AIM:Installation and configuration of Flutter Environment.

THEORY:

What is Flutter?

=> Flutter is an open source framework by Google for building beautiful, natively compiled, multi-platform applications from a single codebase. Flutter code compiles to ARM or Intel machine code as well as JavaScript, for fast performance on any device.

Advantages:

1. Fast Development

Flutter's fast development cycle allows developers to see changes to the app in real-time as they make modifications to the code. This can greatly increase the speed and efficiency of the development process of the applications.

2. High Performance

Flutter offers fast and smooth animations and transitions, and is designed to run smoothly on older devices. The framework is optimized for performance, making it an attractive choice for demanding mobile applications. As a result the number of targeted users increases.

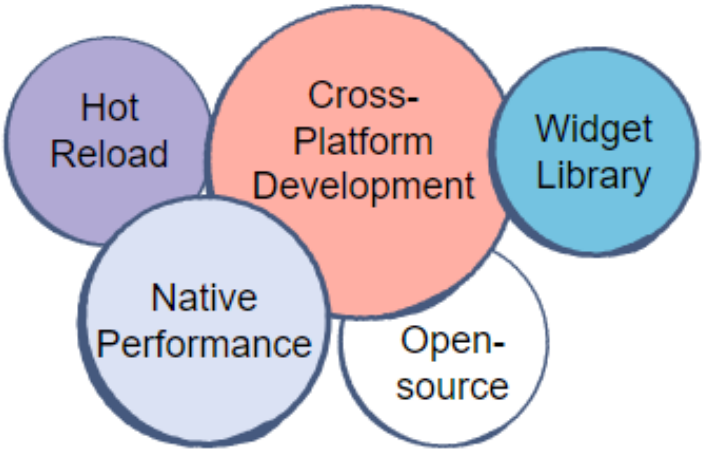
3. Cross-Platform Development

Flutter supports not only mobile app development but also web and desktop app development. This makes it a versatile tool for developing applications that need to run on multiple platforms without any issues.

4. Open-Source

Flutter is a free and open-source framework, making it accessible to a wide range of developers and companies. The large community of developers and users working with the framework helps to ensure that it continues to evolve and expand its capabilities.

Features:



Flutter's Features

i) Hot Reload:
One of the most powerful features of Flutter is its Hot Reload functionality. Developers can instantly see the results of their code changes without restarting the app, which significantly speeds up the development process.

ii)Rich Widget Library:
Flutter comes with a comprehensive set of pre-designed and customizable widgets for creating modern and responsive user interfaces. These widgets are used to build the UI components, and developers can easily customize them to suit their app's design.

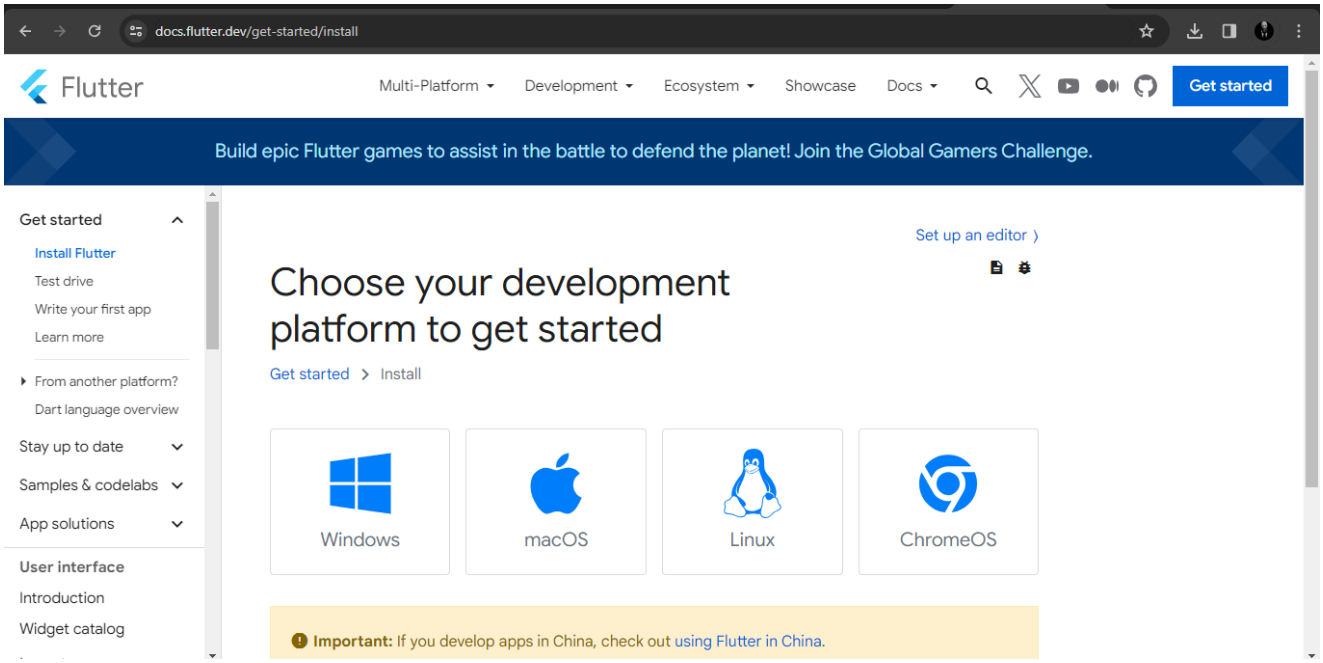
iii)Expressive UI:
Flutter allows for expressive and flexible UI designs. It supports various animations and provides a smooth and consistent experience across different platforms.

iv) Dart Programming Language:
Flutter uses Dart as its programming language. Dart is designed for building modern web and mobile applications and has features like strong typing and just-in-time compilation.

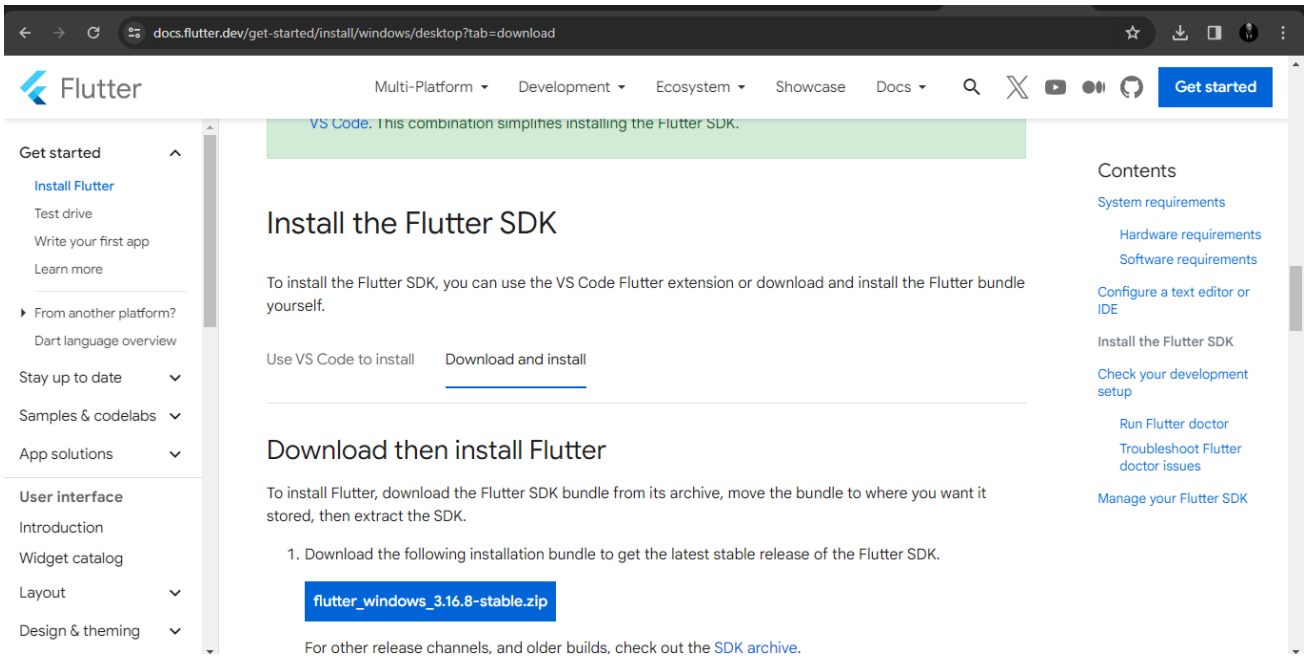
INSTALLATION STEPS =>

A. Install the Flutter SDK

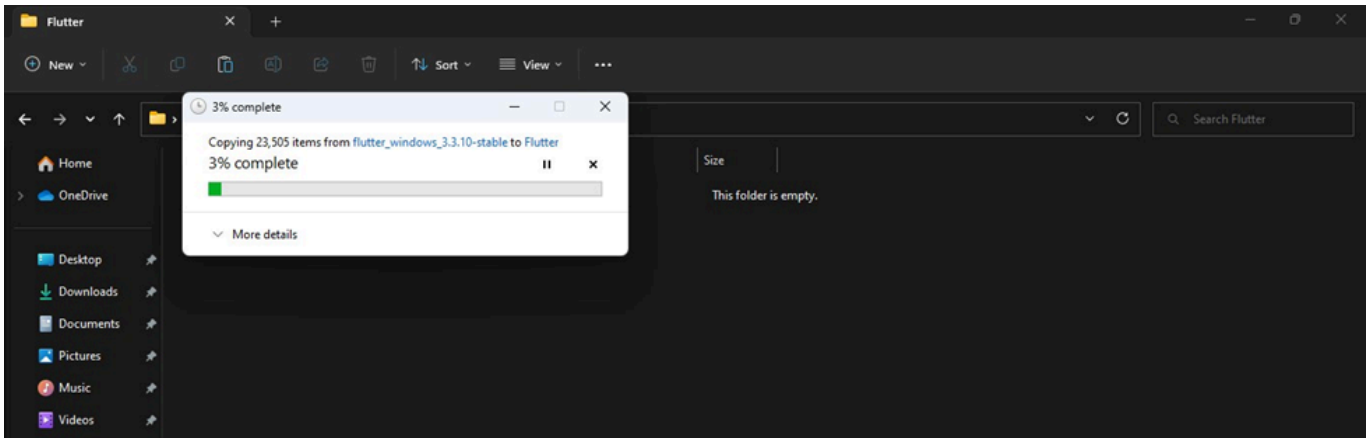
Step 1: Download the installation bundle of the Flutter Software Development Kit for windows. To download Flutter SDK, Go to its official websit ehttps://docs.flutter.dev/get-started/install ,you will get the following screen



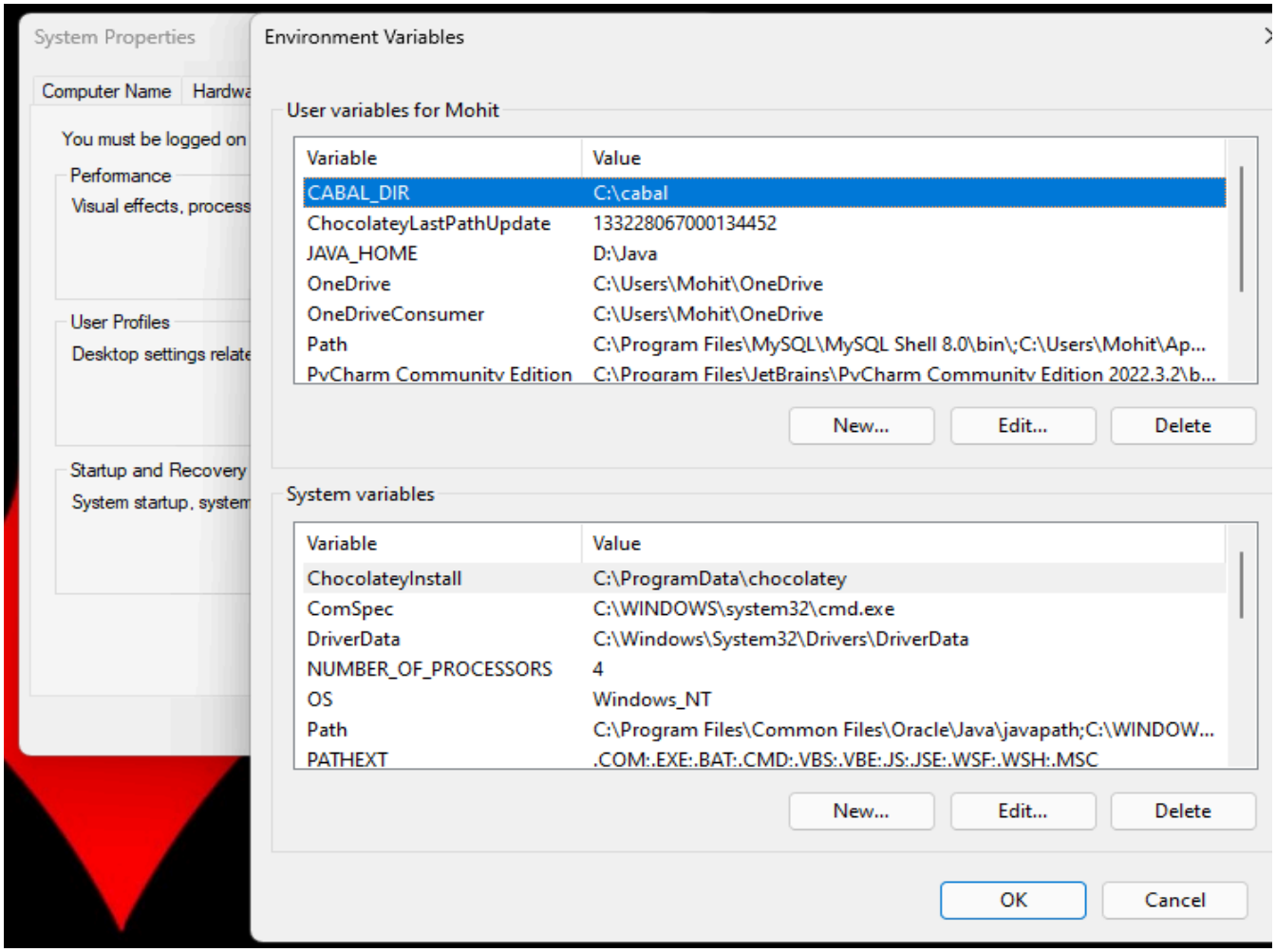
Step 2: Next, to download the latest Flutter SDK, click on the Windows icon. Here, you will find the download link for SDK.

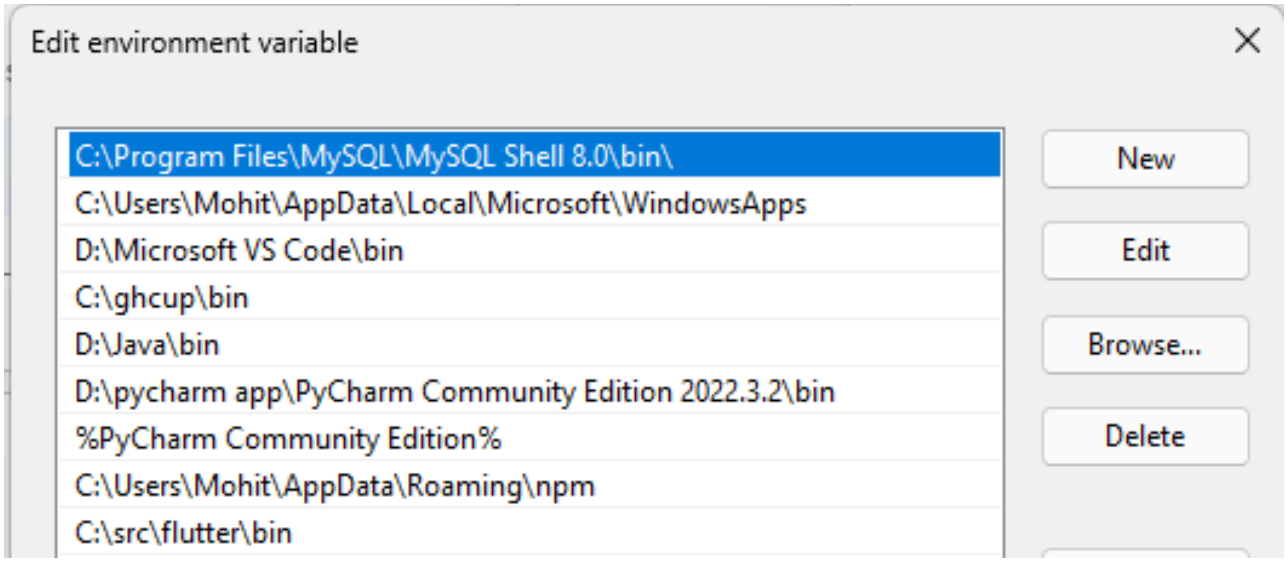


Step 3: When your download is complete, extract the zip file and place it in the desired installation folder or location, for example, C: /Flutter.

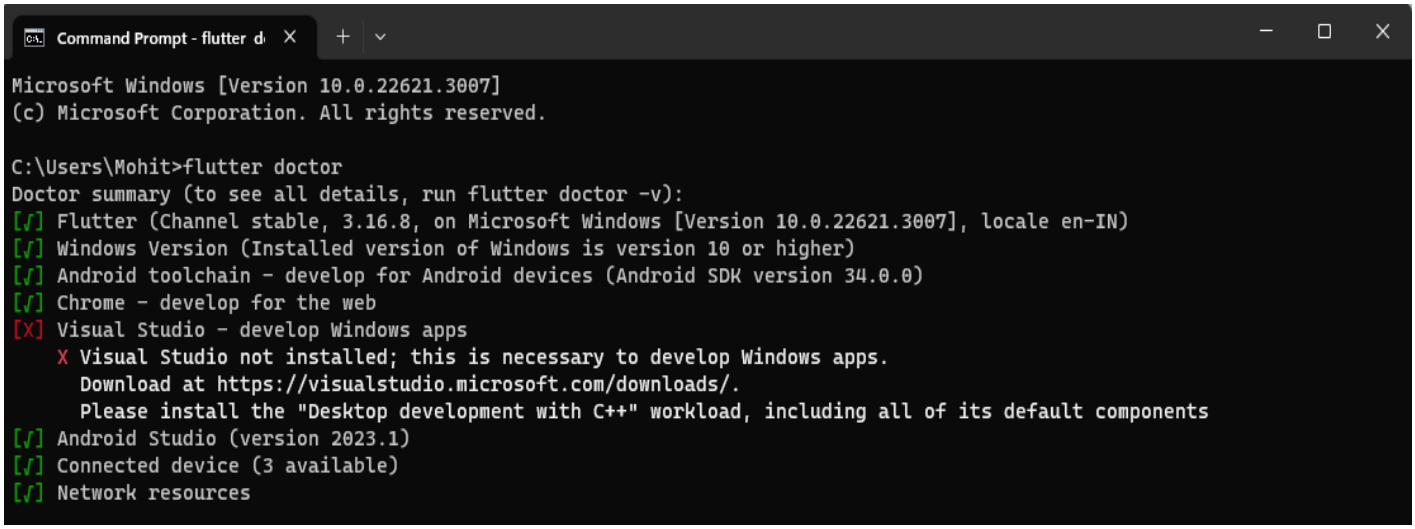


Step 4: To run the Flutter command in regular windows console, you need to update the system path to include the flutter bin directory. The following steps are required to do this:

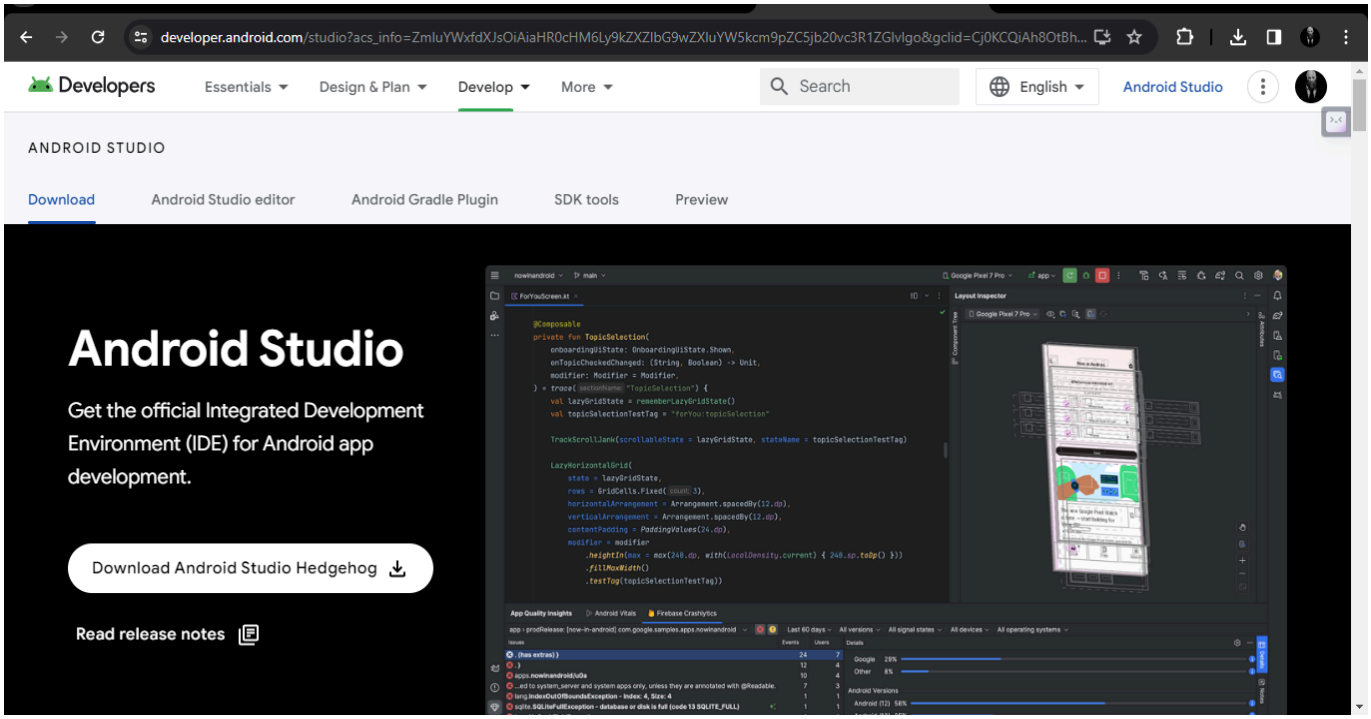




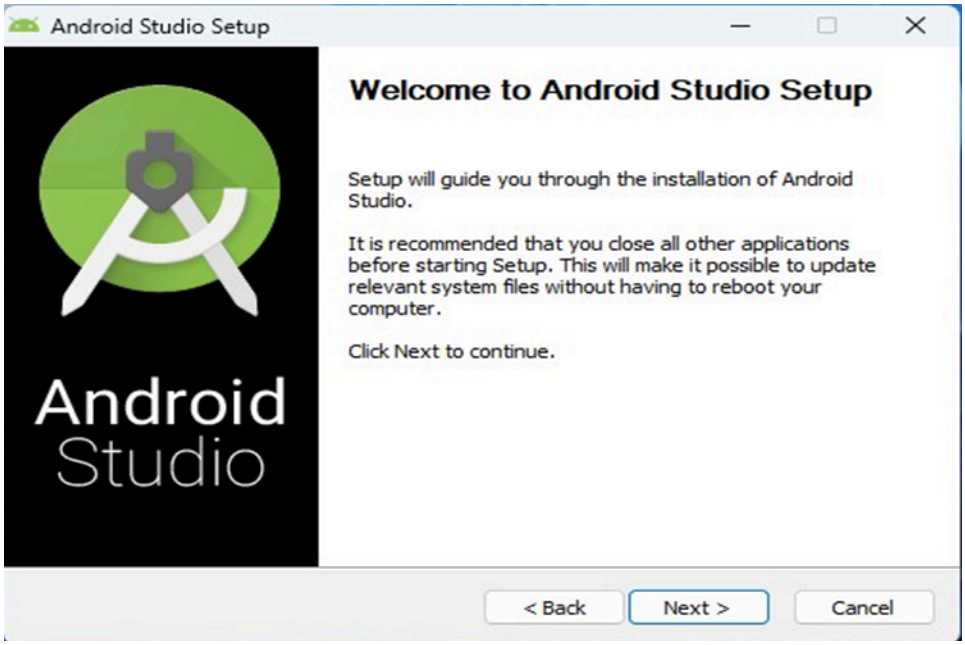
Step5: Now, run the **$ flutter doctor** command. This command checks for all the requirements of Flutter app development and displays a report of the status of your Flutter installation.



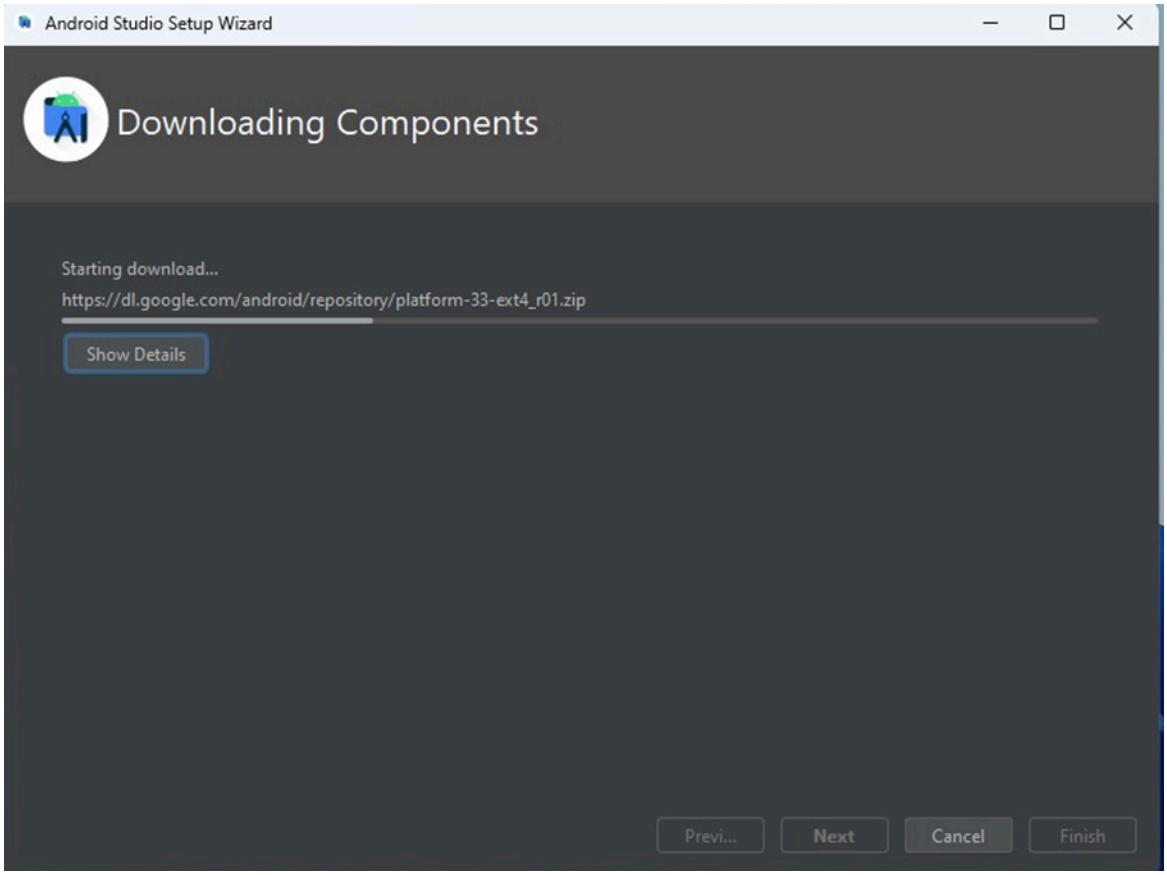
Step 6: Install the Android SDK. If the flutter doctor command does not find the Android SDK tool in your system, then you need first to install the Android Studio IDE. To install Android Studio IDE, do the following steps.



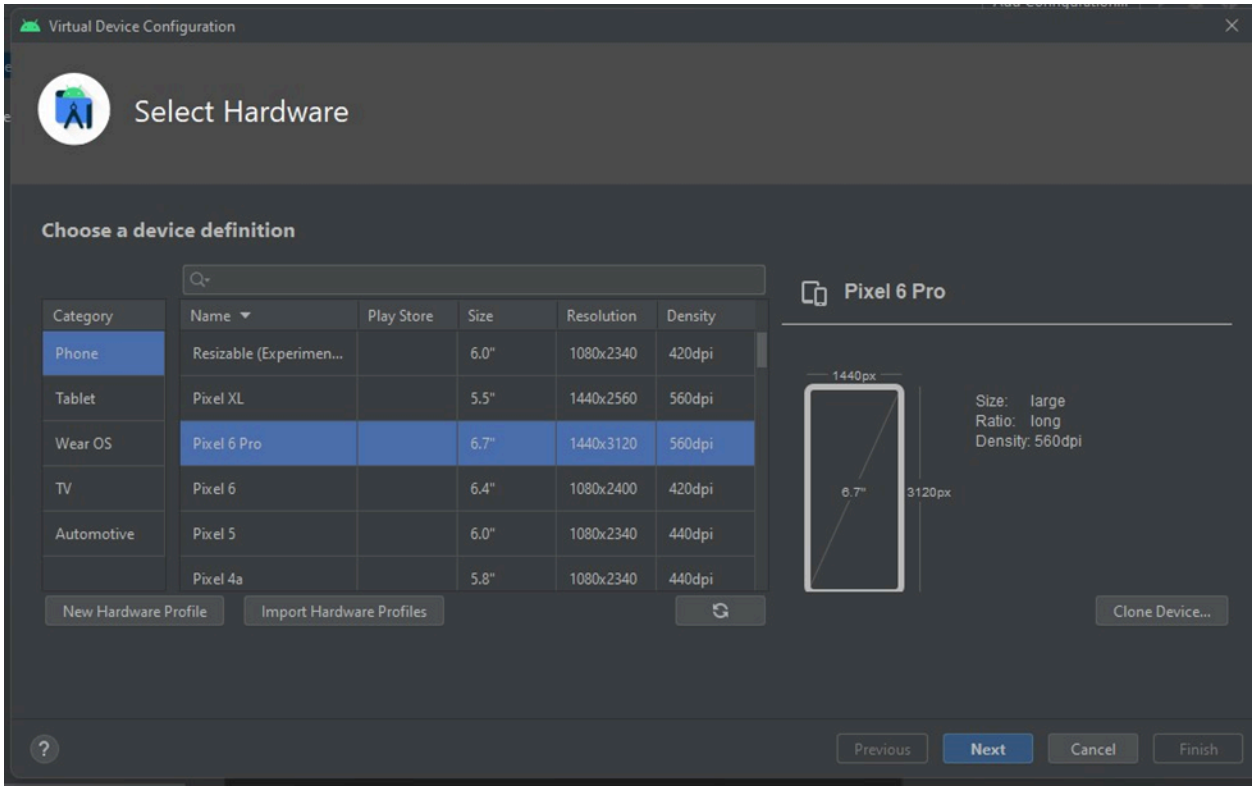
Step 7: When the download is complete, open the .exe file and run it. You will get the following dialog box.



Step 8: In the above screen, click Next-> Finish. Once the Finish button is clicked, you need to choose the 'Don't import Settings option' and click OK. It will start the Android Studio.



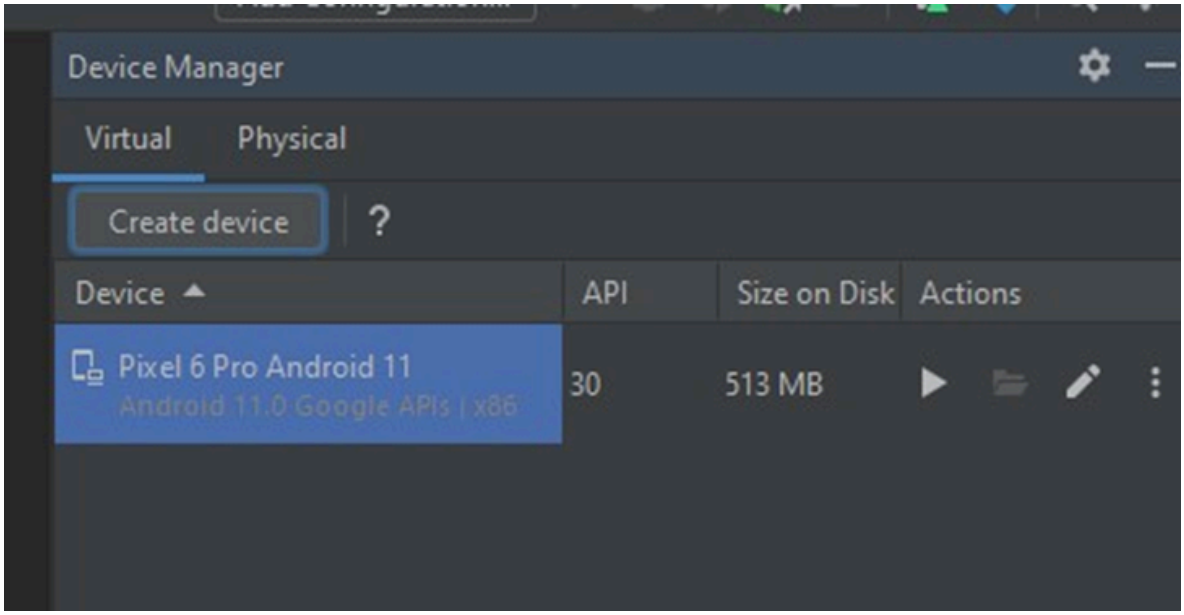
Step 9: Next, you need to set up an Android emulator. It is responsible for running and testing the Flutter application



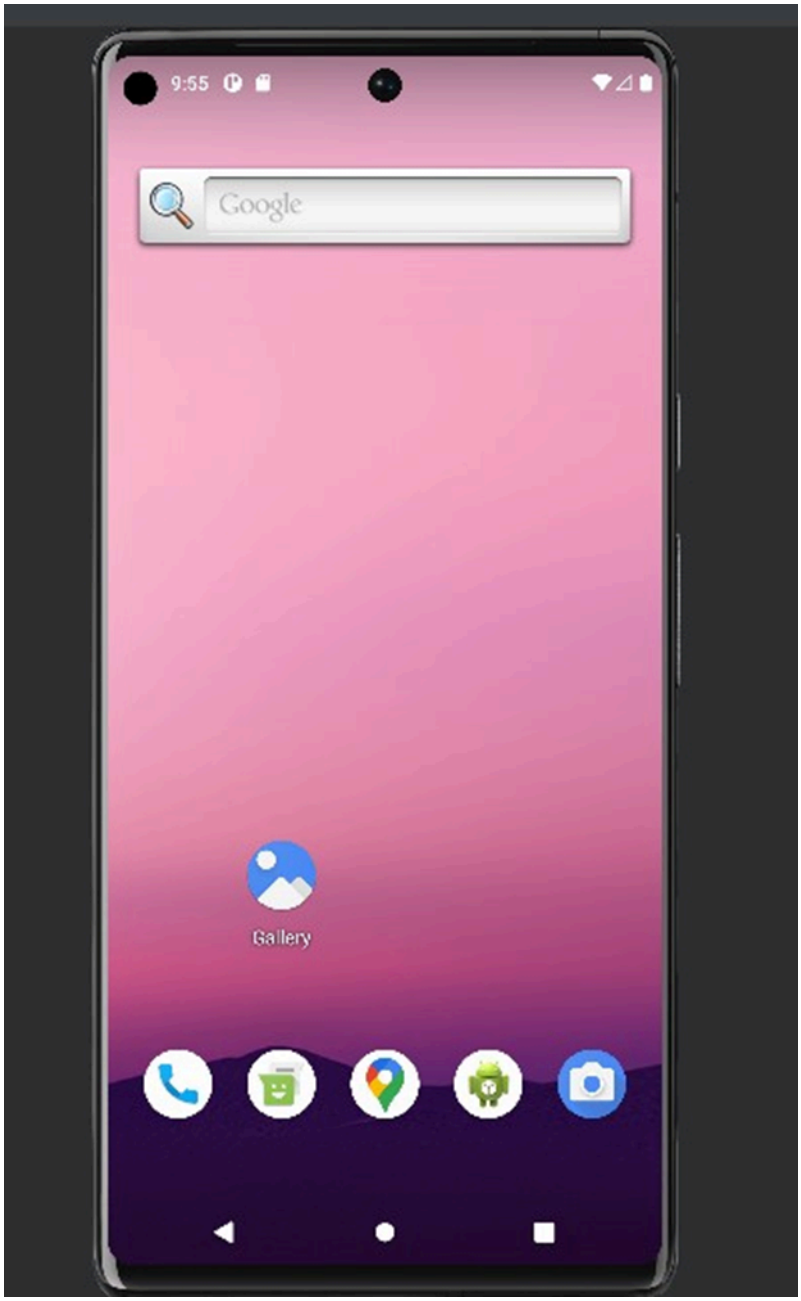
Step 9.1: Choose your device definition and click on Next.

Step 9.2: Select the system image for the latest Android version and click on Next.

Step 9.3: Now, verify the all AVD configuration. If it is correct, click on Finish. The following screen appears.



Step 10: Last, click on the icon pointed into the triangle. The Android emulator displayed as below screen.



Conclusion: In conclusion, the successful installation of Flutter in this lab experiment demonstrates its ease of setup. This versatile framework empowers developers to create cross-platform applications efficiently, fostering innovation in mobile app development.