Prepare Flutter development on Windows

Official documentation:
https://docs.flutter.dev/get-started/install/windows

Requirements:

- Windows 10 or 11 (64 bit)

- About 30 GB free space on your disc

- For tests on Android: an Android phone connected via USB to your PC

Components to be installed

- Android Studio (it is installing the Android SDK$^{*)}$ too)

- Flutter SDK$^{*)}$ (tools, libraries, …)

- Visual Studio Code used as IDE (Integrated Development Environment)

$^{*)}$SDK: Software Development Kit, Wikipedia says:
    a collection of software development tools in one installable package.

Step 1: Download and Install Android Studio

Open https://developer.android.com/studio :
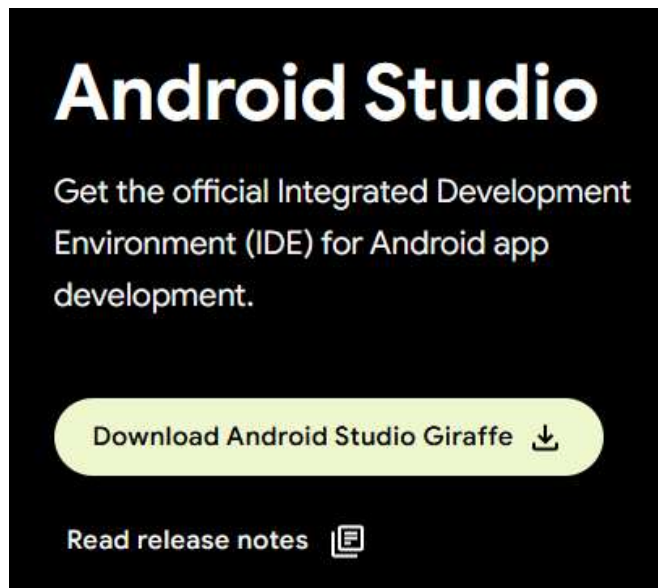
Press the Download button, on next page confirm "Terms and Conditions", then download android-studio-202y.a.b.c-windows.exe.
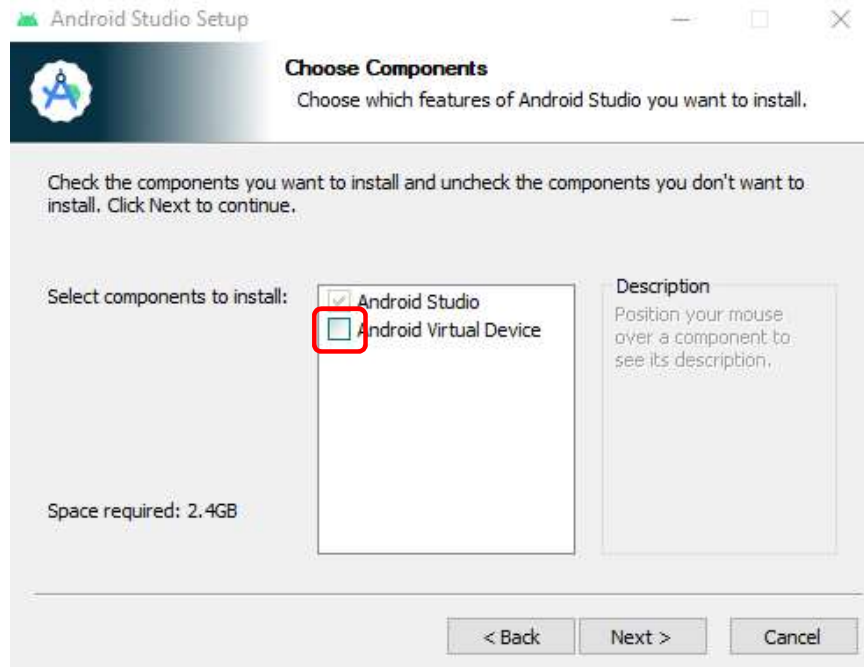
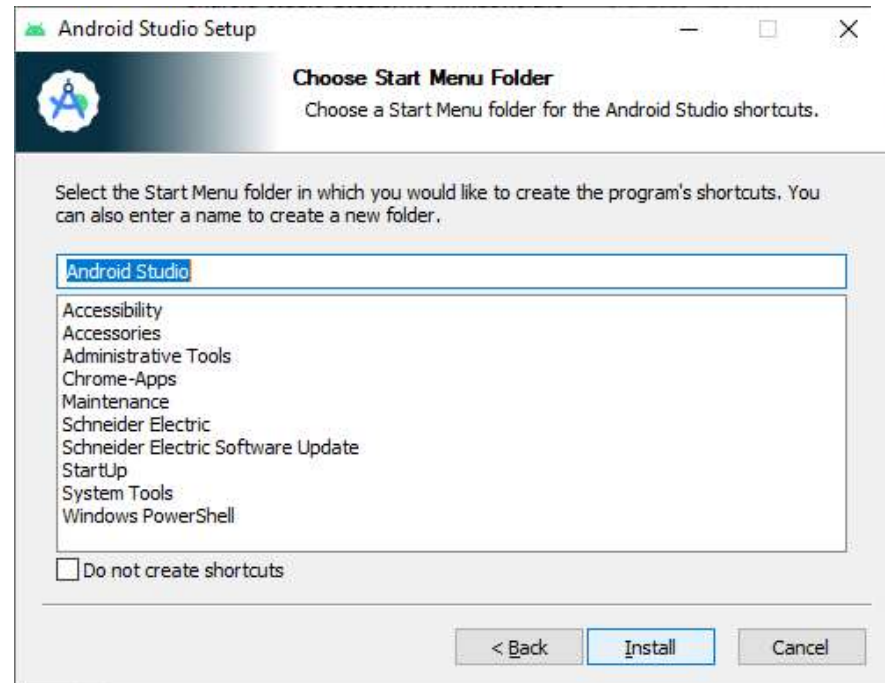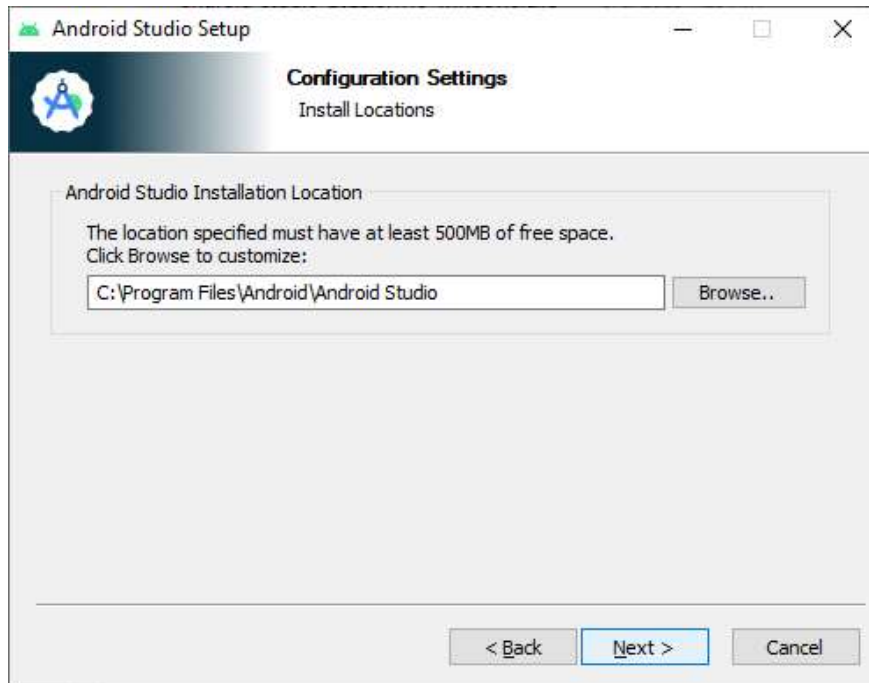In summer 2023 this was android-studio-**2022.3.1.19**-windows.exe.

Install Android Studio (this may take more than 20 minutes)

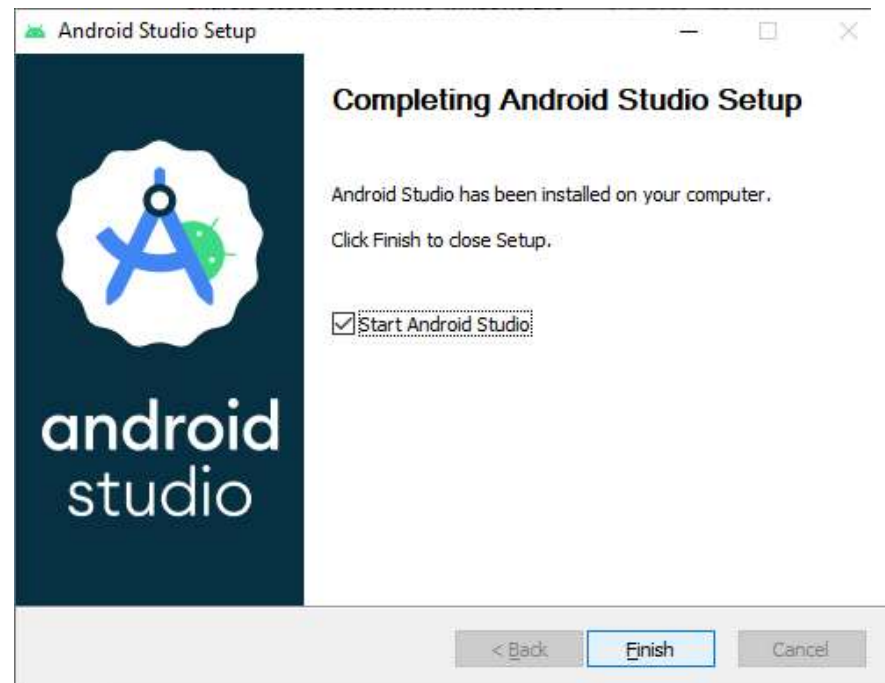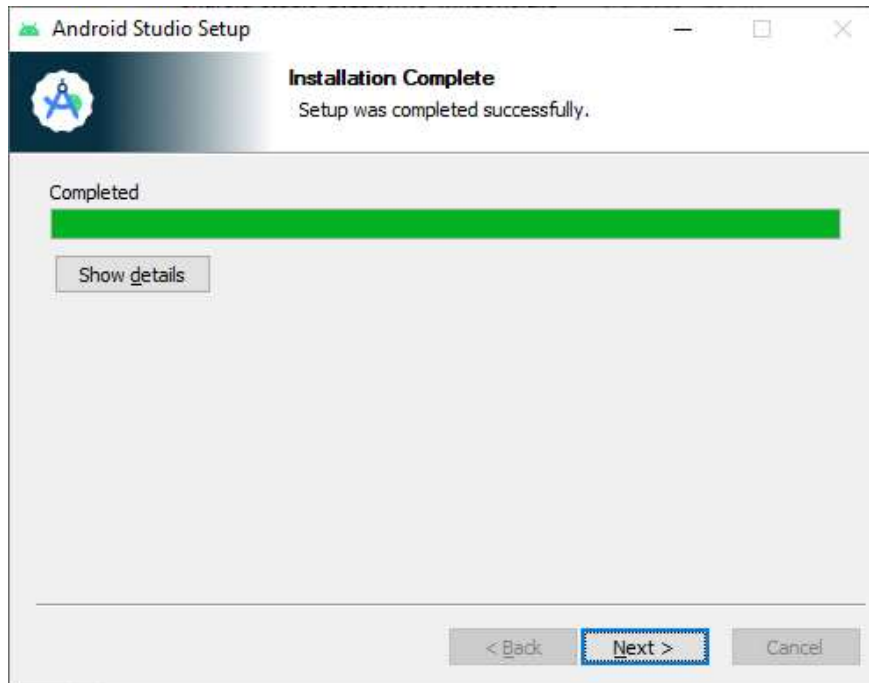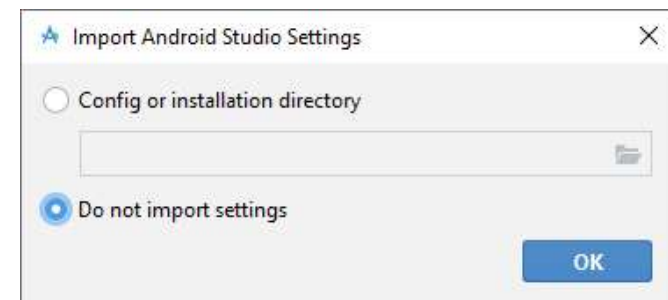Start the downloaded "android-studio-2022.3.1.19-windows.exe" :

Unselect "Android Virtual Devices", because it would need certain virtualization properties on your PC.
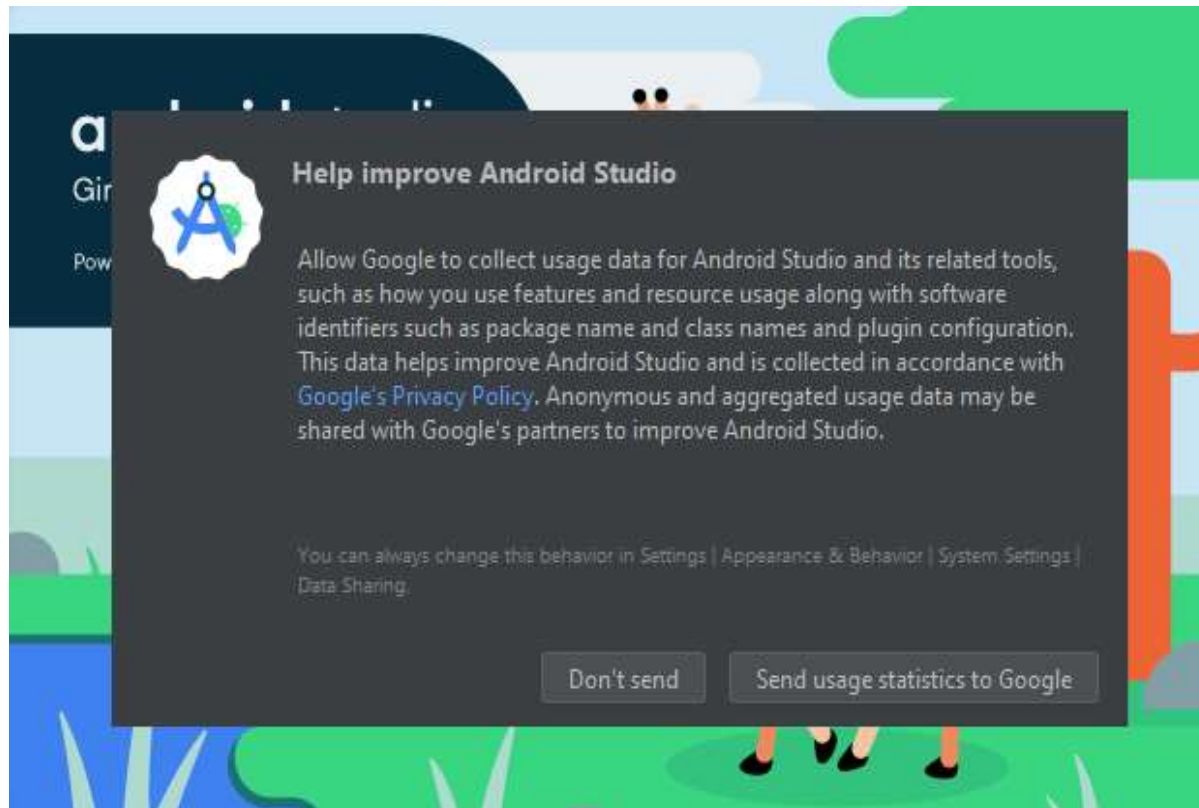
No changes needed in these 2 screens.
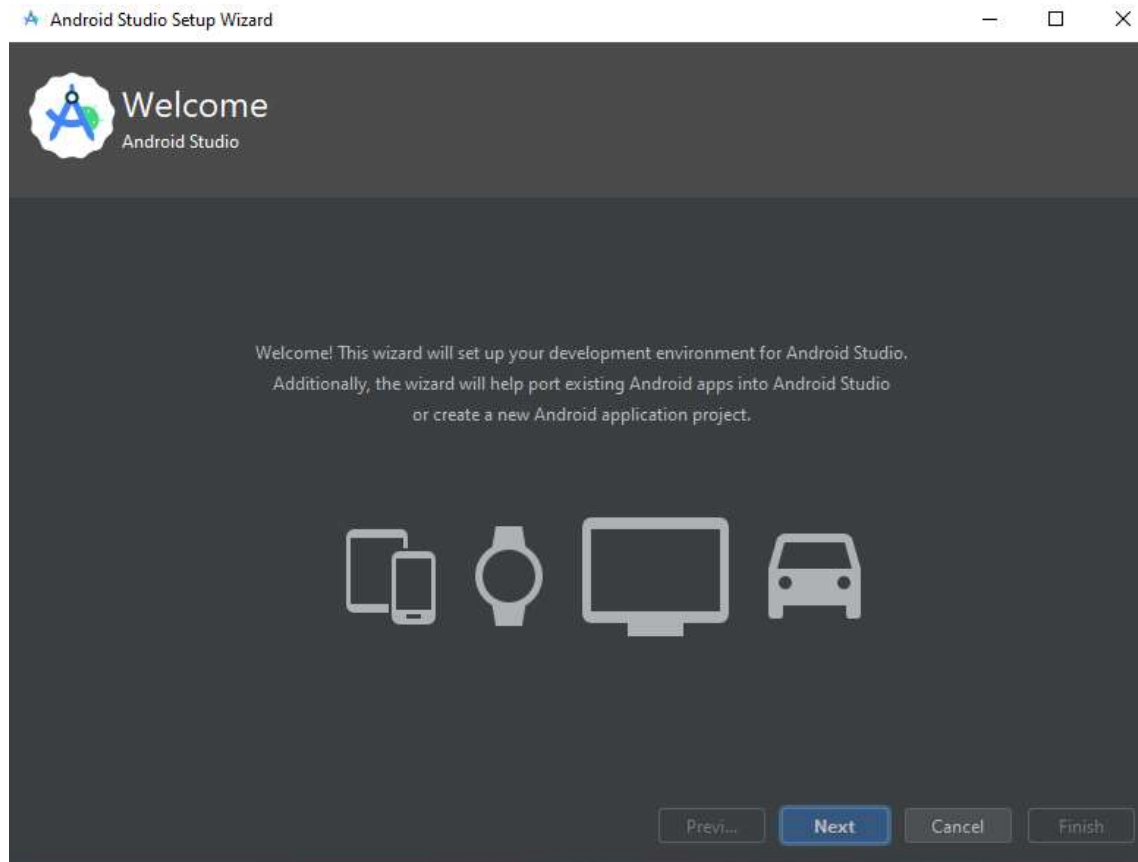Finally press "Install". After about 2 minutes:

Press "Next" in left screen,
then "Finish" in right screen.
Wait until Android Studio starts.
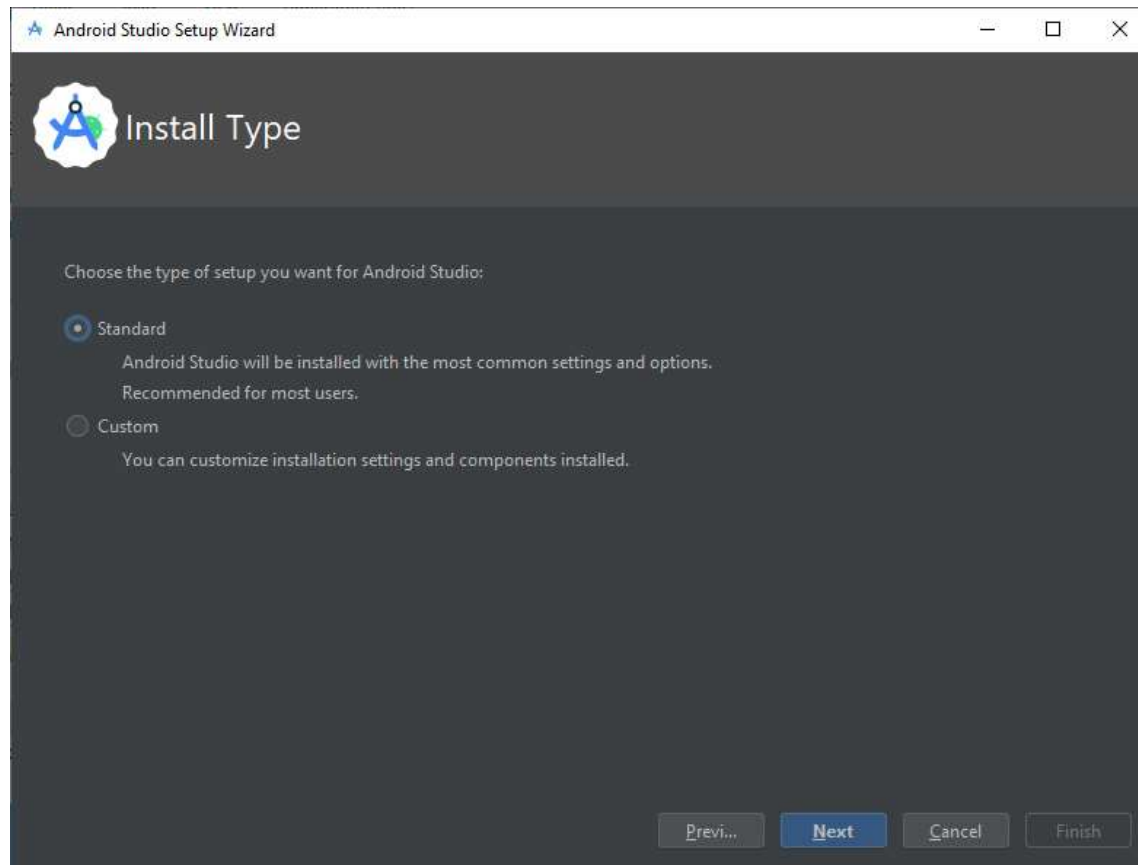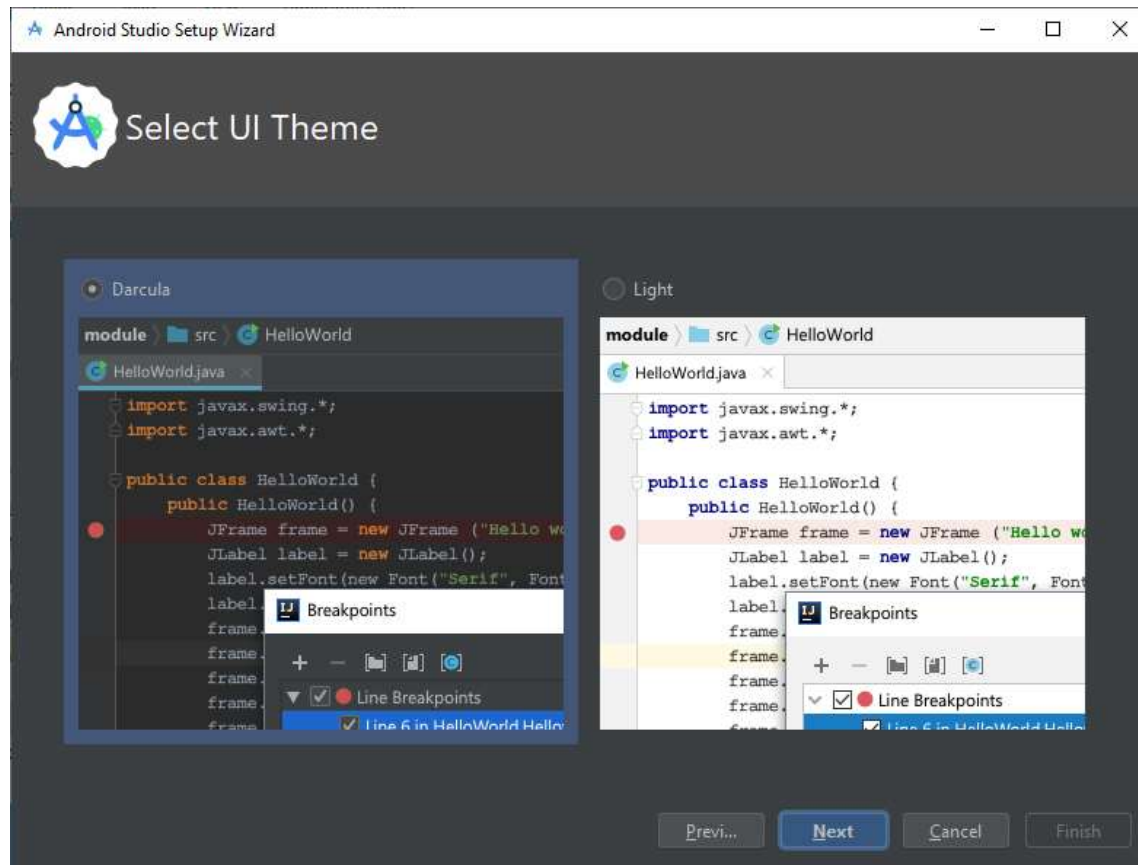Do not import settings:

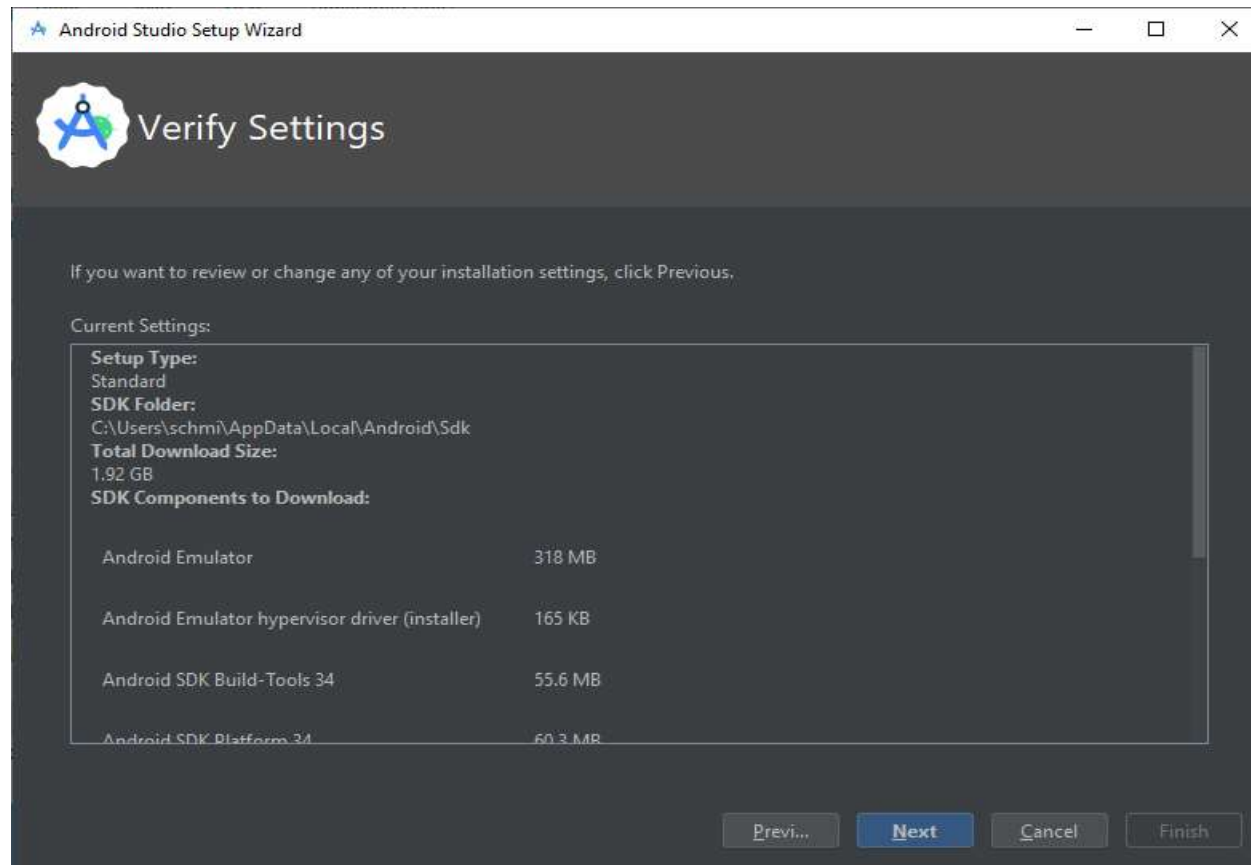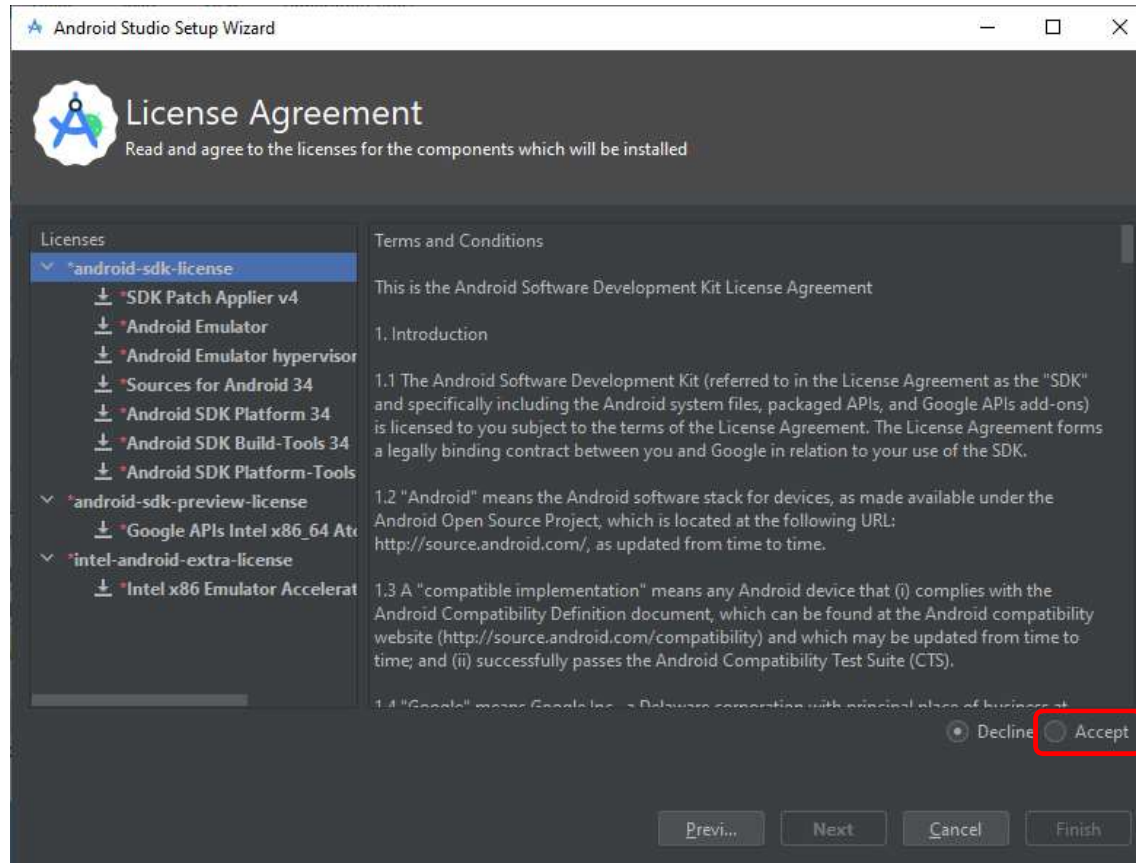Decide yourself what to select here, I pressed "Don't send".
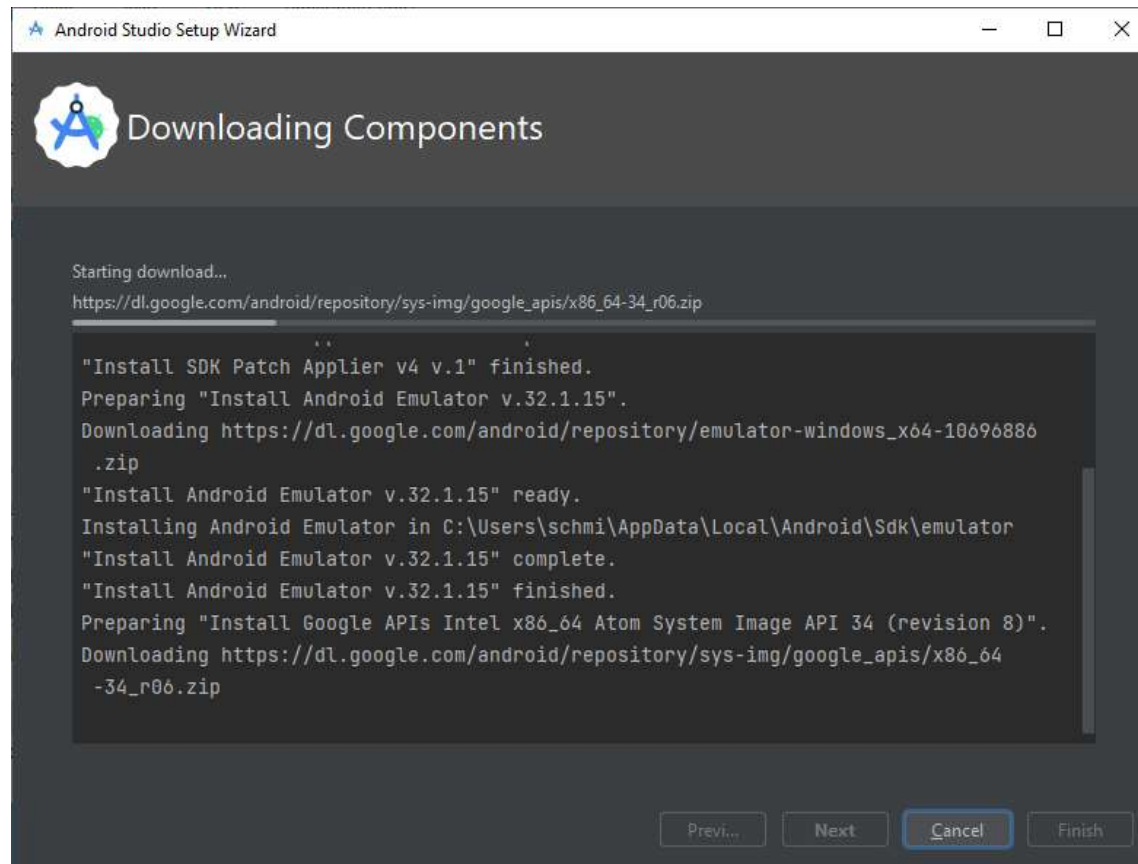
Press "Next".

Press "Next".
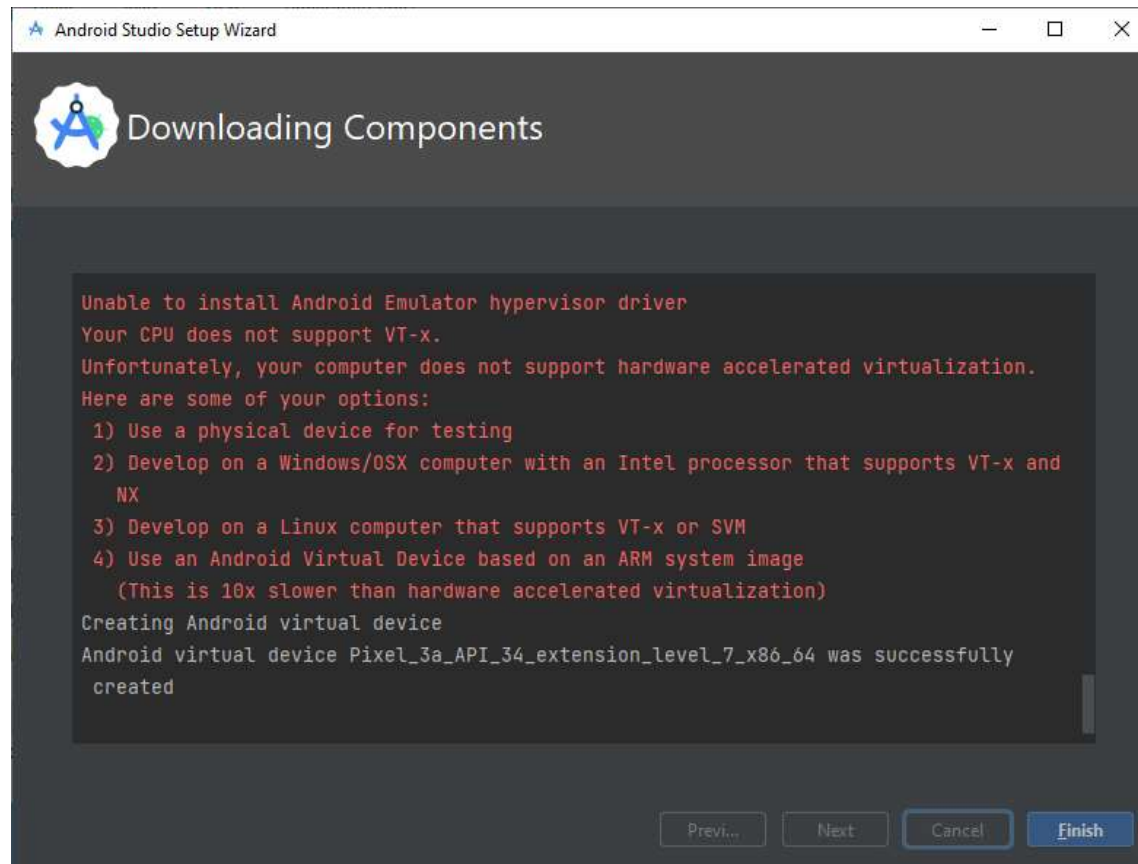
Decide if you prefer dark or light UI Theme.

Press "Next".

Click on "Accept" near bottom-right. Then select the second title line "android-sdk-preview-license" on the left and click again on "Accept". Finally do the same with the third title line.
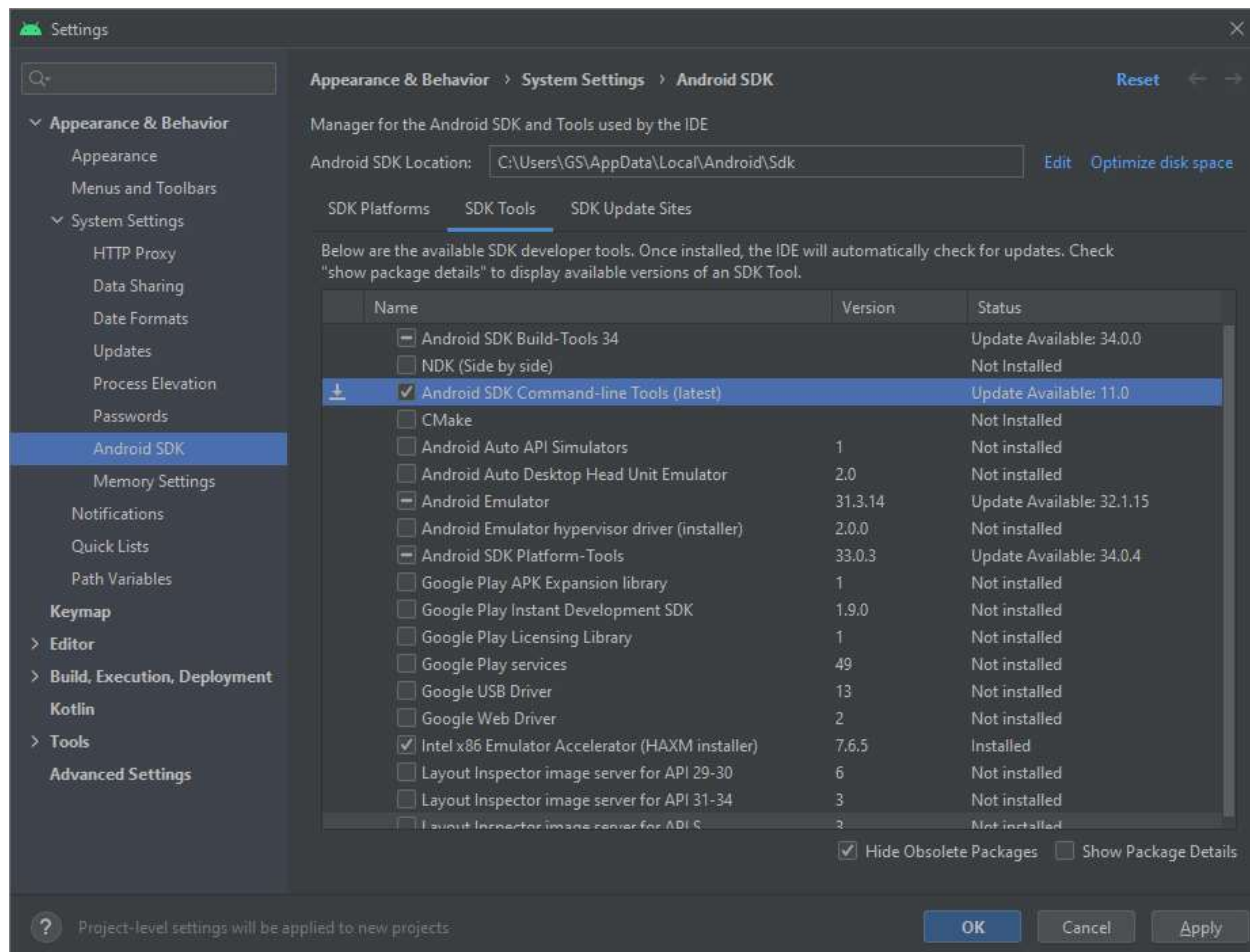
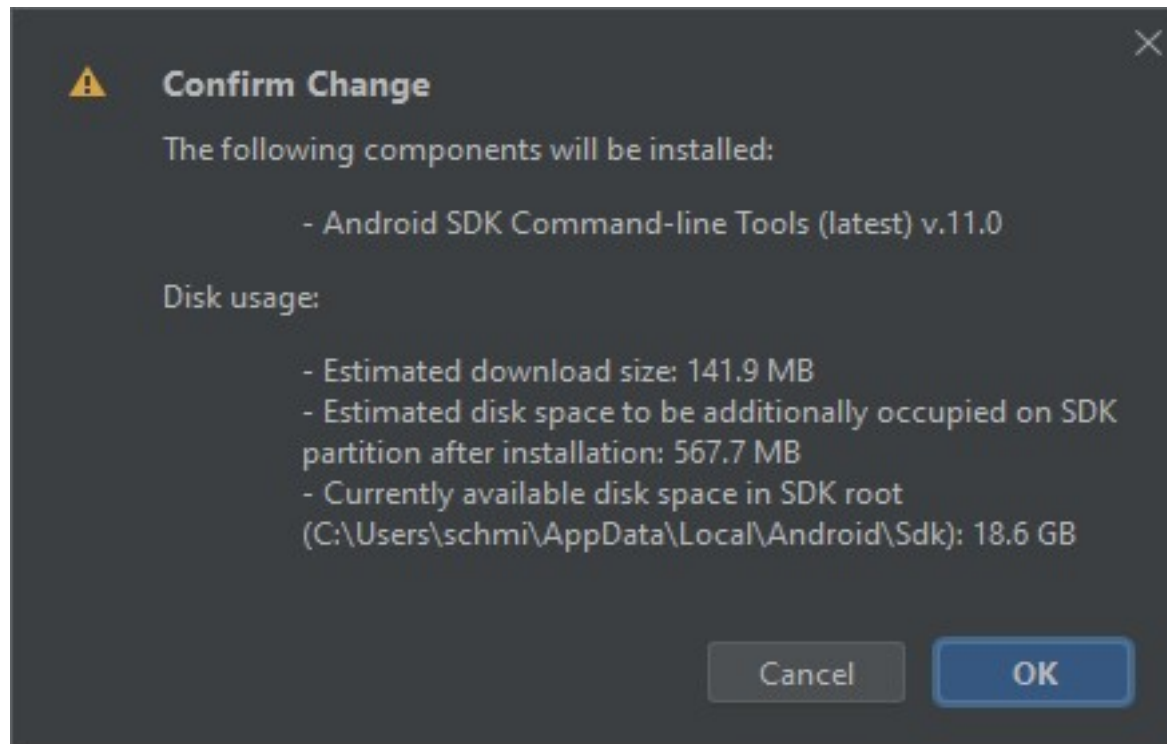Be patient, this may take more than 5 minutes.

Ignore the red lines (we will use a physical phone for testing, no virtual device). Press "Finish" and wait for Android Studio to start.
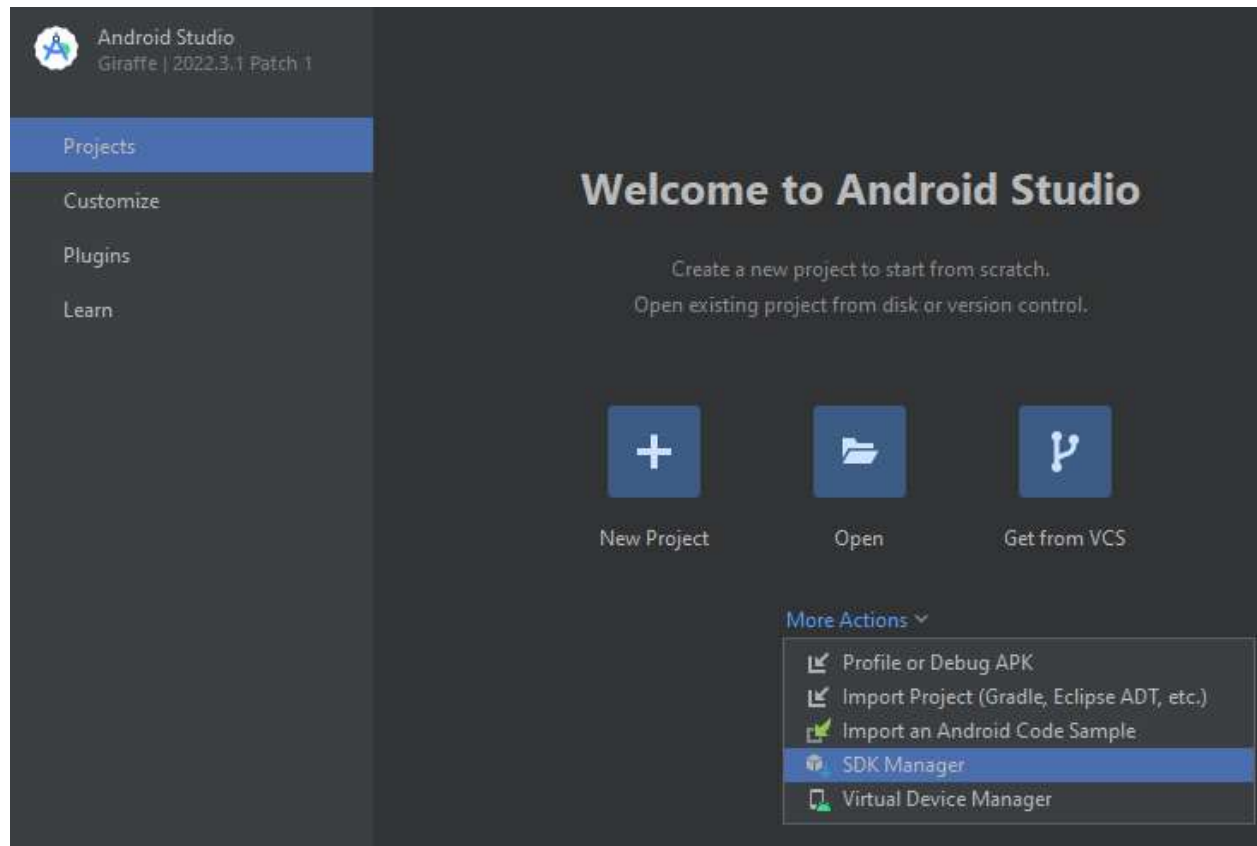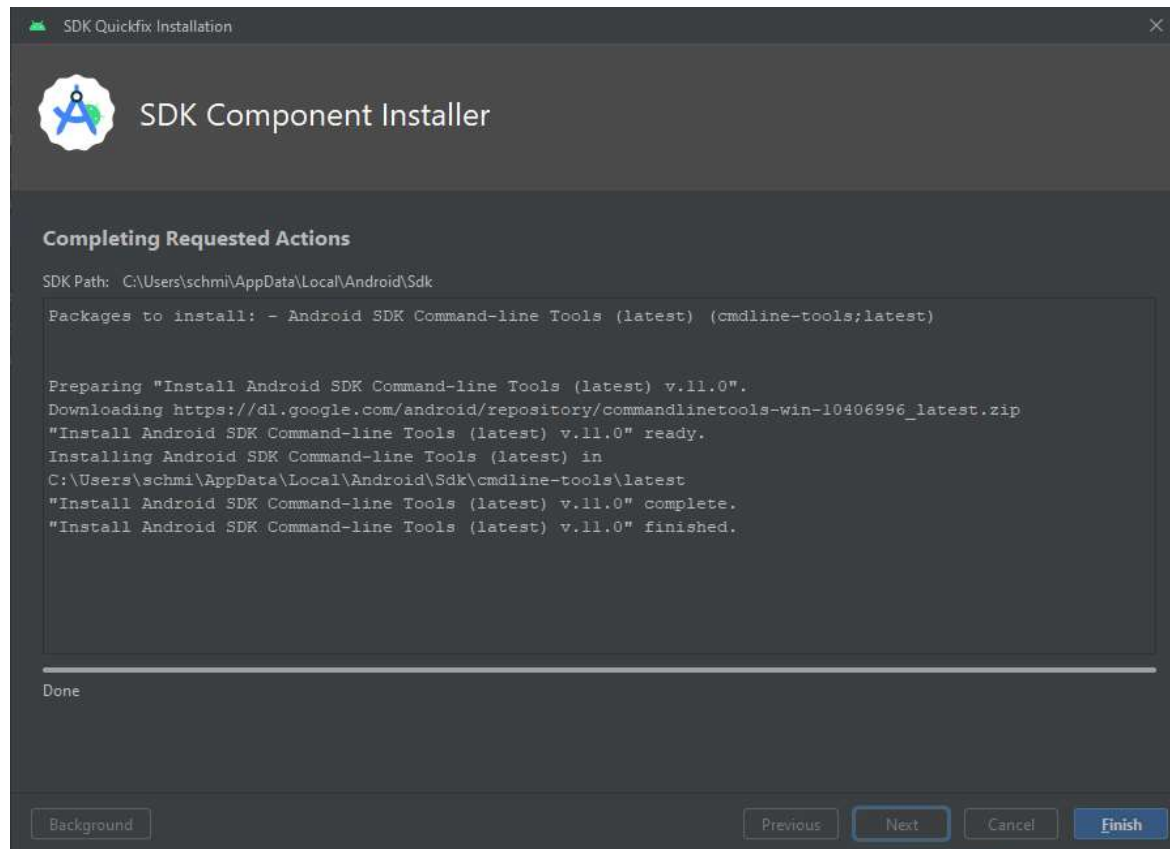
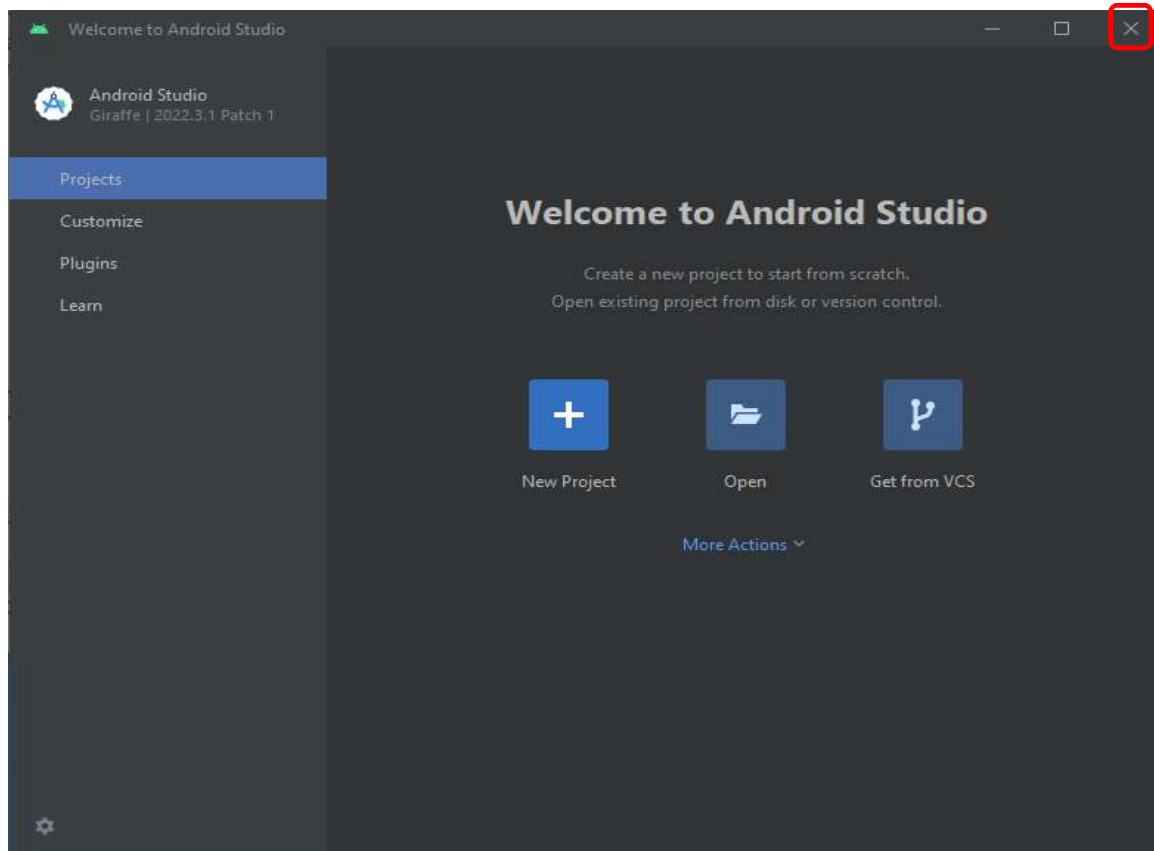When Android Studio has started, open "More Actions" and select "SDK Manager"

Open Tab "SDK Tools", set check mark on third line
"Android SDK Command-Line Tools (latest)" and press "OK".

Press "OK".

Wait until SDK Component Installer is done, then press "Finish".

Quit Android Studio with the "x" Button top-right.
We will use Visual Studio Code as development environment.
We executed Android Studio Installer e.g. to get the Android SDK.

Step 2: Download and Unzip the Flutter SDK

Open https://docs.flutter.dev/get-started/install/windows,
scroll down a bit and press on the blue button shown below:

Get the Flutter SDK

❗ Important: If you're in China, read Using Flutter in China.

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

flutter_windows_3.13.4–stable.zip

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

This will download the latest stable Flutter SDK as a zip-file.

The file has around 900 MB.

Unzip the Flutter SDK

Create a folder "flutter" on your drive "C:\" and therein a folder "sdk". [*)]

Open the downloaded zip file in your Windows Explorer, go to folder "flutter" therein, select all directories and files and copy them to "C:\flutter\sdk" :

Local Disk (C:) > flutter > sdk >

Name	Date modified	Size
.git	15.09.2023 21:14	
.github	15.09.2023 21:14	
.idea	15.09.2023 21:14	
.pub-preload-cache	15.09.2023 21:14	
.vscode	15.09.2023 21:14	
bin	15.09.2023 21:15	
dev	15.09.2023 21:16	
examples	15.09.2023 21:16	
packages	15.09.2023 21:17	
.ci.yaml	15.09.2023 21:17	147 KB
.gitattributes	15.09.2023 21:17	1 KB
.gitignore	15.09.2023 21:17	3 KB
analysis_options.yaml	15.09.2023 21:17	12 KB

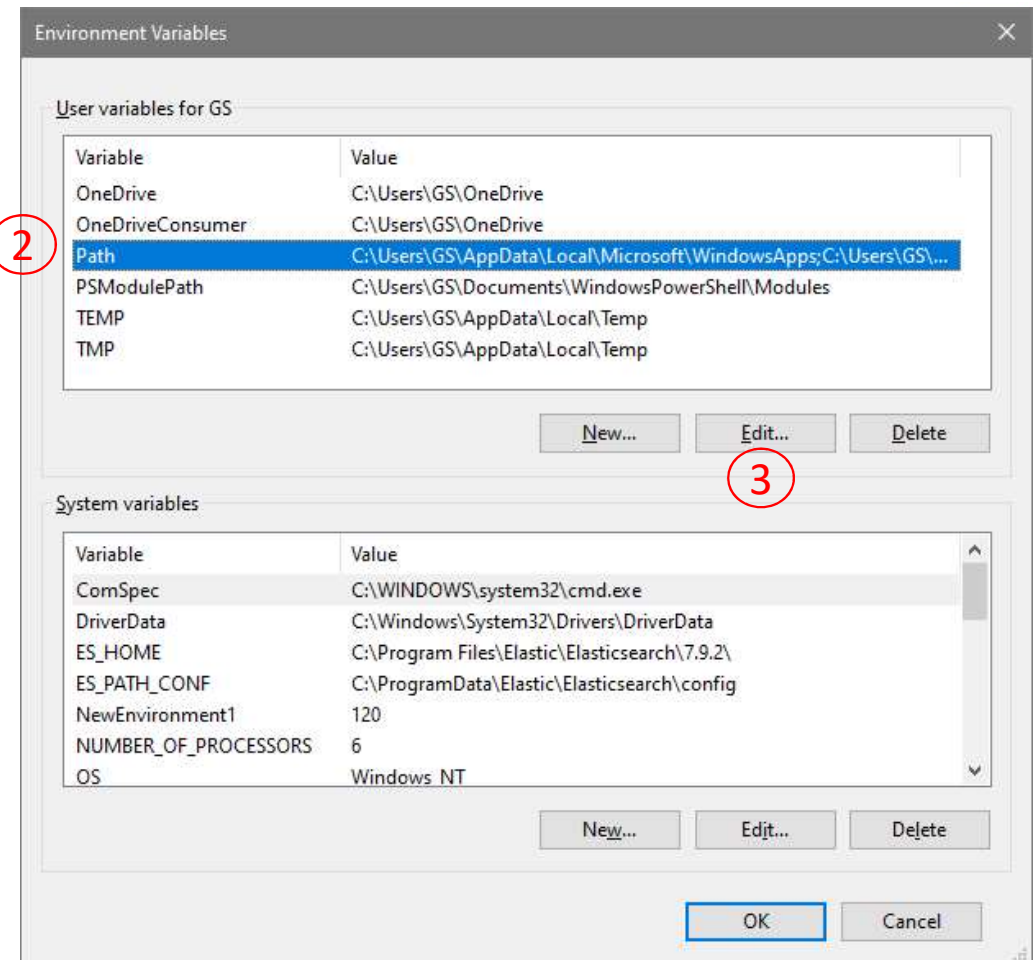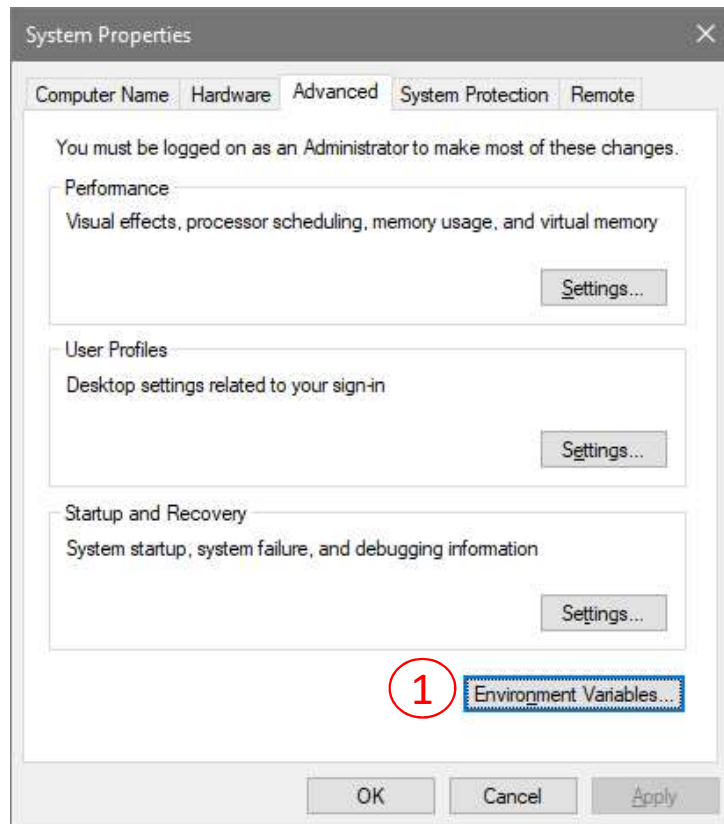[*)] You can name the directories as you want, but do not use blanks in their names.

Add Flutter's bin directory to PATH

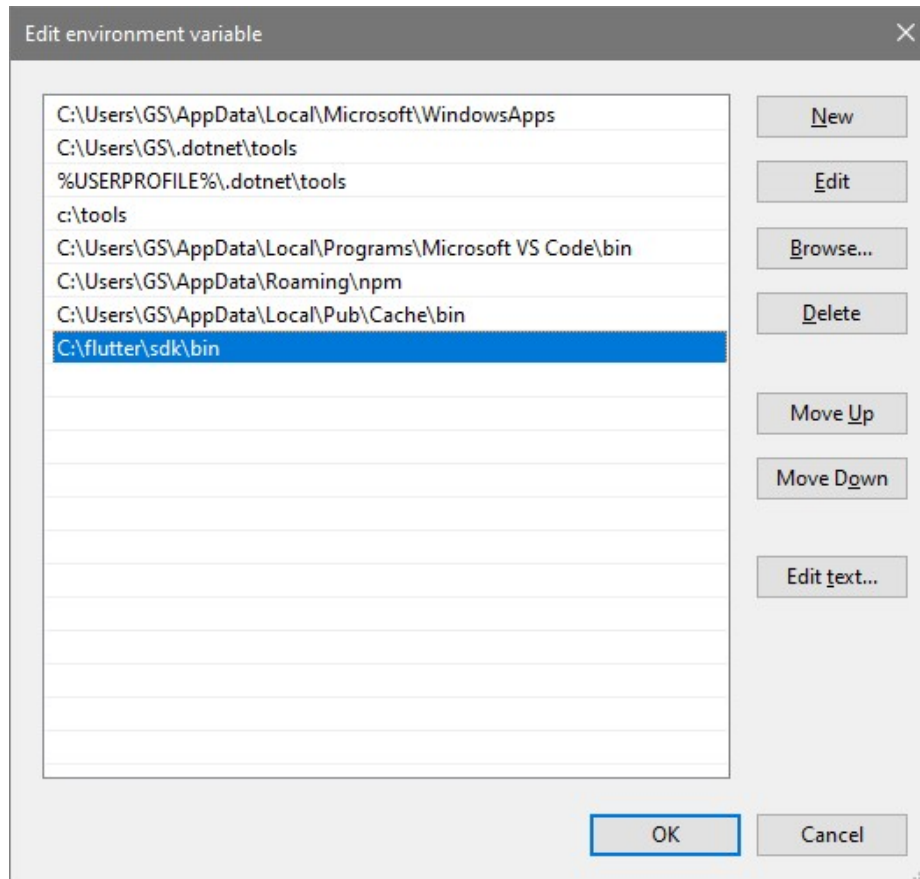In the Search area of the task bar, enter "environment variable" *) :
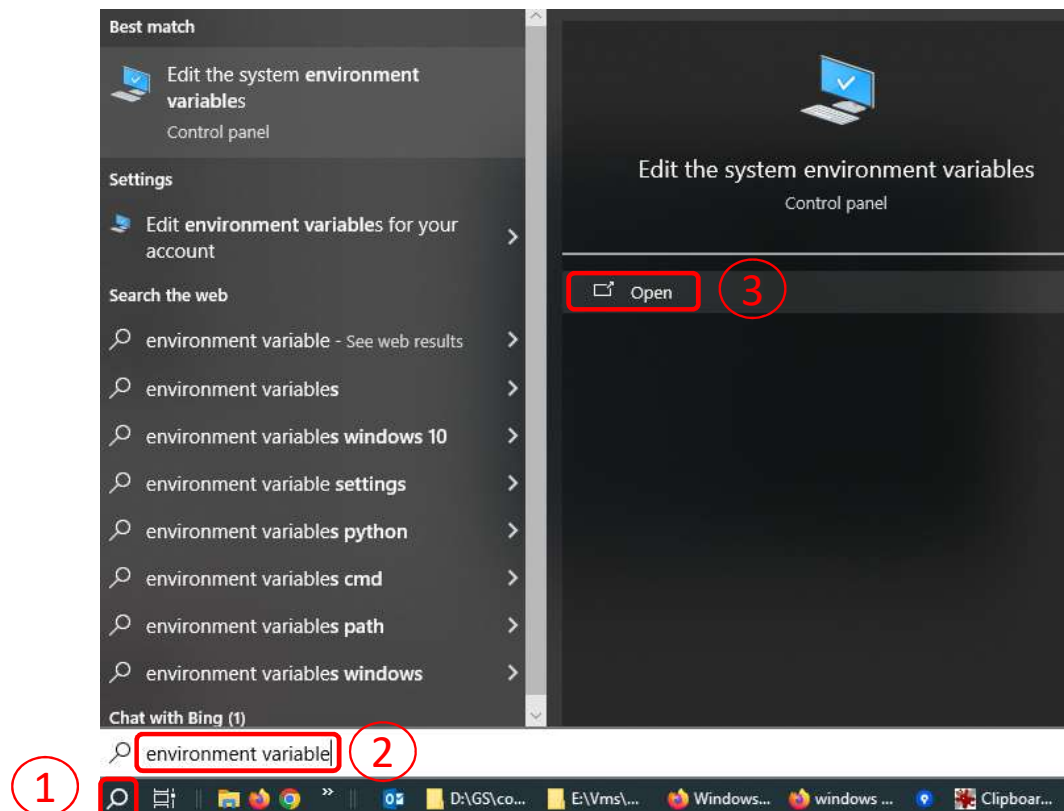
Press "Open" on the right.

*) In a German Windows, enter "Umgebungsvariable"

Press on "Environment Variables" and in the upcoming window
select the line starting with "Path", then press "Edit…"

You may see other content than shown above. Press "New",
in the high-lighted line enter "C:\flutter\sdk\bin", then press "OK".
This ensures that you can start the "flutter" command in each command prompt.

In the search area of the task bar, enter "cmd" and open a command prompt.
Therein enter the command "flutter doctor".
Be patient, this command may take several minutes.

At the end you should see the following output :

```
C:\Users\gs>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[√] Flutter (Channel stable, 3.13.4, on Microsoft Windows [Version 10.0.19045.3324], locale en-US)
[√] Windows Version (Installed version of Windows is version 10 or higher)
[!] Android toolchain - develop for Android devices (Android SDK version 34.0.0)
    ! Some Android licenses not accepted. To resolve this, run: flutter doctor --android-licenses
[√] Chrome - develop for the web
[X] Visual Studio - develop Windows apps
    X Visual Studio not installed; this is necessary to develop Windows apps.
      Download at https://visualstudio.microsoft.com/downloads/.
      Please install the "Desktop development with C++" workload, including all of its default components
[√] Android Studio (version 2022.3)
[√] Connected device (2 available)
[√] Network resources

! Doctor found issues in 2 categories.
```

The 'red' issue is ok for us, we do not want to develop apps for Windows.
Next page shows how to fix the 'orange' issue.

As proposed by "flutter doctor", enter the command "flutter doctor --android-licenses". You should see:

```
C:\Users\gs>flutter doctor --android-licenses
[=====================================] 100% Computing updates...
4 of 7 SDK package licenses not accepted.
Review licenses that have not been accepted (y/N)?
```

Enter "y" and repeat this 5 times until you see

```
10.8 Open Source Software. In the event Open Source software is included with Evaluation Software, such Open Source s
oftware is licensed pursuant to the applicable Open Source software license agreement identified in the Open Source s
oftware comments in the applicable source code file(s) and/or file header as indicated in the Evaluation Software. Ad
ditional detail may be available (where applicable) in the accompanying on-line documentation. With respect to the Op
en Source software, 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
```

Now "flutter doctor" should only show the 'Windows issue':


```
C:\Users\gs>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[√] Flutter (Channel stable, 3.13.4, on Microsoft Windows [Version 10.0.19045.3324], locale en-US)
[√] Windows Version (Installed version of Windows is version 10 or higher)
[√] Android toolchain - develop for Android devices (Android SDK version 34.0.0)
[√] Chrome - develop for the web
[X] Visual Studio - develop Windows apps
    X Visual Studio not installed; this is necessary to develop Windows apps.
      Download at https://visualstudio.microsoft.com/downloads/.
      Please install the "Desktop development with C++" workload, including all of its default components
[√] Android Studio (version 2022.3)
[√] Connected device (2 available)
[√] Network resources

! Doctor found issues in 1 category.
```

Thus your system is prepared to develop flutter apps for Android
or for the web.

Next step will be to install Visual Studio as IDE (Integrated Development Environment).

If you want, you can create and run Flutter apps even without an IDE.

The command "flutter create ." (don't forget '.' at the end) creates a new Flutter project in the directory, where this command was started:

And "flutter run" starts this project e.g. on Chrome:

Step 3: Download and Install Visual Studio Code

Open https://code.visualstudio.com/download and press the button marked below in red:

Install Visual Studio Code

Start the downloaded VSCodeUserSetup-x64-… file. It will show:
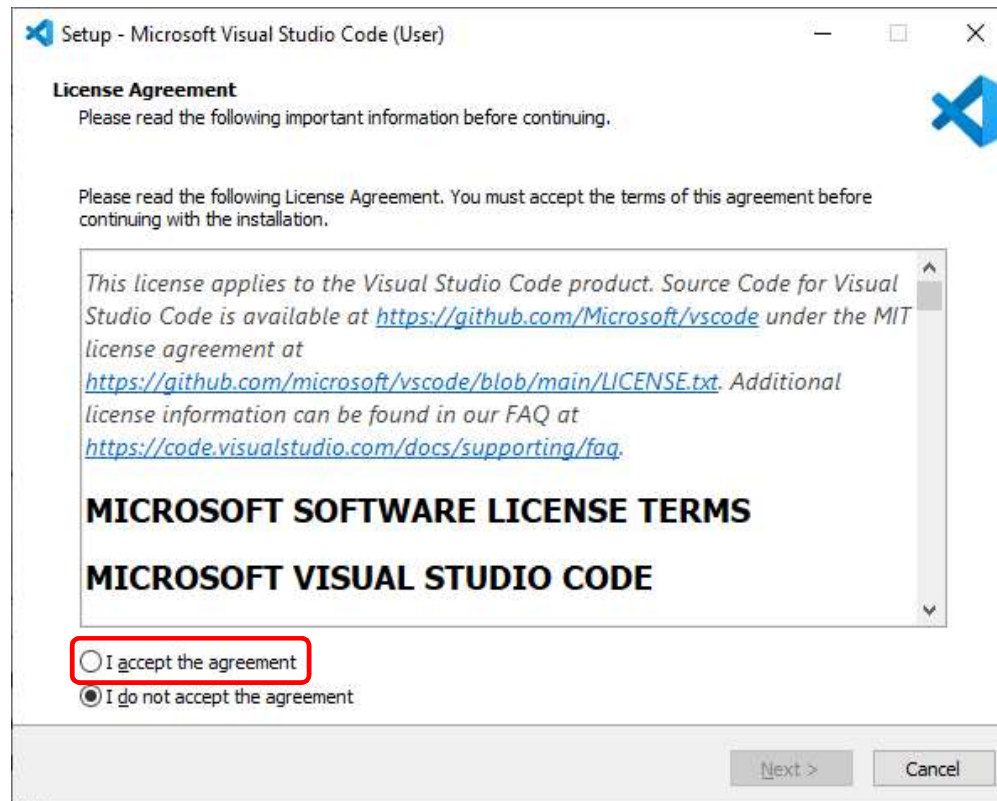
Accept the agreement and press "Next".
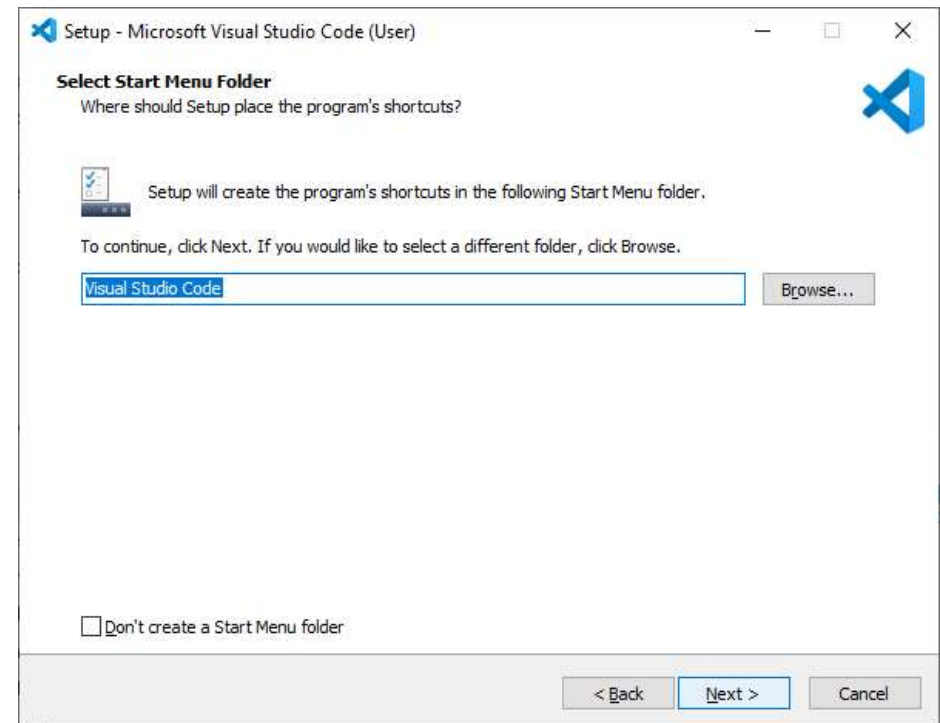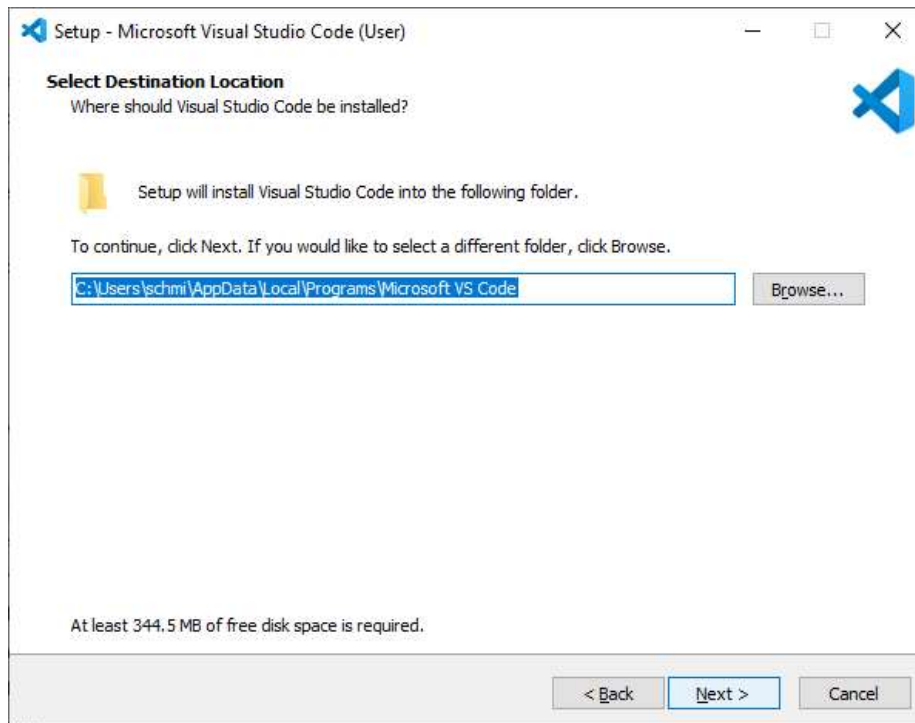
No changes needed in these 2 screens. Press "Next" in both of them.
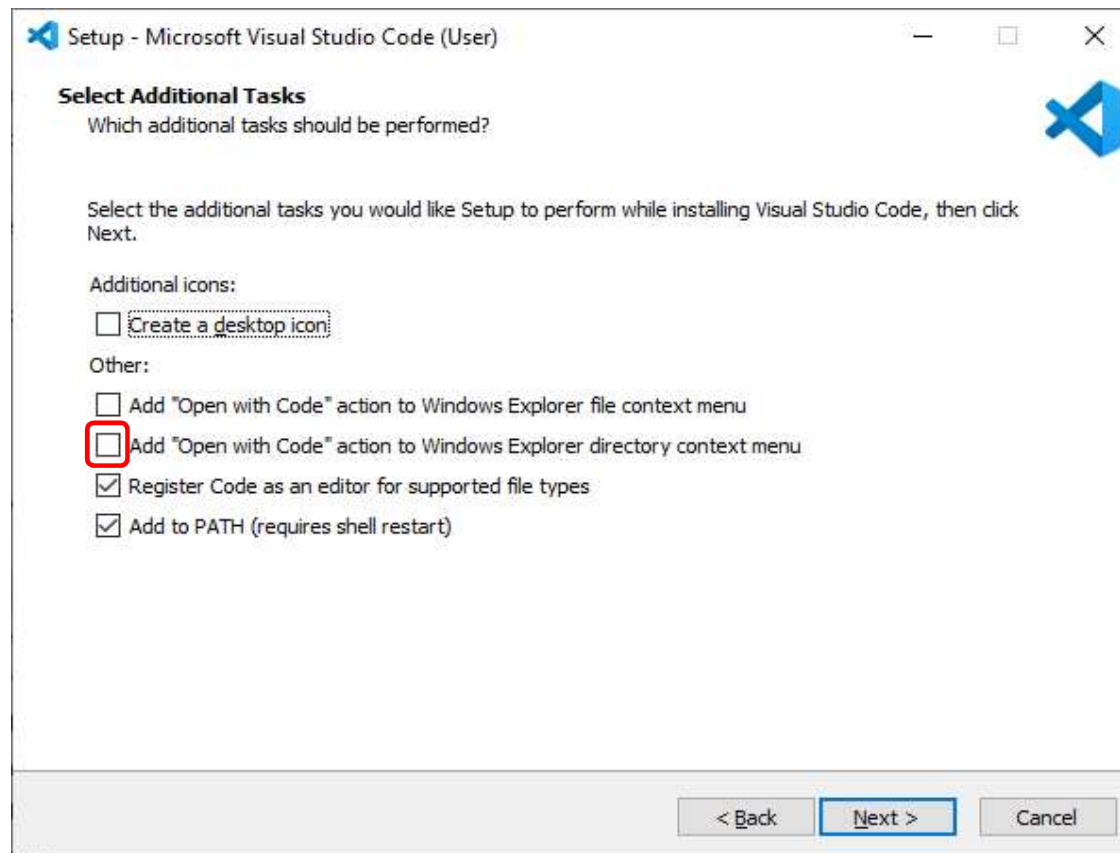
Select the red marked check-box before pressing "Next".
If you want you can also check "Create a desktop icon".
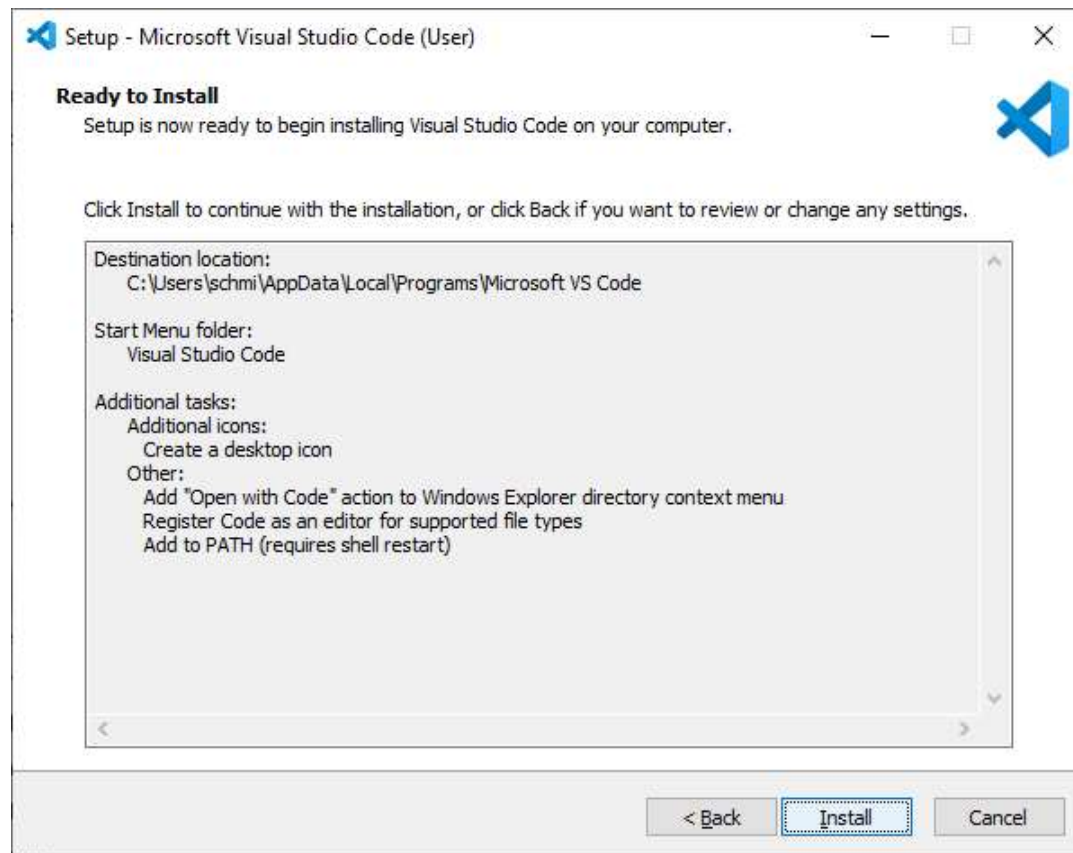
Press "Install".

After about one minute, you will see the screen above.
Press "Finish" and wait until VS Code has started.
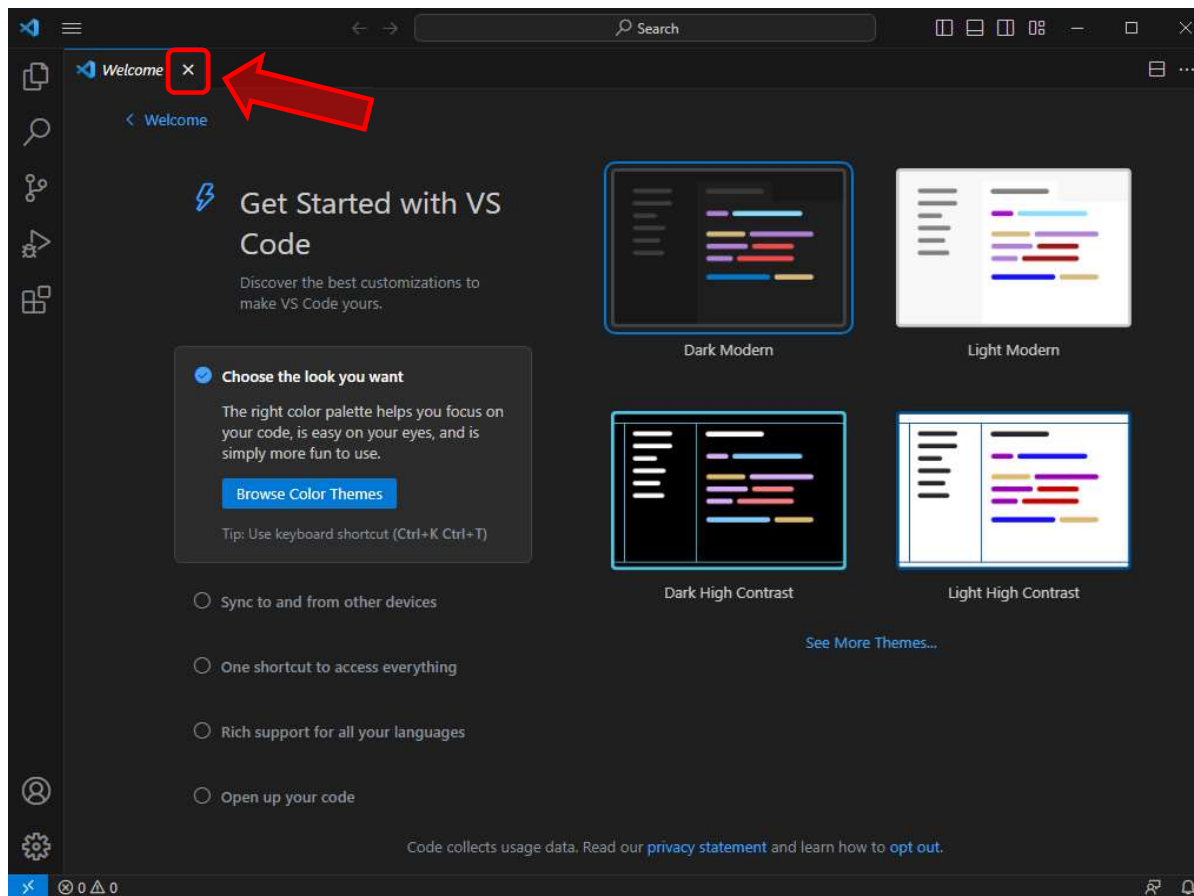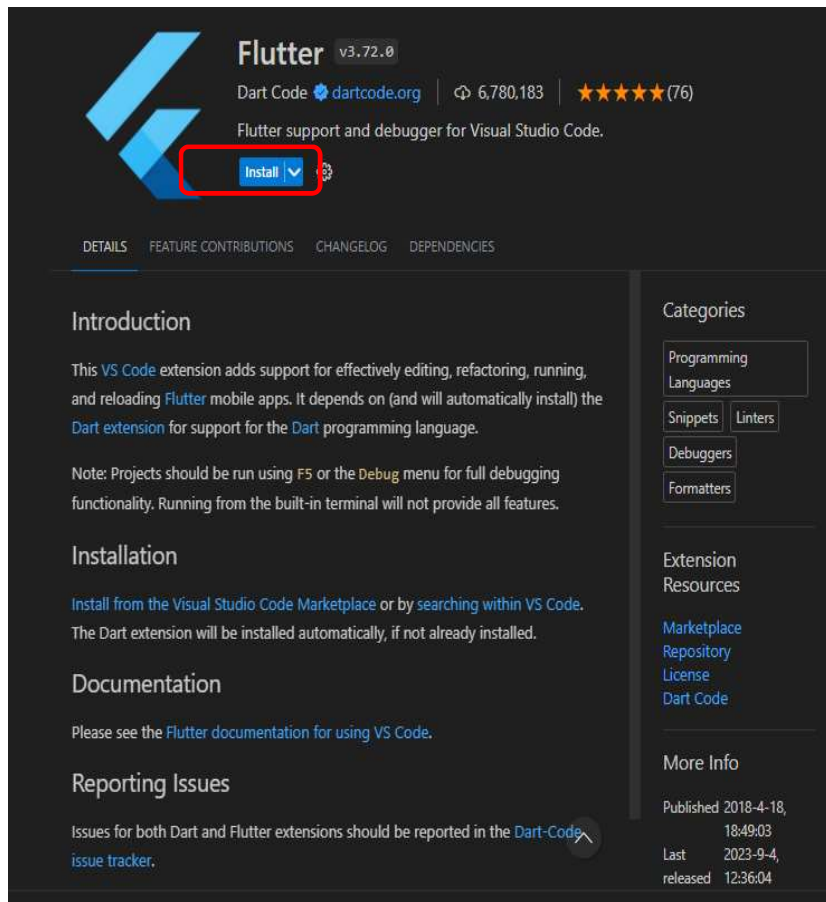
You can, but you do not need to change anything here.
Afterwards close this Welcome screen by pressing on the red marked "x".

Install the flutter extension in VS Code
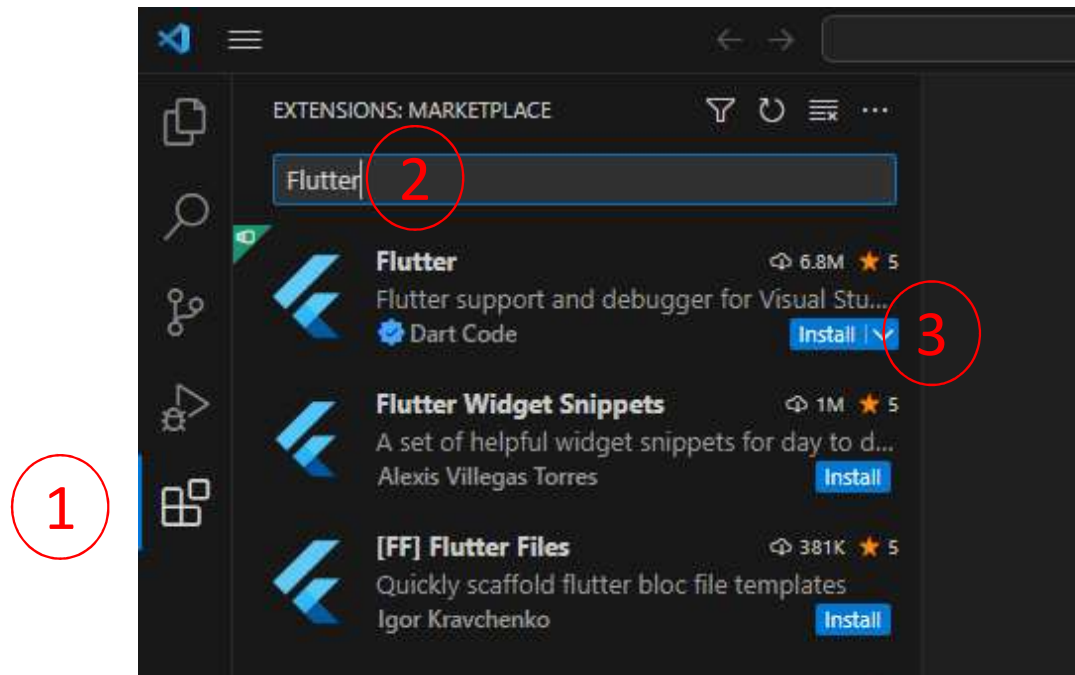
On the left toolbar in VS Code, press the icon with 4 squares, in the upcoming search field enter "Flutter" and press "Install" on the extension called "Flutter".

Press again "Install".

Install will take only some seconds. Close the window "Extension:Flutter".
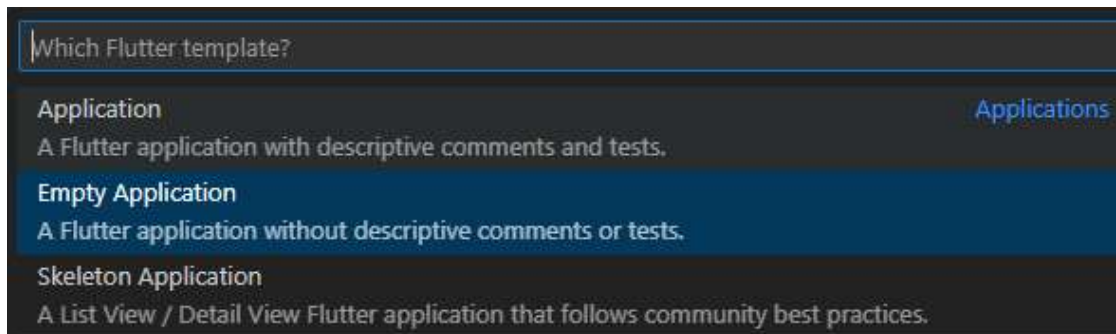Open menu "View" and select "Command Palette":
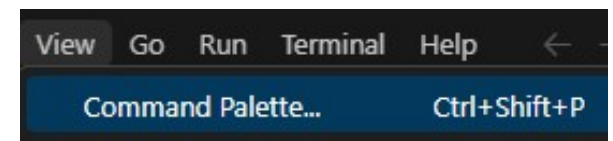
In the opened entry field on top of VS Code, enter "Flutter" and in the upcoming drop-down, press on "Flutter: New Project":
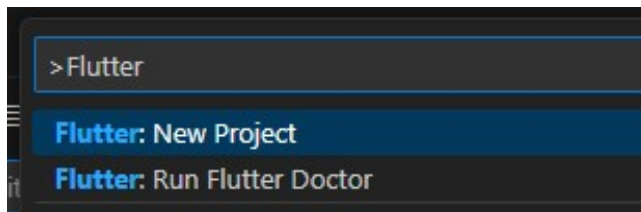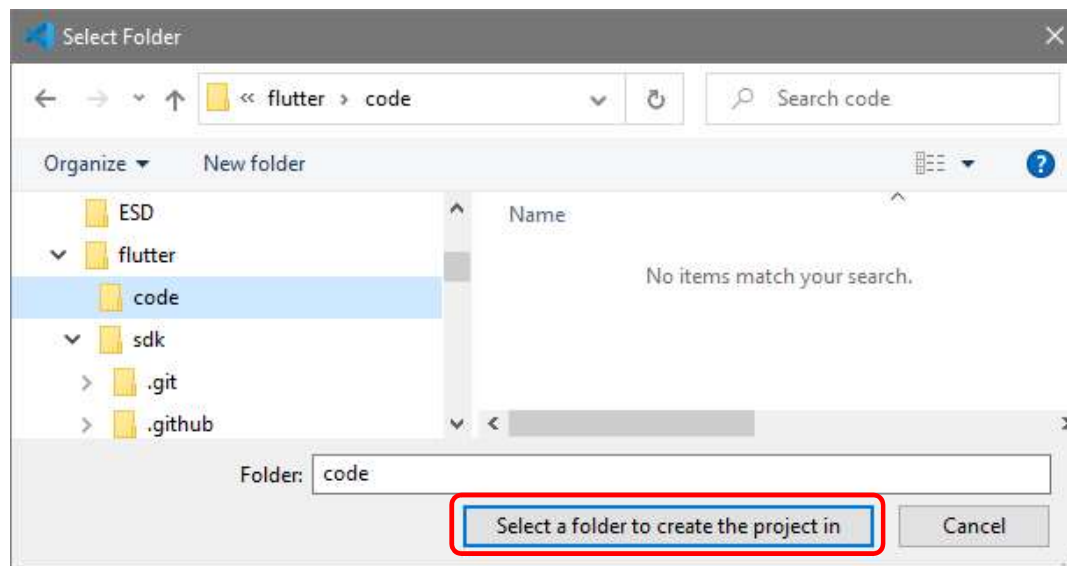

In the next drop-down, press on "Empty Application":

Select a folder, where the new project should be created,
in the screen below it was "C:\flutter\code"

Then press the red marked button.

Enter the name of the project (capital letters and spaces are not allowed !):

Press 'Enter' on your keyboard and confirm, that you trust the Flutter team:
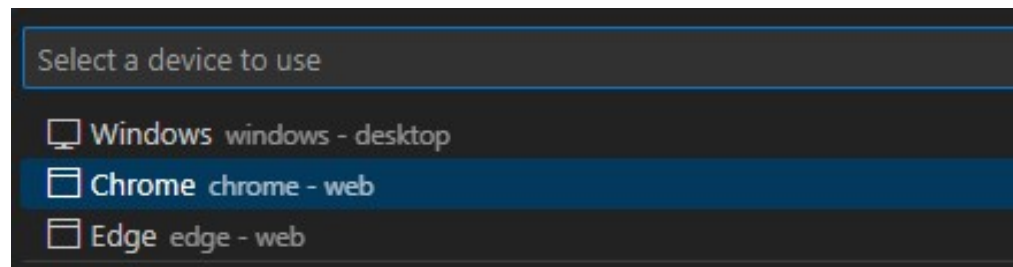
Your project will be created now.
You need a working internet connection in this phase!

Then press in the bottom line of the VS Code window on
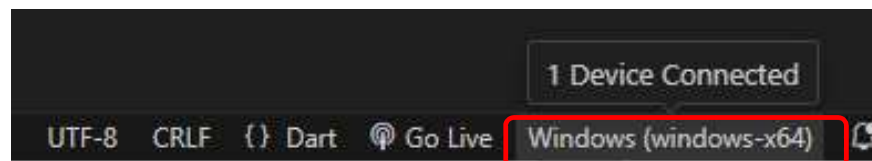
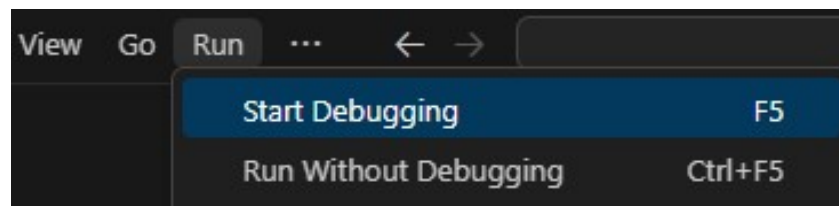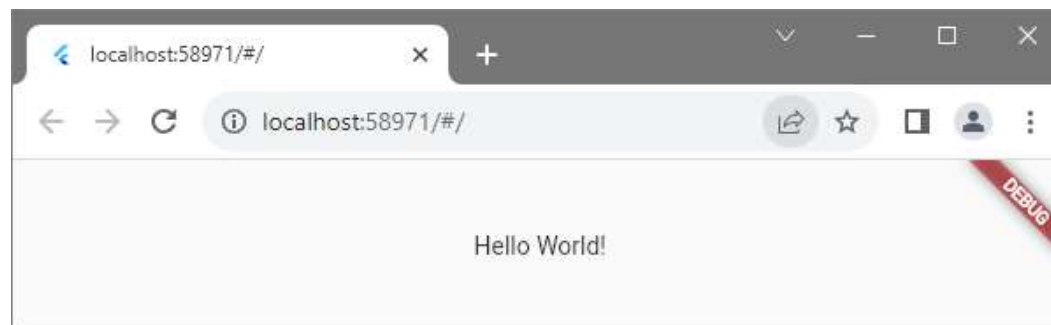and in the drop-down opened on top of VS Code select "Chrome" or "Edge":

Finally press "F5" or select in menu "Run" the entry "Start Debugging":

Now you must be a bit patient. The first Build takes some time because other packages may be downloaded in the background.
Finally Chrome or Edge should come up showing your HelloWorld app:

I hope you successfully reached this final step.

Enjoy now developing your own apps with Flutter !