앱 개발 입문

성균관대학교 컬처앤테크놀로지융합전공 하계 부트캠프

1일차 - 2022. 06. 19 (월)

강의 슬라이드 링크

https://github.com/kunny/skku-bootcamp-2023-summer/blob/main/_slides/day1.pdf

부트캠프에서 배울 내용 소개

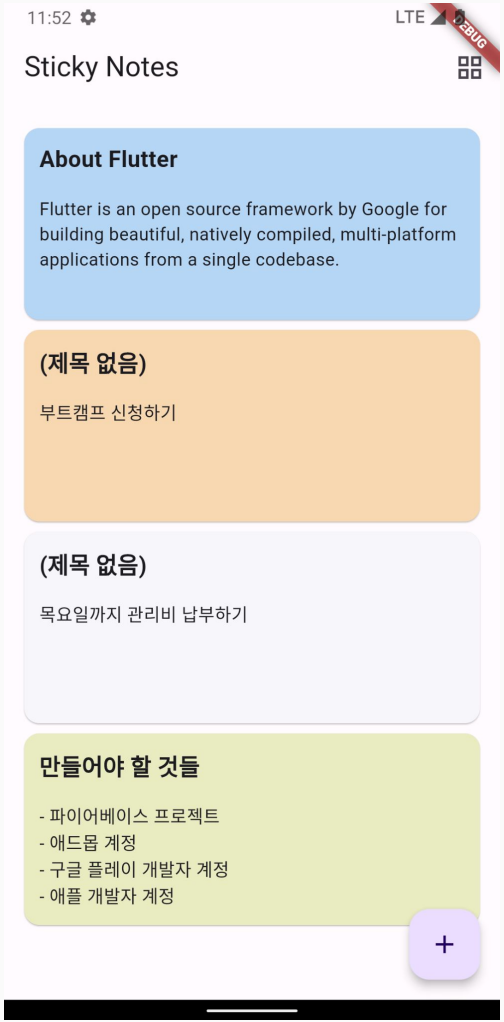
Flutter

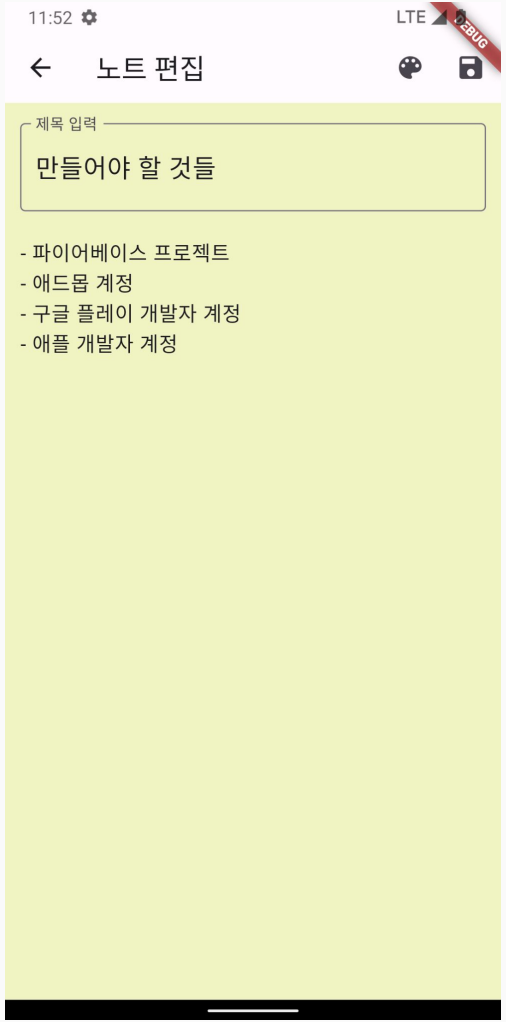
Dart

Firebase

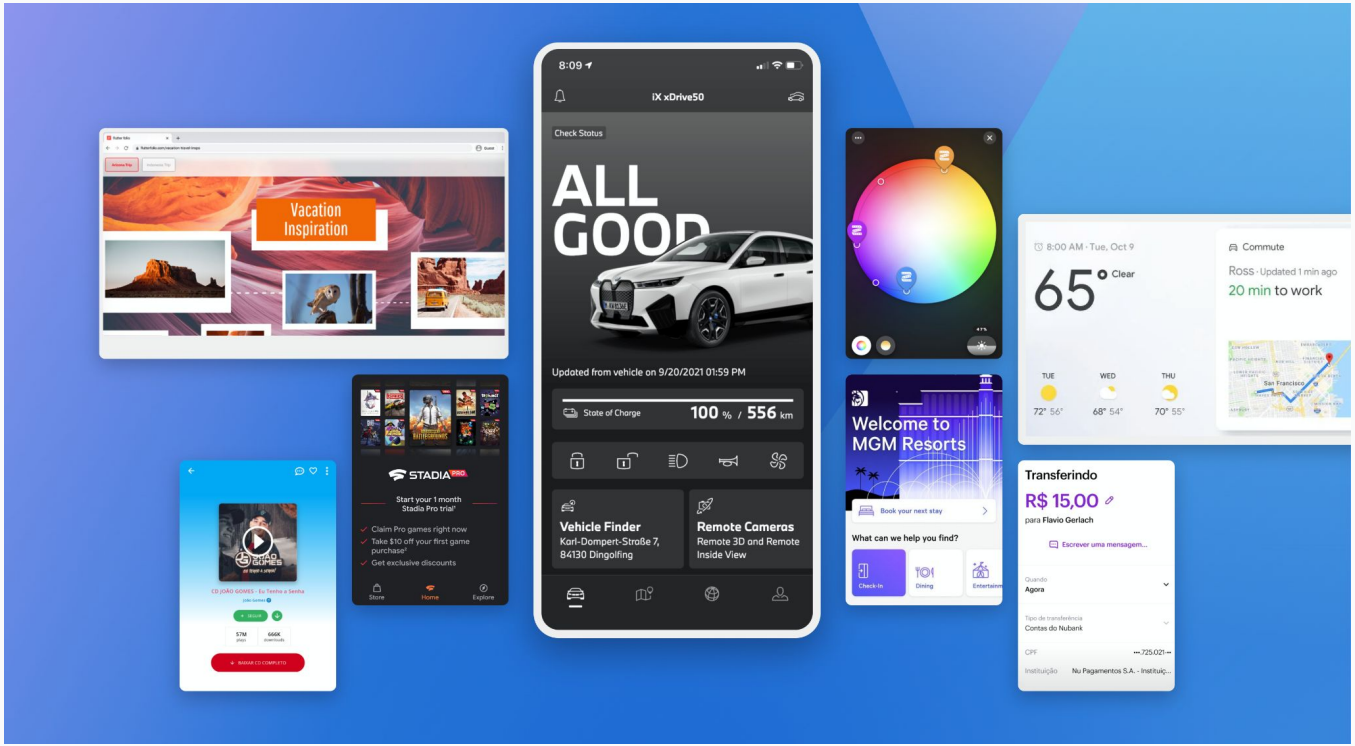
MATERIAL DESIGN

11:52
LTE
DEBUG
Sticky Notes
About Flutter
Flutter is an open source framework by Google for building beautiful, natively compiled, multi-
(제목 없음)
부트캠프 신청하기
(제목 없음)
목요일까지 관리비 납부하기
만들어야 할 것들
- 파이어베이스 프로젝트
- 애드몹 계정
- 구글 플레이 개발자 계정
- 애플 개발자 계정
+


11:52
LTE
DEBUG
Sticky Notes
About Flutter
Flutter is an open source framework by Google for building beautiful, natively compiled, multi-platform applications from a single codebase.
(제목 없음)
부트캠프 신청하기
(제목 없음)
목요일까지 관리비 납부하기
만들어야 할 것들
- 파이어베이스 프로젝트
- 애드몹 계정
- 구글 플레이 개발자 계정
- 애플 개발자 계정
+


11:52
LTE
DEBUG
노트 편집
제목 입력
만들어야 할 것들
- 파이어베이스 프로젝트
- 애드몹 계정
- 구글 플레이 개발자 계정
- 애플 개발자 계정

Flutter 소개



Flutter is an open source framework by Google for building beautiful, natively compiled, multi-platform applications from a single codebase.

Open source

Search or jump to... / Pull requests Issues Marketplace Explore

flutter / flutter Public

Watch 3.6k Fork 22.8k Starred 143k

Code Issues 5k+ Pull requests 218 Actions Projects 169 Wiki Security Insights

master 328 branches 504 tags Go to file Add file Code

engine-flutter-autoroll Roll Flutter Engine from 8b48451ce023 to 0c84... ... ✓ ed2f5d3 6 hours ago 30,045 commits

.github	[.github] Update cherry-pick template to require PR links (#107856)	5 days ago
bin	Roll Flutter Engine from 8b48451ce023 to 0c84d63523d4 (1 revisio...	6 hours ago
dev	[web] define $flutterDriverResult variable early in driver test inita...	yesterday
examples	Remove outdated Fuchsia concepts (#107335)	yesterday
packages	Add optional flag to determine assertiveness level in aria announcem...	yesterday
.ci.yaml	Remove luci scheduling from openpay benchmarks (#108126)	2 days ago
.cirrus.yml	Update cirrus secret. (#103957)	2 months ago
.gitattributes	Add pre-stable support for create on Windows (#51895)	2 years ago
.gitignore	[macOS] Adds macOS project files to layers example (#102539)	2 months ago
AUTHORS	[flutter_driver] support send text input action (#106561)	9 days ago
CODEOWNERS	[CODEOWNERS] Remove caseyhillers from ci.yaml (#100642)	4 months ago
CODE_OF_CONDUCT.md	Update CODE_OF_CONDUCT.md (#94583)	8 months ago
CONTRIBUTING.md	Sync CONTRIBUTING.md with .github copy (#106677)	26 days ago
LICENSE	License update (#45373)	3 years ago
PATENT_GRANT	Rename patent file (#38686)	3 years ago
README.md	Correct links and grammar in `README.md` (#108113)	2 days ago
TESTOWNERS	[openpay] Create an OpenPay benchmark (#107838)	2 days ago
analysis_options.yaml	enable combinators_ordering (#107847)	5 days ago

About

Flutter makes it easy and fast to build beautiful apps for mobile and beyond

flutter.dev

android windows macos dart ios mobile web material-design desktop web-framework app-framework skia linux-desktop fuchsia dart-platform

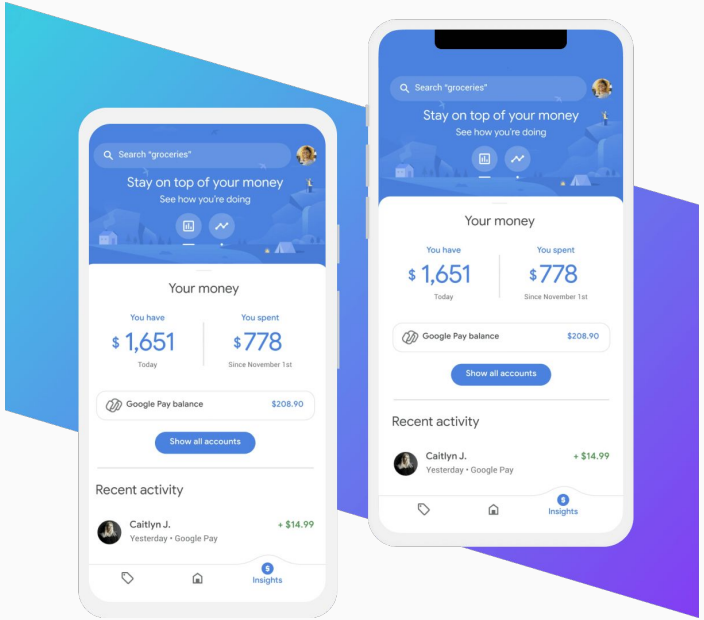
Readme
BSD-3-Clause license
Code of conduct
143k stars
3.6k watching
22.8k forks

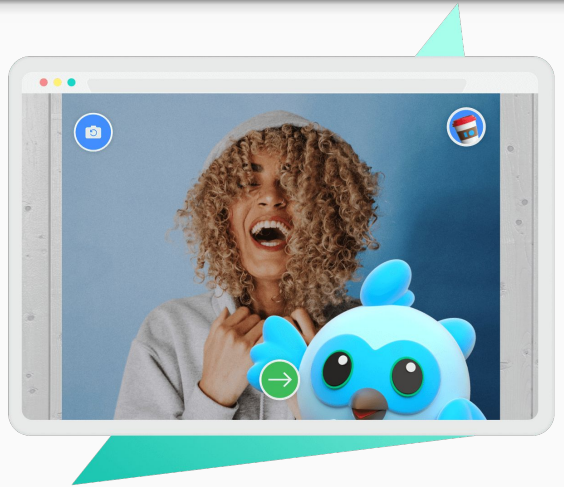
Used by 8

Contributors 1,049

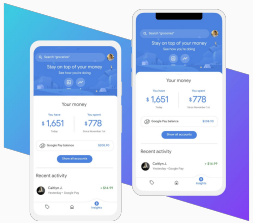
https://github.com/flutter/flutter

Multi-platform, single codebase



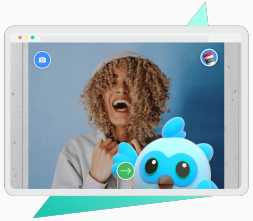


Multi-platform, single codebase



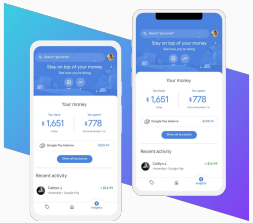
- Android (Java / Kotlin)
- iOS (Objective-C / Swift)

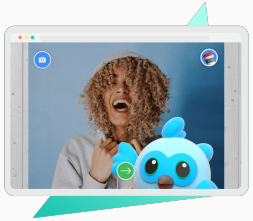
- Windows
- macOS
- Linux



- Angular
- React
- Vue.js

Multi-platform, single codebase





Flutter

Dart

Multi-platform frameworks: Why Flutter?

- 비 게임 기준으로 Flutter는 **46% 가량**의 시장 점유율을 보이고 있으며, 이는 React Native (29%)를 뛰어넘는 수준입니다.[1]

- 구글에서 제공하는 다양한 서비스 (Firebase, Google Play, AdMob)를 손쉽게 사용할 수 있으며, Material Design을 지원하므로 최소한의 노력으로 미려한 디자인의 앱을 만들 수 있습니다.

- 타 플랫폼 대비 활발히 개발되고 있으며, 공식 버전 출시 이후 세번의 판올림(3.x)을 진행했습니다. (참고: React Native의 최신 버전은 아직 0.71입니다)

```python
print('Hello, World!')
```

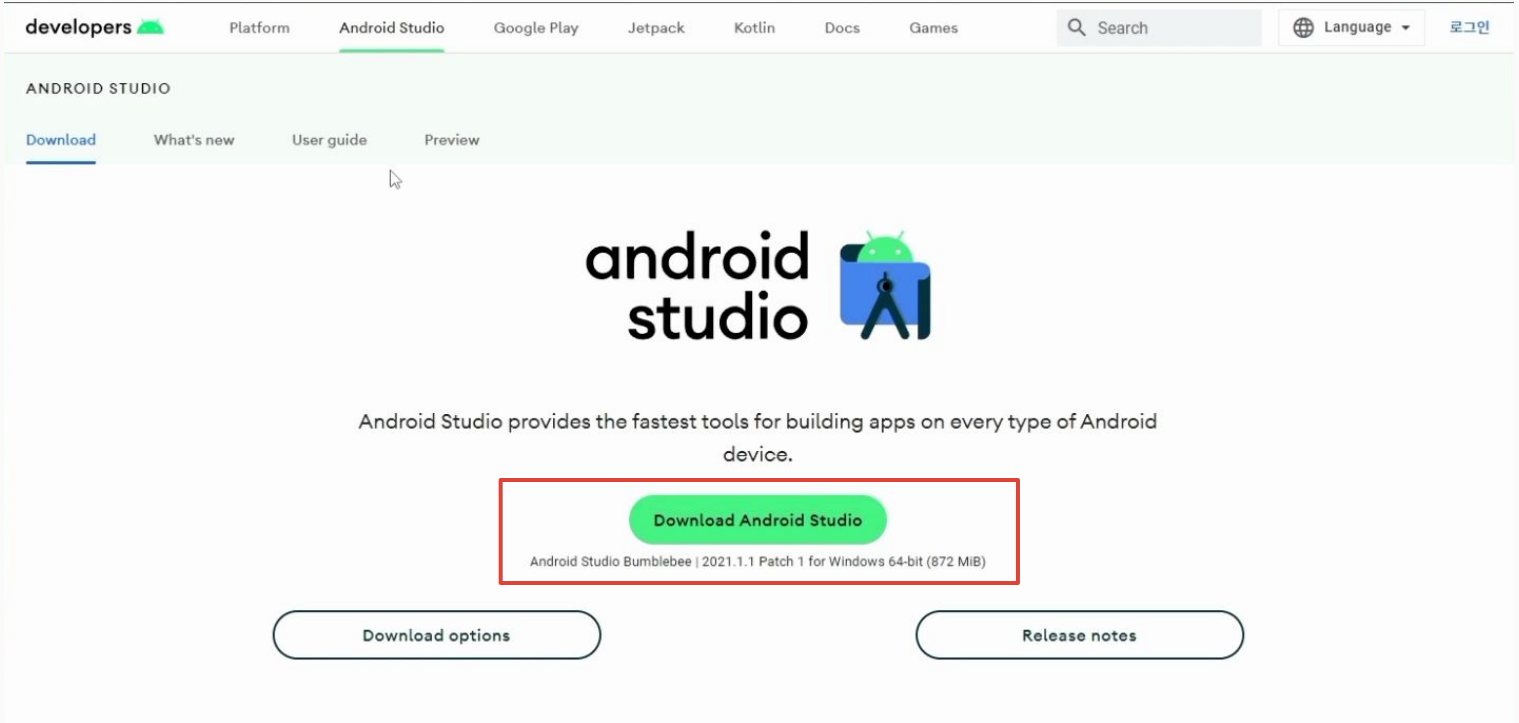
```dart
void main() {
  print('Hello, World!');
}
```

개발 환경 설정 절차

1. 앱 코드를 편집할 때 사용하는 **안드로이드 스튜디오** 설치 및 초기 설정
2. 안드로이드 스튜디오에 Flutter 앱 개발 기능(**Flutter 플러그인**) 추가하기
3. **안드로이드 SDK 커맨드라인 도구** 설치 (안드로이드 앱 개발시 필요)
4. Flutter 앱 개발에 필요한 도구가 포함된 **Flutter SDK** 설치
5. Flutter SDK 동작에 필요한 도구인 **Git** 설치 (Windows만)
6. Flutter SDK **구성 완료**하기
7. **안드로이드 에뮬레이터** 설정하기

안드로이드 스튜디오 설치

안드로이드 스튜디오 설치 (Windows)



d.android.com/studio

안드로이드 스튜디오 설치 (Windows)

fees) arising out of or accruing from (a) your use of the SDK, (b) any application you develop on the SDK that infringes any copyright, trademark, trade secret, trade dress, patent or other intellectual property right of any person or defames any person or violates their rights of publicity or privacy, and (c) any non-compliance by you with the License Agreement.

13. Changes to the License Agreement

13.1 Google may make changes to the License Agreement as it distributes new versions of the SDK. When these changes are made, Google will make a new version of the License Agreement available on the website where the SDK is made available.

14. General Legal Terms

14.1 The License Agreement constitutes the whole legal agreement between you and Google and governs your use of the SDK (excluding any services which Google may provide to you under a separate written agreement), and completely replaces any prior agreements between you and Google in relation to the SDK. 14.2 You agree that if Google does not exercise or enforce any legal right or remedy which is contained in the License Agreement (or which Google has the benefit of under any applicable law), this will not be taken to be a formal waiver of Google's rights and that those rights or remedies will still be available to Google. 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. *July 27, 2021*

☑ I have read and agree with the above terms and conditions

Download Android Studio Bumblebee 2021.1.1 Patch 1 for Windows

android-studio-2021.1.1.21-windows.exe

안드로이드 스튜디오 설치 (Windows)

안드로이드 스튜디오 설치 마법사 실행 후, 기본 옵션 그대로 설치합니다.

안드로이드 스튜디오 설치 (macOS)

developers Platform Android Studio Google Play Jetpack 더보기 검색 한국어

ANDROID STUDIO

Download What's new User guide Preview

android studio

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

Download Android Studio

Android Studio Chipmunk | 2021.2.1 Patch 1 for Mac (~1017 MiB)

Download options

Release notes

d.android.com/studio

안드로이드 스튜디오 설치 (macOS)

14.1 The License Agreement constitutes the whole legal agreement between you and Google and governs your use of the SDK (excluding any services which Google may provide to you under a separate written agreement), and completely replaces any prior agreements between you and Google in relation to the SDK. 14.2 You agree that if Google does not exercise or enforce any legal right or remedy which is contained in the License Agreement (or which Google has the benefit of under any applicable law), this will not be taken to be a formal waiver of Google's rights and that those rights or remedies will still be available to Google. 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. *July 27, 2021*

☑ I have read and agree with the above terms and conditions

Select the version of Android Studio that's right for your Mac:

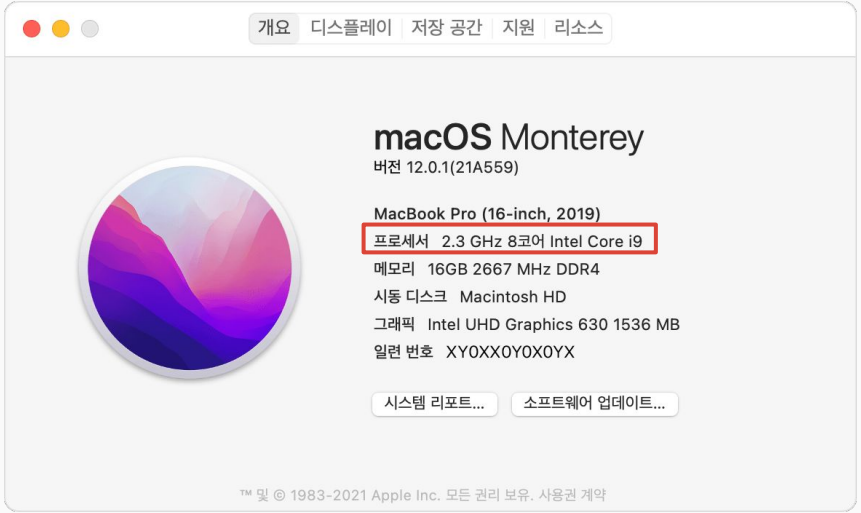
Android Studio Chipmunk 2021.2.1 Patch 1

Mac with Intel chip | Mac with Apple chip

android-studio-2021.2.1.15-mac.dmg *android-studio-2021.2.1.15-mac_arm.dmg*

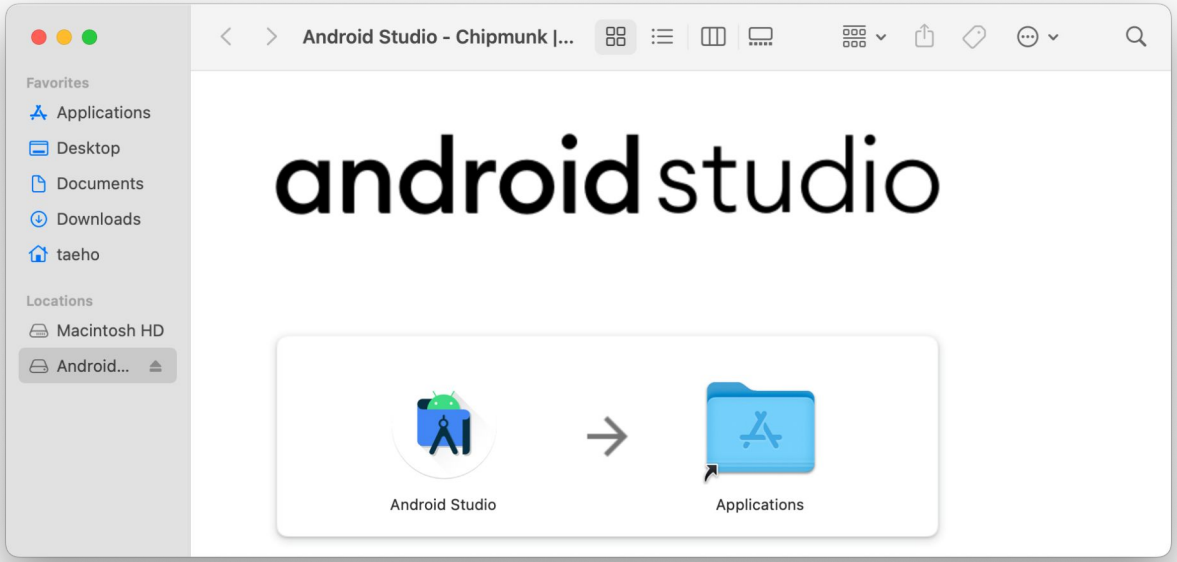
안드로이드 스튜디오 설치 (macOS)

컴퓨터가 사용하는 칩 종류 확인 (Apple 로고 > 이 Mac에 관하여)



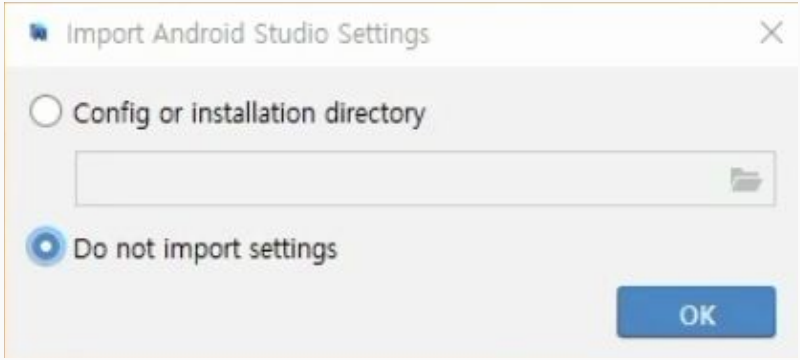
안드로이드 스튜디오 설치 (macOS)

다운로드한 *.dmg 파일을 연 후, 안드로이드 스튜디오를 애플리케이션 폴더에 복사합니다. (Drag & Drop)



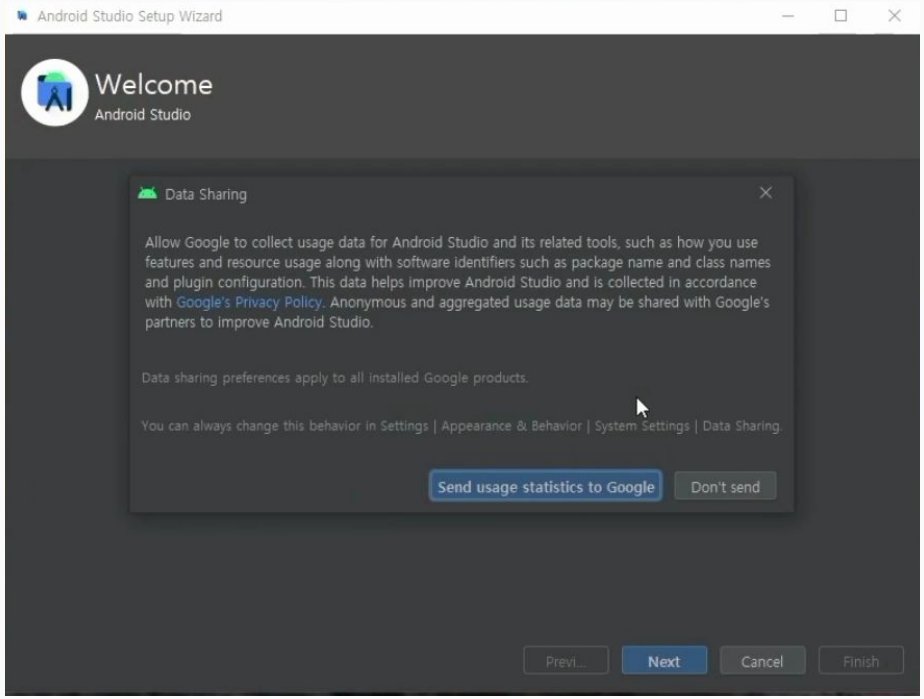
안드로이드 스튜디오 초기 설정

Import Android Studio Settings 다이얼로그에서 **Do not import settings**을 선택합니다.



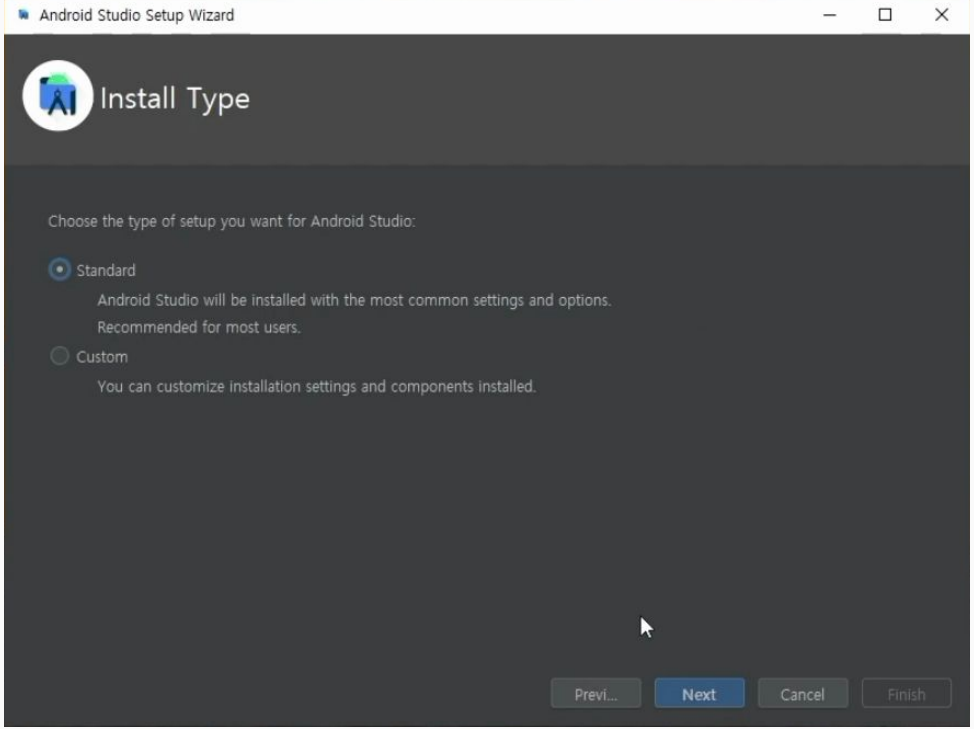
안드로이드 스튜디오 초기 설정

Data Sharing 설정에서 **원하는 옵션**을 선택합니다. (개발 툴 사용 통계 수집 동의 여부)



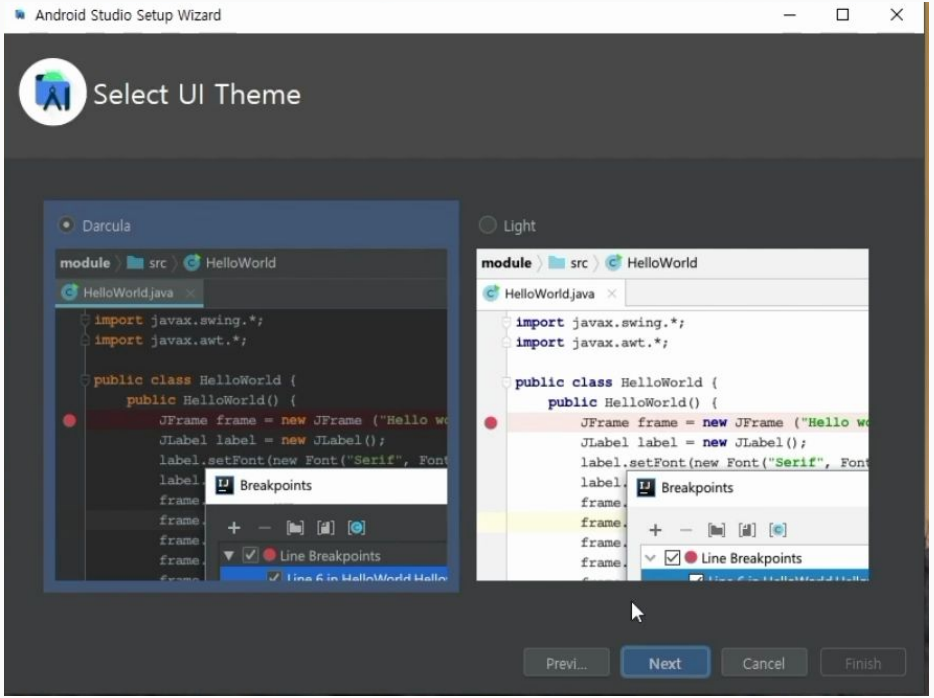
안드로이드 스튜디오 초기 설정

초기 설정에 필요한 추가 구성요소를 설치합니다. Install Type에서 Standard를 선택합니다.



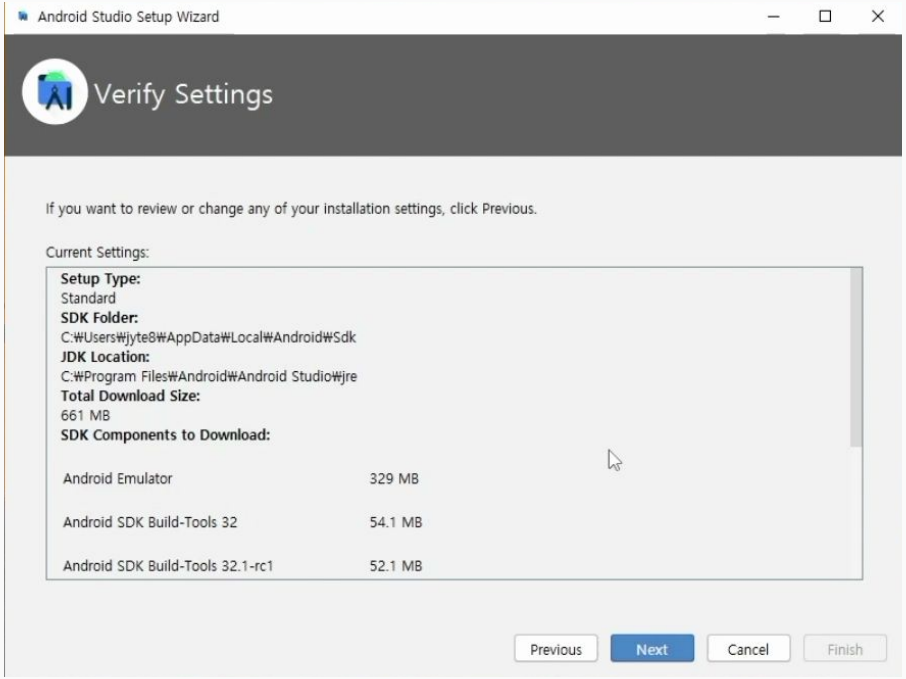
안드로이드 스튜디오 초기 설정

원하는 테마를 선택합니다.



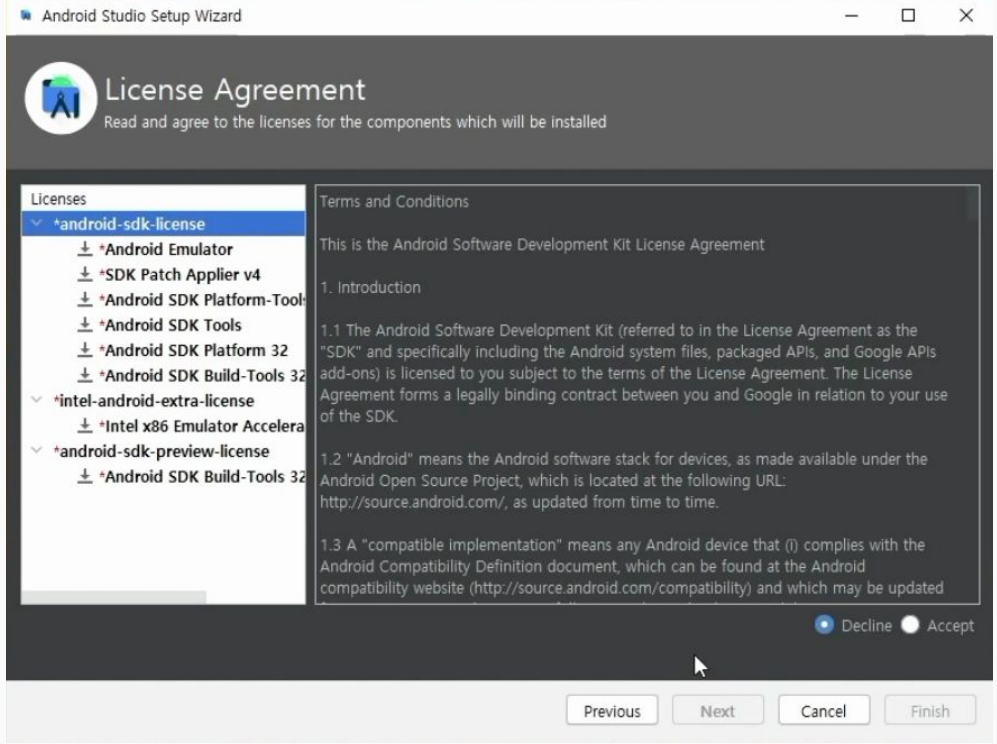
안드로이드 스튜디오 초기 설정

설치할 구성요소를 확인할 수 있습니다.



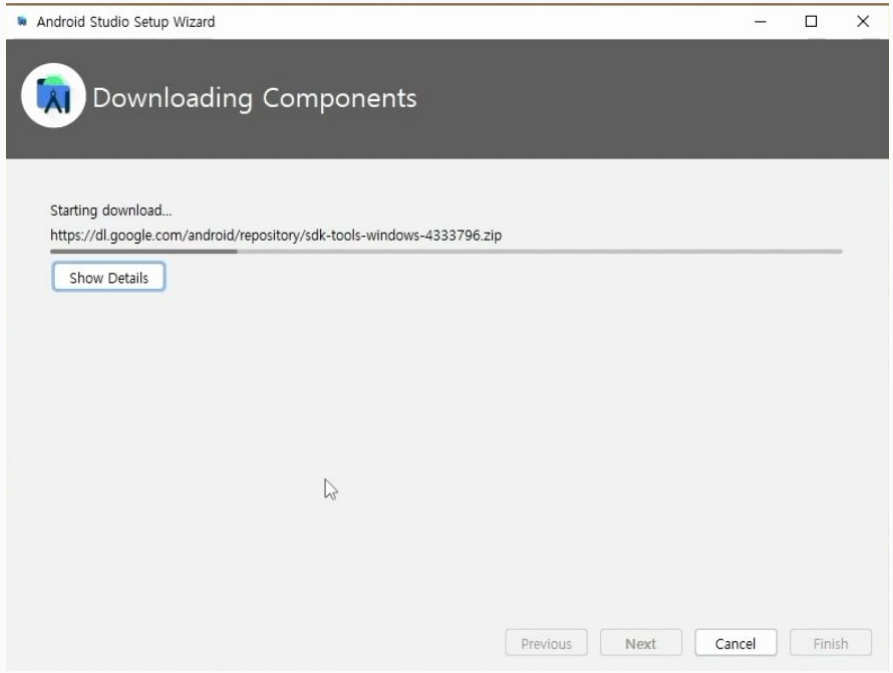
안드로이드 스튜디오 초기 설정

설치할 구성요소의 라이선스 약관을 수락합니다.



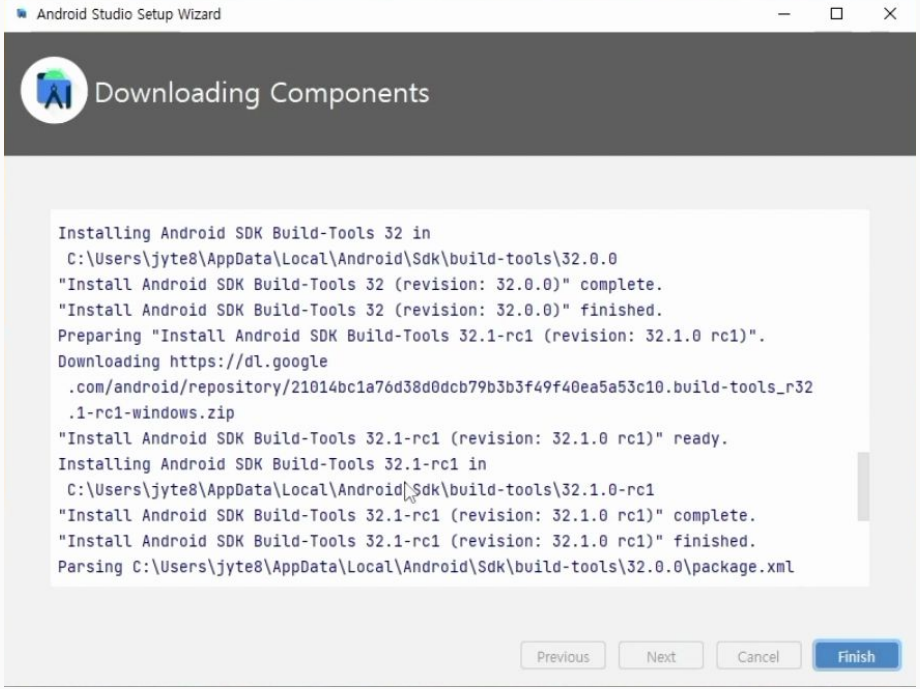
안드로이드 스튜디오 초기 설정

설치가 끝날때까지 잠시 기다려줍니다.



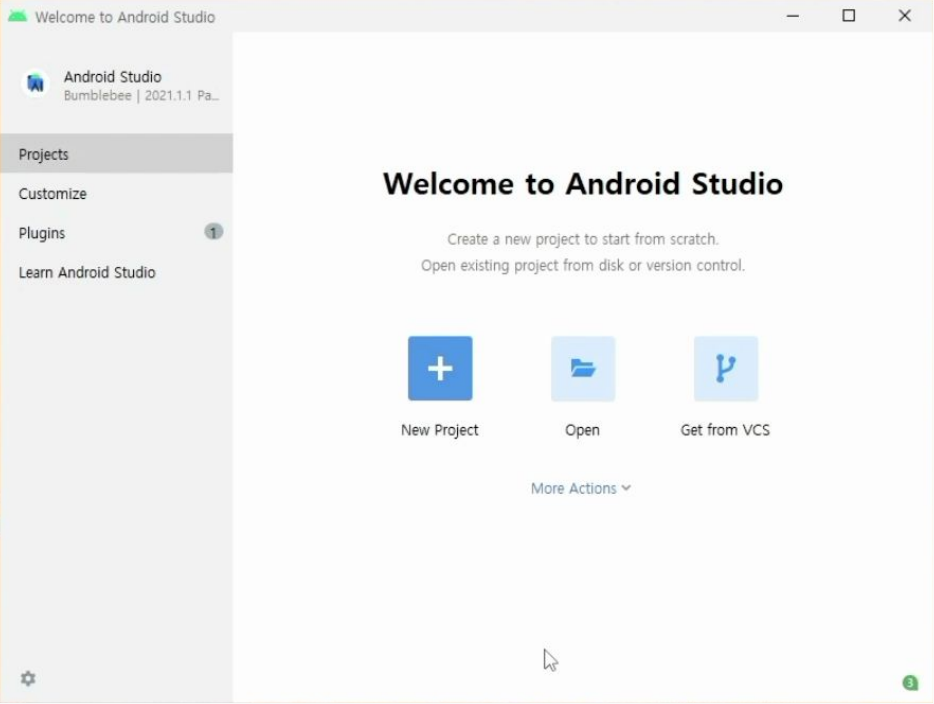
안드로이드 스튜디오 초기 설정

설치가 모두 끝나면, Finish를 눌러 설치를 마무리합니다.



안드로이드 스튜디오 초기 설정

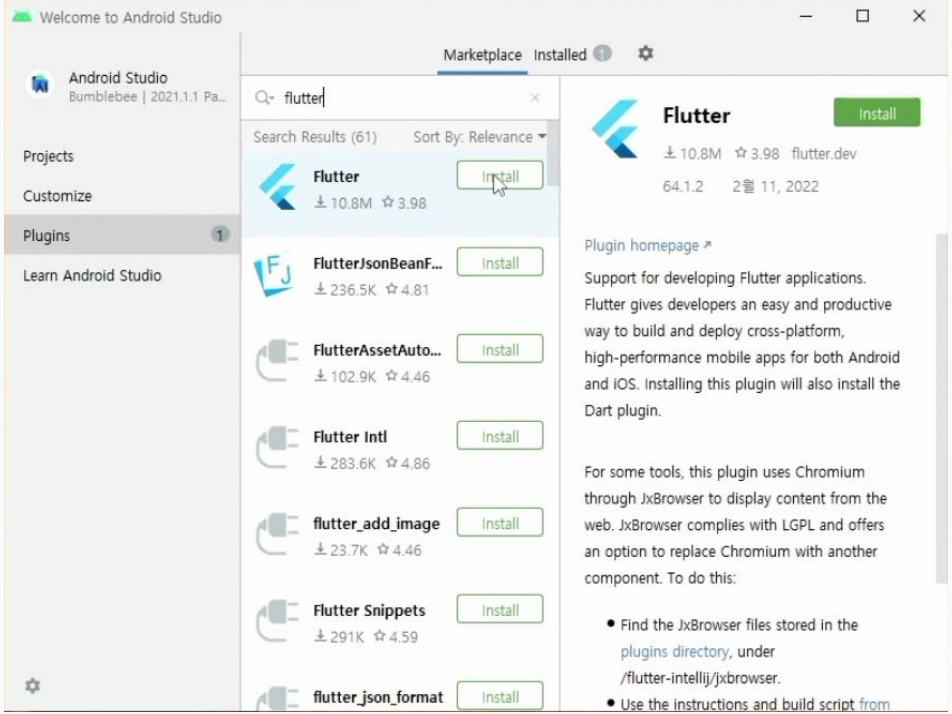
안드로이드 스튜디오 초기 화면이 실행됩니다.



Flutter 플러그인 추가하기

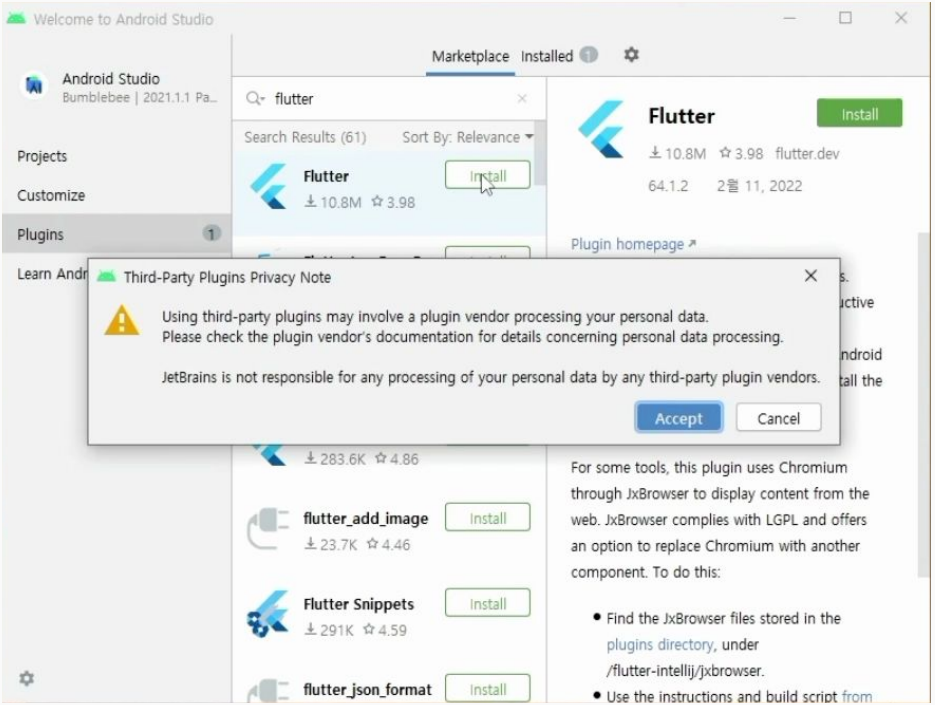
Flutter 플러그인 추가하기

안드로이드 스튜디오 초기 화면 왼쪽의 Plugins 탭을 선택한 후, Flutter 플러그인을 검색합니다.



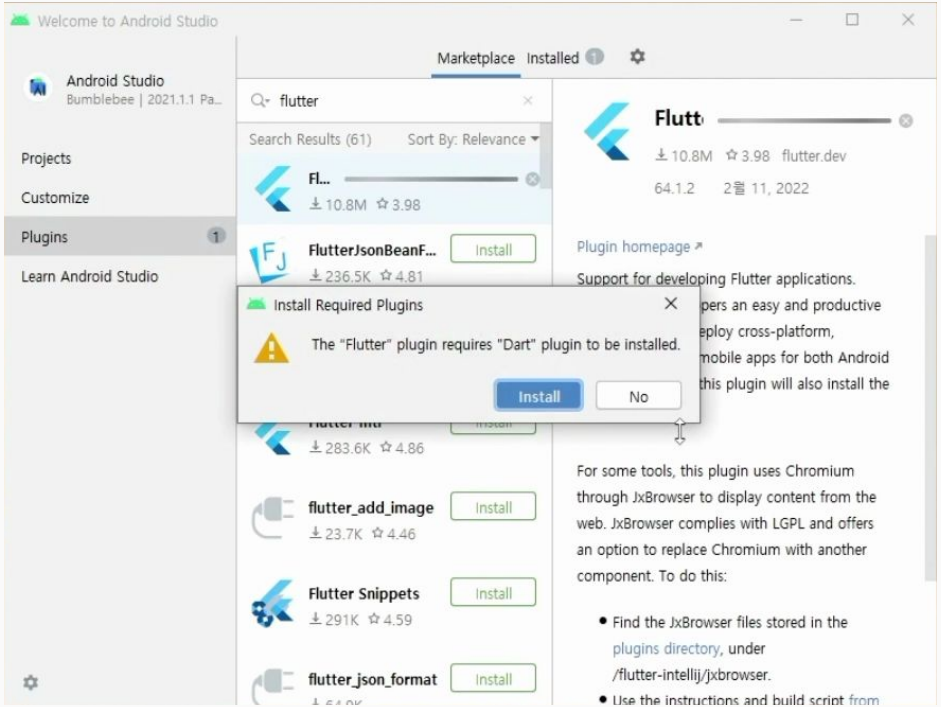
Flutter 플러그인 추가하기

서드파티 플러그인 관련 경고가 나오면 Accept를 눌러 계속 진행합니다.



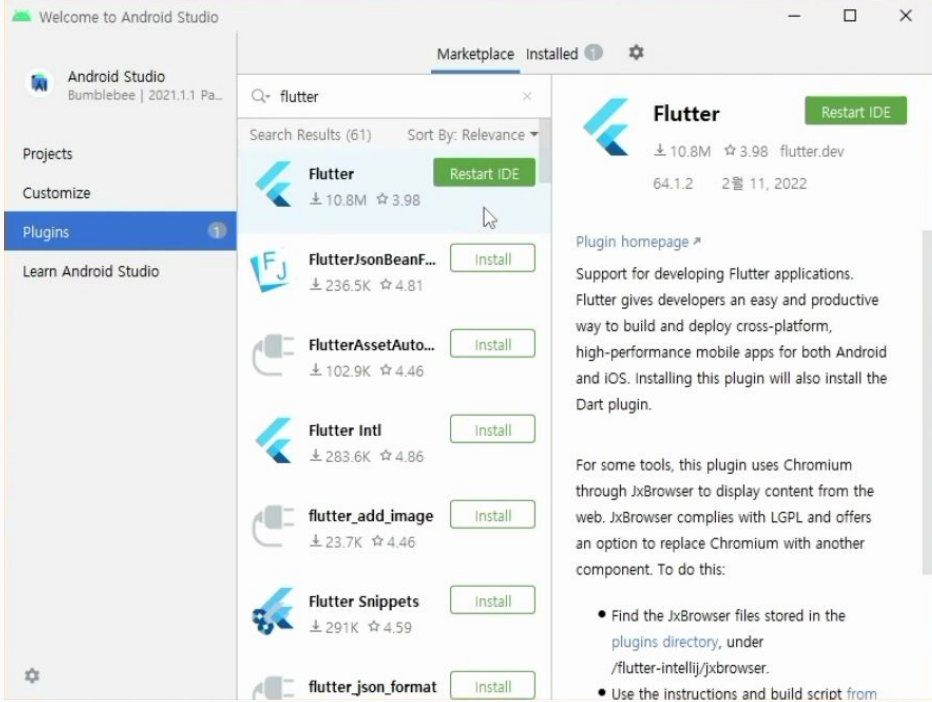
Flutter 플러그인 추가하기

Flutter 플러그인을 사용하려면 Dart 플러그인도 함께 설치해야 합니다. Install 버튼을 눌러 설치합니다.



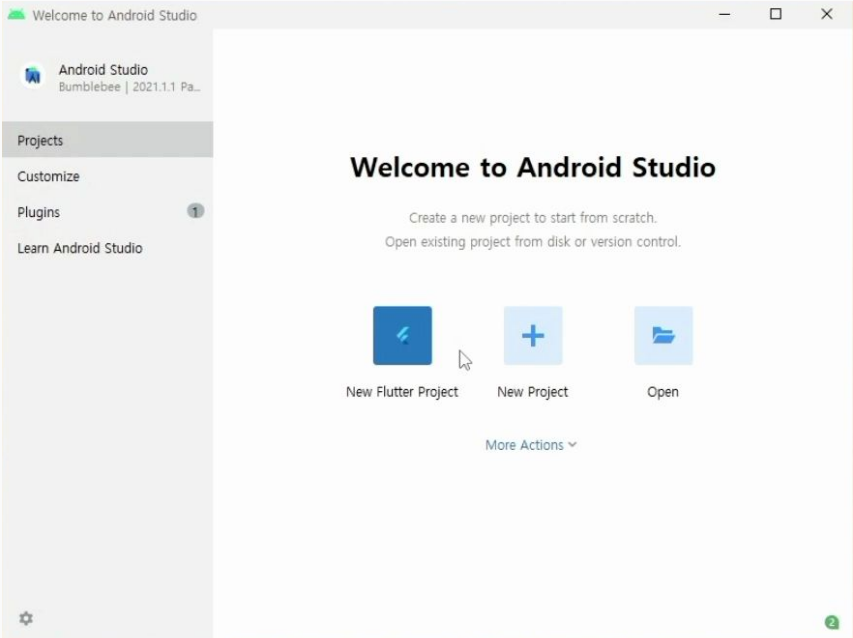
Flutter 플러그인 추가하기

플러그인 설치가 완료되면, **Restart IDE** 버튼을 눌러 안드로이드 스튜디오를 재시작합니다.



Flutter 플러그인 추가하기

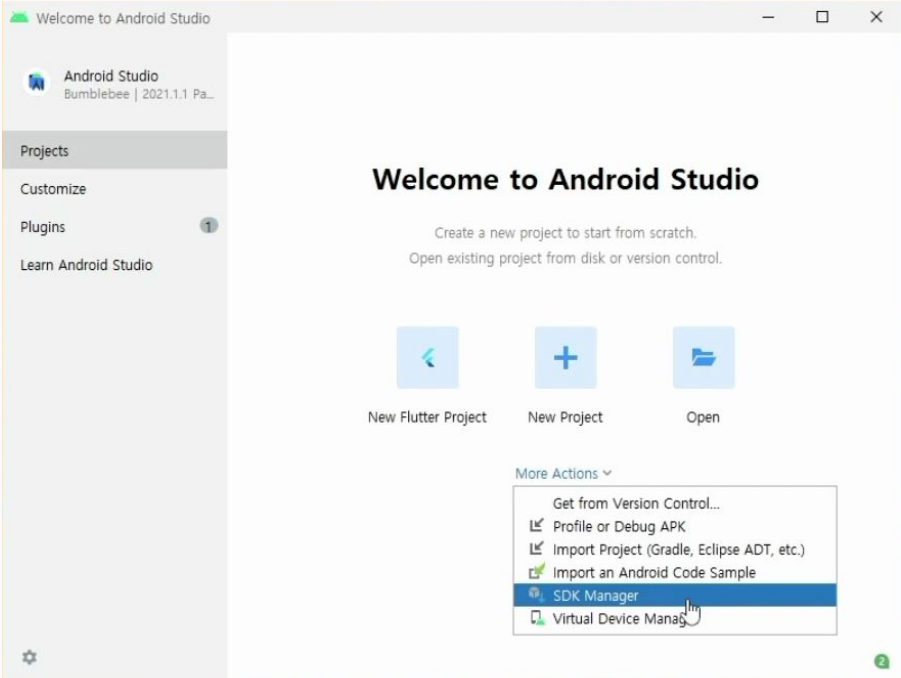
안드로이드 스튜디오 초기 화면에 New Flutter Project 버튼이 추가됩니다.



안드로이드 SDK
커맨드라인 도구 설치하기

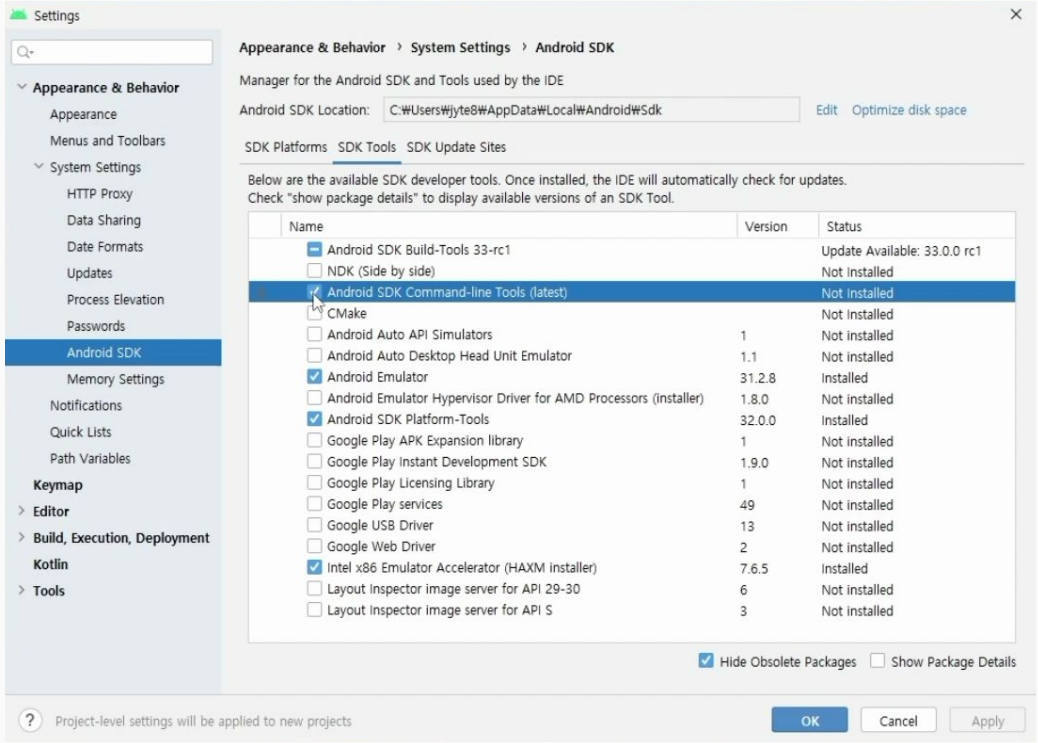
안드로이드 SDK 커맨드라인 도구 설치

안드로이드 스튜디오 초기 화면에서 More Actions > SDK Manager를 선택합니다.



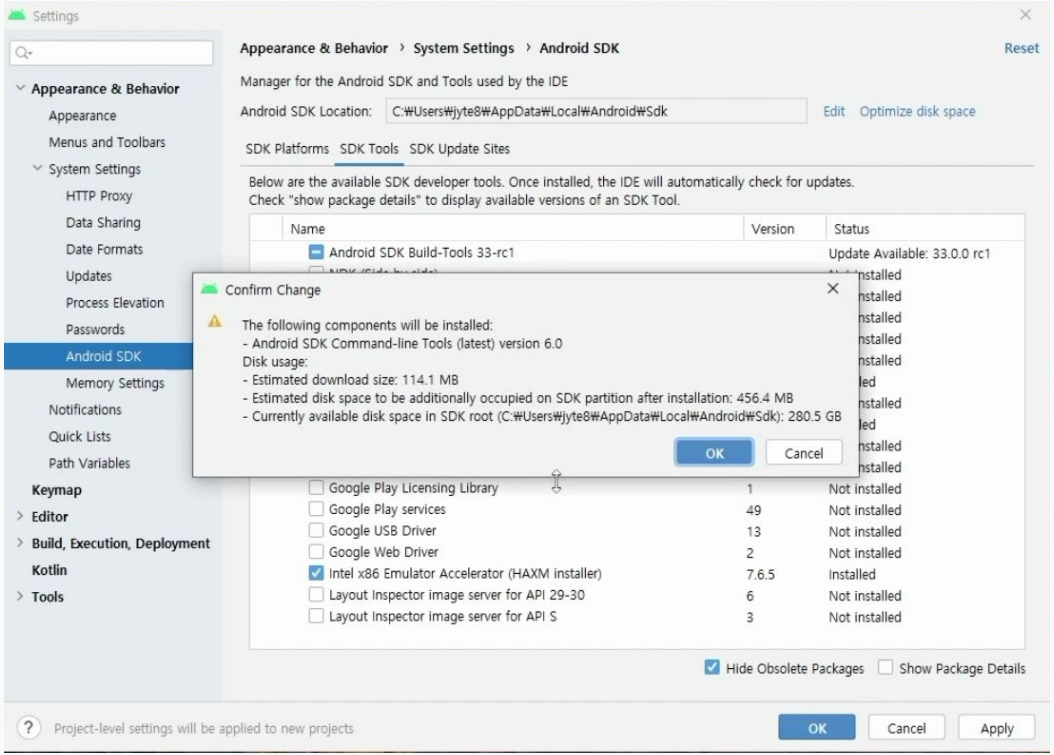
안드로이드 SDK 커맨드라인 도구 설치

SDK Tools 탭에서 **Android SDK Command-line Tools**를 선택한 후, **Apply** 버튼을 누릅니다.



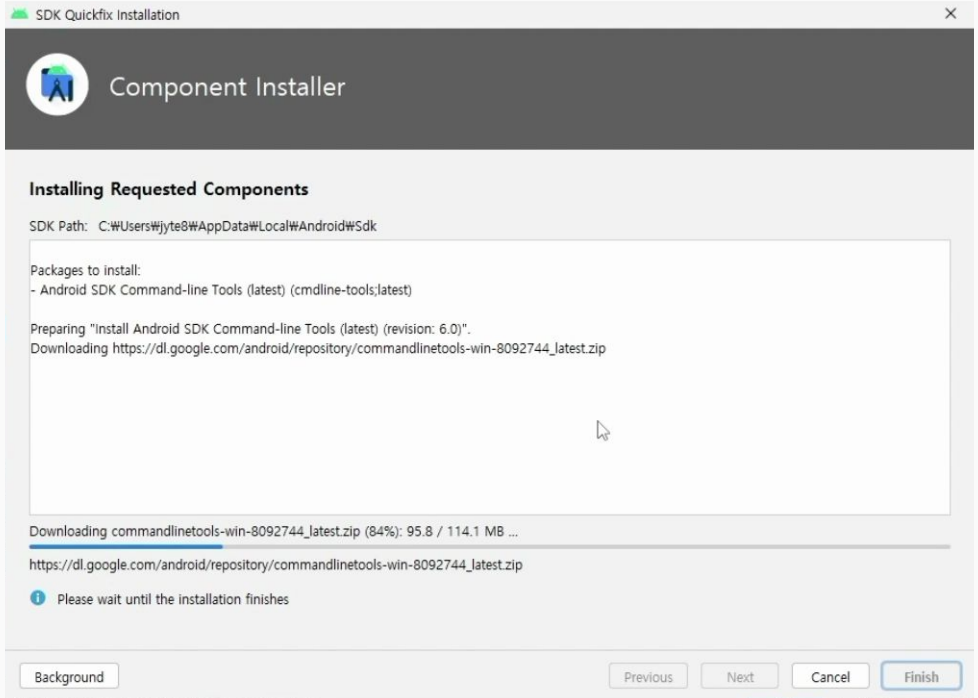
안드로이드 SDK 커맨드라인 도구 설치

설치할 항목을 확인하는 다이얼로그가 표시되면, OK 버튼을 눌러 설치를 계속합니다.



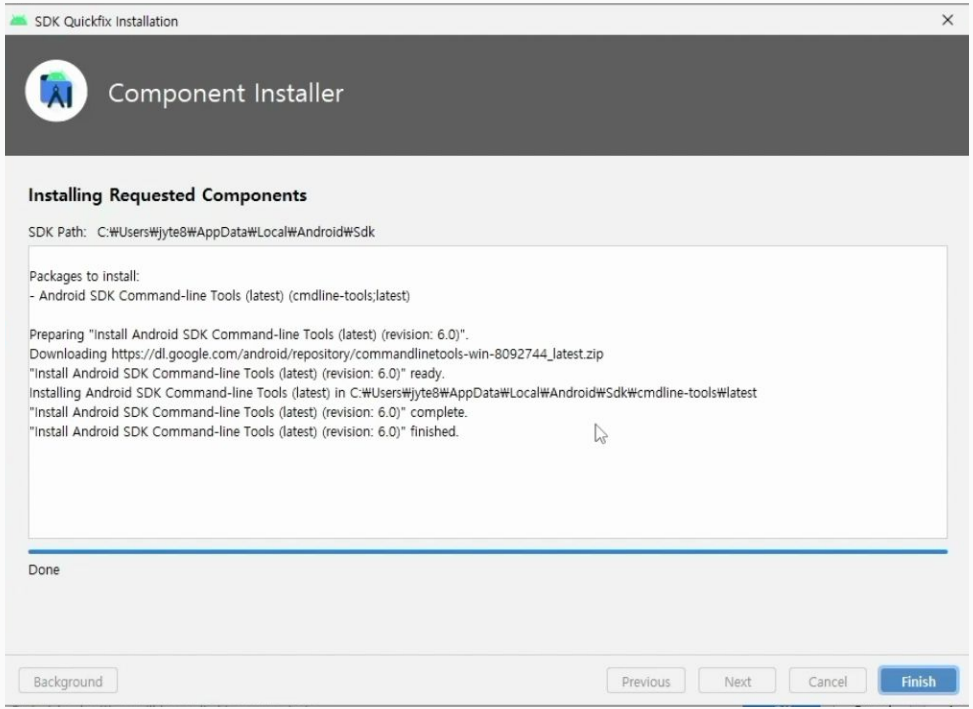
안드로이드 SDK 커맨드라인 도구 설치

설치가 끝날때까지 잠시 기다려줍니다.



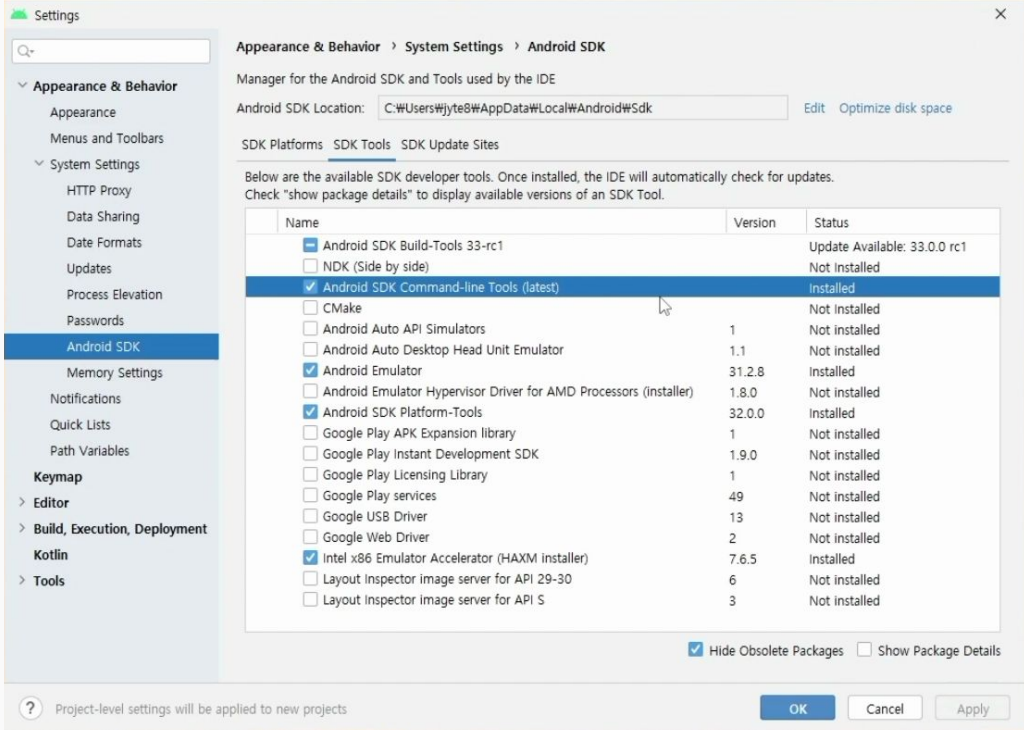
안드로이드 SDK 커맨드라인 도구 설치

Finish를 눌러 설치를 종료합니다.



안드로이드 SDK 커맨드라인 도구 설치

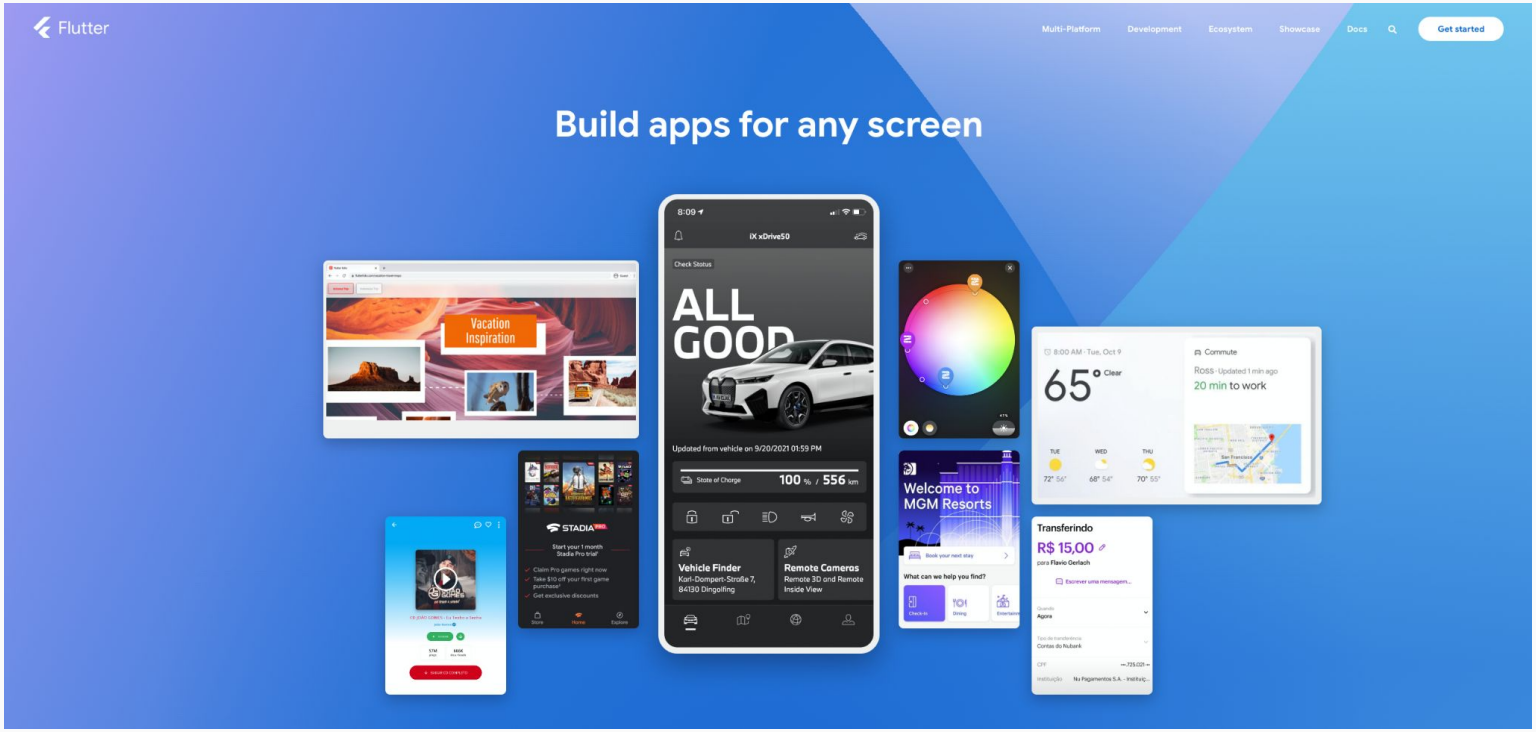
설치가 잘 되었다면, Status가 **Installed**로 바뀝니다.



Flutter SDK 설치하기

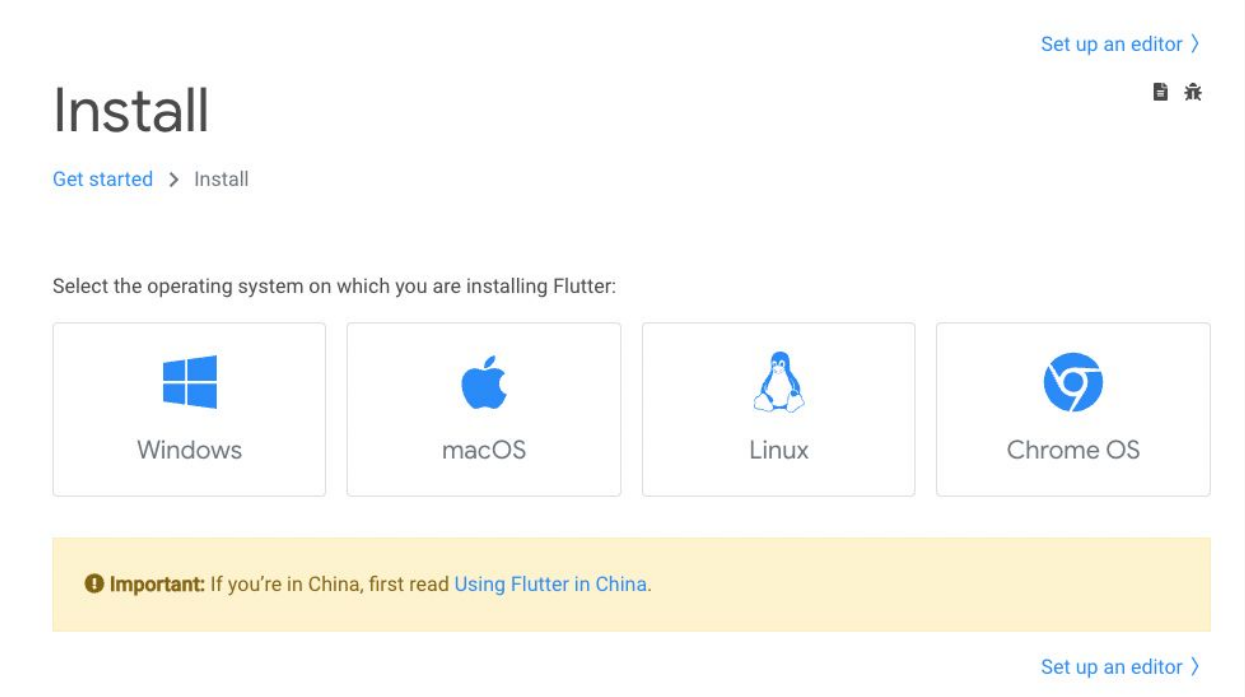
Flutter SDK 설치

flutter.dev 페이지로 이동 후, Get started를 누릅니다.



Flutter SDK 설치 (Windows)

Windows 를 선택합니다.



Flutter SDK 설치 (Windows)

Get the Flutter SDK 섹션에서 **SDK 다운로드** 버튼을 누릅니다.

Get the Flutter SDK

1. Download the following installation bundle to get the latest stable release of the Flutter SDK:

   flutter_windows_3.10.5-stable.zip

   For other release channels, and older builds, check out the SDK archive.

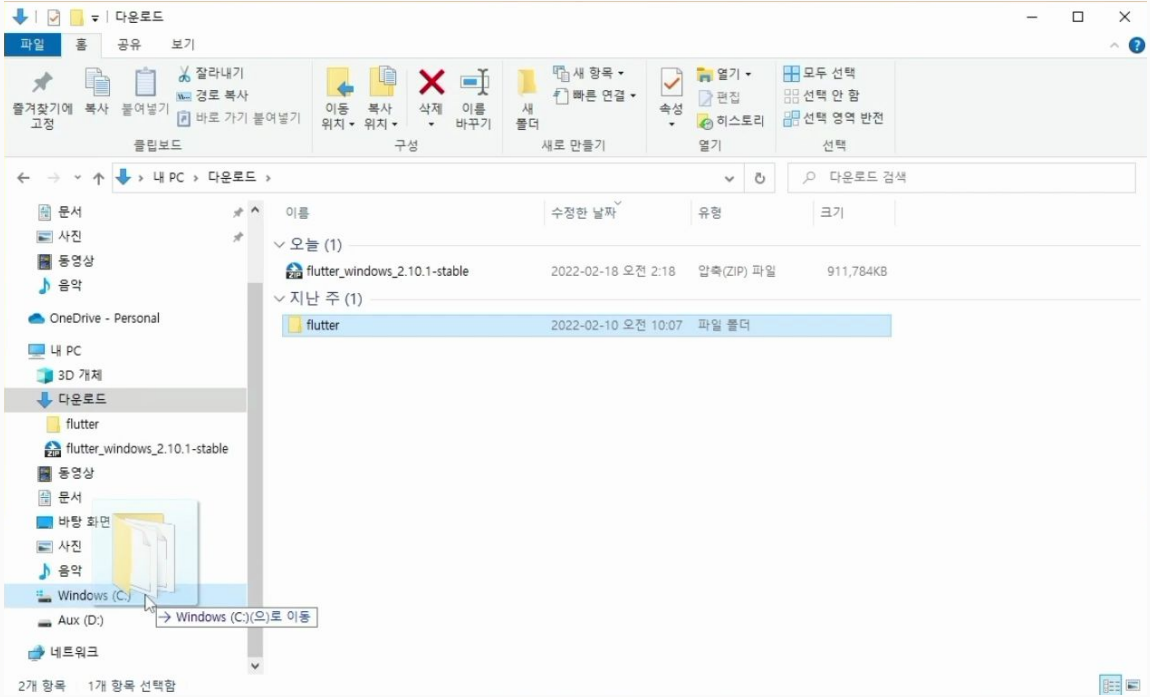
2. Extract the zip file and place the contained `flutter` in the desired installation location for the Flutter SDK (for example, `C:\src\flutter`).

⚠ **Warning:** Do not install Flutter to a path that contains special characters or spaces.

⚠ **Warning:** Do not install Flutter in a directory like `C:\Program Files\` that requires elevated privileges.

Flutter SDK 설치 (Windows)

다운로드한 SDK를 압축 해제한 후, flutter 폴더를 **C: 드라이브 루트**로 이동합니다.

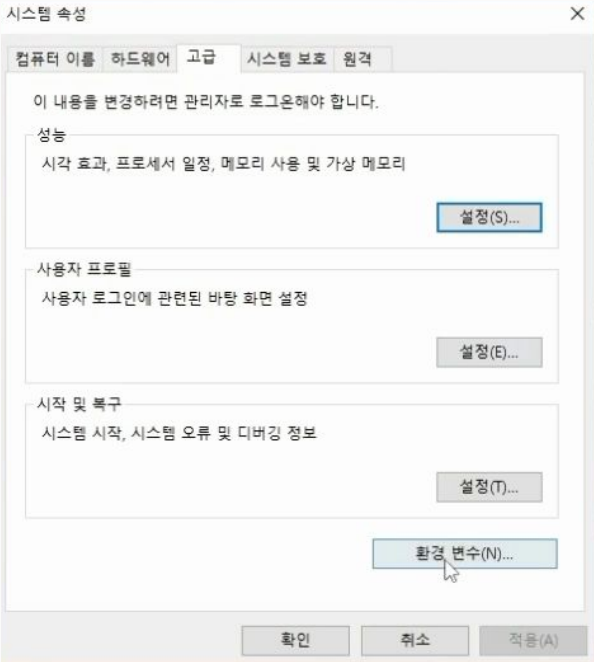


Flutter SDK 설치 (Windows)

설정 > 정보 > 고급 시스템 설정을 선택합니다.

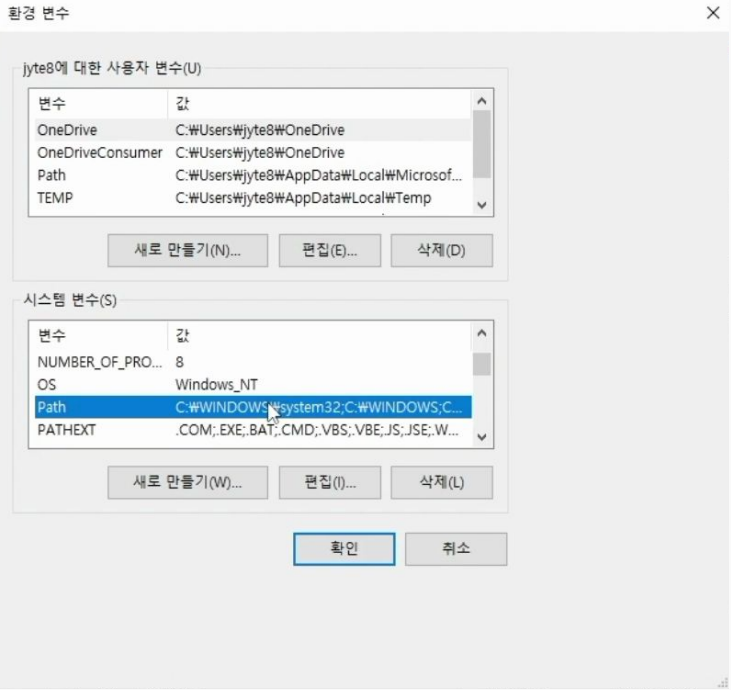
Flutter SDK 설치 (Windows)

시스템 속성 창에서 **환경 변수**를 선택합니다.



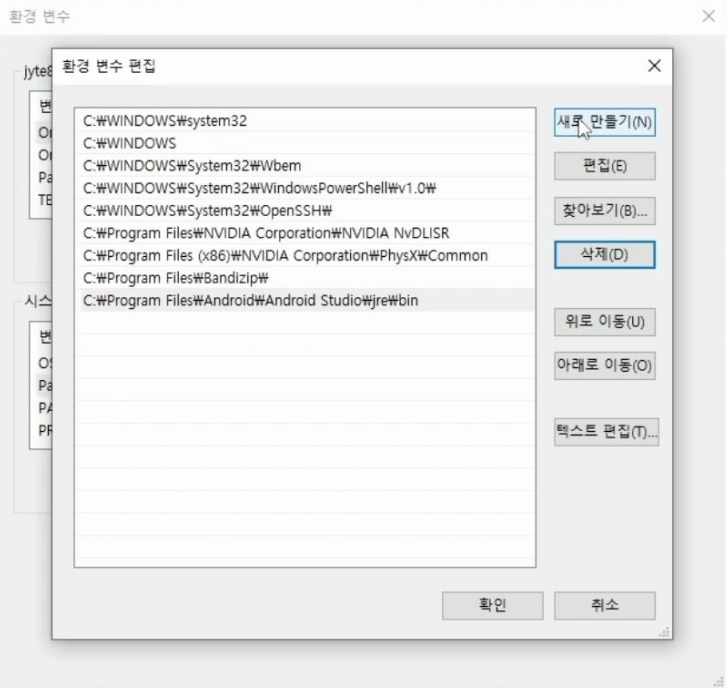
Flutter SDK 설치 (Windows)

시스템 변수에서 **Path**를 선택한 후, **편집** 버튼을 선택합니다.



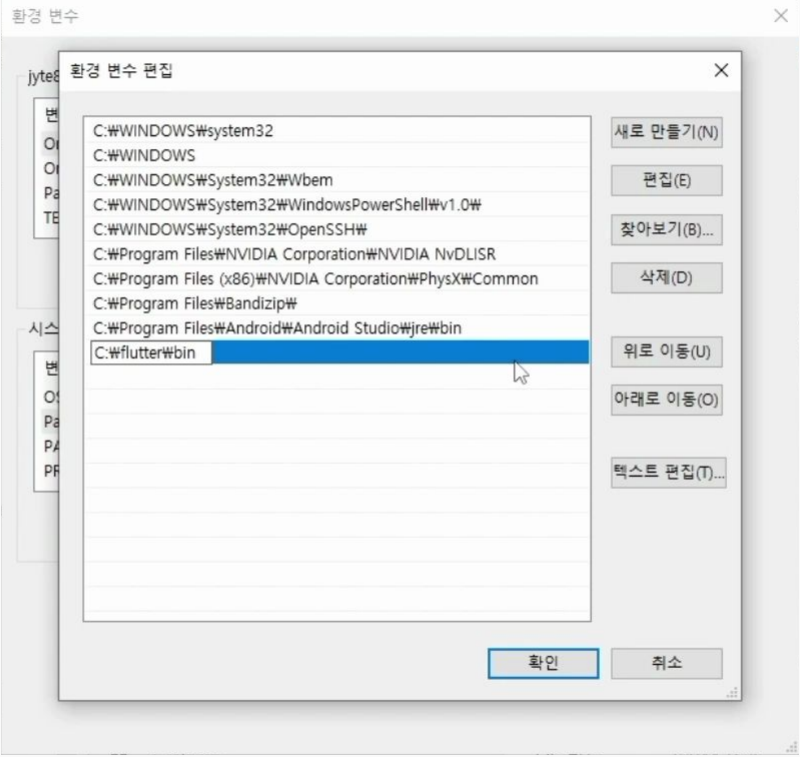
Flutter SDK 설치 (Windows)

환경 변수 편집 창에서 **새로 만들기** 버튼을 선택합니다.



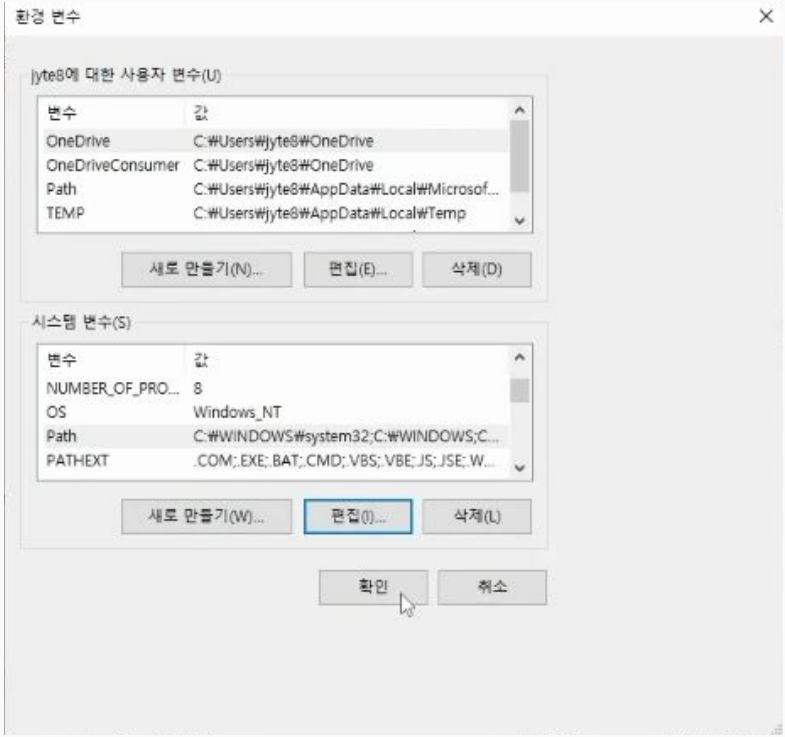
Flutter SDK 설치 (Windows)

C:₩flutter₩bin 을 입력한 후, 확인 버튼을 누릅니다.



Flutter SDK 설치 (Windows)

환경 변수 창에서 **확인** 버튼을 눌러 변경사항을 저장합니다.



Git 설치 (Windows만)

git --distributed-even-if-your-workflow-isnt

Search entire site...

About
Documentation
Downloads
GUI Clients
Logos
Community

The entire **Pro Git book** written by Scott Chacon and Ben Straub is available to read online for free. Dead tree versions are available on Amazon.com.

Download for Windows

Click here to download the latest (**2.37.1**) **32-bit** version of **Git for Windows**. This is the most recent maintained build. It was released **12 days ago**, on 2022-07-12.

Other Git for Windows downloads

Standalone Installer

32-bit Git for Windows Setup.

64-bit Git for Windows Setup.

Portable ("thumbdrive edition")

32-bit Git for Windows Portable.

64-bit Git for Windows Portable.

Using winget tool

Install winget tool if you don't already have it, then type this command in command prompt or Powershell.

```
winget install --id Git.Git -e --source winget
```

The current source code release is version **2.37.1**. If you want the newer version, you can build it from the source code.

git-scm.com/download/windows

Git 설치 (Windows만)

설치 마법사를 실행한 후, **기본 옵션 그대로** 설치를 완료합니다.

Flutter SDK 구성 완료하기 (Windows)

명령 프롬프트를 실행한 후, **`flutter --version`** 명령을 실행한 후, SDK 버전이 출력되는지 확인합니다.

명령 프롬프트

```
Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

C:₩Users₩jyte8>flutter --version
Flutter 2.10.1 • channel stable • https://github.com/flutter/flutter.git
Framework • revision db747aa133 (8 days ago) • 2022-02-09 13:57:35 -0600
Engine • revision ab46186b24
Tools • Dart 2.16.1 • DevTools 2.9.2

C:₩Users₩jyte8>
```

Flutter SDK 구성 완료하기 (Windows)

`flutter doctor` 명령을 실행하여 SDK 구성 상태를 확인합니다.

```
명령 프롬프트
Microsoft Windows [Version 10.0.19044.1526]
(c) Microsoft Corporation. All rights reserved.

C:₩Users₩jyte8>flutter --version
Flutter 2.10.1 • channel stable • https://github.com/flutter/flutter.git
Framework • revision db747aa133 (8 days ago) • 2022-02-09 13:57:35 -0600
Engine • revision ab46186b24
Tools • Dart 2.16.1 • DevTools 2.9.2

C:₩Users₩jyte8>flutter doctor
Running "flutter pub get" in flutter_tools...                      10.8s
Doctor summary (to see all details, run flutter doctor -v):
[√] Flutter (Channel stable, 2.10.1, on Microsoft Windows [Version 10.0.19044.1526], locale ko-KR)
[!] Android toolchain - develop for Android devices (Android SDK version 32.1.0-rc1)
    ! Some Android licenses not accepted.  To resolve this, run: flutter doctor --android-licenses
[√] Chrome - develop for the web
[X] Visual Studio - develop for Windows
    X Visual Studio not installed; this is necessary for Windows development.
      Download at https://visualstudio.microsoft.com/downloads/.
      Please install the "Desktop development with C++" workload, including all of its default components
[√] Android Studio (version 2021.1)
[√] Connected device (3 available)
[√] HTTP Host Availability

! Doctor found issues in 2 categories.

C:₩Users₩jyte8>_
```

Flutter SDK 구성 완료하기 (Windows)

`flutter doctor --android-licenses` 명령을 실행하여 안드로이드 SDK 라이선스를 수락합니다.

명령 프롬프트 - flutter doctor --android-licenses

```
Google's rights and that those rights or remedies will still be available to Google.

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

14.4 You acknowledge and agree that Googles API data licensors and each member of the group of companies of which Google
 is the parent shall be third party beneficiaries to this License Agreement and that such other companies shall be entit
led to directly enforce, and rely upon, any provision of this 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 this License Agreement
.

14.5 EXPORT RESTRICTIONS. THE GOOGLE TV ADD-ON 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 GOOGLE TV ADD-ON. THESE LAWS INCLUDE R
ESTRICTIONS ON DESTINATIONS, END USERS AND END USE.

14.6 The rights granted in this 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 this License Agreement without the prior written approval of the other party.

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

August 15, 2011
---------------------------------------
Accept? (y/N): y
```

Flutter SDK 구성 완료하기 (Windows)

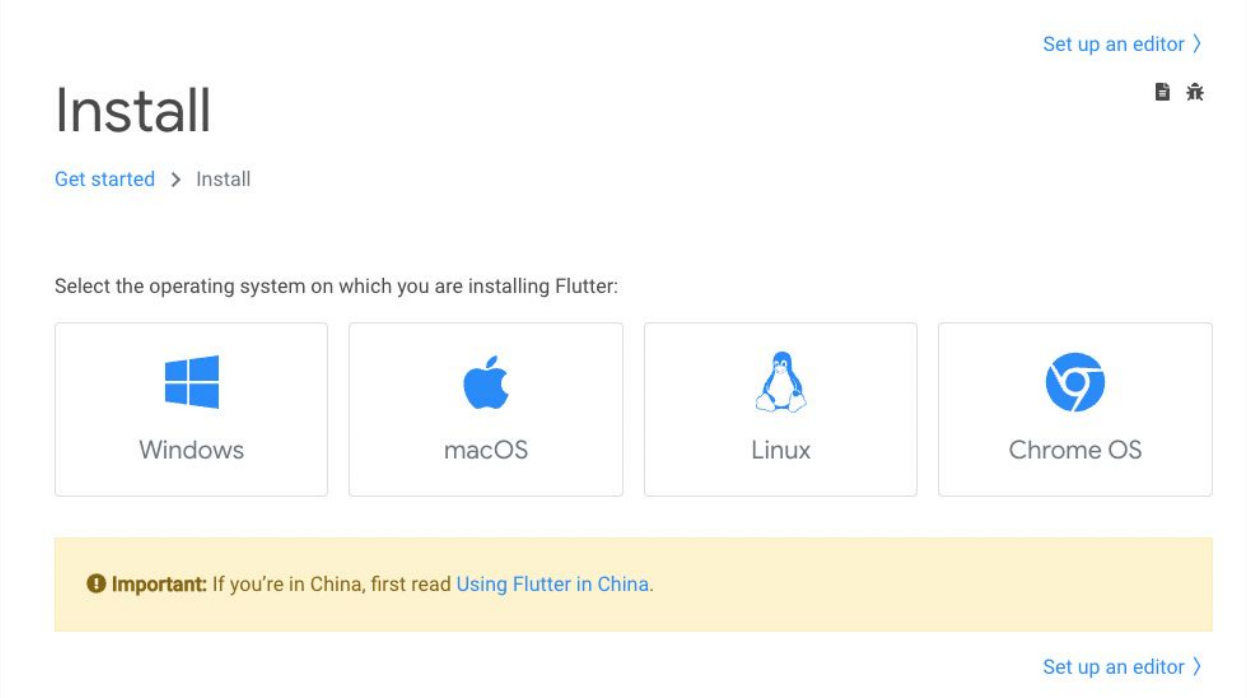
라이선스 수락이 끝나면 Android toolchain 항목 에러가 사라집니다.

명령 프롬프트

```
ANY PRE-RELEASE MATERIALS ARE NON-QUALIFIED AND, AS SUCH, ARE PROVIDED AS IS AND AS AVAILABLE, POSSIBLY WITH FAULTS, AND
 WITHOUT REPRESENTATION OR WARRANTY OF ANY KIND.

10.8 Open Source Software. In the event Open Source software is included with Evaluation Software, such Open Source soft
ware is licensed pursuant to the applicable Open Source software license agreement identified in the Open Source softwar
e comments in the applicable source code file(s) and/or file header as indicated in the Evaluation Software. Additional
detail may be available (where applicable) in the accompanying on-line documentation. With respect to the Open Source so
ftware, nothing in this Agreement limits any rights under, or grants rights that supersede, the terms of any applicable
Open Source software license agreement.
---------------------------------------
Accept? (y/N): y
All SDK package licenses accepted


C:₩Users₩jyte8>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[√] Flutter (Channel stable, 2.10.1, on Microsoft Windows [Version 10.0.19044.1526], locale ko-KR)
[√] Android toolchain - develop for Android devices (Android SDK version 32.1.0-rc1)
[√] Chrome - develop for the web
[X] Visual Studio - develop for Windows
    X Visual Studio not installed; this is necessary for Windows development.
      Download at https://visualstudio.microsoft.com/downloads/.
      Please install the "Desktop development with C++" workload, including all of its default components
[√] Android Studio (version 2021.1)
[√] Connected device (3 available)
[√] HTTP Host Availability

! Doctor found issues in 1 category.

C:₩Users₩jyte8>_
```

Flutter SDK 설치 (macOS)

macOS 를 선택합니다.



Flutter SDK 설치 (macOS)

Get the Flutter SDK 섹션에서 사용중인 컴퓨터에 맞는 **SDK를 다운로드** 합니다.

Get the Flutter SDK

1. Download the following installation bundle to get the latest stable release of the Flutter SDK:

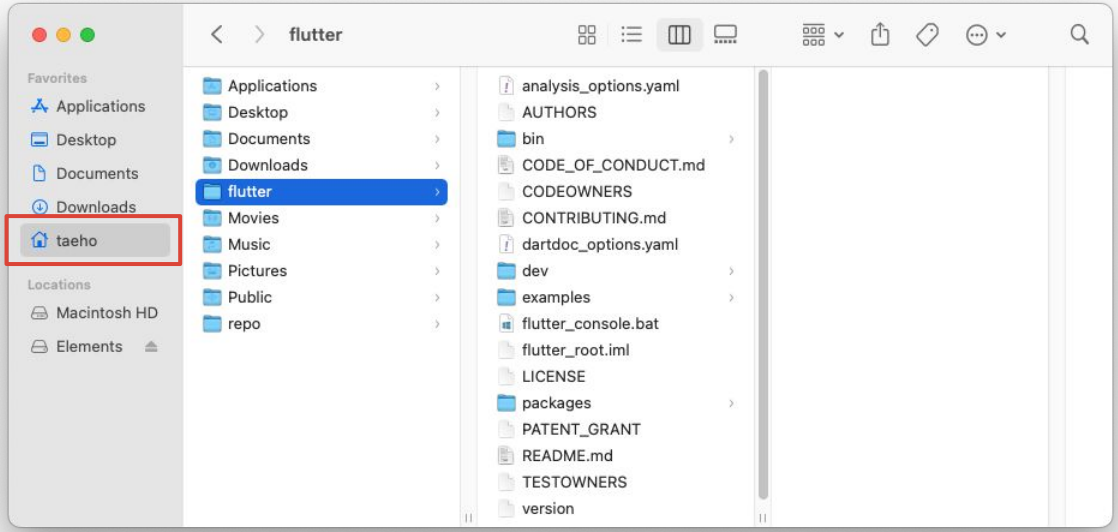
Intel	Apple Silicon
flutter_macos_3.10.5-stable.zip	flutter_macos_arm64_3.10.5-stable.zip

For other release channels, and older builds, check out the SDK archive.

Tip: To determine whether your Mac uses an Apple silicon processor, refer to Mac computers with Apple silicon on apple.com

Flutter SDK 설치 (macOS)

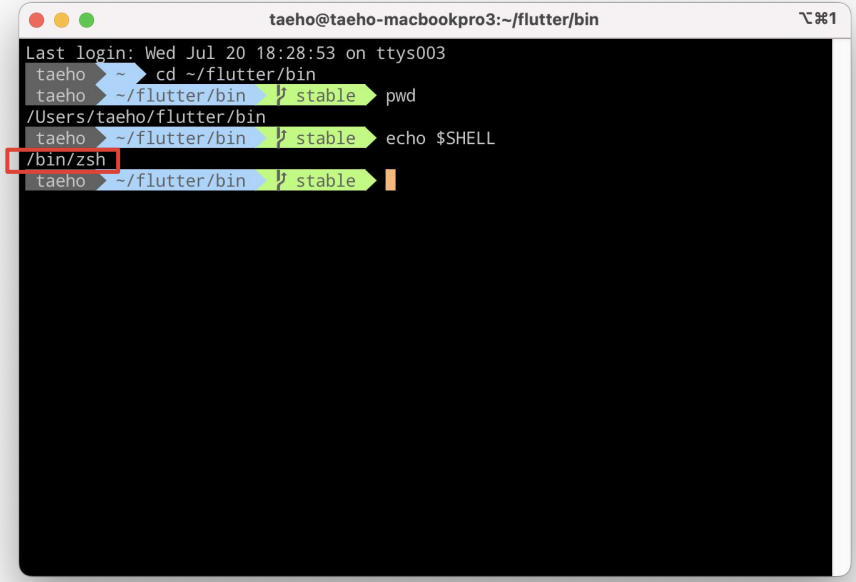
다운로드한 SDK를 압축 해제한 후, flutter 폴더를 **홈 폴더**로 이동합니다.



Flutter SDK 설치 (macOS)

터미널을 실행한 후, **echo $SHELL** 명령을 입력하여 사용중인 셸 종류를 확인합니다.

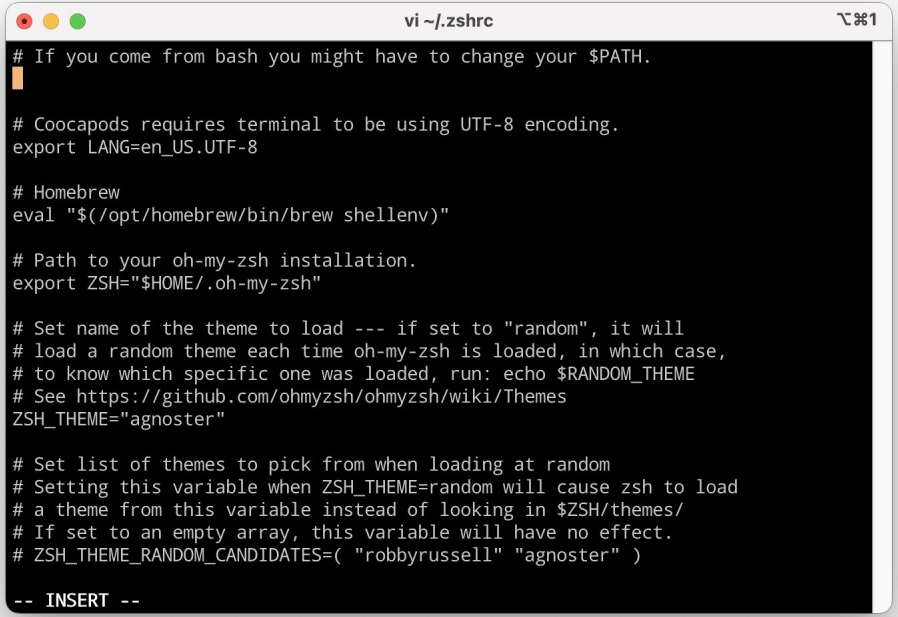
- /bin/bash: Bash shell 사용중
- /bin/zsh: Z shell 사용중



Flutter SDK 설치 (macOS)

셸 종류에 따라 다음 명령어를 입력합니다.

- Bash shell: **`vi ~/.bash_profile`** 입력 후, **`i`**를 눌러 편집 모드로 전환
- Z shell: **`vi ~/.zshrc`** 입력 후, **`i`**를 눌러 편집 모드로 전환



Flutter SDK 설치 (macOS)

PATH에 Flutter SDK가 설치된 폴더를 넣어줍니다.

- `export PATH="$PATH:$HOME/flutter/bin"`

vi .zshrc ⌥⌘1

```
# If you come from bash you might have to change your $PATH.
export PATH="$PATH:$HOME/flutter/bin"

# Coocapods requires terminal to be using UTF-8 encoding.
export LANG=en_US.UTF-8

# Homebrew
eval "$(/opt/homebrew/bin/brew shellenv)"

# Path to your oh-my-zsh installation.
export ZSH="$HOME/.oh-my-zsh"

# Set name of the theme to load --- if set to "random", it will
# load a random theme each time oh-my-zsh is loaded, in which case,
# to know which specific one was loaded, run: echo $RANDOM_THEME
# See https://github.com/ohmyzsh/ohmyzsh/wiki/Themes
ZSH_THEME="agnoster"

# Set list of themes to pick from when loading at random
# Setting this variable when ZSH_THEME=random will cause zsh to load
# a theme from this variable instead of looking in $ZSH/themes/
# If set to an empty array, this variable will have no effect.
# ZSH_THEME_RANDOM_CANDIDATES=( "robbyrussell" "agnoster" )

-- INSERT --
```

Flutter SDK 설치 (macOS)

Esc > :(콜론) > wq > 엔터를 순서대로 입력하여 편집한 내용을 저장합니다.

vi ~/.zshrc ⌥⌘1

```
# If you come from bash you might have to change your $PATH.
export PATH="$PATH:/Users/taeho/flutter/bin""

# Coocapods requires terminal to be using UTF-8 encoding.
export LANG=en_US.UTF-8

# Homebrew
eval "$(/opt/homebrew/bin/brew shellenv)"

# Path to your oh-my-zsh installation.
export ZSH="$HOME/.oh-my-zsh"

# Set name of the theme to load --- if set to "random", it will
# load a random theme each time oh-my-zsh is loaded, in which case,
# to know which specific one was loaded, run: echo $RANDOM_THEME
# See https://github.com/ohmyzsh/ohmyzsh/wiki/Themes
ZSH_THEME="agnoster"

# Set list of themes to pick from when loading at random
# Setting this variable when ZSH_THEME=random will cause zsh to load
# a theme from this variable instead of looking in $ZSH/themes/
# If set to an empty array, this variable will have no effect.
# ZSH_THEME_RANDOM_CANDIDATES=( "robbyrussell" "agnoster" )

:wq
```

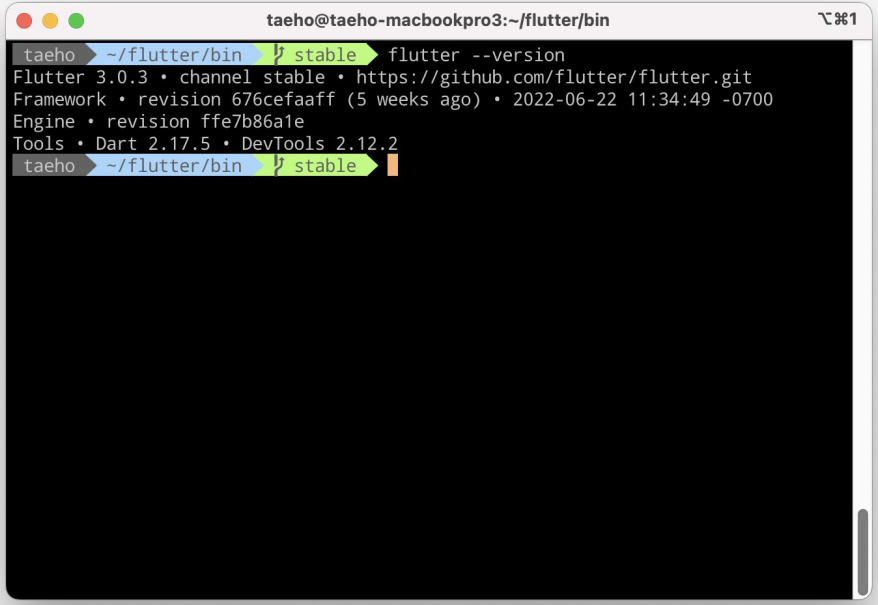
Flutter SDK 설치 (macOS)

(Apple Silicon 맥 사용자만) Flutter SDK의 일부 도구는 Apple Silicon 용으로 작성되지 않았습니다. 이를 실행하기 위해 Rosetta를 설치해야 합니다.

`/usr/sbin/softwareupdate --install-rosetta --agree-to-license` 명령을 실행하여 로제타를 설치합니다.

Flutter SDK 구성 완료하기 (macOS)

새로운 PATH 설정이 적용된 터미널을 실행하기 위해 터미널을 종료했다 다시 실행합니다. 터미널이 실행되었다면, **`flutter --version`** 명령을 실행하여 플러터 버전이 출력되는지 확인합니다.



Flutter SDK 구성 완료하기 (macOS)

flutter doctor 명령을 실행하여 SDK 구성 상태를 확인합니다.

```
taeho — -zsh — 80×24
[✓] Flutter (Channel stable, 2.10.1, on macOS 12.0.1 21A559 darwin-arm, locale
    en-KR)
[!] Android toolchain - develop for Android devices (Android SDK version
    32.1.0-rc1)
    ! Some Android licenses not accepted.  To resolve this, run: flutter doctor
      --android-licenses
[✗] Xcode - develop for iOS and macOS
    ✗ Xcode installation is incomplete; a full installation is necessary for iOS
      development.
      Download at: https://developer.apple.com/xcode/download/
      Or install Xcode via the App Store.
      Once installed, run:
        sudo xcode-select --switch /Applications/Xcode.app/Contents/Developer
        sudo xcodebuild -runFirstLaunch
    ✗ CocoaPods not installed.
        CocoaPods is used to retrieve the iOS and macOS platform side's plugin
        code that responds to your plugin usage on the Dart side.
        Without CocoaPods, plugins will not work on iOS or macOS.
        For more info, see https://flutter.dev/platform-plugins
      To install see
      https://guides.cocoapods.org/using/getting-started.html#installation for
      instructions.
[✓] Chrome - develop for the web
[✓] Android Studio (version 2021.1)
```

Flutter SDK 구성 완료하기 (macOS)

`flutter doctor --android-licenses` 명령을 실행하여 안드로이드 SDK 라이선스를 수락합니다.

```
taeho — -zsh — 80×24
 generally available a production version of the Pre-Release Materials . MIPS is
 not under any obligation to develop and/or release or offer for sale or license
 a final product based upon the Pre-Release Materials and may unilaterally elect
 to abandon the Pre-Release Materials or any such development platform at any ti
me and without any obligation or liability whatsoever to Recipient or any other
person.

ANY PRE-RELEASE MATERIALS ARE NON-QUALIFIED AND, AS SUCH, ARE PROVIDED "AS IS" A
ND "AS AVAILABLE", POSSIBLY WITH FAULTS, AND WITHOUT REPRESENTATION OR WARRANTY
OF ANY KIND.

10.8 Open Source Software. In the event Open Source software is included with Ev
aluation Software, such Open Source software is licensed pursuant to the applica
ble Open Source software license agreement identified in the Open Source softwar
e comments in the applicable source code file(s) and/or file header as indicated
 in the Evaluation Software. Additional detail may be available (where applicabl
e) in the accompanying on-line documentation. With respect to the Open Source so
ftware, nothing in this Agreement limits any rights under, or grants rights that
 supersede, the terms of any applicable Open Source software license agreement.
---------------------------------------
Accept? (y/N): y
All SDK package licenses accepted

taeho@taehos-mbp ~ %
```

Flutter SDK 구성 완료하기 (macOS)

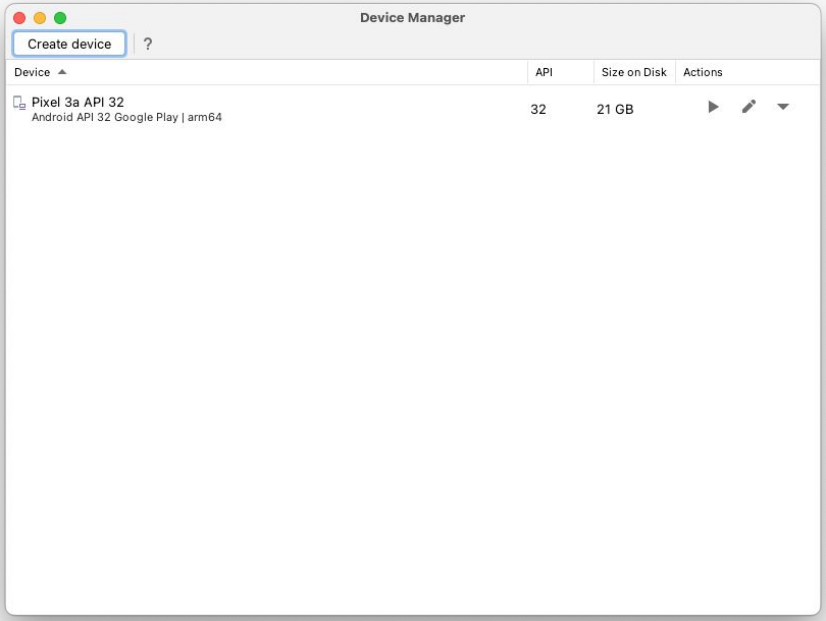
라이선스 수락이 끝나면 Android toolchain 항목 에러가 사라집니다.

```
taeho@taeho-macbookpro3:~                                    ⌥⌘1
Last login: Wed Jun 14 10:54:25 on ttys000
taeho  ~  flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 3.10.0, on macOS 13.4 22F66 darwin-arm64, locale
    en)
[✓] Android toolchain - develop for Android devices (Android SDK version 33.0.1)
[✓] Xcode - develop for iOS and macOS (Xcode 14.3.1)
[✓] Chrome - develop for the web
[✓] Android Studio (version 2022.2)
[✓] VS Code (version 1.79.0)
[✓] Connected device (3 available)
[✓] Network resources

• No issues found!
taeho  ~
```

안드로이드 에뮬레이터 설정하기

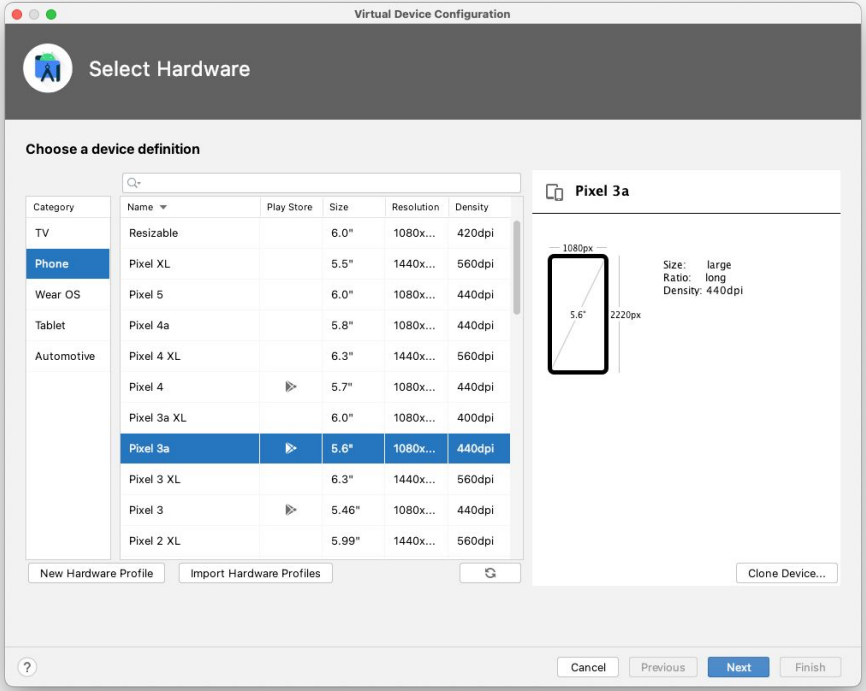
안드로이드 에뮬레이터 설정하기

안드로이드 스튜디오 시작 화면에서 More actions > Virtual Device Manager를 선택합니다. 다음, 상단의 Create device 버튼을 누릅니다.



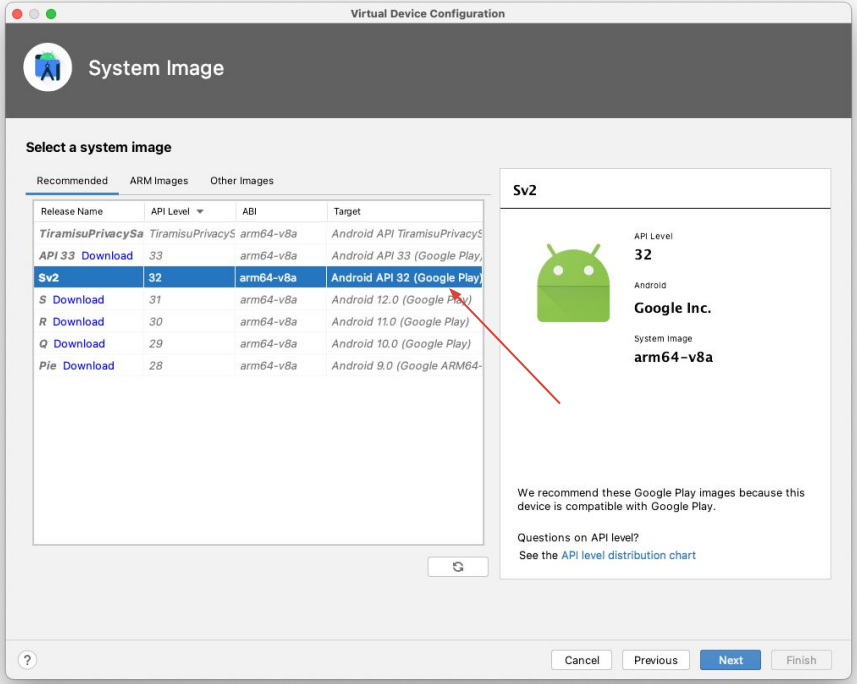
안드로이드 에뮬레이터 설정하기

Select Hardware 창에서 **Pixel 3a**를 선택합니다.



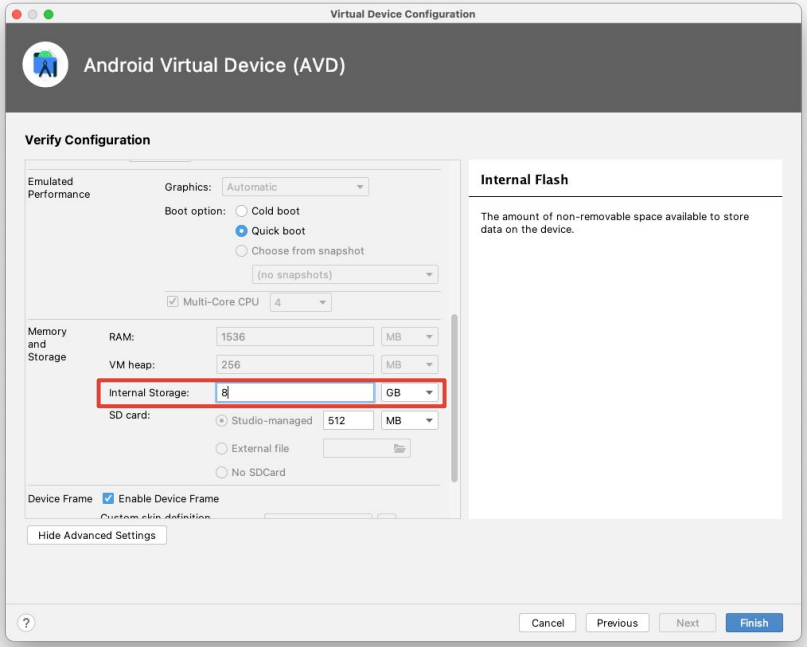
안드로이드 에뮬레이터 설정하기

System image 창에서 Sv2를 선택합니다. (Target에 Google Play가 있는지 확인합니다)



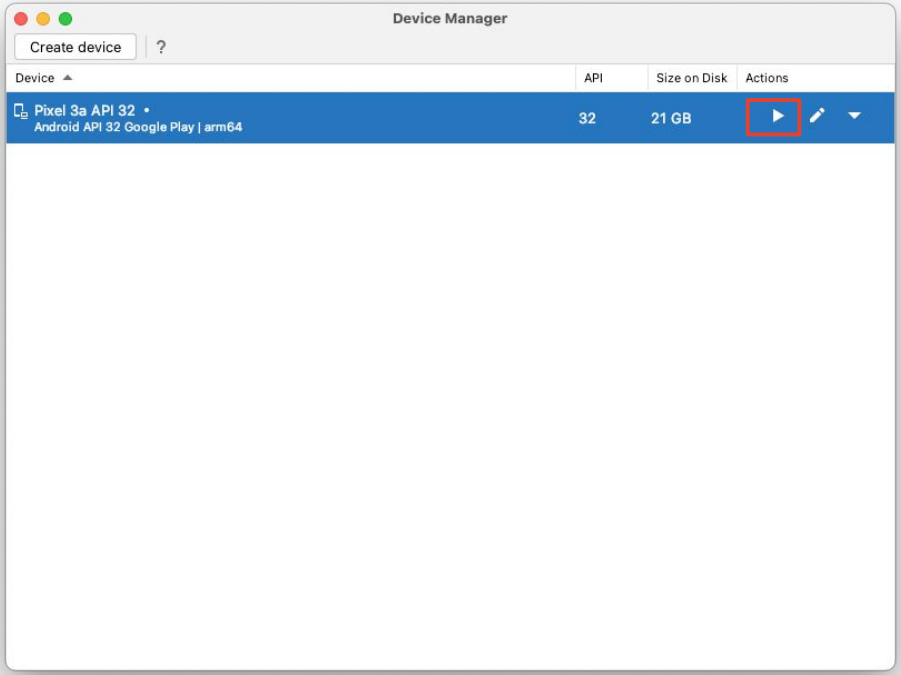
안드로이드 에뮬레이터 설정하기

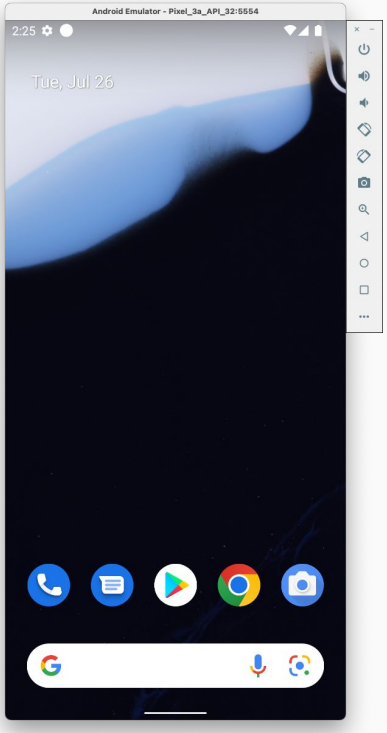
Android Virtual Device 창에서 하단의 Show Advanced Settings 버튼을 누른 후, Internal Storage를 8GB로 설정하고 Finish 버튼을 눌러줍니다.



안드로이드 에뮬레이터 설정하기

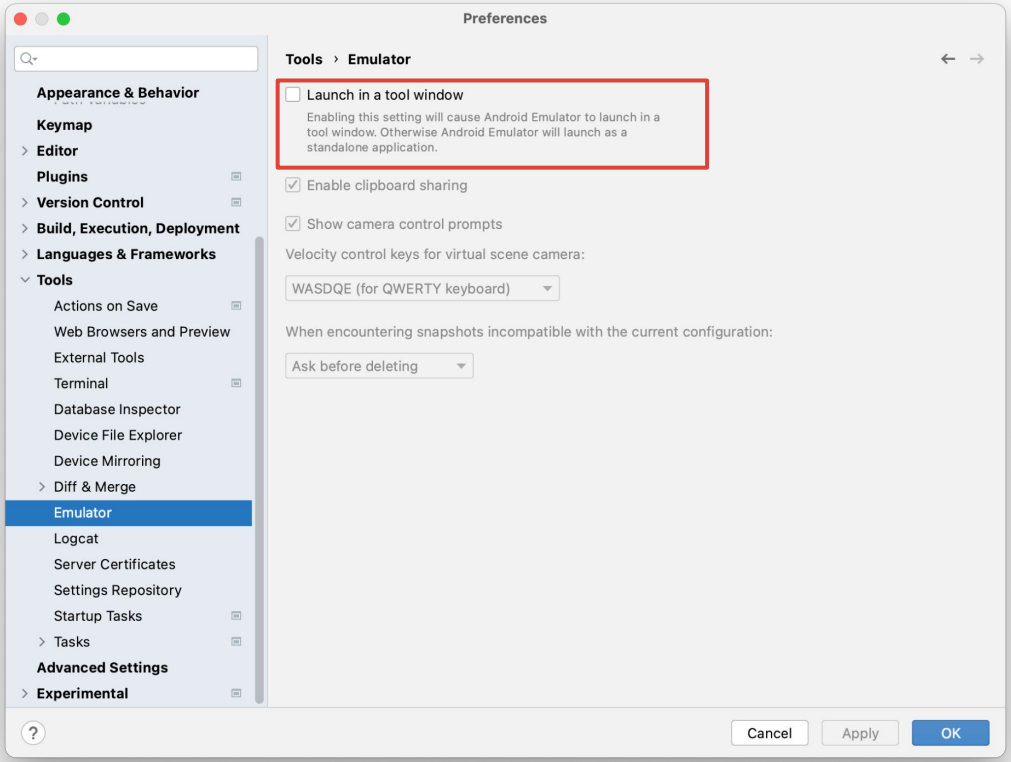
Actions 탭에서 실행 (재생 버튼)을 누르면 에뮬레이터가 실행됩니다. (최초 실행시 2~3분가량 소요)





안드로이드 에뮬레이터를 별도 창에서 실행되도록 하기

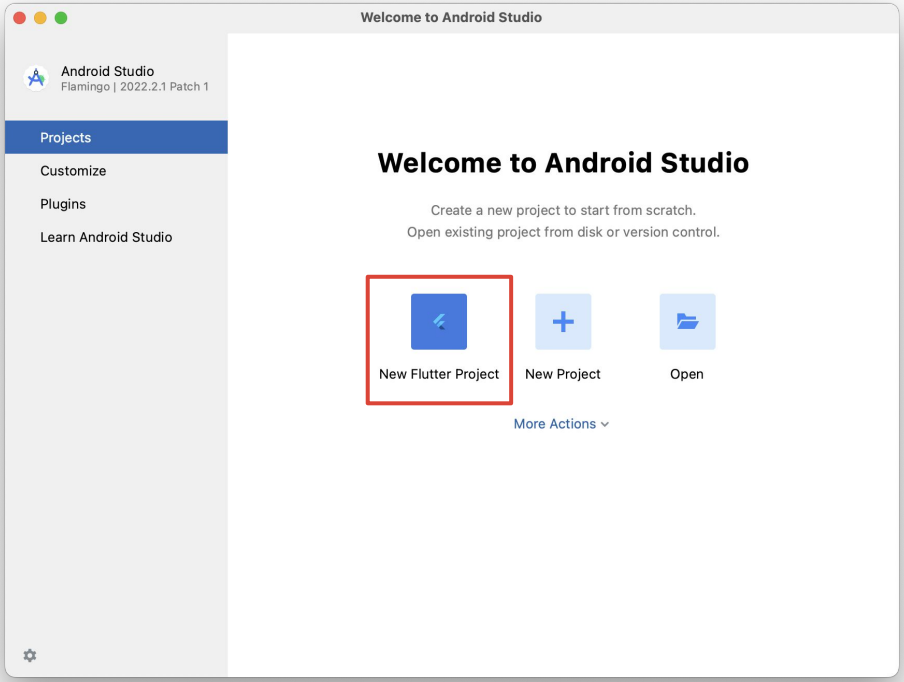
Settings > Tools > Emulator 화면에서 Launch in a tool window를 체크 해제합니다.



새 프로젝트 만들기

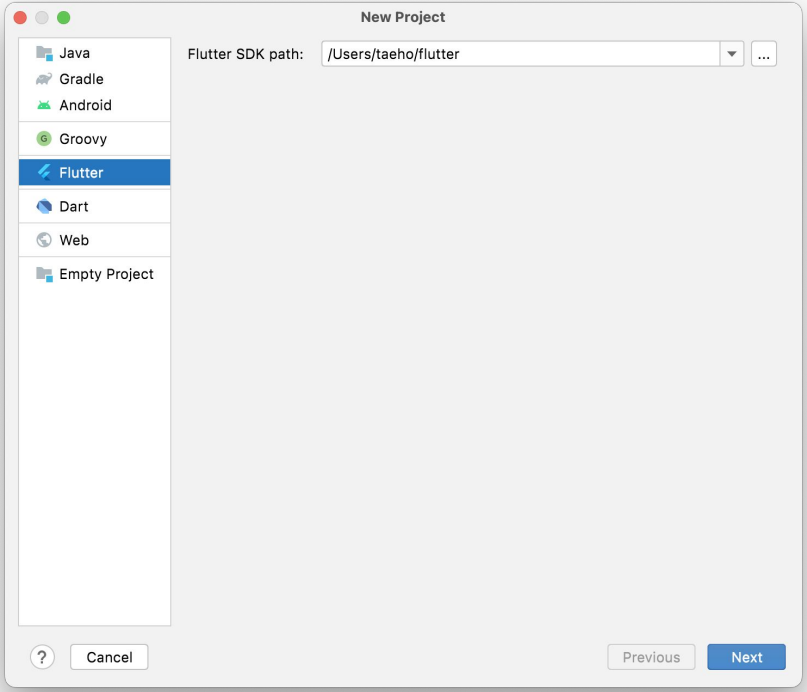
새 프로젝트 만들기

안드로이드 스튜디오 초기 화면에서 New Flutter Project 를 선택합니다.



새 프로젝트 만들기

SDK path에 앞에서 Flutter SDK를 설치한 경로가 나오는지 확인한 후, **Next** 버튼을 누릅니다.

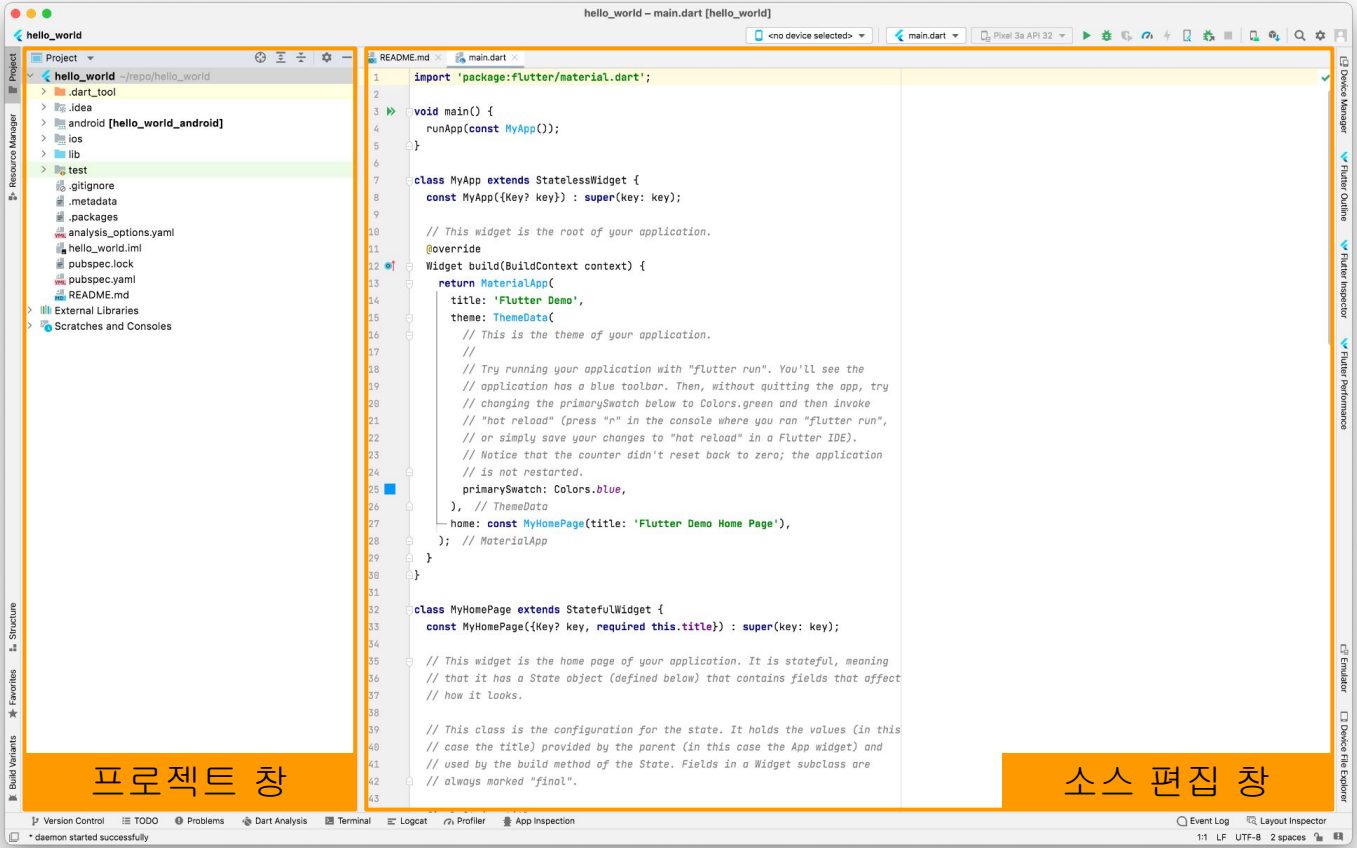


새 프로젝트 만들기

다음과 같이 프로젝트 정보를 입력한 후, Create 버튼을 눌러 프로젝트를 생성합니다. (언급하지 않은 항목은 기본값 그대로 둡니다)

- Project name: hello_world
- Organization: edu.skku.sco
- Platforms: Android, iOS

새 프로젝트 만들기


hello_world – main.dart [hello_world]
hello_world
Project
hello_world ~/repo/hello_world
.dart_tool
.idea
android [hello_world_android]
ios
lib
test
.gitignore
.metadata
.packages
analysis_options.yaml
hello_world.iml
pubspec.lock
pubspec.yaml
README.md
External Libraries
Scratches and Consoles
README.md
main.dart
import 'package:flutter/material.dart';
void main() {
runApp(const MyApp());
}
class MyApp extends StatelessWidget {
const MyApp({Key? key}) : super(key: key);
// This widget is the root of your application.
@override
Widget build(BuildContext context) {
return MaterialApp(
title: 'Flutter Demo',
theme: ThemeData(
// This is the theme of your application.
//
// Try running your application with "flutter run". You'll see the
// application has a blue toolbar. Then, without quitting the app, try
// changing the primarySwatch below to Colors.green and then invoke
// "hot reload" (press "r" in the console where you ran "flutter run",
// or simply save your changes to "hot reload" in a Flutter IDE).
// Notice that the counter didn't reset back to zero; the application
// is not restarted.
primarySwatch: Colors.blue,
), // ThemeData
home: const MyHomePage(title: 'Flutter Demo Home Page'),
); // MaterialApp
}
}
class MyHomePage extends StatefulWidget {
const MyHomePage({Key? key, required this.title}) : super(key: key);
// This widget is the home page of your application. It is stateful, meaning
// that it has a State object (defined below) that contains fields that affect
// how it looks.
// This class is the configuration for the state. It holds the values (in this
// case the title) provided by the parent (in this case the App widget) and
// used by the build method of the State. Fields in a Widget subclass are
// always marked "final".
프로젝트 창
소스 편집 창
Version Control
TODO
Problems
Dart Analysis
Terminal
Logcat
Profiler
App Inspection
Event Log
Layout Inspector
* daemon started successfully

새 프로젝트 만들기

플러터 프로젝트의 주요 구성요소

- android, ios 폴더: 안드로이드 및 iOS 앱을 만들 때 필요한 코드 (플러터로 구현된 부분을 감싸는 역할)
- lib 폴더: 플러터 소스 코드를 담고있는 폴더 (대부분의 코드는 여기에서 작성합니다)
- pubspec.yaml: 프로젝트 이름, 버전, 사용하는 라이브러리 등 프로젝트 구성에 필요한 주요 정보 포함

새 프로젝트 만들기

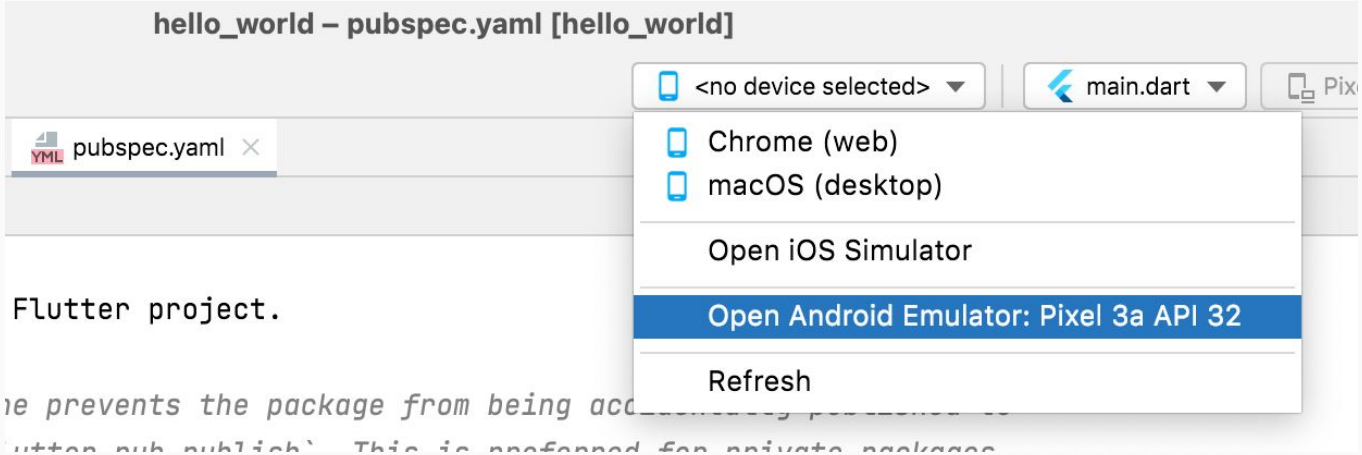
```yaml
name: hello_world
description: A new Flutter project.
publish_to: 'none' # Remove this line if you wish to publish to pub.dev
version: 1.0.0+1

environment:
  sdk: '>=3.0.0 <4.0.0'

dependencies:
  flutter:
    sdk: flutter
  cupertino_icons: ^1.0.2

dev_dependencies:
  flutter_test:
    sdk: flutter
  flutter_lints: ^2.0.0

flutter:
  uses-material-design: true
```

pubspec.yaml

프로젝트 동작 원리 살펴보기

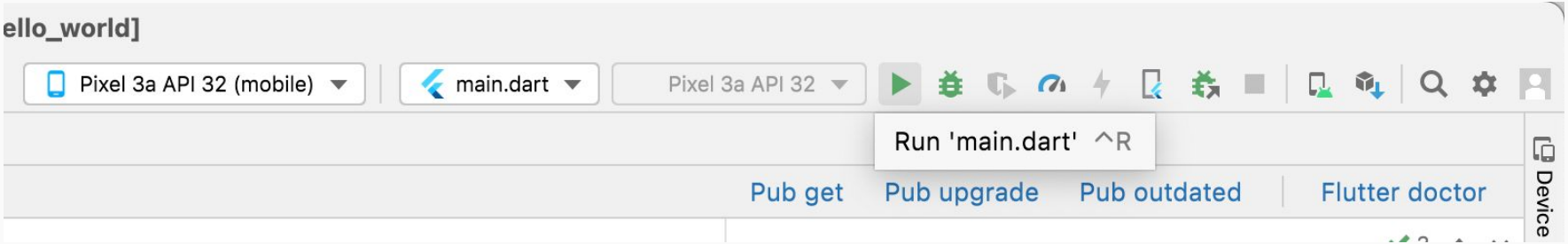
프로젝트 동작 원리 살펴보기

안드로이드 스튜디오 상단의 Flutter Device Selection 콤보박스를 누른 후, Open Android Emulator를 선택하여 안드로이드 에뮬레이터를 실행합니다. (메뉴가 표시되지 않는 경우 Refresh 선택 후 잠시 대기)



프로젝트 동작 원리 살펴보기

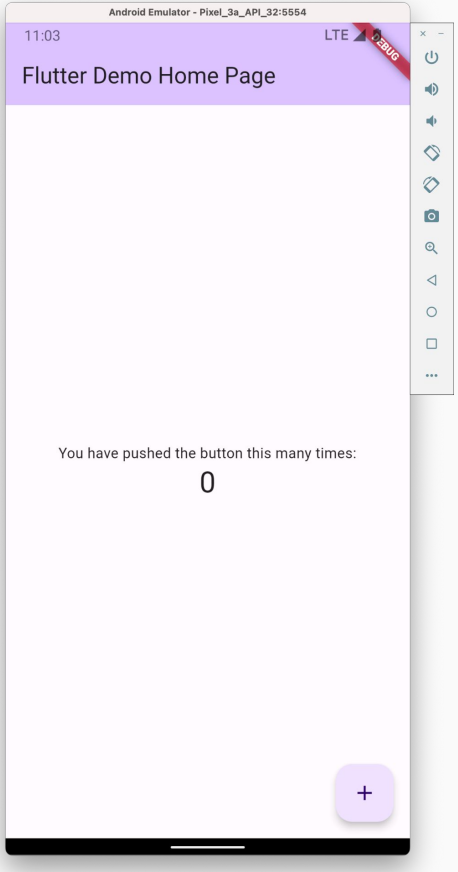
안드로이드 에뮬레이터가 실행된 후, Run ‘main.dart’ 버튼을 눌러 생성된 프로젝트를 에뮬레이터에서 실행합니다.



프로젝트 동작 원리 살펴보기

안드로이드 에뮬레이터에서 앱이 실행되는 모습을 확인합니다.

(주: 앱을 처음으로 실행하는 경우 빌드 도구를 새로 다운로드 한 후 빌드를 진행하므로 앱이 실행되기 까지 몇 분가량 소요될 수 있습니다)



프로젝트 동작 원리 살펴보기

main.dart 파일을 열어 어떤 코드로 앱이 구성되어있는지 확인합니다.

- `void main()`
  - 최초로 실행되는 코드로, 애플리케이션 코드를 화면에 표시합니다.
- `class MyApp extends StatelessWidget`
  - 애플리케이션을 구성하는 코드로 앱의 첫 화면, 테마 등을 정의합니다.
- `class MyHomePage extends StatefulWidget`
  - 앱에서 가장 처음으로 보여줄 화면을 구성합니다. 상태에 따라 표시되는 화면을 변경할 수 있습니다.
- `class _MyHomePageState extends State<MyHomePage>`
  - 상태에 따라 화면을 그려주는 코드를 담고 있습니다.

프로젝트 동작 원리 살펴보기

MyApp 클래스를 구성하는 주요 요소

- `MaterialApp`
  - 머티리얼 디자인을 따르는 앱을 구성할 때 사용합니다.
- `MaterialApp.theme`
  - 앱의 테마 색상을 결정합니다.
- `MaterialApp.home`
  - 앱에서 가장 처음으로 표시할 화면(위젯)을 지정합니다.

프로젝트 동작 원리 살펴보기

MyHomePage 클래스를 구성하는 주요 요소

- `State<MyHomePage> createState()`
  - 위젯의 상태에 따라 화면을 그려주는 클래스를 지정합니다.

프로젝트 동작 원리 살펴보기

`_MyHomePageState` 클래스를 구성하는 주요 요소

- `Widget build(BuildContext context)`
  - 위젯에서 표시할 화면을 그려주는 코드를 작성합니다.
- `Scaffold`
  - 머티리얼 디자인을 따르는 화면을 편리하게 구성할 수 있게 도와주는 위젯입니다.
- `AppBar`
  - 화면 상단부 (화면 이름, 액션 버튼 등)을 구성할 때 사용하는 위젯입니다.
- `Text`
  - 문자열을 표시할 때 사용하는 위젯입니다.
- `FloatingActionButton`
  - 화면 하단의 액션 버튼을 표시할 때 사용하는 위젯입니다.
- `setState()`
  - 화면을 다시 그려줍니다. 이 함수가 호출어야만 변경된 값을 화면에 반영할 수 있습니다.