [Java Card](#)
- [NetBeans IDE](#)
- [Java Mission Control](#)

Java Resources

- [Java APIs](#)
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- [Developer Training](#)
- [Tutorials](#)
- [Java.com](#)

www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html



Oracle Technology Network > Java > Java SE > Downloads

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 8u144 checksum

Java SE Development Kit 8u144

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

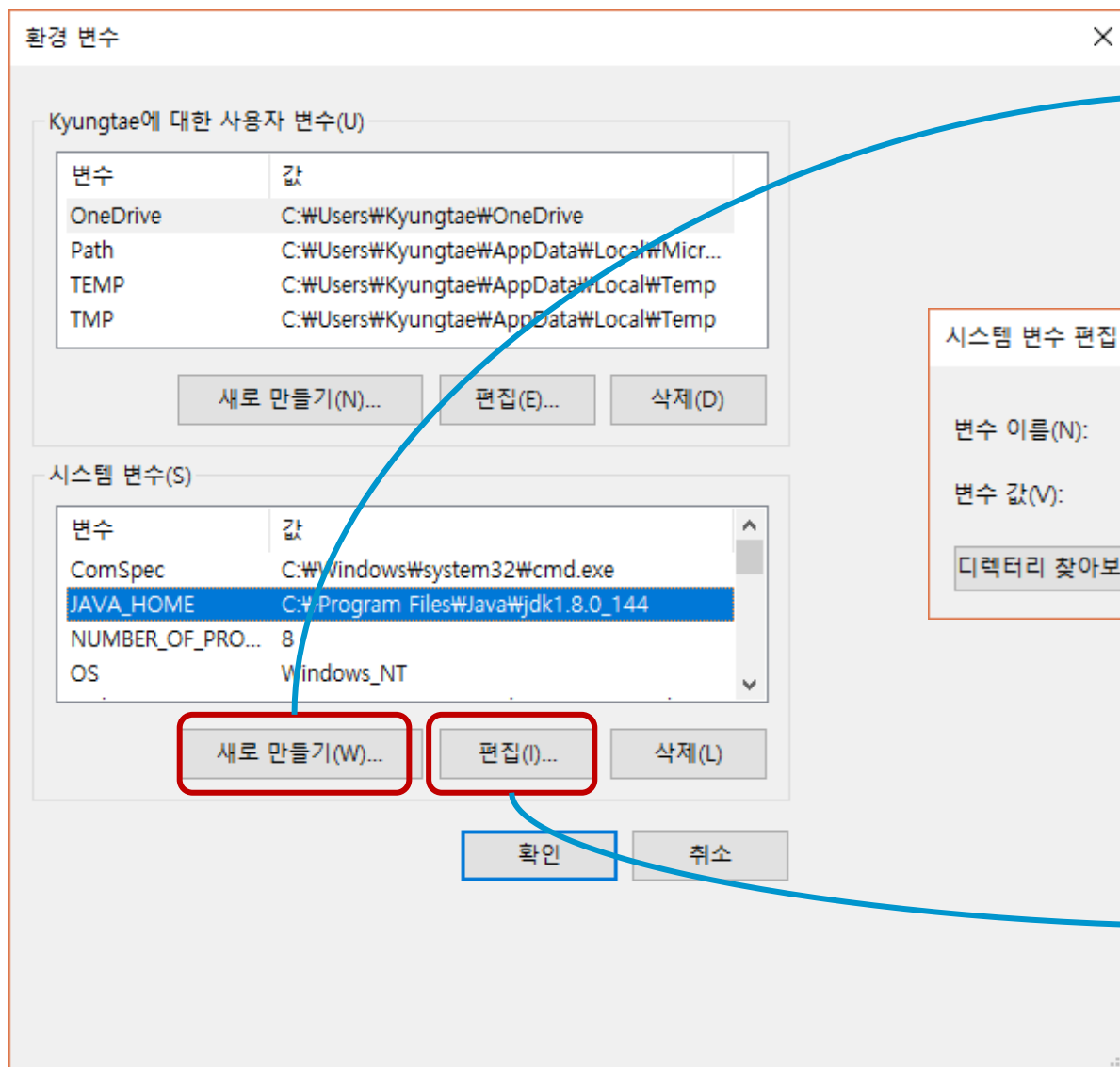
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Product / File Description	File Size	Download
Linux ARM 32 Hard Float ABI	77.89 MB	jdk-8u144-linux-arm32-vfp-hflt.tar.gz
Linux ARM 64 Hard Float ABI	74.83 MB	jdk-8u144-linux-arm64-vfp-hflt.tar.gz
Linux x86	164.65 MB	jdk-8u144-linux-i586.rpm
Linux x86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

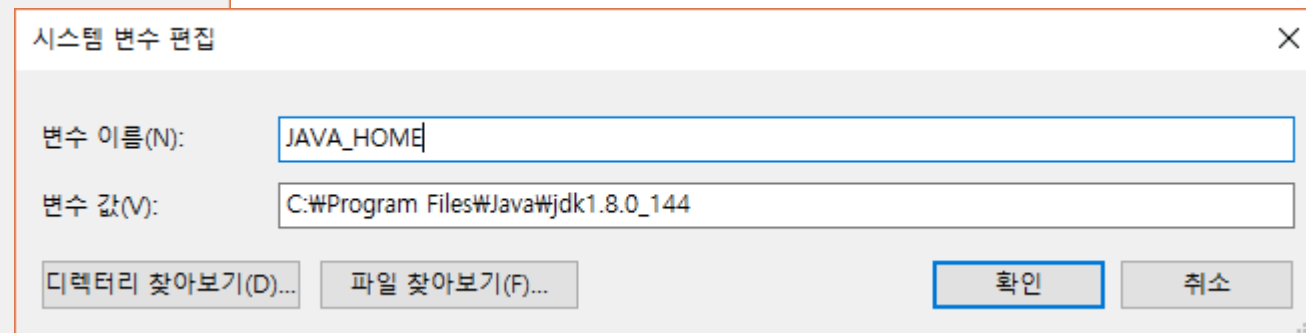
Continued – 자바홈(JAVA_HOME) 환경설정

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- 제어판>시스템>고급 시스템 설정>고급>환경변수



JAVA_HOME이 등록되어 있지 않은
경우에 추가할 때



JAVA_HOME이 등록되어 있는 경우
에 수정할 때




Step 2. Android Studio 설치

Download Android Studio

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

 Android Studio

기능 사용자 가이드 미리보기

검색

개발자로 돌아가기

다운로드

기능

사용자 가이드

미리보기

Android Studio

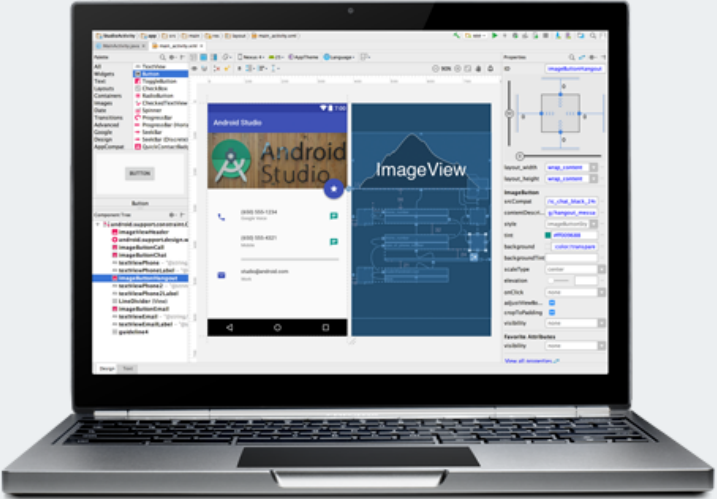
Android용 공식 IDE

Android Studio는 모든 유형의 Android 기기에서 앱을 빌드하기 위한 가장 빠른 도구를 제공합니다.

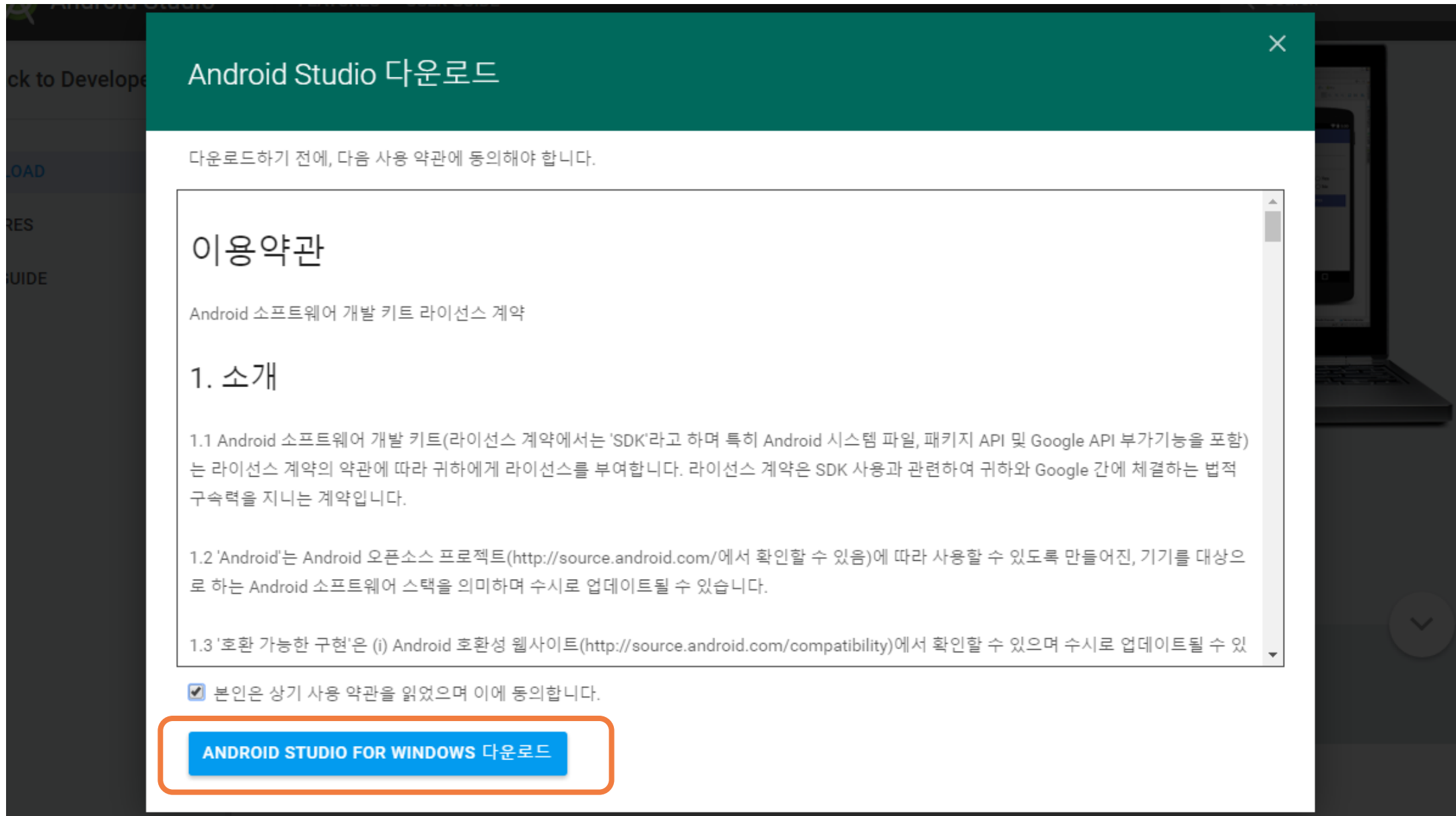
최고 수준의 코드 편집, 디버깅, 성능 도구, 유연한 빌드 시스템 및 인스턴트 빌드/배포 시스템을 사용하여 뛰어난 품질의 앱을 빌드하는 데 집중할 수 있습니다.


다운로드 ANDROID STUDIO
2.3.3 FOR WINDOWS (1,926 MB)

> 문서 읽기 > 릴리스 노트 참조



> 기능 > 최신 뉴스 > 리소스 > 동영상 > 다운로드 옵션



 Android Studio

FEATURES USER GUIDE

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Meet Android Studio

Workflow Basics

Manage Your Project

Write Your App

Build and Run Your App

Configure Your Build

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Command Line Tools

Release Notes

Troubleshoot

Android Studio 설치

Android Studio 설치 는 몇 번의 클릭만으로 가능합니다. (이미 [Android Studio](#)를 다운로드했어야 합니다.)


Android Studio를 Windows에 설치하려면 다음 단계를 진행하세요.

1. 다운로드한 .exe 파일을 실행합니다.
2. 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 Variables**를 열고 JDK 폴더(예: `C:\Program Files\Java\jdk1.8.0_77`)를 가리키는 새 시스템 변수 `JAVA_HOME`을 추가합니다.

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



운영 체제

Windows

android-studio-bu...e...

0.1/1.8GB, 4분 남음

전체 보기

✕

Android Studio

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Troubleshoot

Known Issues

Start -> All Programs -> Computer -> System Properties -> Advanced System Properties를 클릭합니다. 그런 다음 Advanced -> Environment variables를 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.

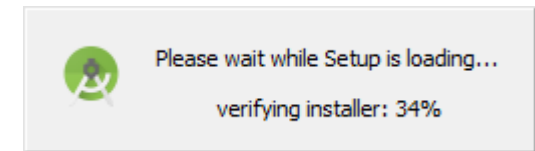


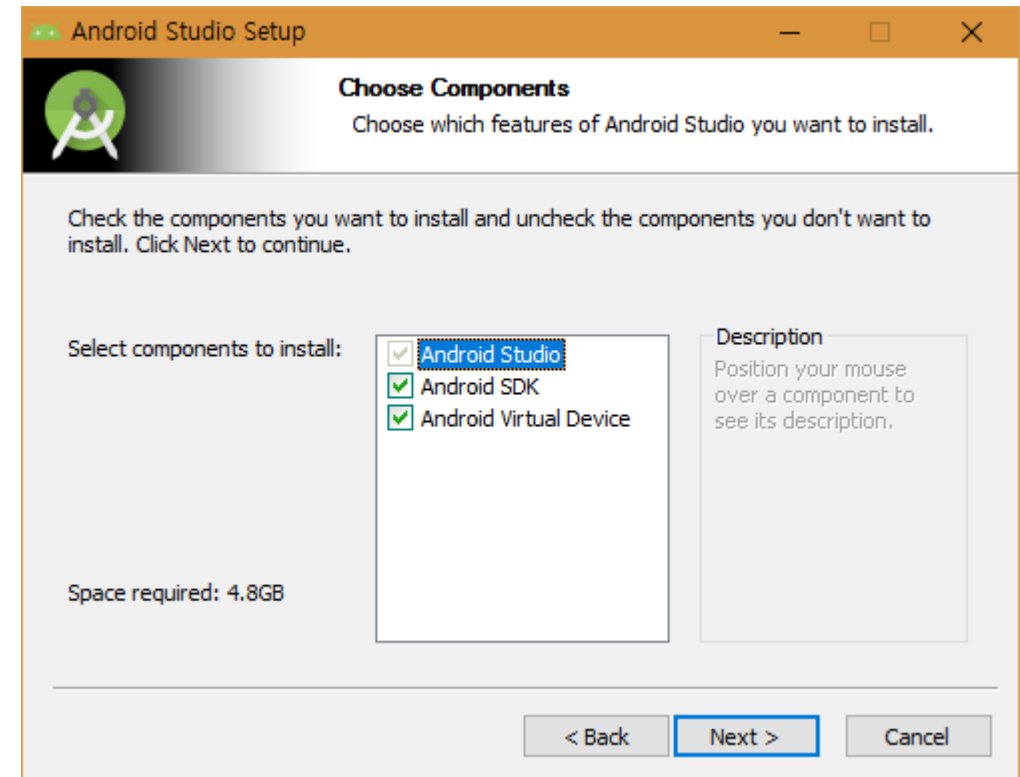
새로운 도구와 기타 API가 나오게 되면, Android Studio가 팝업으로 알려줍니다. 또는 **Help > Check for Update**를 클릭하여 업데이트를 확인할 수 있습니다.

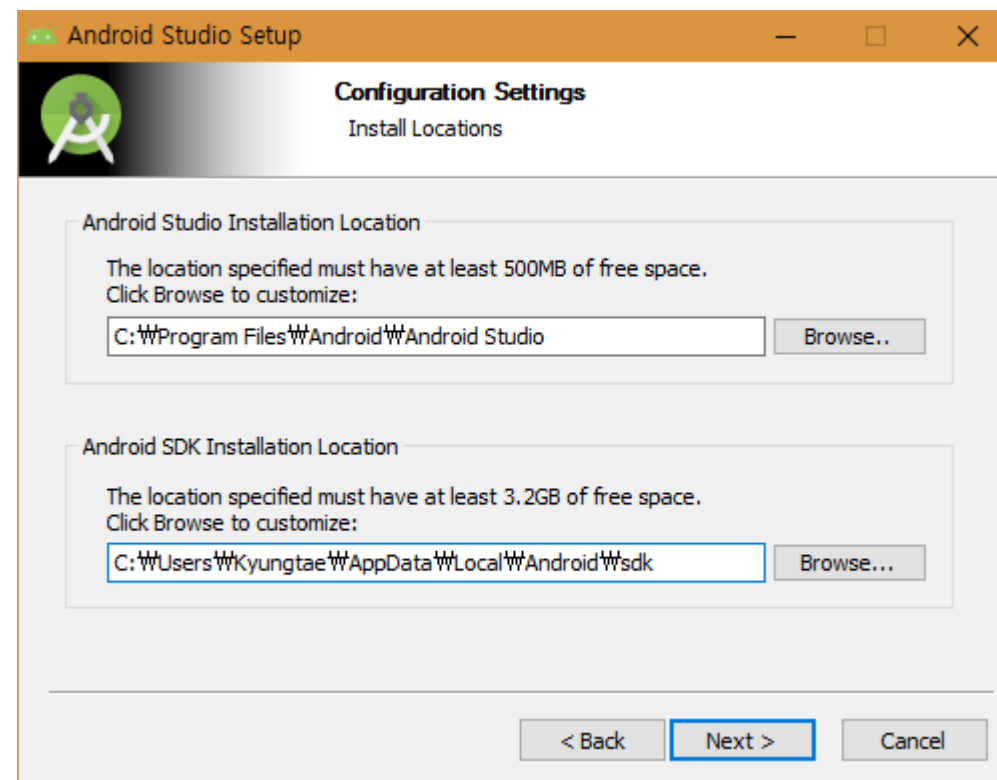
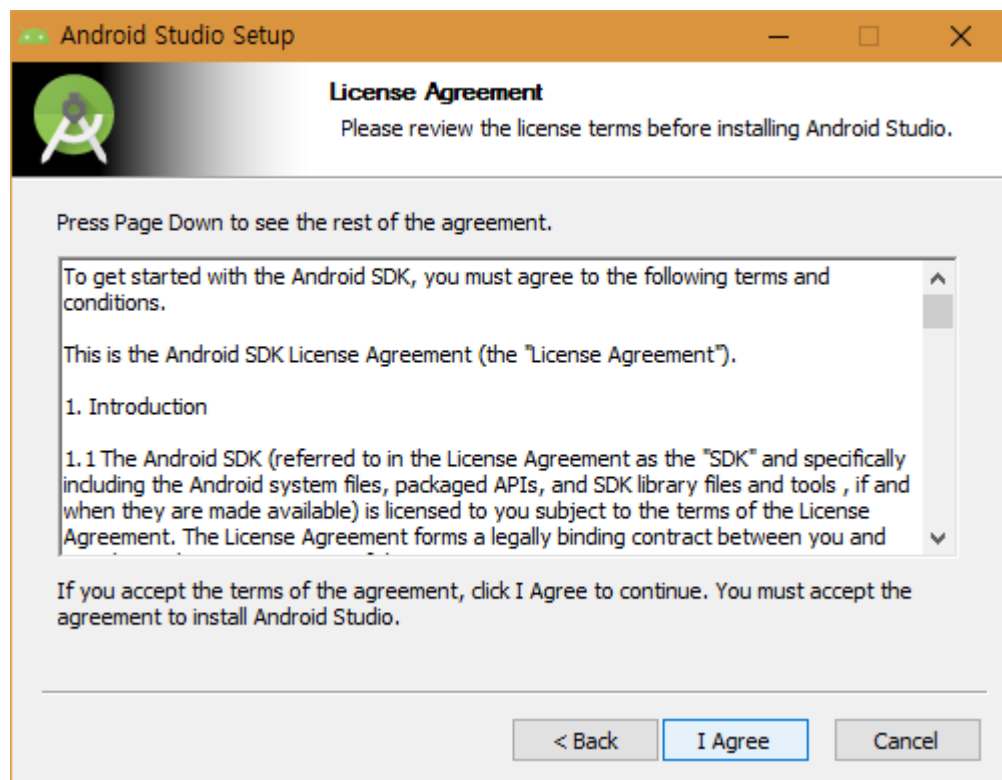
Install Android Studio on windows

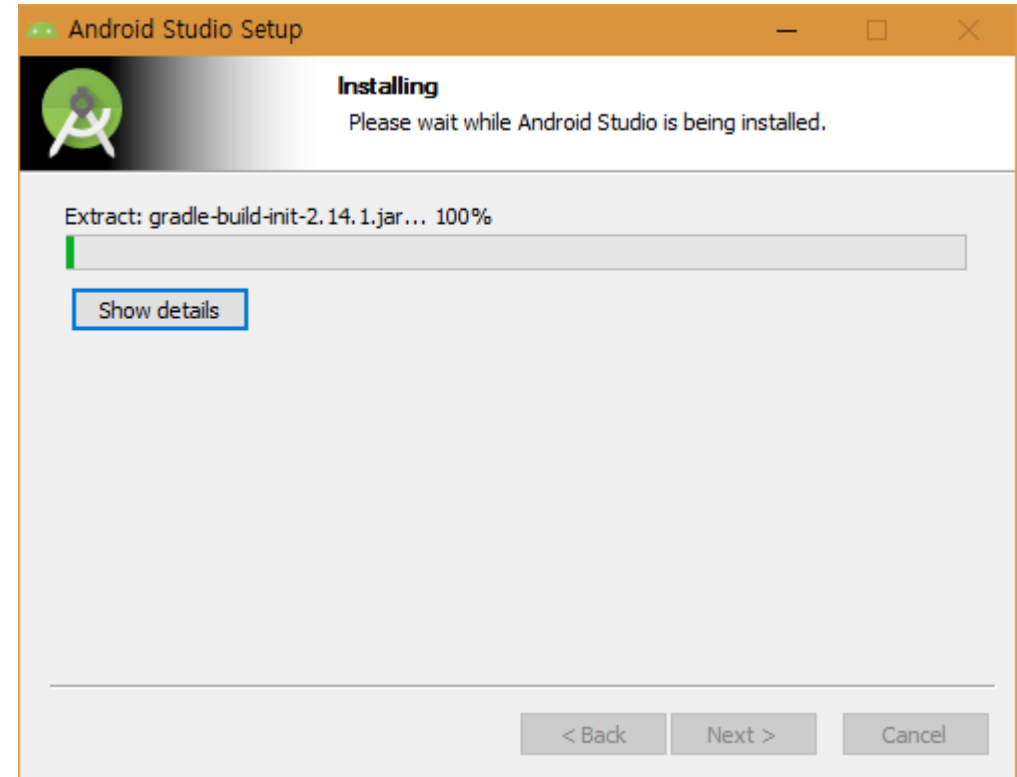
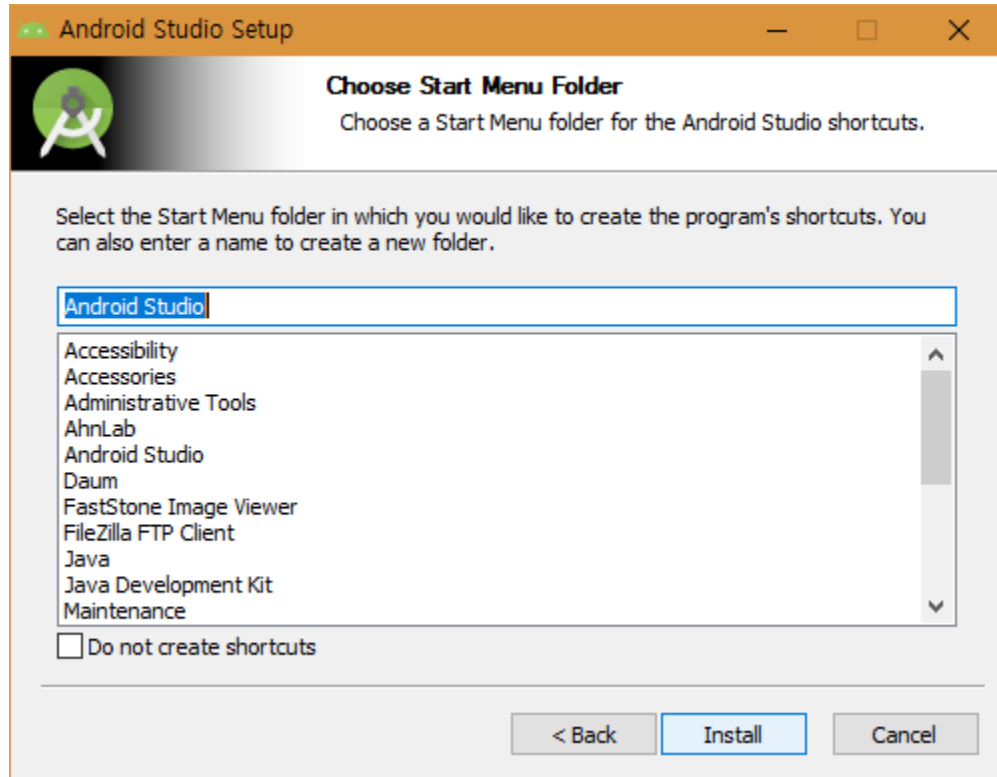
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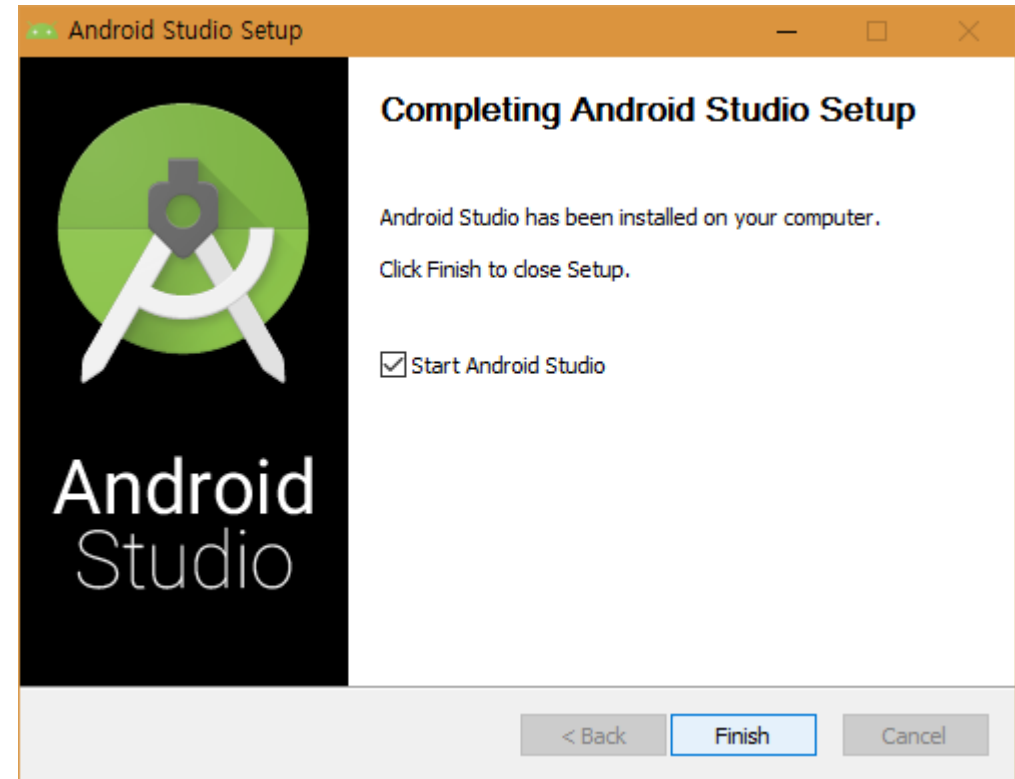
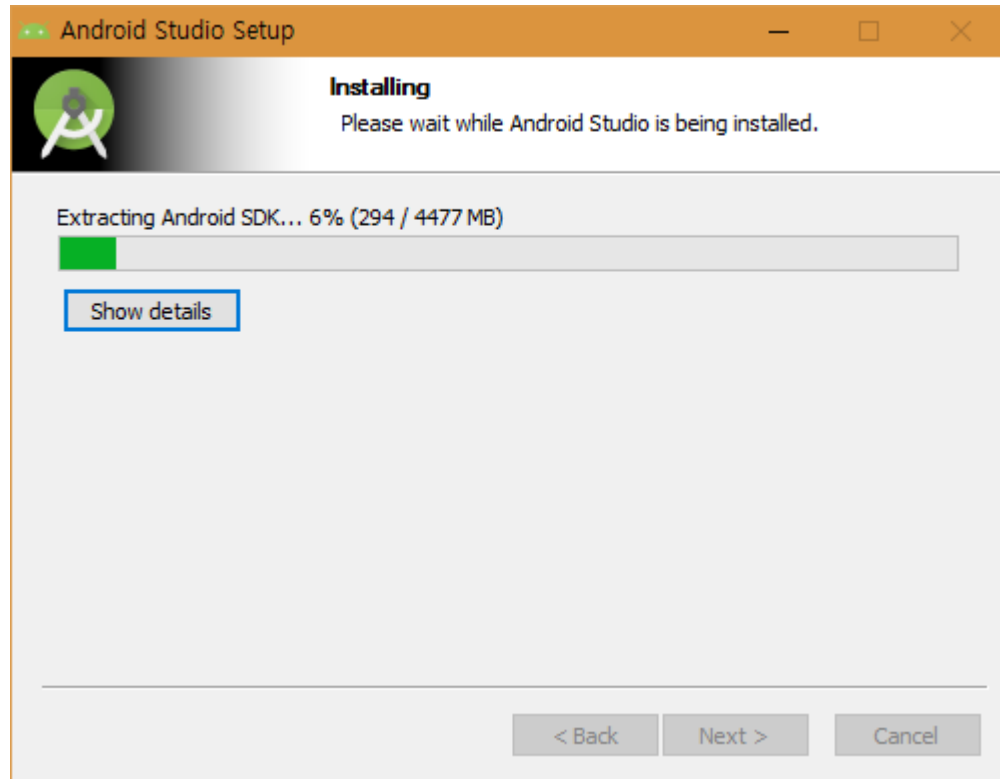
- 다운 받은 Android Studio 설치 파일을 클릭하여 '실행' 버튼을 클릭한다.





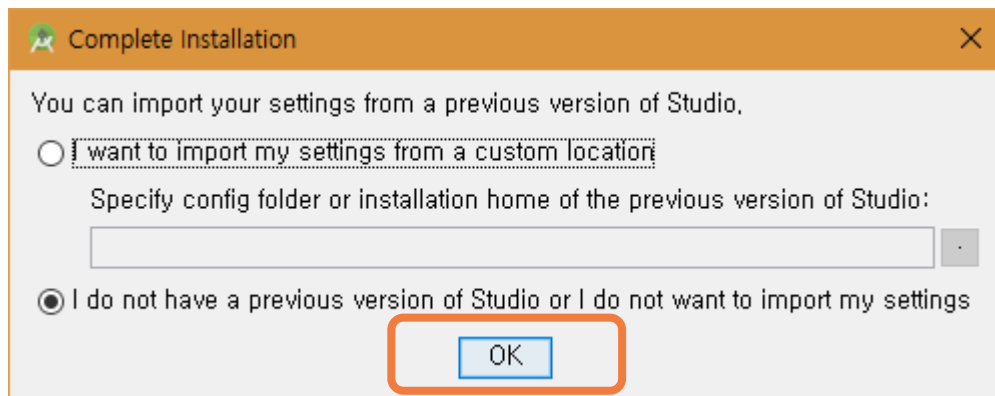






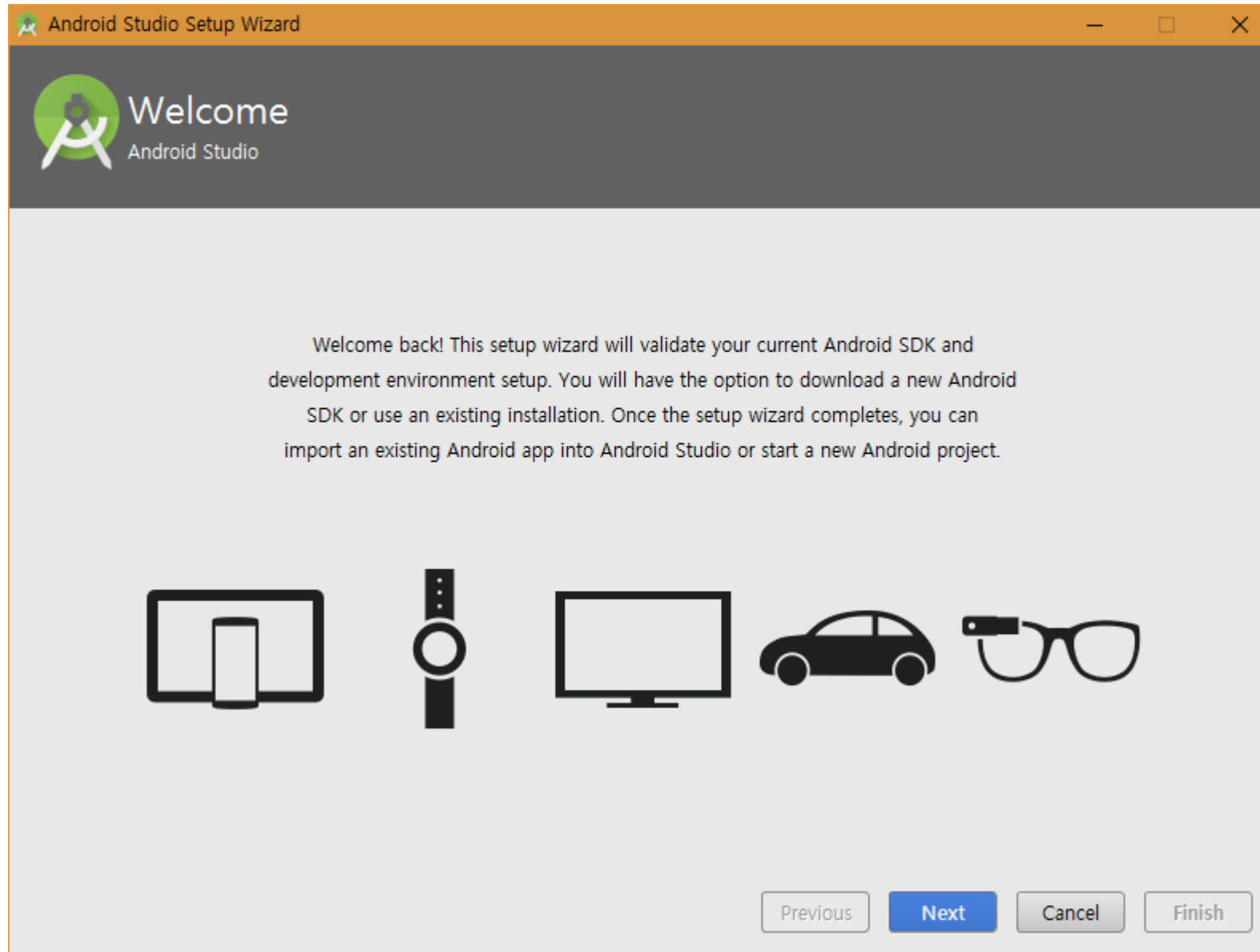
Continued ... Complete installation

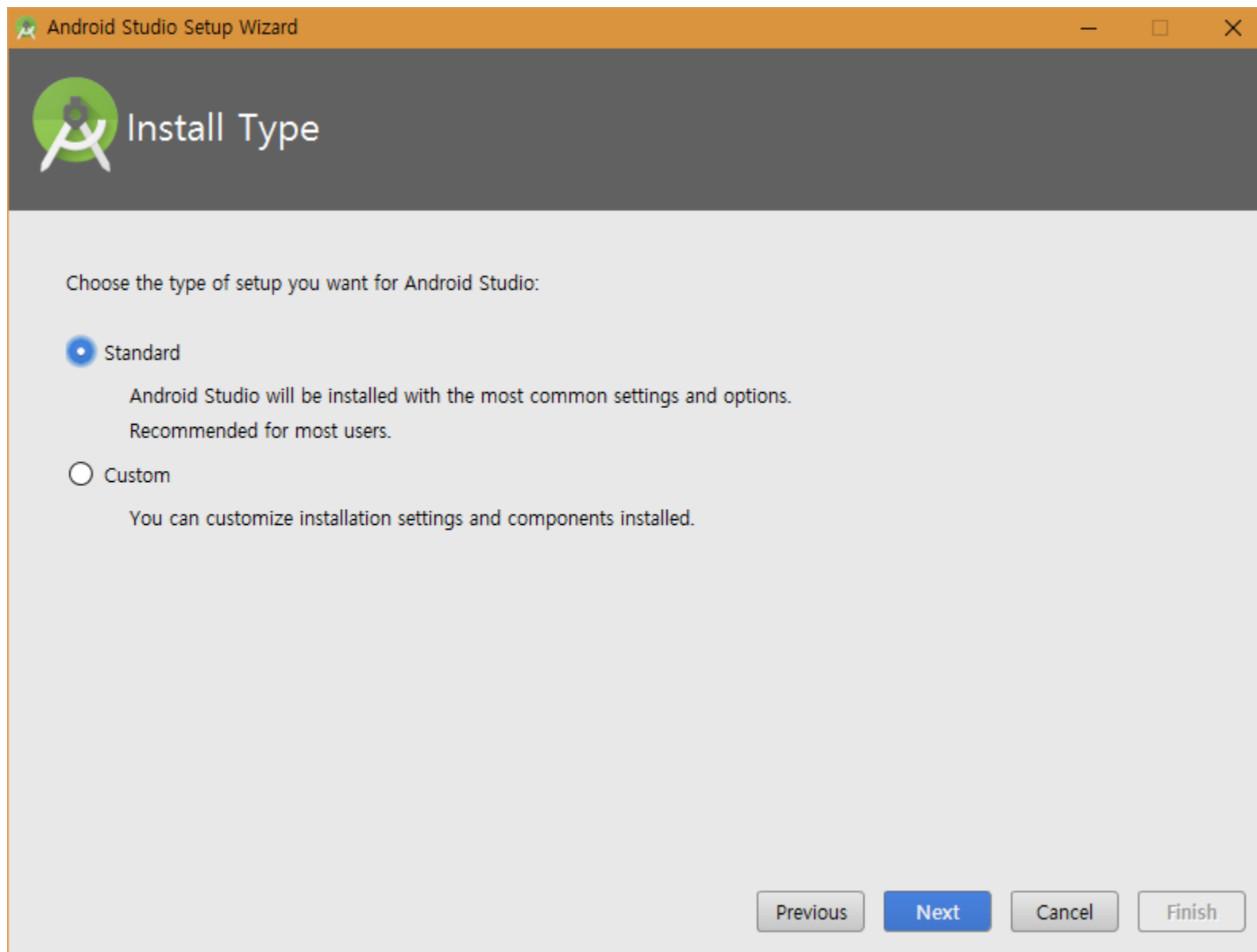
21

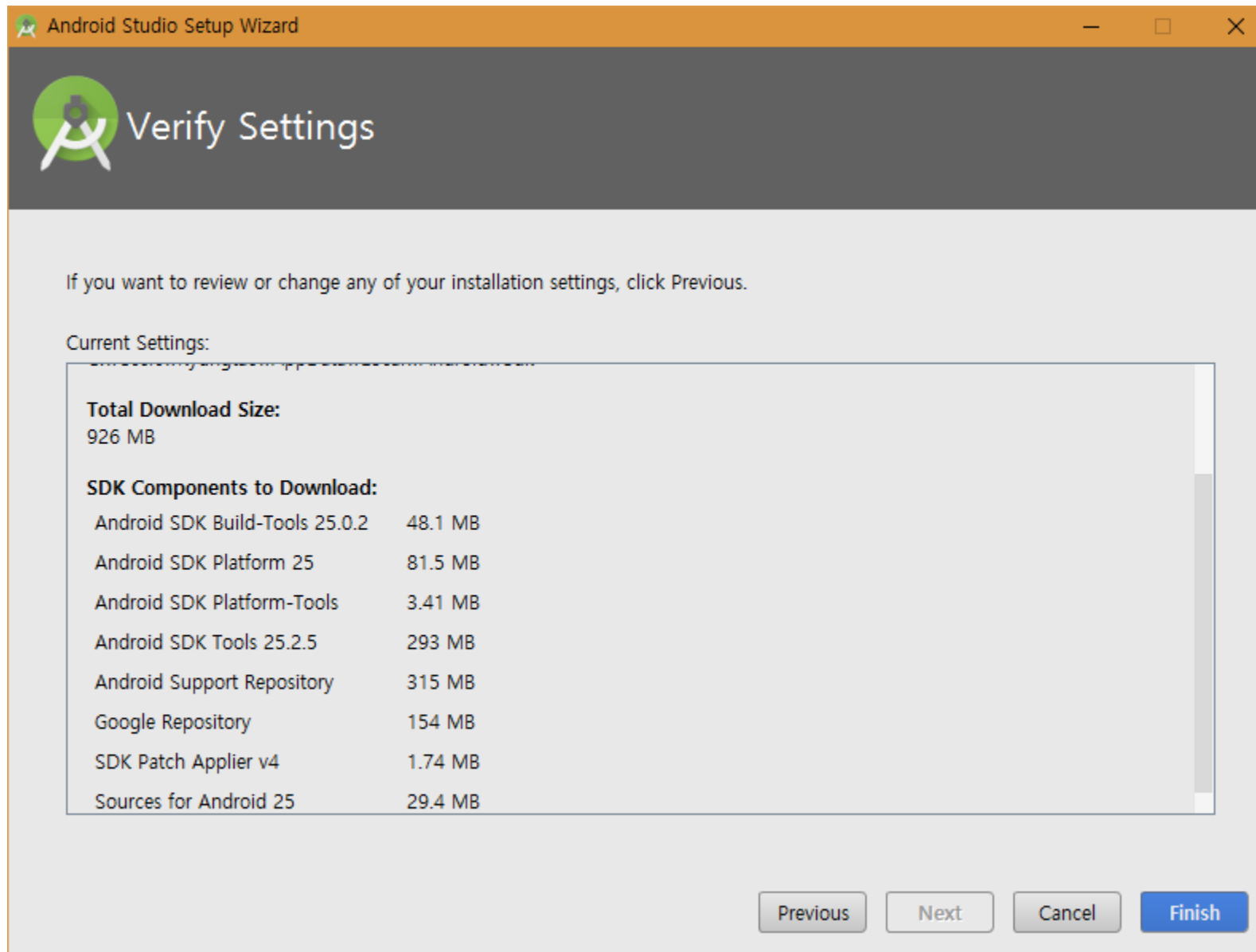


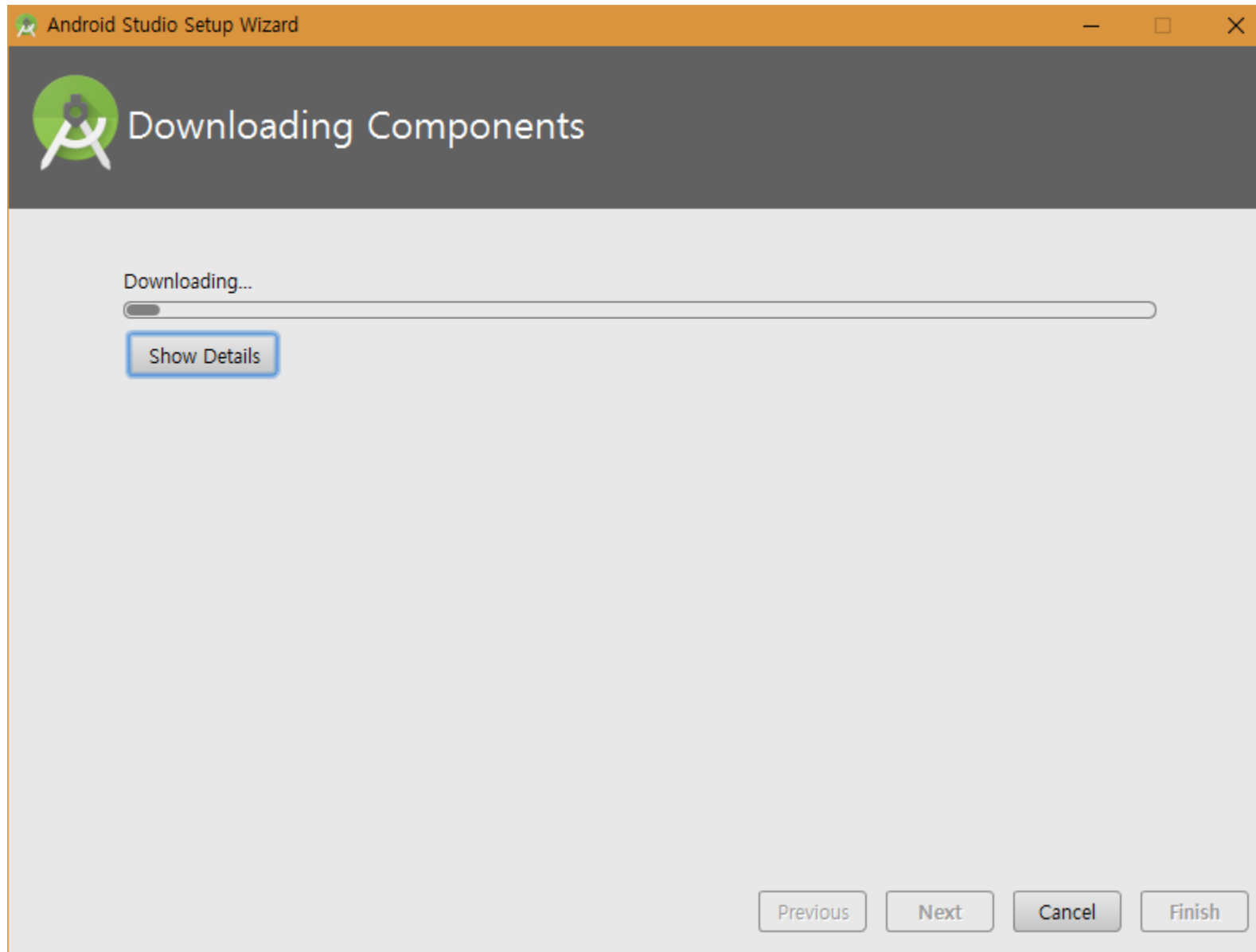
Android Studio Setup Wizard

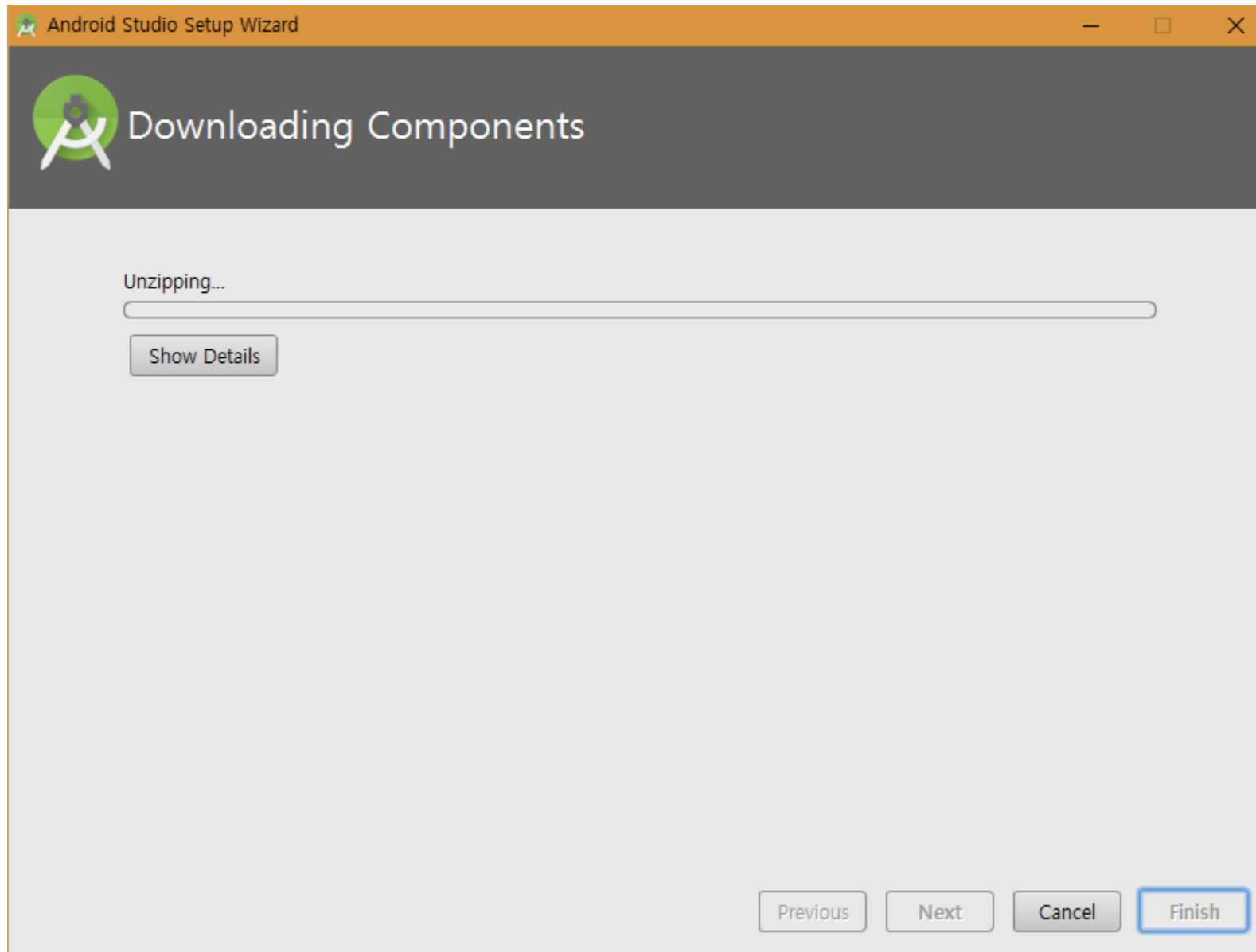
22

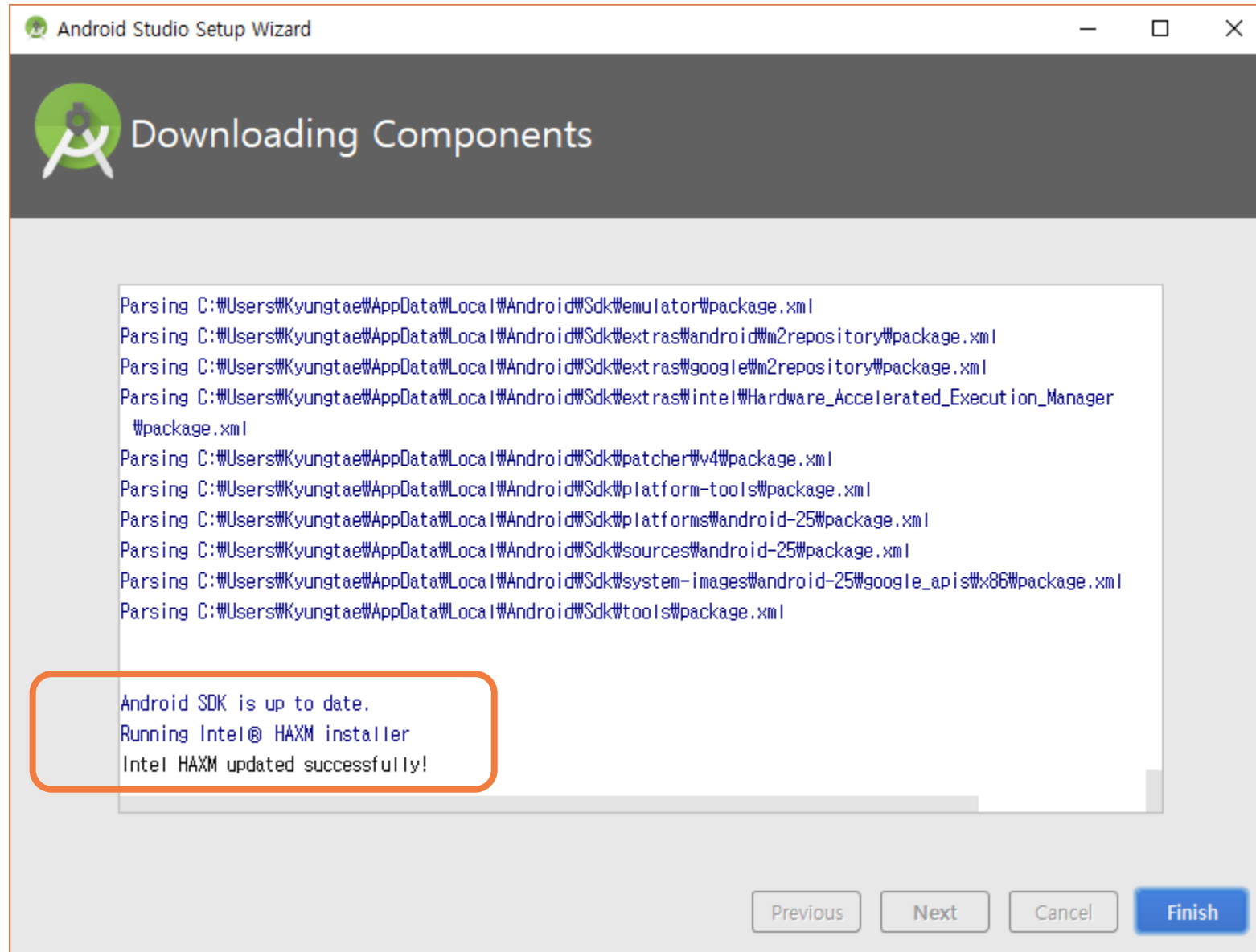




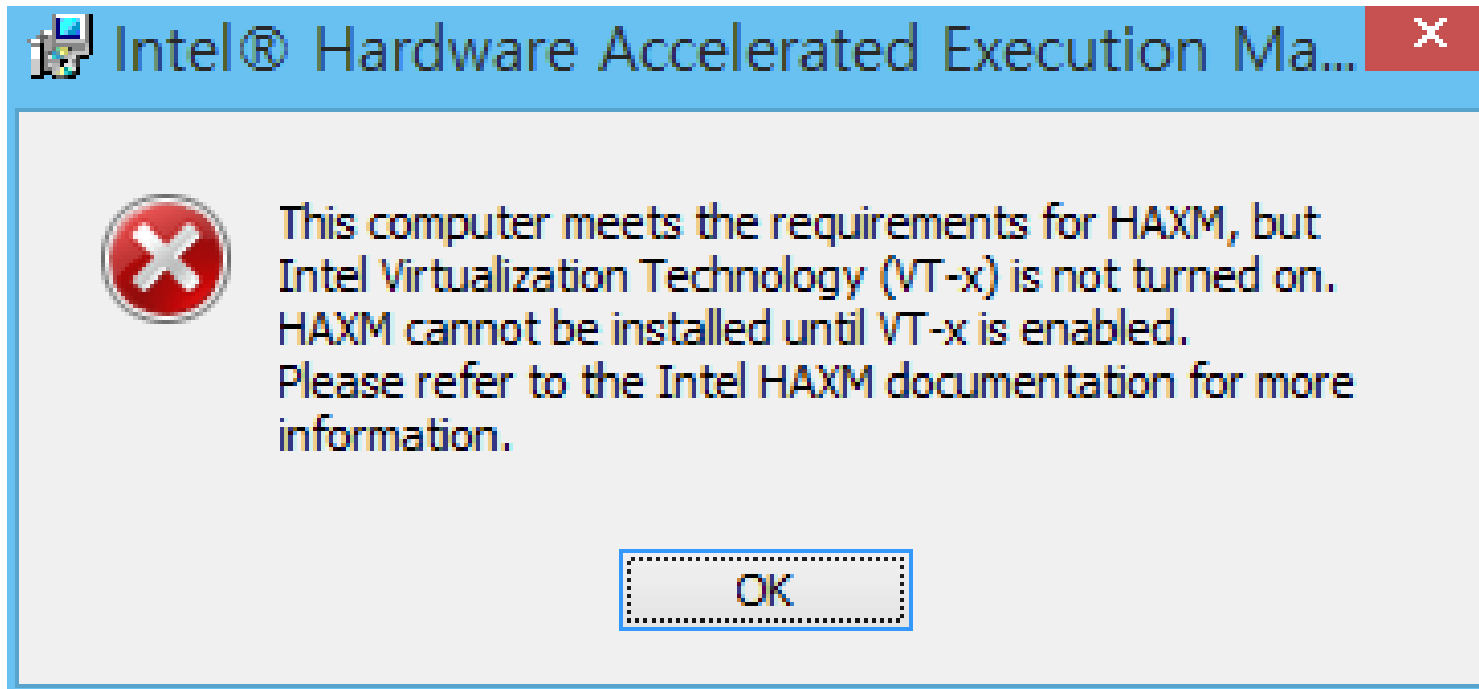








- Troubleshoot-Intel HAEM (Hardware Accelerated Execution Manager)

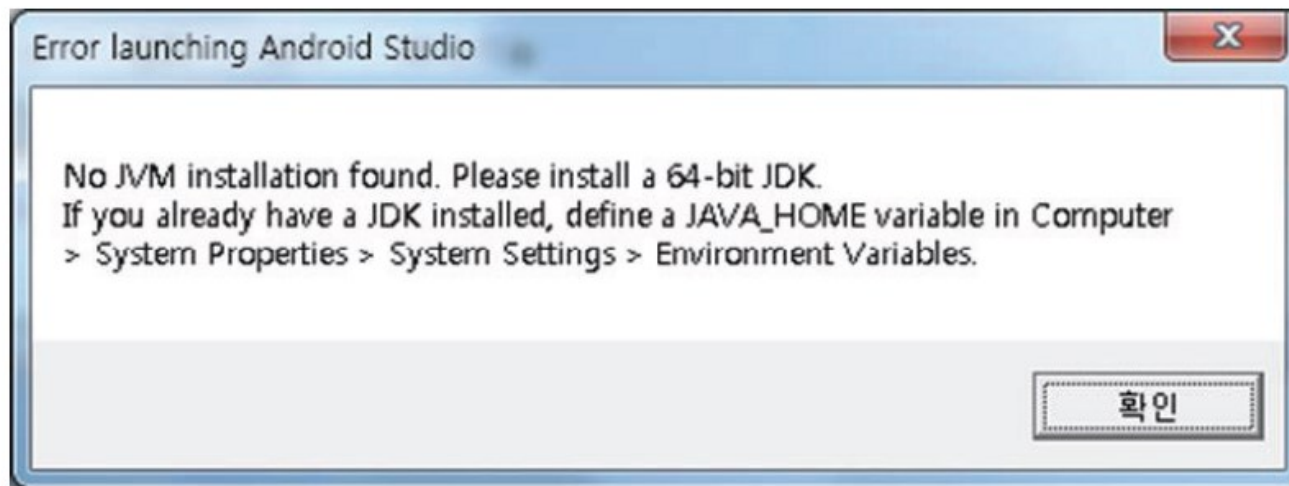


- 메인보드에서 CPU VT-x(가상화기술)을 허용하지 않음 상태이므로 BIOS 설정을 통해서 VT-x 활성화하는 게 필요.

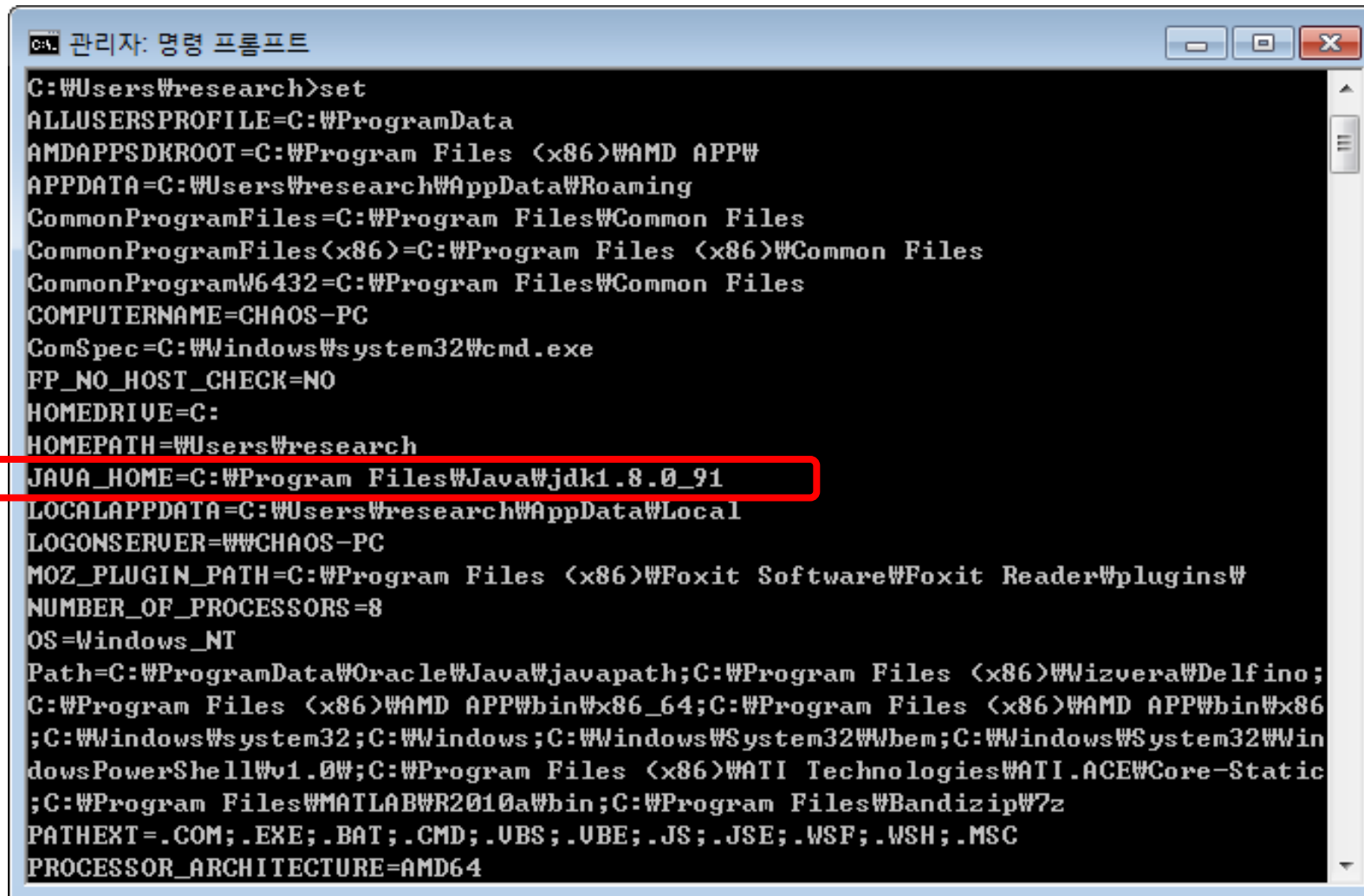
- 설치 중에 “JAVA_HOME” 경로 설정이 안 된 경우

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.



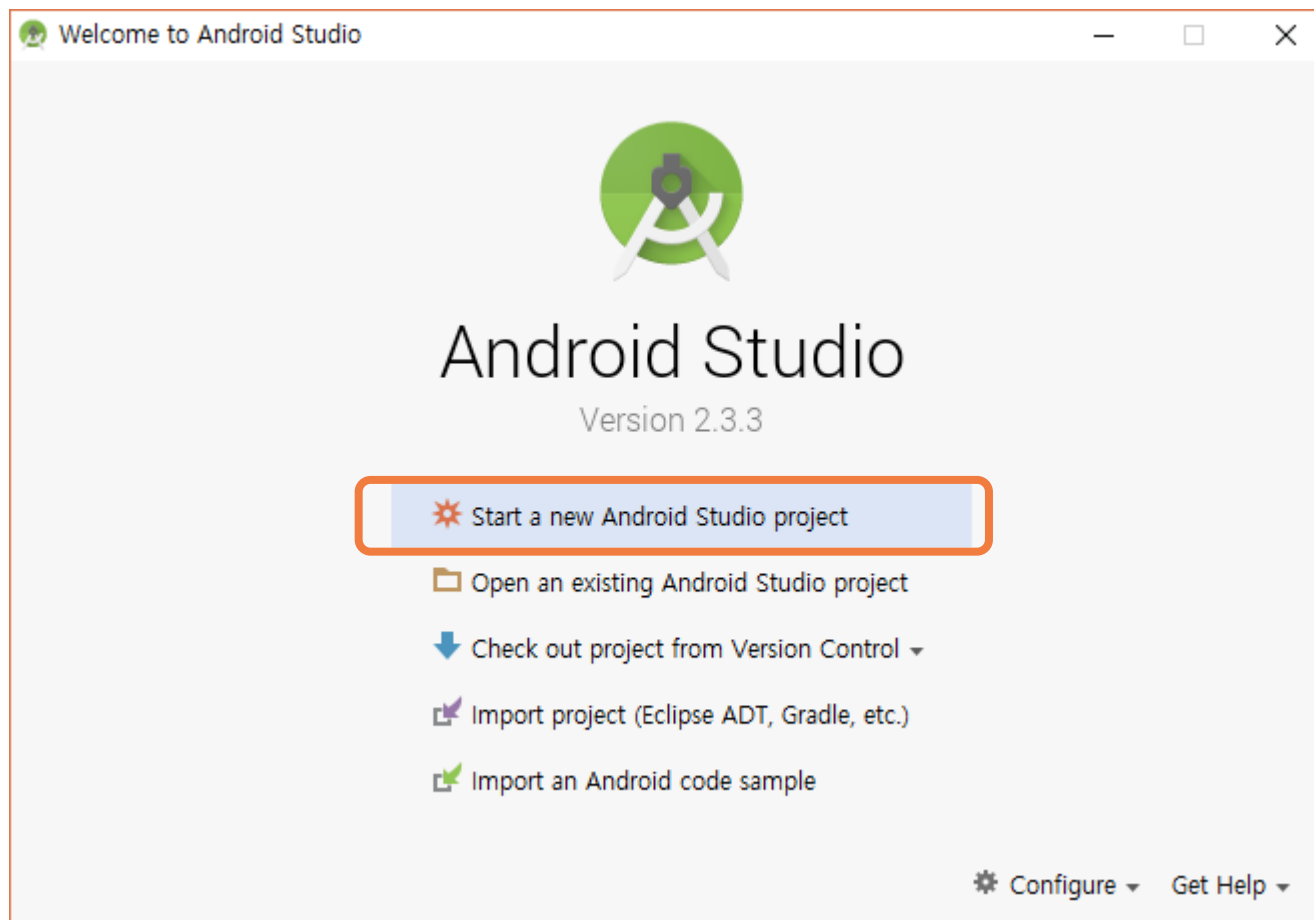
- JAVA_HOME 확인 방법: 명령프롬프트에서 “set” 명령어 실행





```
C:\Users\research>set
ALLUSERSPROFILE=C:\ProgramData
AMDAPPSDKROOT=C:\Program Files (x86)\AMD APP\
APPDATA=C:\Users\research\AppData\Roaming
CommonProgramFiles=C:\Program Files\Common Files
CommonProgramFiles(x86)=C:\Program Files (x86)\Common Files
CommonProgramW6432=C:\Program Files\Common Files
COMPUTERNAME=CHAOS-PC
ComSpec=C:\Windows\system32\cmd.exe
FP_NO_HOST_CHECK=NO
HOMEDRIVE=C:
HOMEPATH=\Users\research
JAVA_HOME=C:\Program Files\Java\jdk1.8.0_91
LOCALAPPDATA=C:\Users\research\AppData\Local
LOGONSERVER=\\CHAOS-PC
MOZ_PLUGIN_PATH=C:\Program Files (x86)\Foxit Software\Foxit Reader\plugins\
NUMBER_OF_PROCESSORS=8
OS=Windows_NT
Path=C:\ProgramData\Oracle\Java\javapath;C:\Program Files (x86)\Wizvera\Delfino;
C:\Program Files (x86)\AMD APP\bin\x86_64;C:\Program Files (x86)\AMD APP\bin\x86
;C:\Windows\system32;C:\Windows;C:\Windows\System32\Wbem;C:\Windows\System32\Win
dowsPowerShell\v1.0\;C:\Program Files (x86)\ATI Technologies\ATI.ACE\Core-Static
;C:\Program Files\MATLAB\R2010a\bin;C:\Program Files\Bandizip\7z
PATHEXT=.COM;.EXE;.BAT;.CMD;.VBS;.VBE;.JS;.JSE;.WSF;.WSH;.MSC
PROCESSOR_ARCHITECTURE=AMD64
```

Create New Project

- Start a new Android Studio project 메뉴 클릭



 Create New Project ✕

 **New Project**
Android Studio

Configure your new project

Application name:

Company domain:


Package name: [Edit](#)

☐ Include C++ support

Project location: ...

Previous Next Cancel Finish

Create New Project

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)

API 15: Android 4.0.3 (IceCreamSandwich)

API 16: Android 4.1 (Jelly Bean)

API 17: Android 4.2 (Jelly Bean)

API 18: Android 4.3 (Jelly Bean)

API 19: Android 4.4 (KitKat)

API 20: Android 4.4W (KitKat Wear)

API 21: Android 5.0 (Lollipop)

API 22: Android 5.1 (Lollipop)

☐ Wear

Minimum SDK

API 21: Android 5.0 (Lollipop)

☐ TV

Minimum SDK

API 21: Android 5.0 (Lollipop)

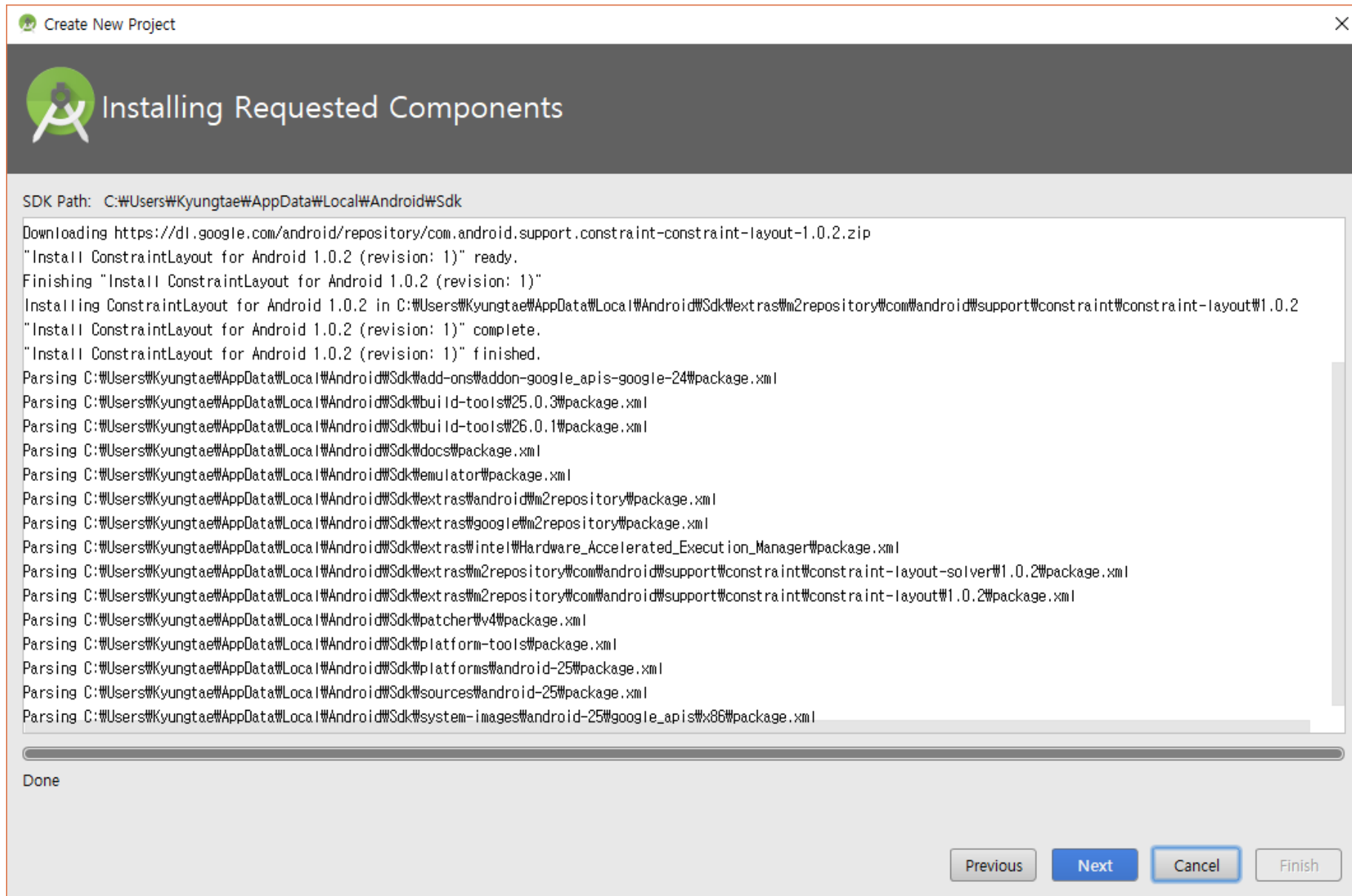
☐ Android Auto

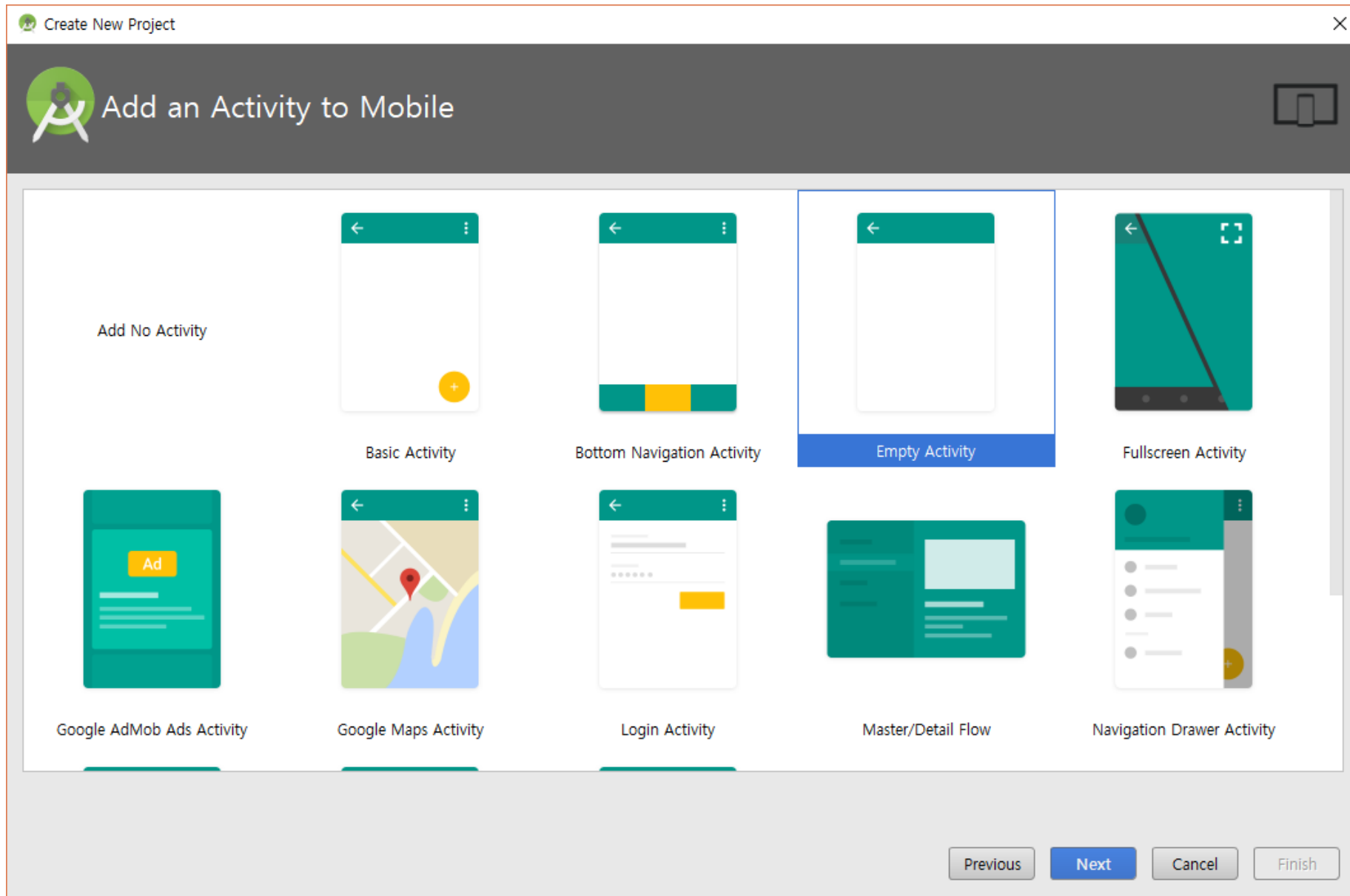
Previous

Next


Cancel


Finish

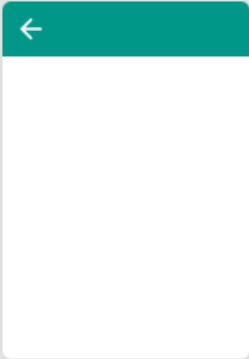




Create New Project

Customize the Activity





Empty Activity

Creates a new empty activity

Activity Name:

☒ Generate Layout File

Layout Name:

☒ Backwards Compatibility (AppCompat)

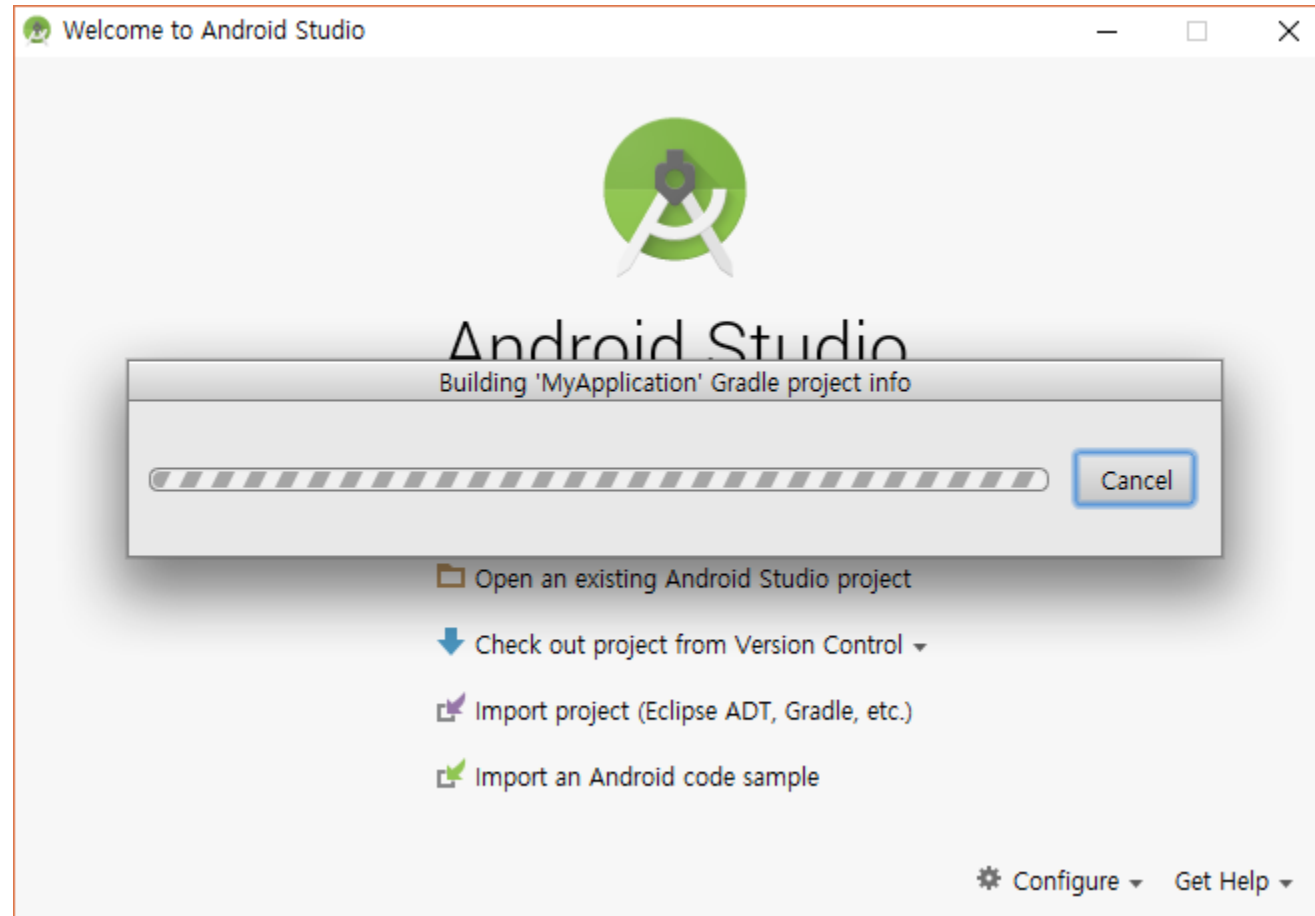
The name of the activity class to create

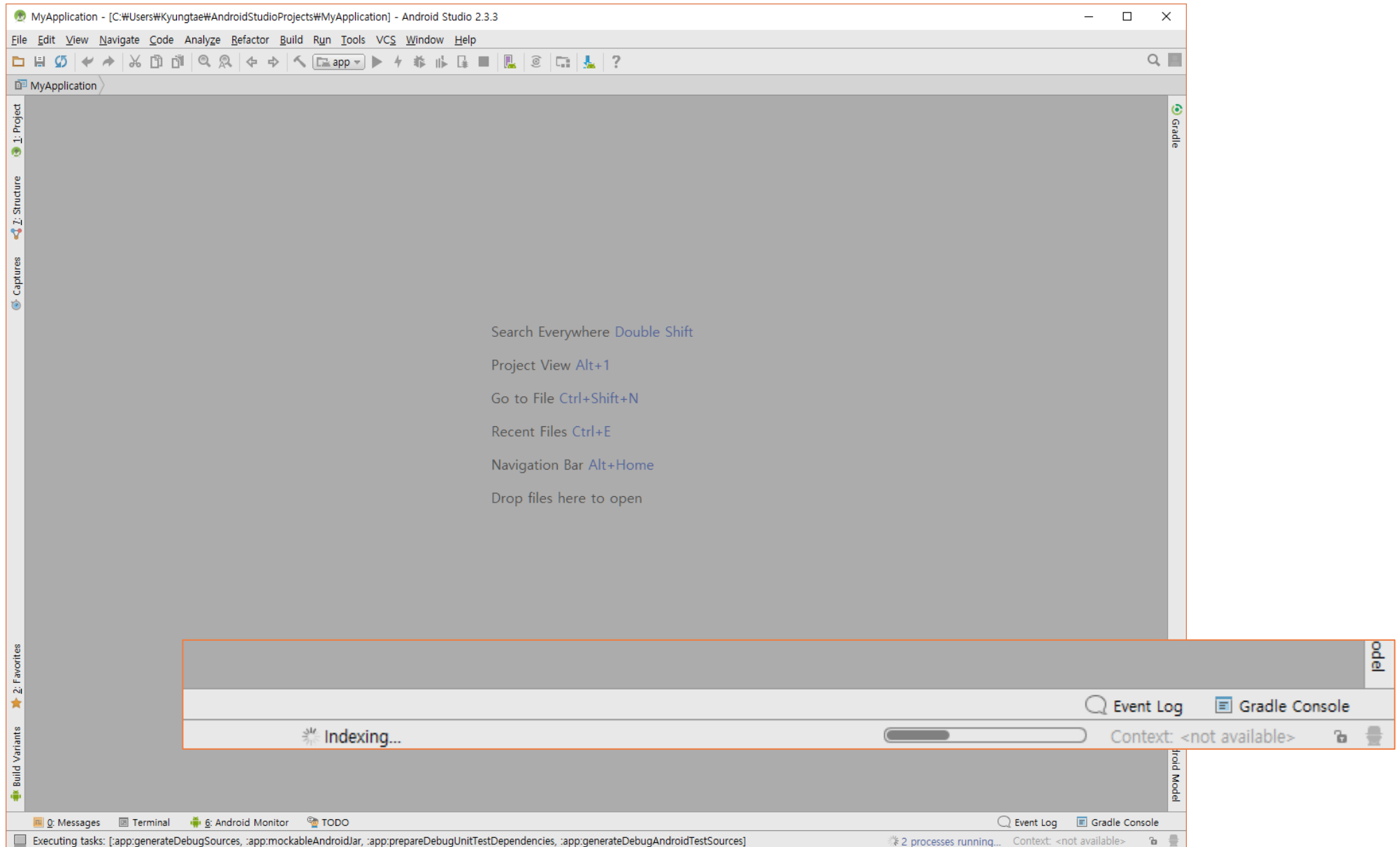
Previous

Next

Cancel

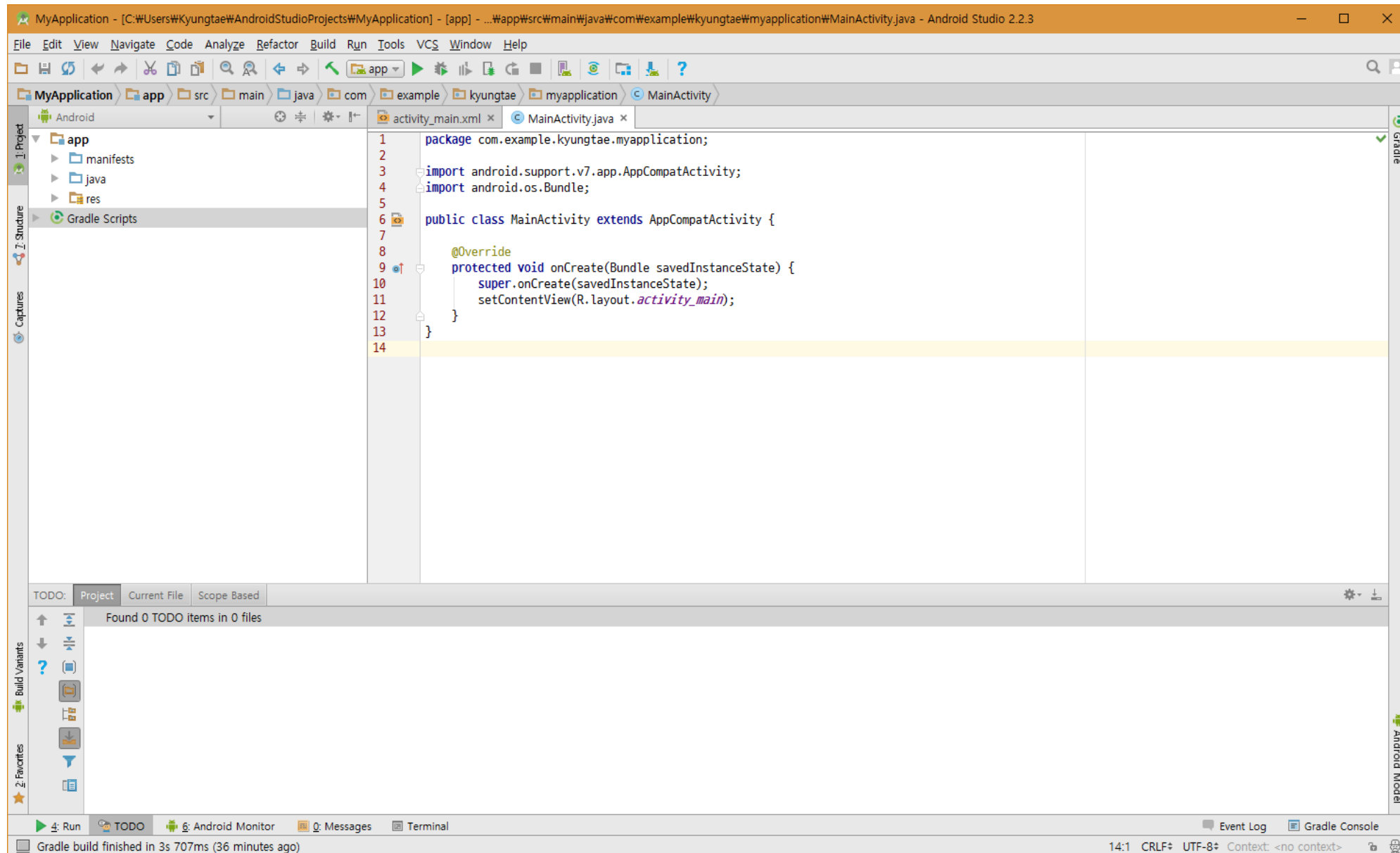
Finish





Completion – Android Studio 개발환경

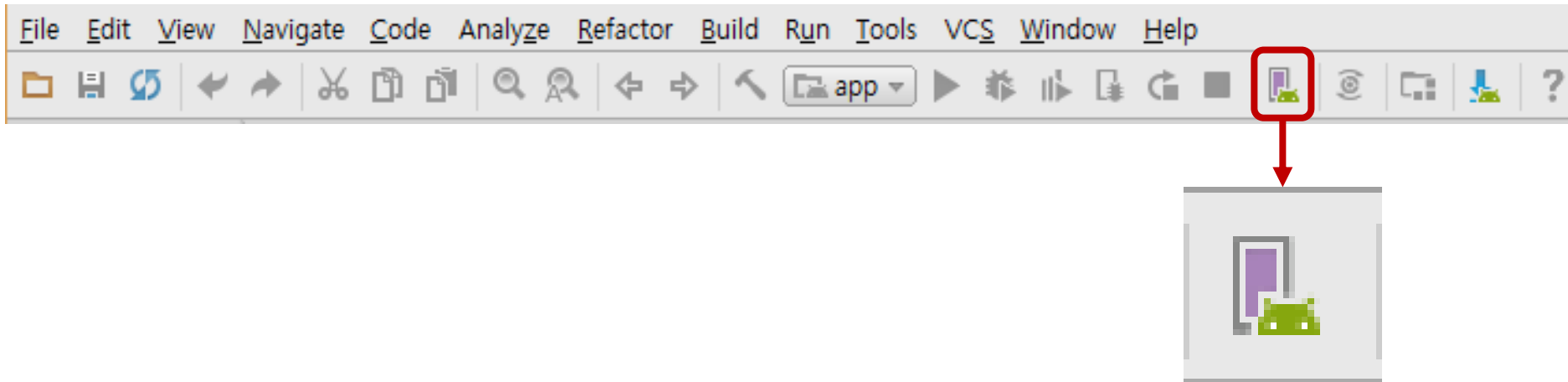
39



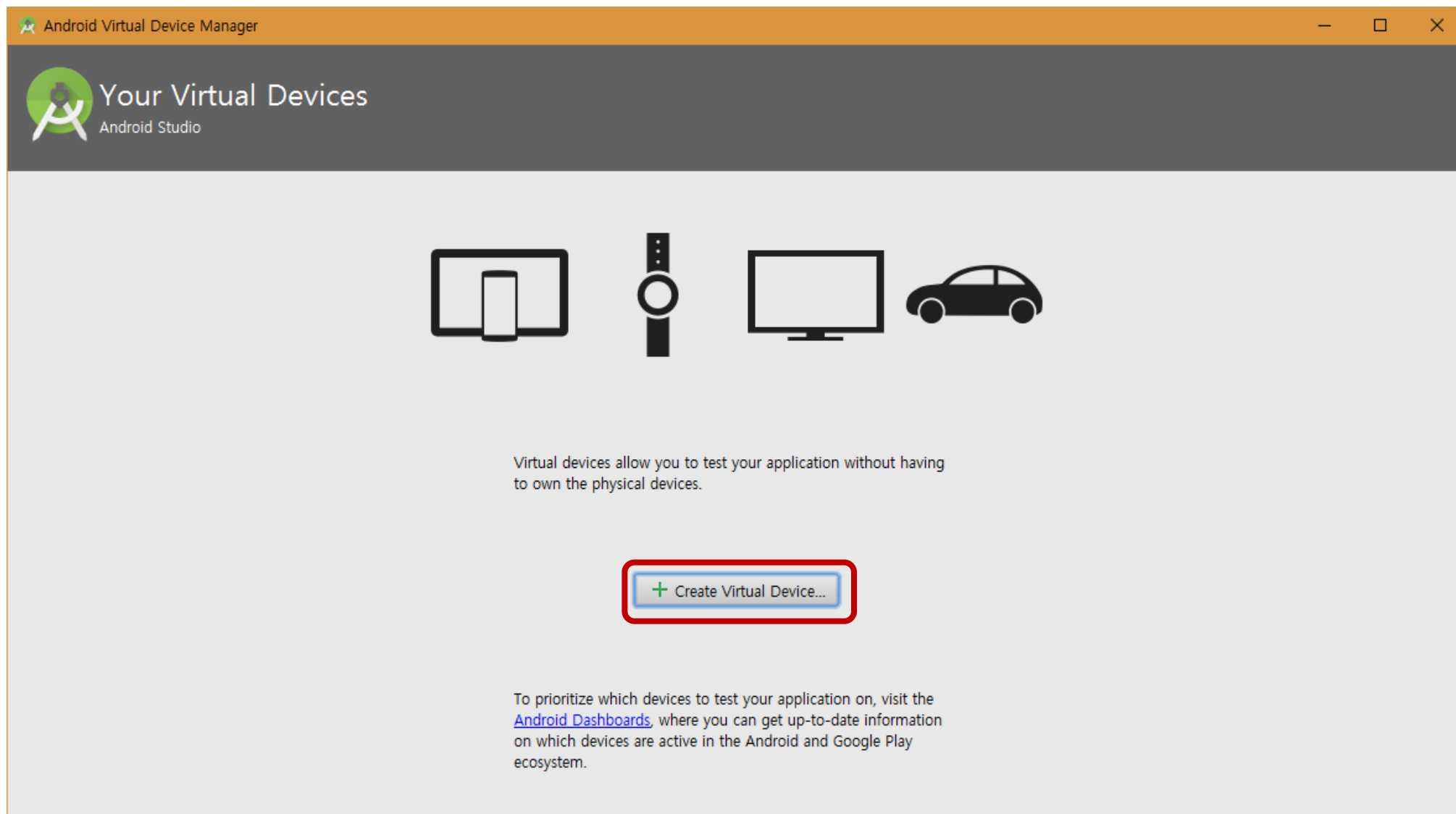
Continued...AVD

40

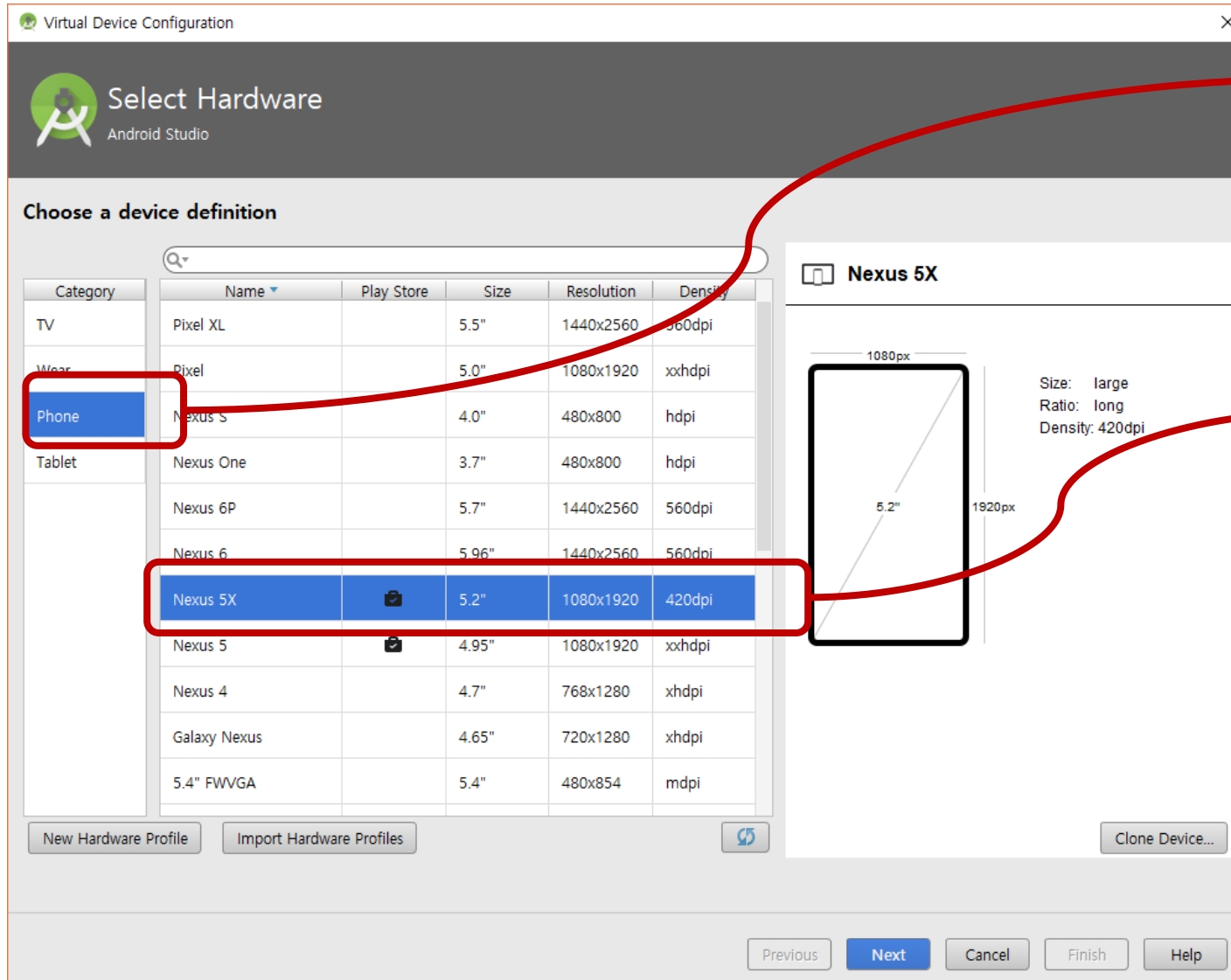
- Android Studio 실행 후 AVD Manager 실행



- AVD 추가하기



• 장비 추가하기

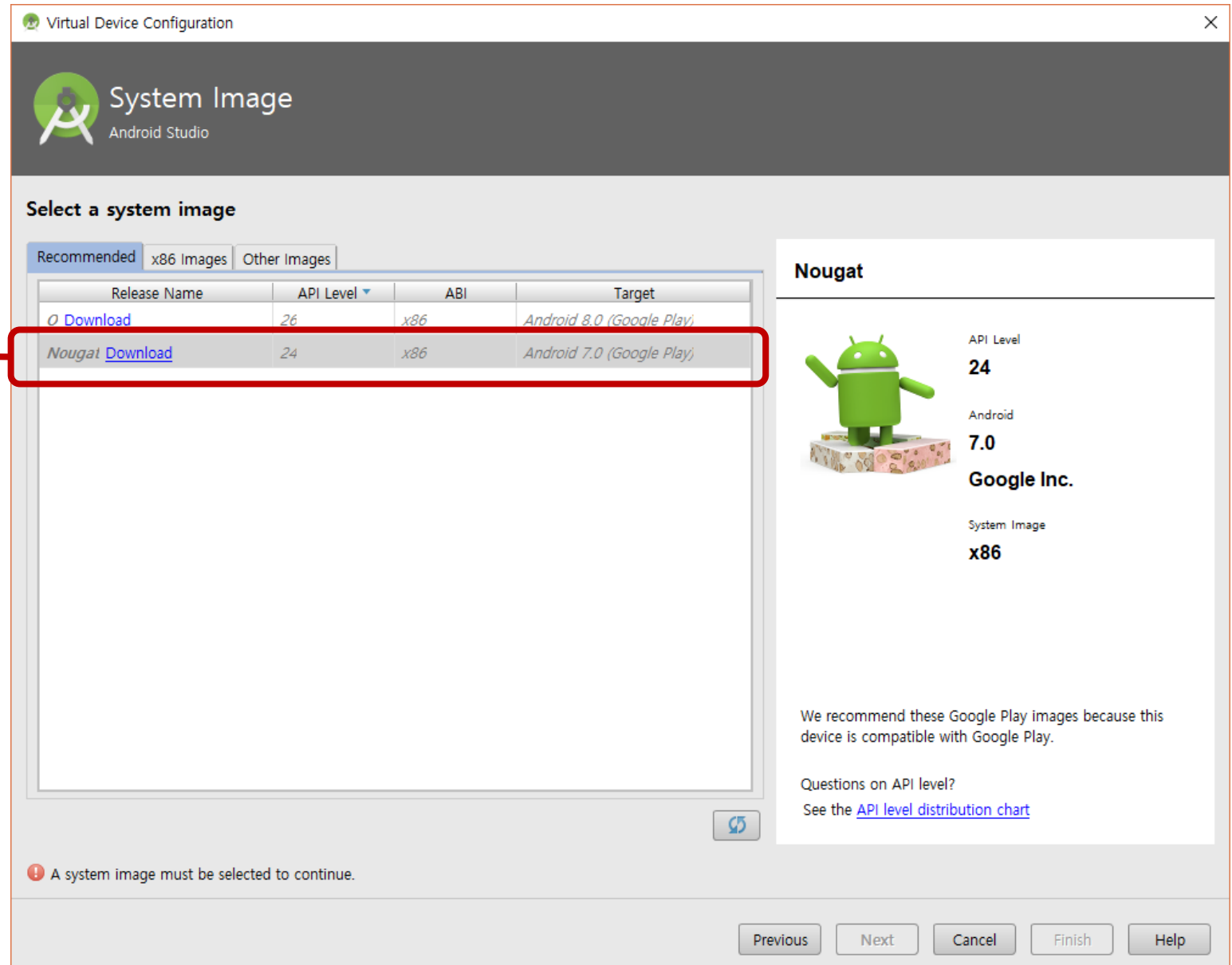


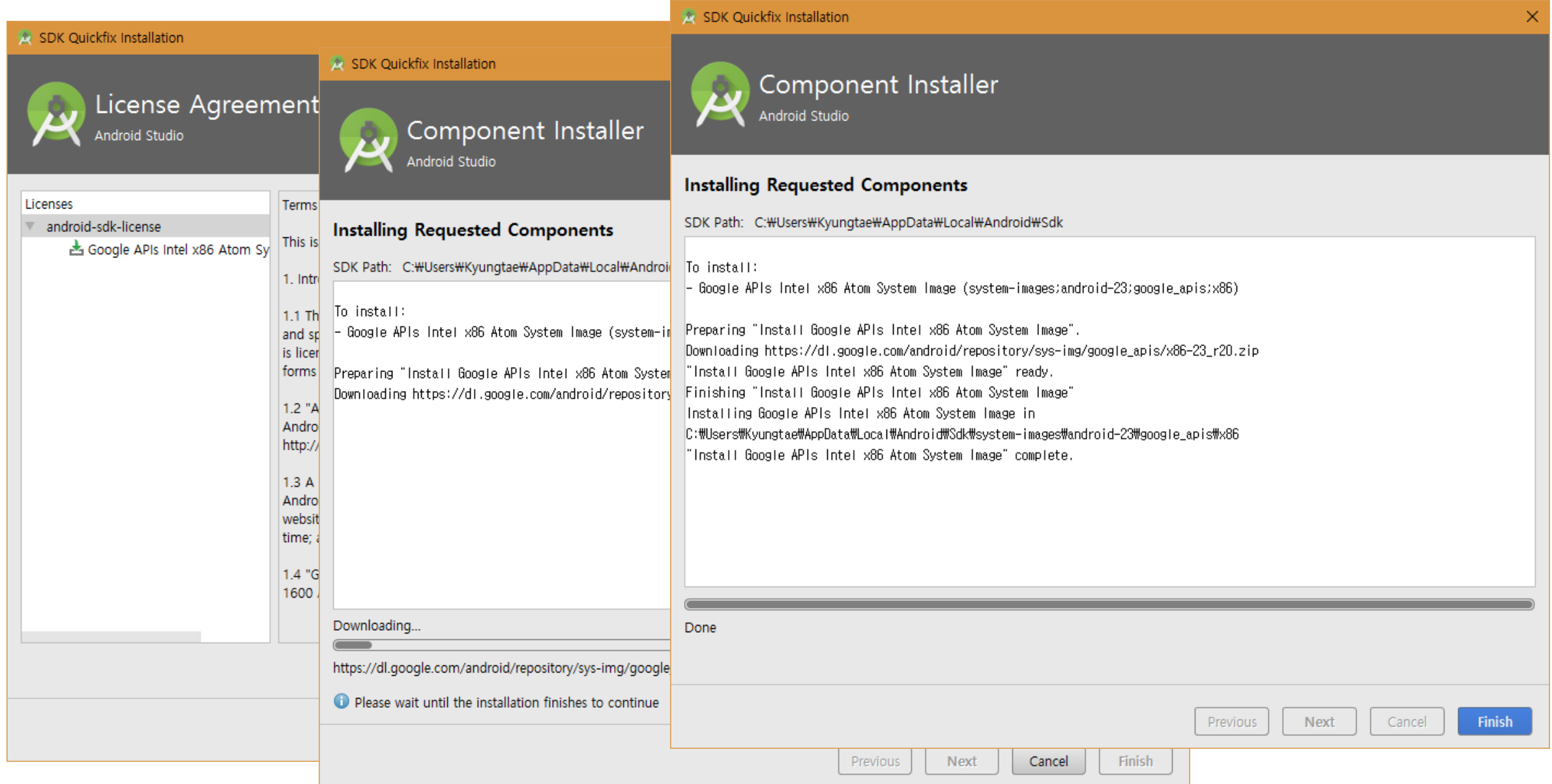
Category – Phone

Device – Nexus 5X

- System 선택

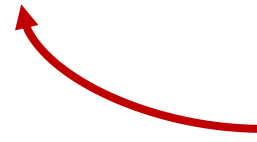
개발 시스템이 설치가 되어 있지
않다면 '[Download](#)' 눌러 설치






- 시스템 선택

선택



Virtual Device Configuration


 System Image
Android Studio

Select a system image

Recommendedx86 ImagesOther Images

Release Name	API Level	ABI	Target
Download	26	x86	Android 8.0 (Google Play)
Nougat	24	x86	Android 7.0 (Google Play)

Nougat



API Level
24

Android
7.0

Google Inc.

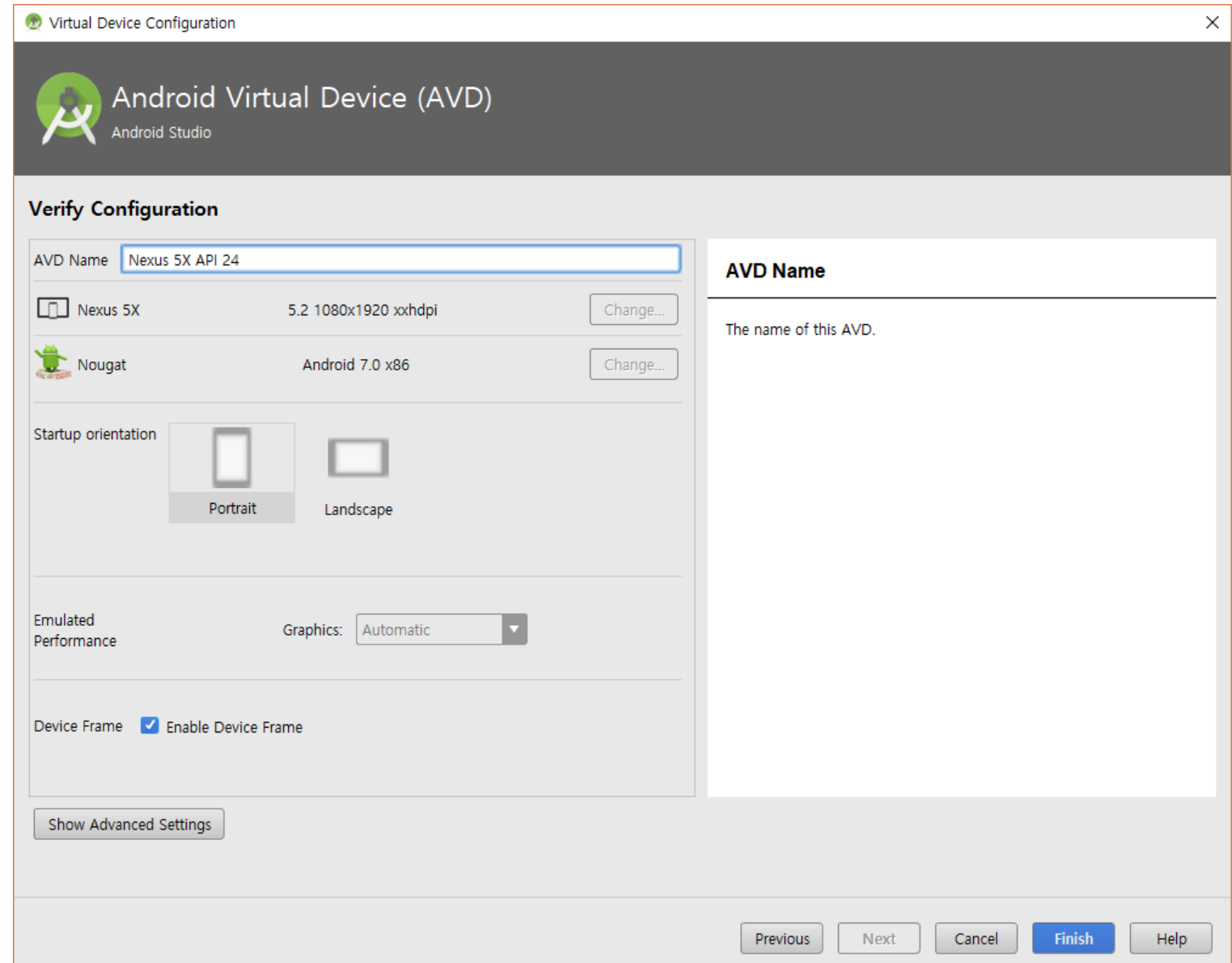
System Image
x86

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

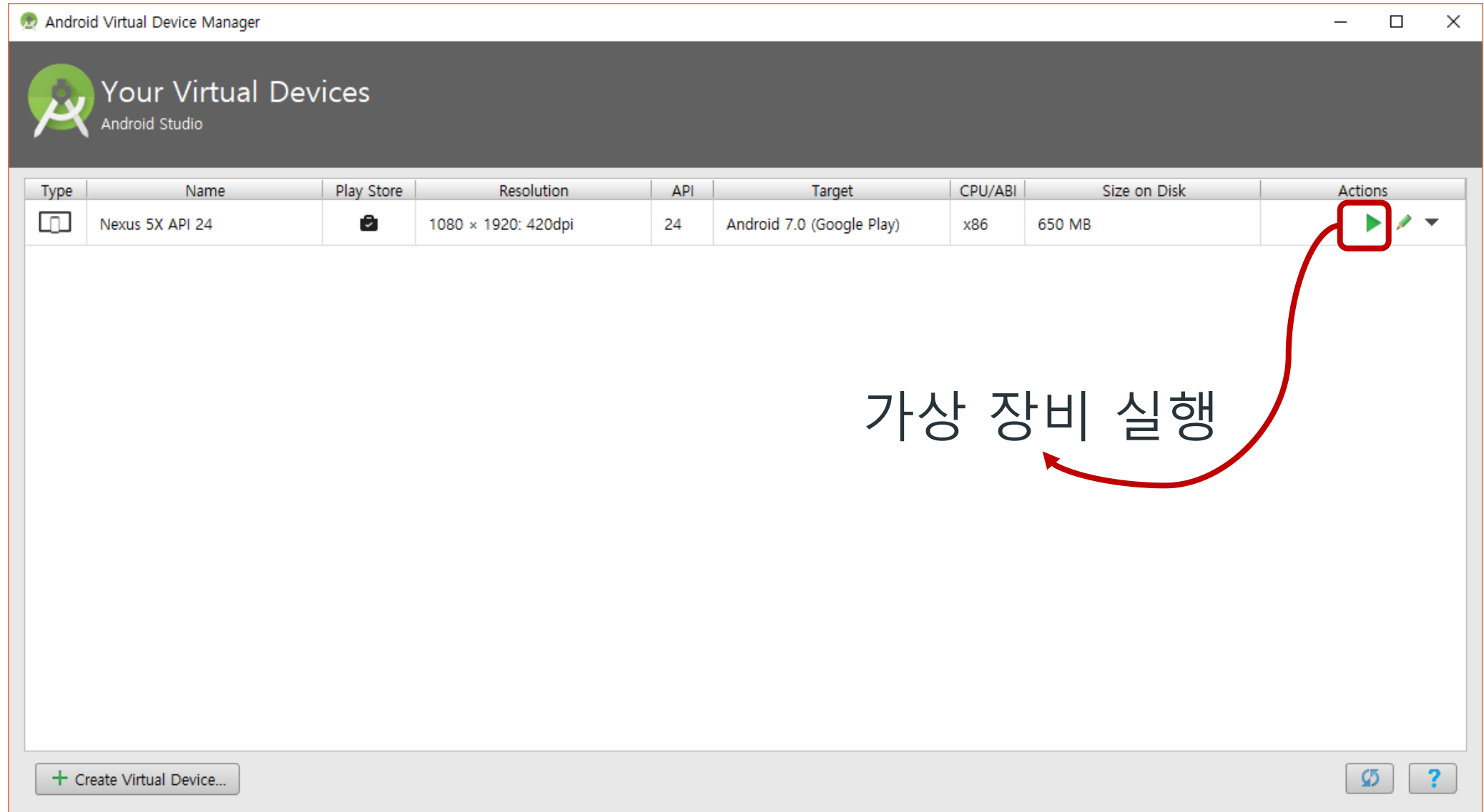
Questions on API level?
See the [API level distribution chart](#)

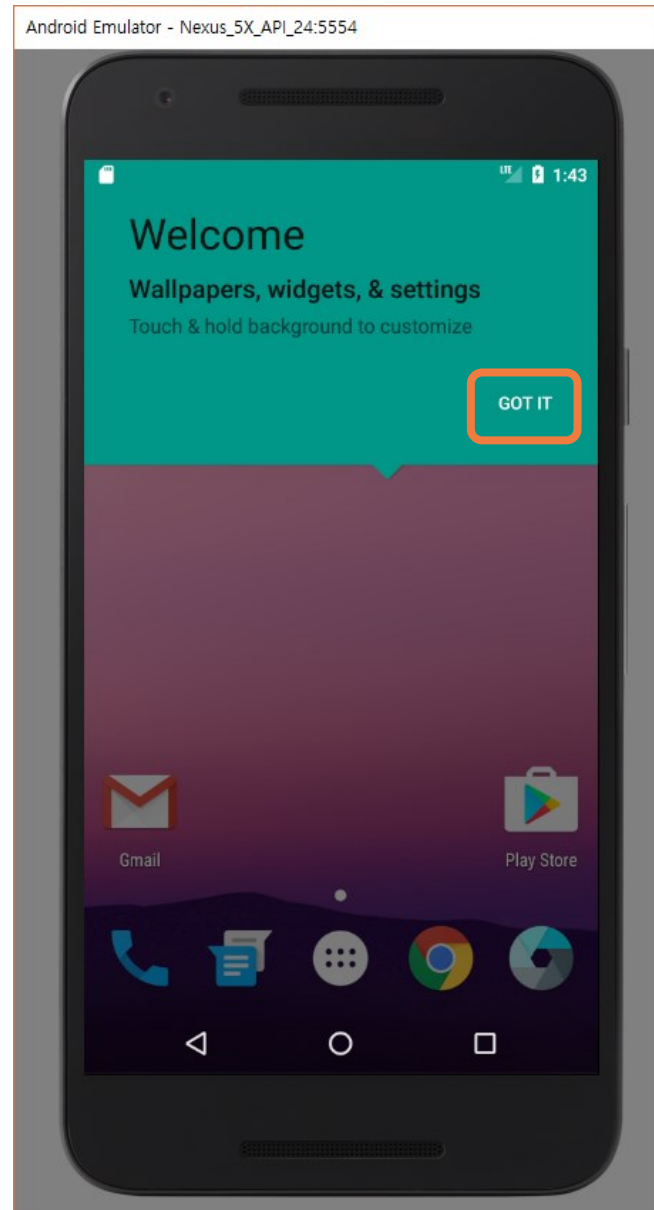
PreviousNextCancelFinishHelp

- AVD 검증

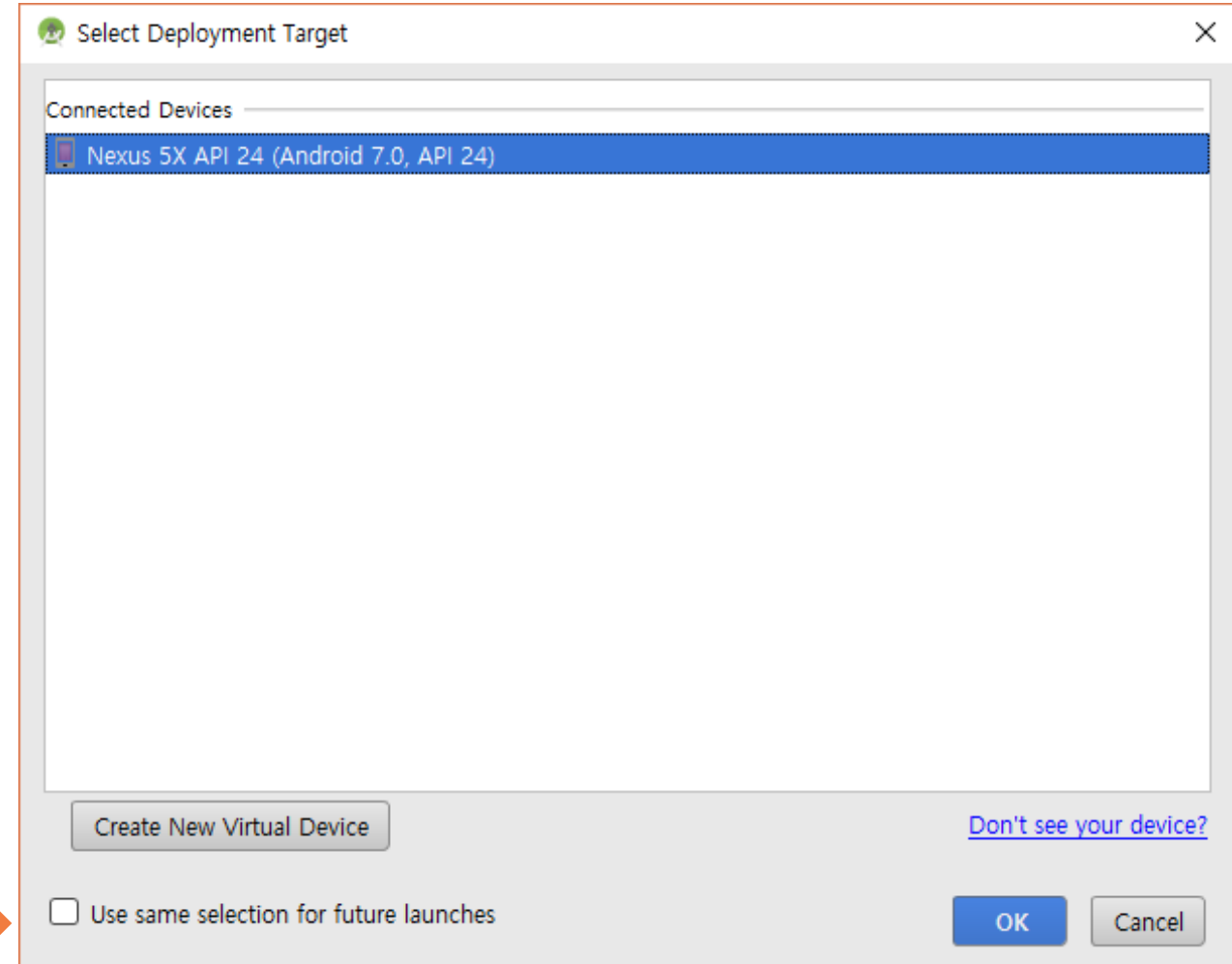
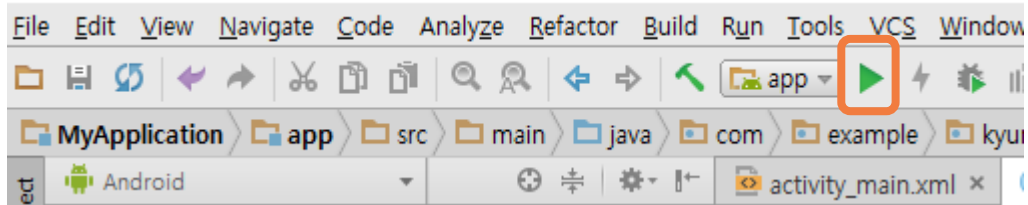


- 완료된 가상 장비 (에뮬레이터)





- Nexus 5X의 가상 머신 실행

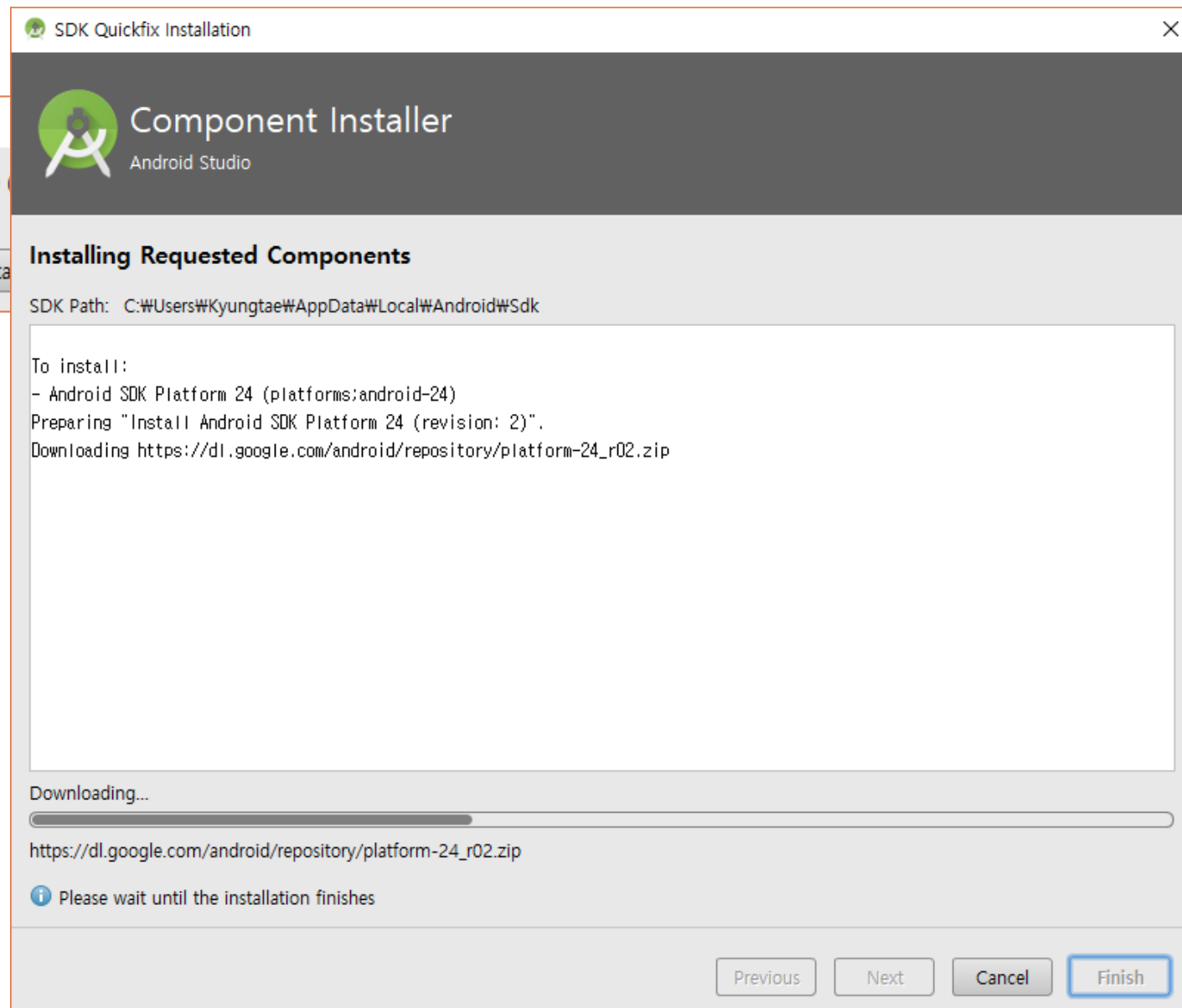
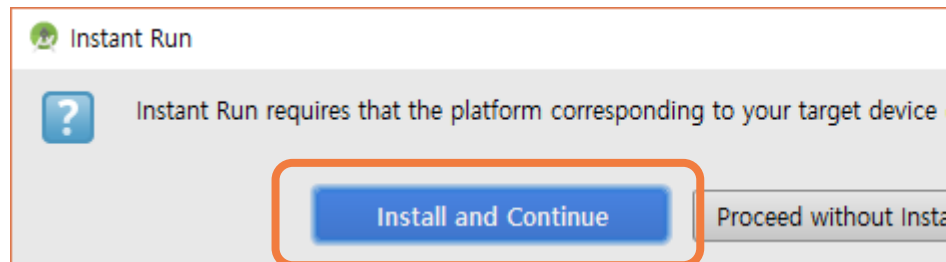


Target Device 선택 →

Continued

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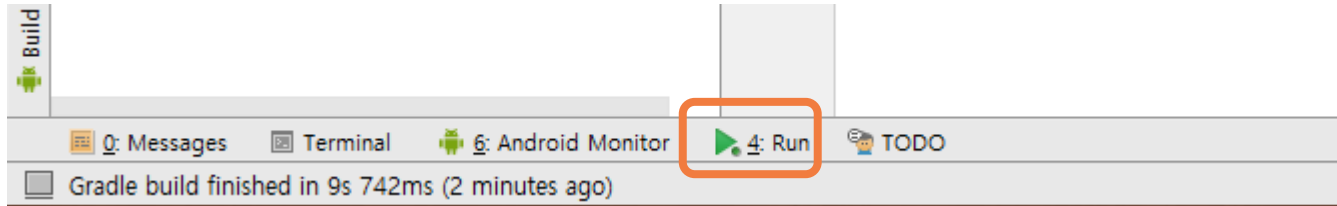
- Instant Run



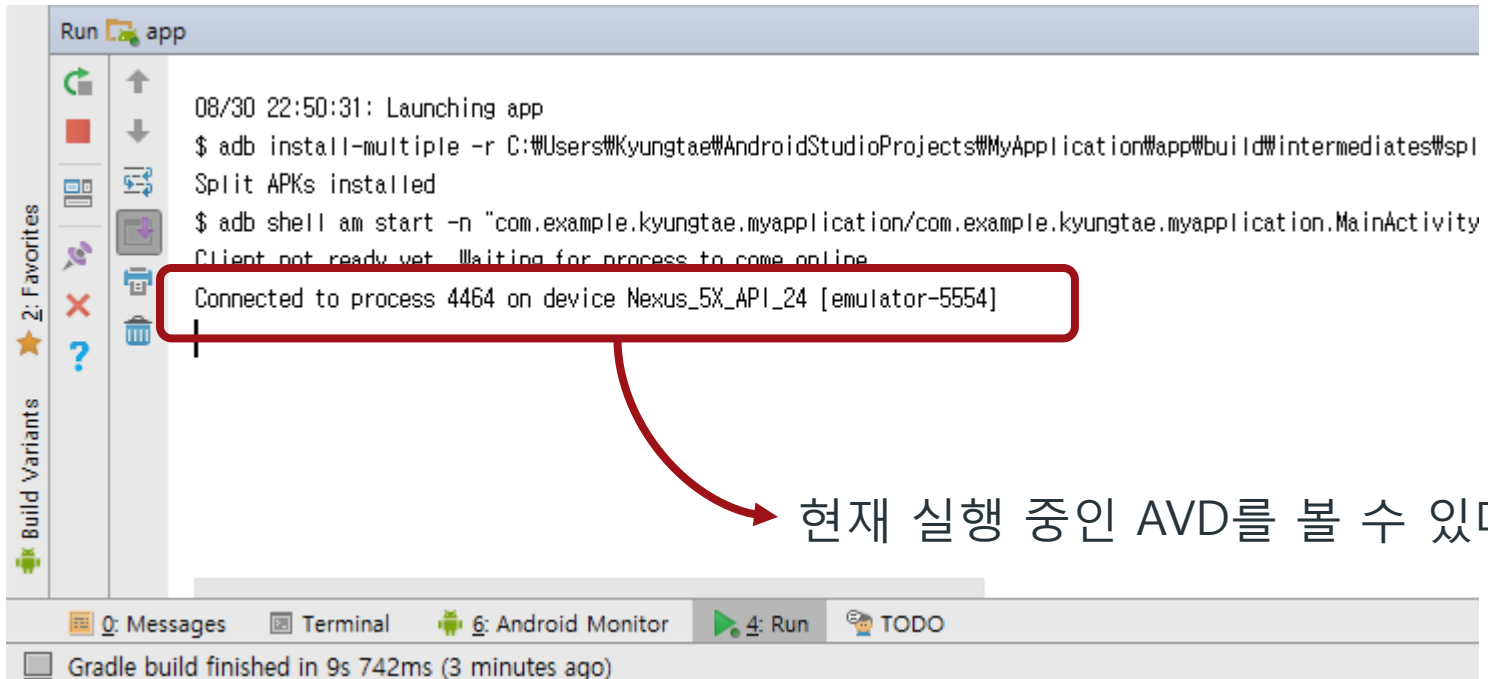
Target Device 선택➡



- Nexus 5X의 가상 머신의 실행 상태 보기



AVD 실행 과정을 log로 부여 준다.



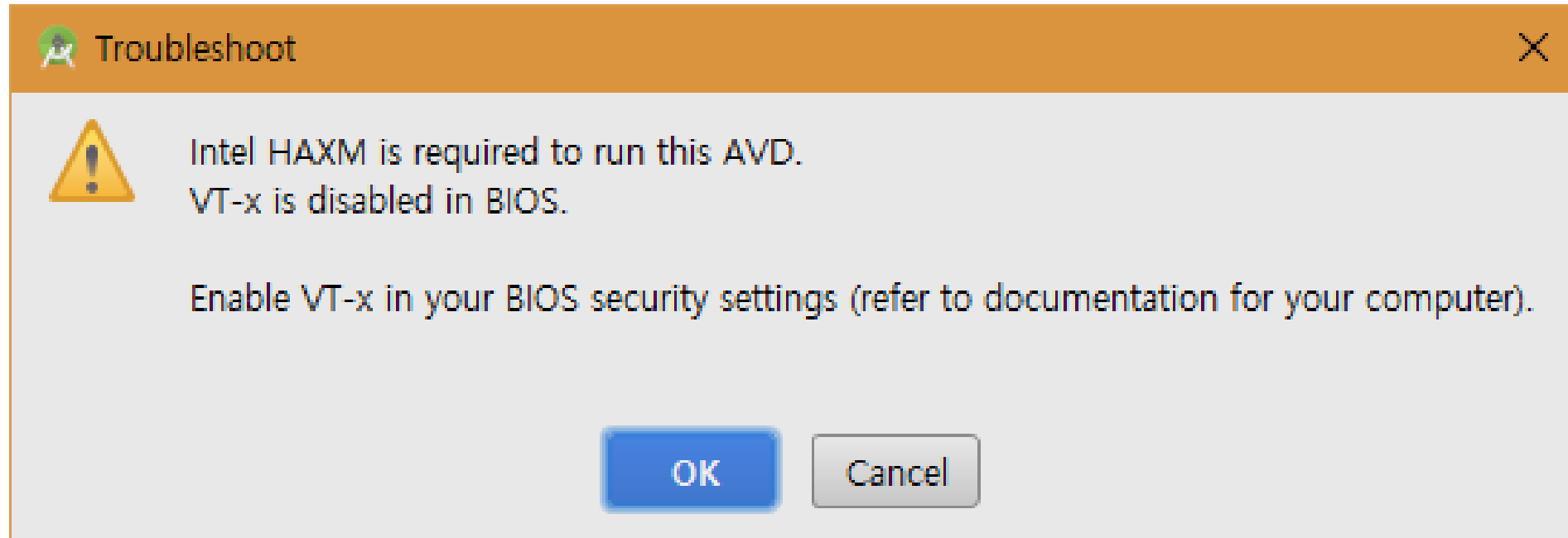
- AVD는 어플리케이션 개발 시에 지정한 **최소 SDK 버전 이상**만 되면 실행 가능하다.



Intel HAXM...AVD를 실행하기 위해 필요

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- BIOS에서 VT-x 옵션 설정 필요





Step 3. 앱 실행 환경 구축

Step 3. 앱 실행 환경 구축

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

모바일 TV/AV 가전 IT 스토어

SAMSUNG

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

① 자세한 내용은 통합 USB 드라이버 가이드를 클릭하여 확인 하실 수 있습니다.

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

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

○ 소프트웨어 다운로드



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.

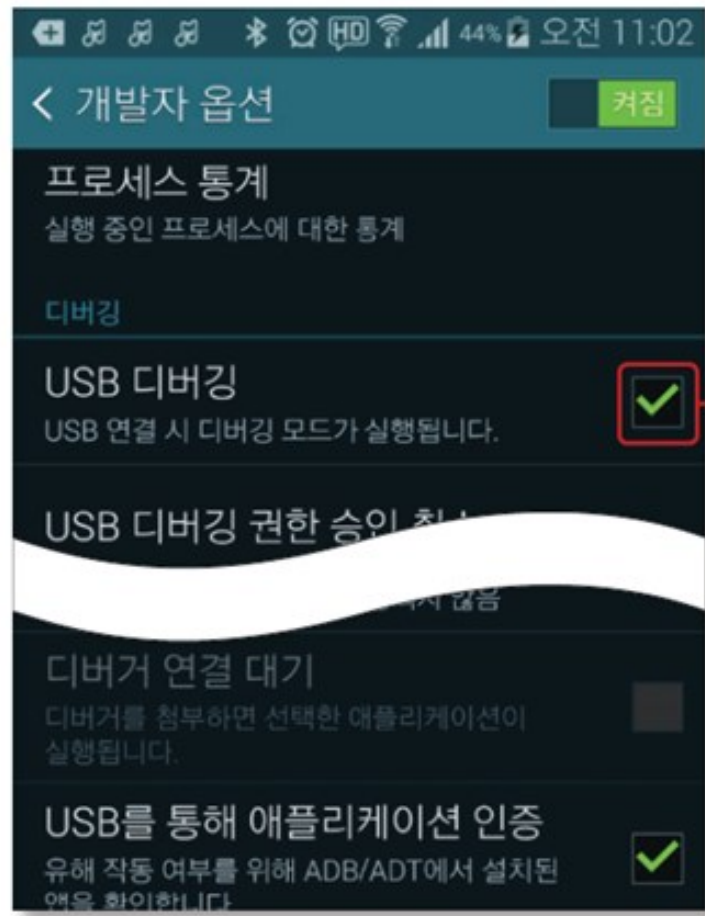
다운로드

상세보기

Continued...스마트폰의 환경 설정

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- 설정 > 개발자 옵션에서 'USB 디버깅'을 실행 가능하도록 체크



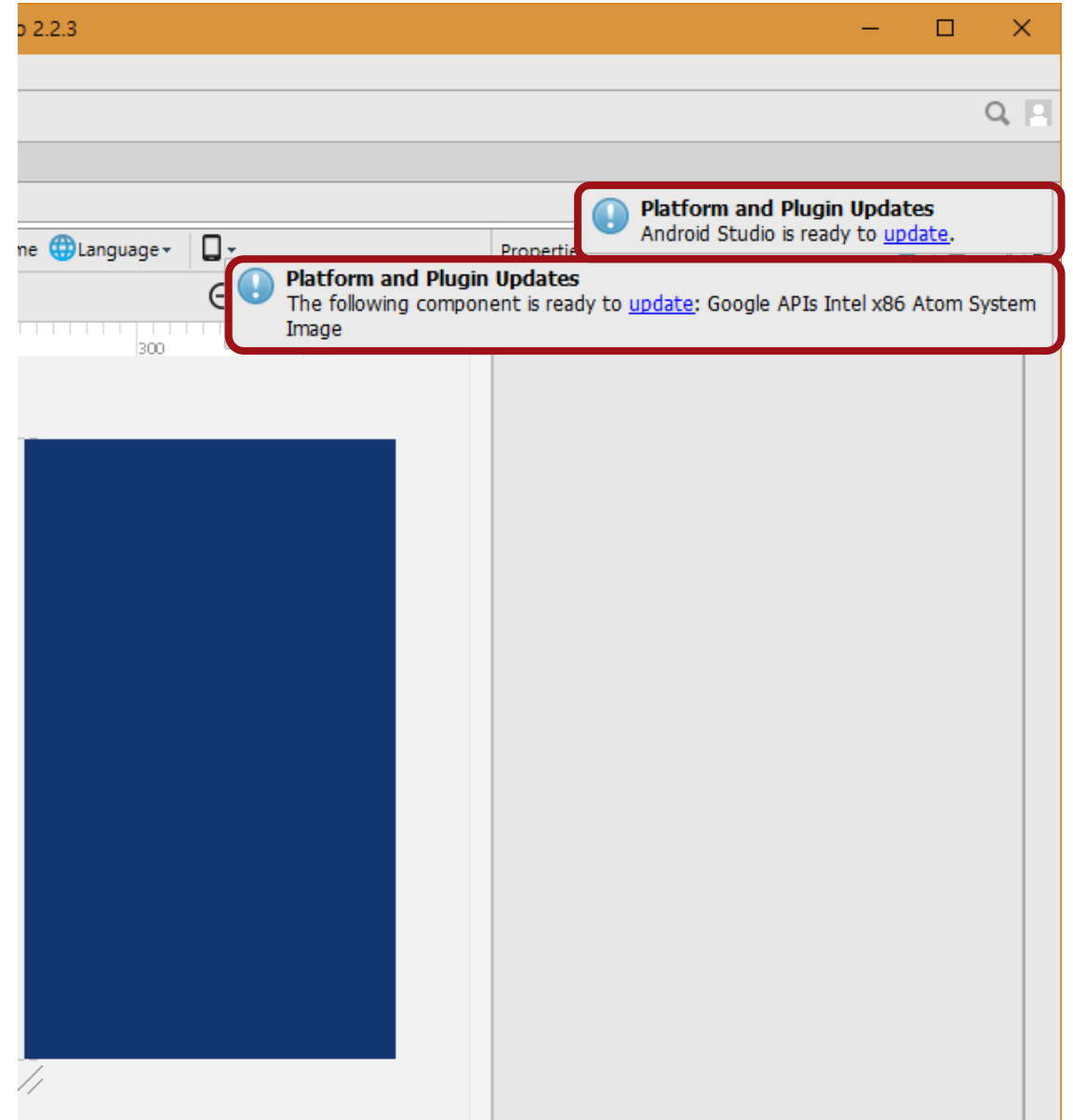


기타...

Android Studio updates...

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- Update 수행하지 말 것
(무시하세요)



Android Developers Homepage

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- <https://developer.android.com/>

