EXPERIMENT NO.1

Experiment No 1 **1: Installation and Configuration of Flutter Environment.**	
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CLASS	**D15-B**
SUBJECT	**MAD & PWA Lab**
LO-MAPPED	

Experiment No 1: Installation and Configuration of Flutter Environment.

Aim: To install and configure Flutter

Theory:

In the last few years of this decade, we have seen a lot of app startups emerging from all across the globe. With the rise in technology and the availability of smartphones, many startups find it easy to connect with users and clients via apps. The app market has also grown in the last few years and is expected to grow exponentially in the coming decade. The app development market has also been on a rise and has allowed countless app developers to exhibit their skills and find a suitable job. With this shift into apps, much development, and research have been done to deliver the best and to make the app development process faster and much simpler.

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

Features of flutter

Flutter structure offers the accompanying elements to designers:

- Present day and receptive structure.
- Utilizes Dart programming language, and it is extremely simple to learn.
- Delightful and liquid UIs.
- Colossal gadget list.
- Runs the same UI for numerous stages.
- Superior execution application
- Fast and responsive layout.
- Easy connection of back-end and asynchronization.

Advantages

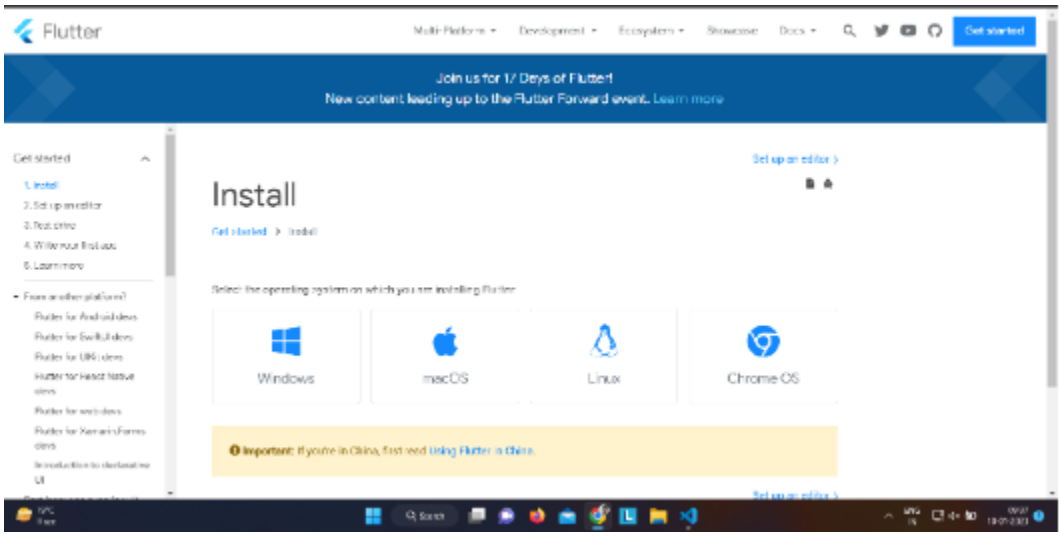
- 1. Cross-platform Operations: Apps made with flutter can be operated on both the platform (iOS and Android). There is no need for reconfiguration and redesigning.

- 2. Less Need of Developers: This can be advantageous for the companies, as they require a smaller number of developers and the app can also work on both the platforms.

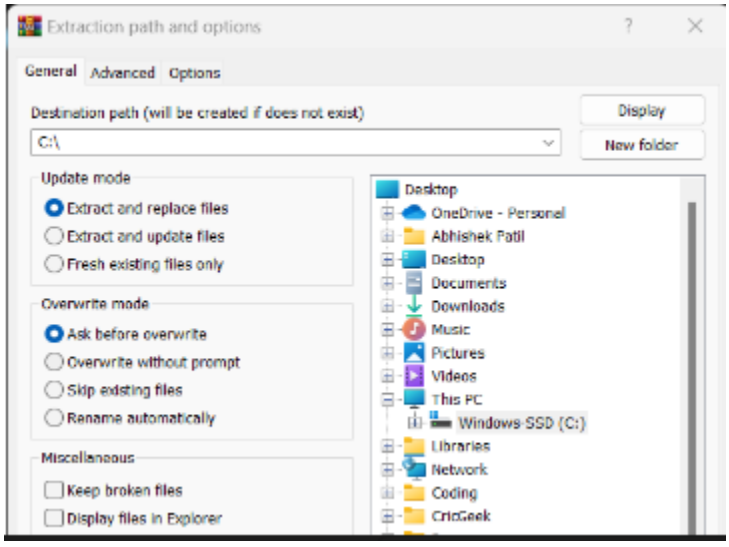
- 3. Less Development Cost: Since there are a smaller number of developers needed, the cost incurred for the development of the app also reduces.

Installing the Flutter SDK

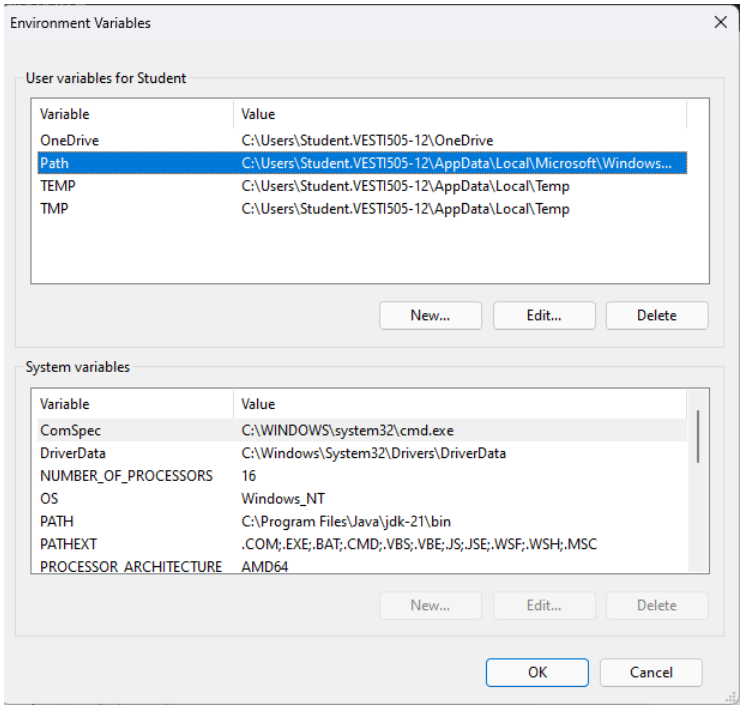
Step 1: Download the installation bundle of the Flutter Software Development Kit for windows.
To download Flutter SDK, Go to its official website
https://docs.flutter.dev/get-started/install ,
you will get the following screen.



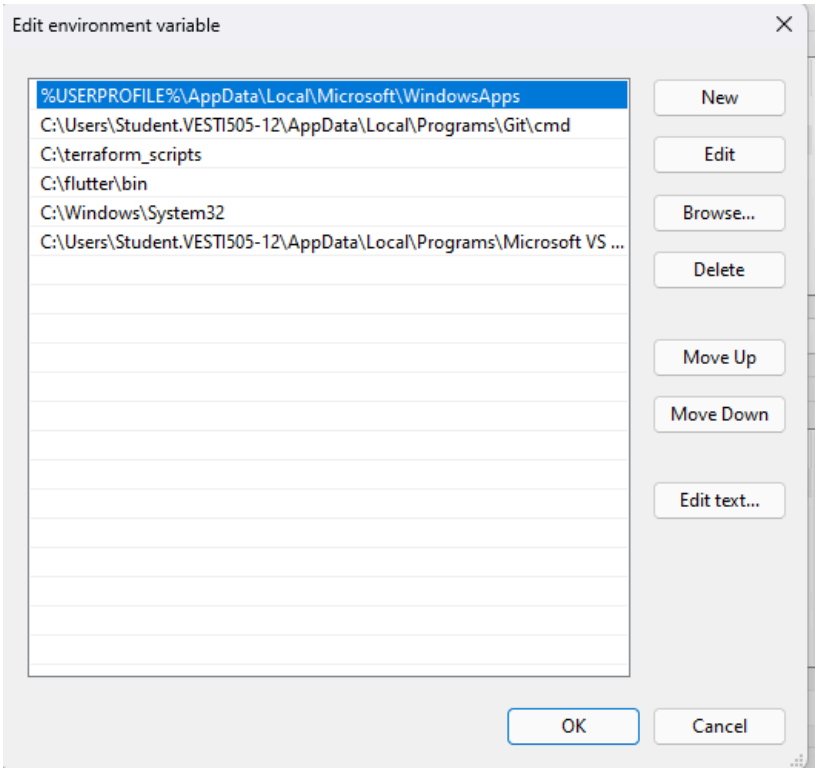
Step 2: Next, to download the latest Flutter SDK, click on the Windows icon. Here, you will
find the download link for SDK.
Step 3: When your download is complete, extract the zip file and place it in the desired installation folder or location, for example, C: /Flutter.



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:
Step 4.1: Go to MyComputer properties -> advanced tab -> environment variables. You will get
the following screen.

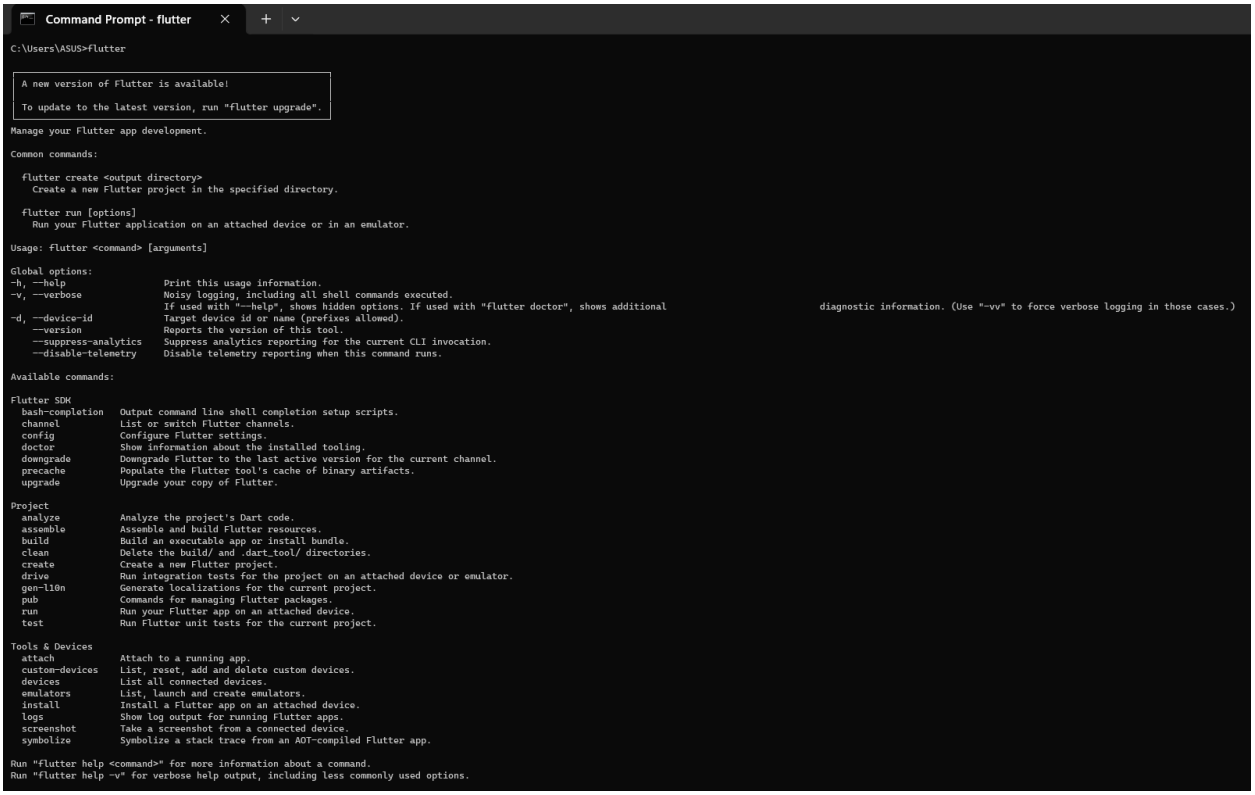


Step 4.2: Now, select path -> click on edit.
Step 4.3: In the above window, click on New->write path of Flutter bin folder in variable value -
> ok -> ok -> ok.

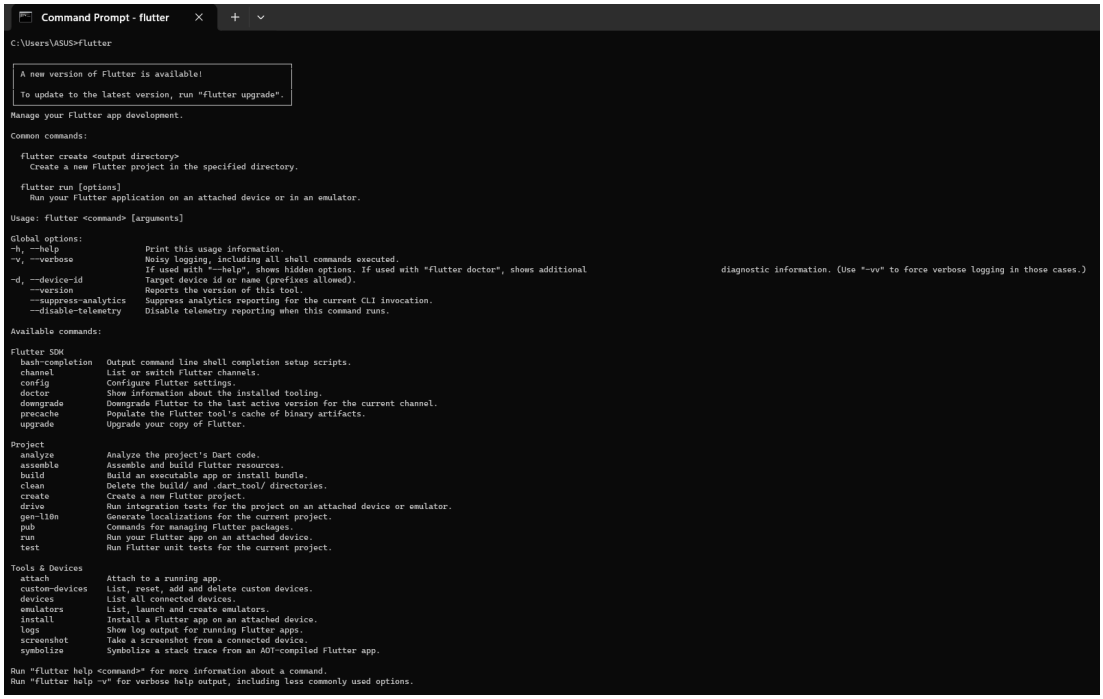


Step 5: Now, run the $ flutter command in command prompt.

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.

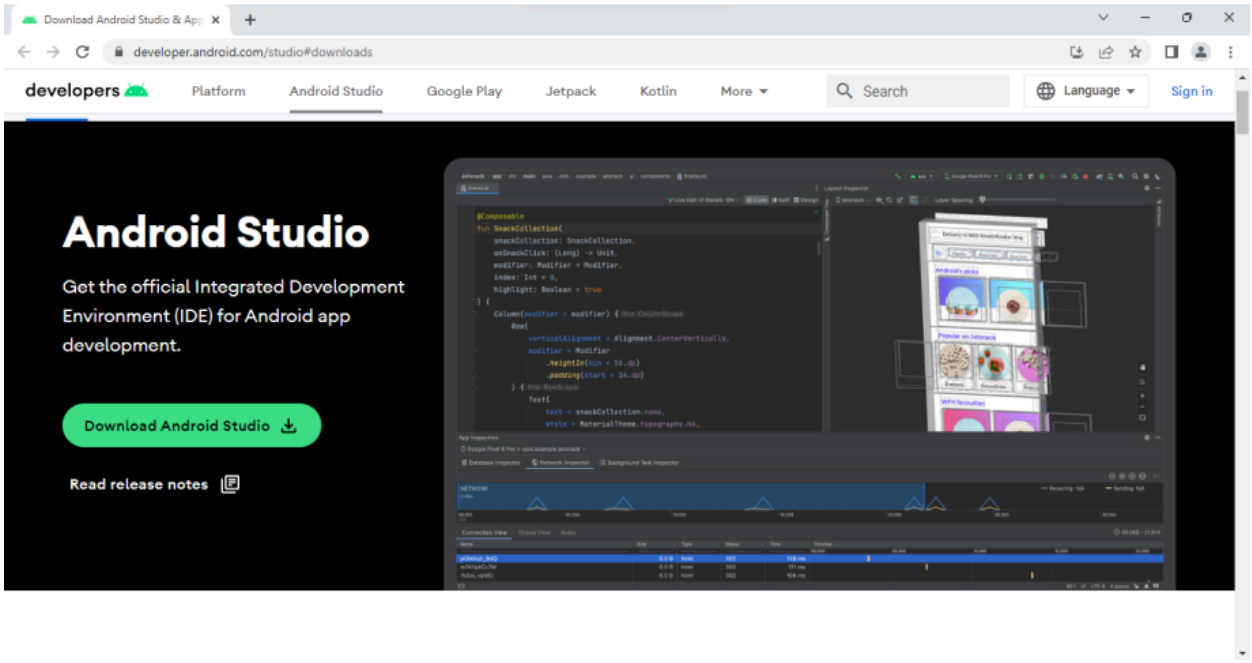


Step 6: When you run the above command, it will analyze the system and show its report, as
shown in the below image. Here, you will find the details of all missing tools, which required to
run Flutter as well as the development tools that are available but not connected with the
device.

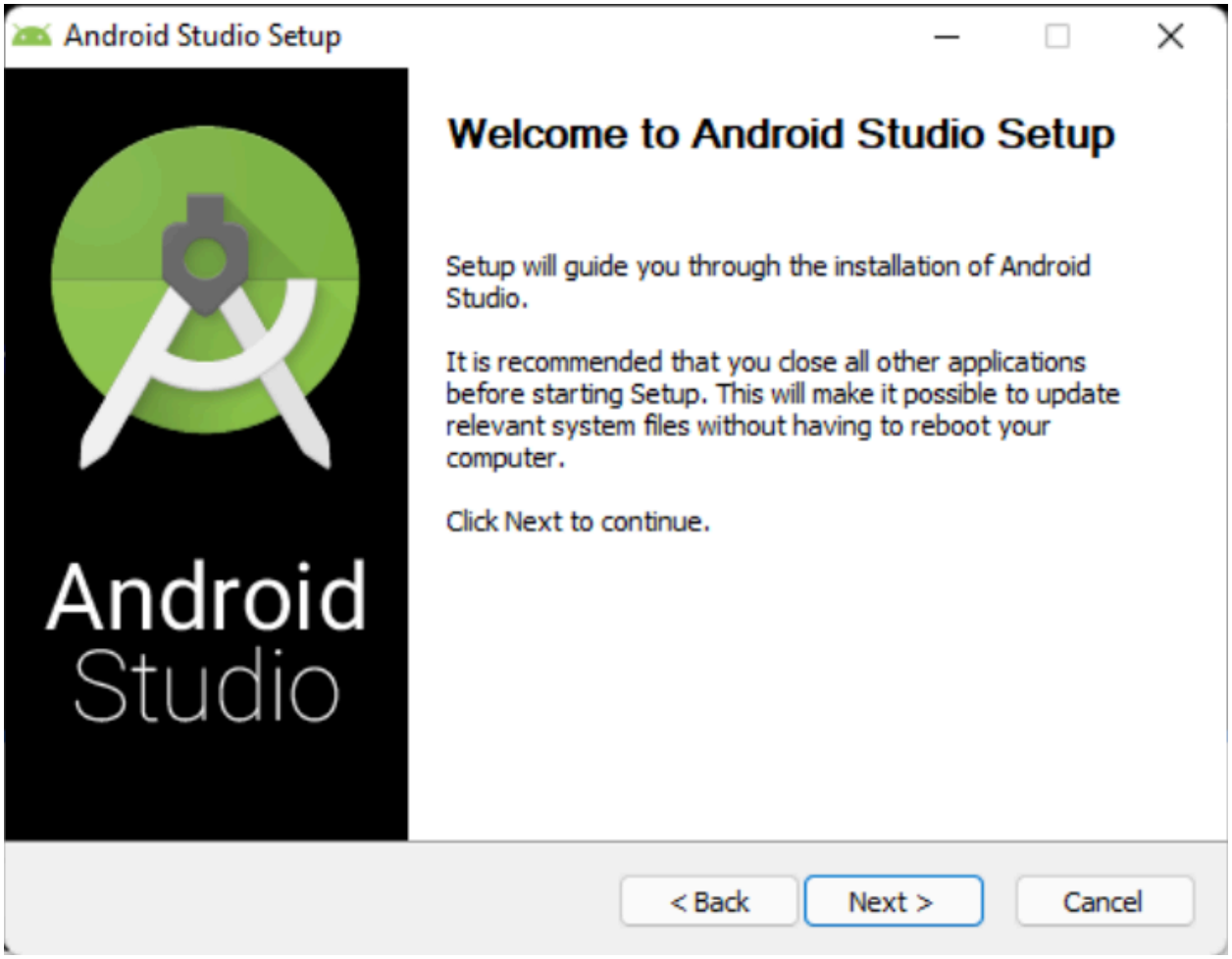


Step 7: Install the Android SDK. If the flutter doctor command does not find the Android SDK
tool in your system, then you need first to install the Android Studio IDE. To install Android
Studio IDE, do the following steps.

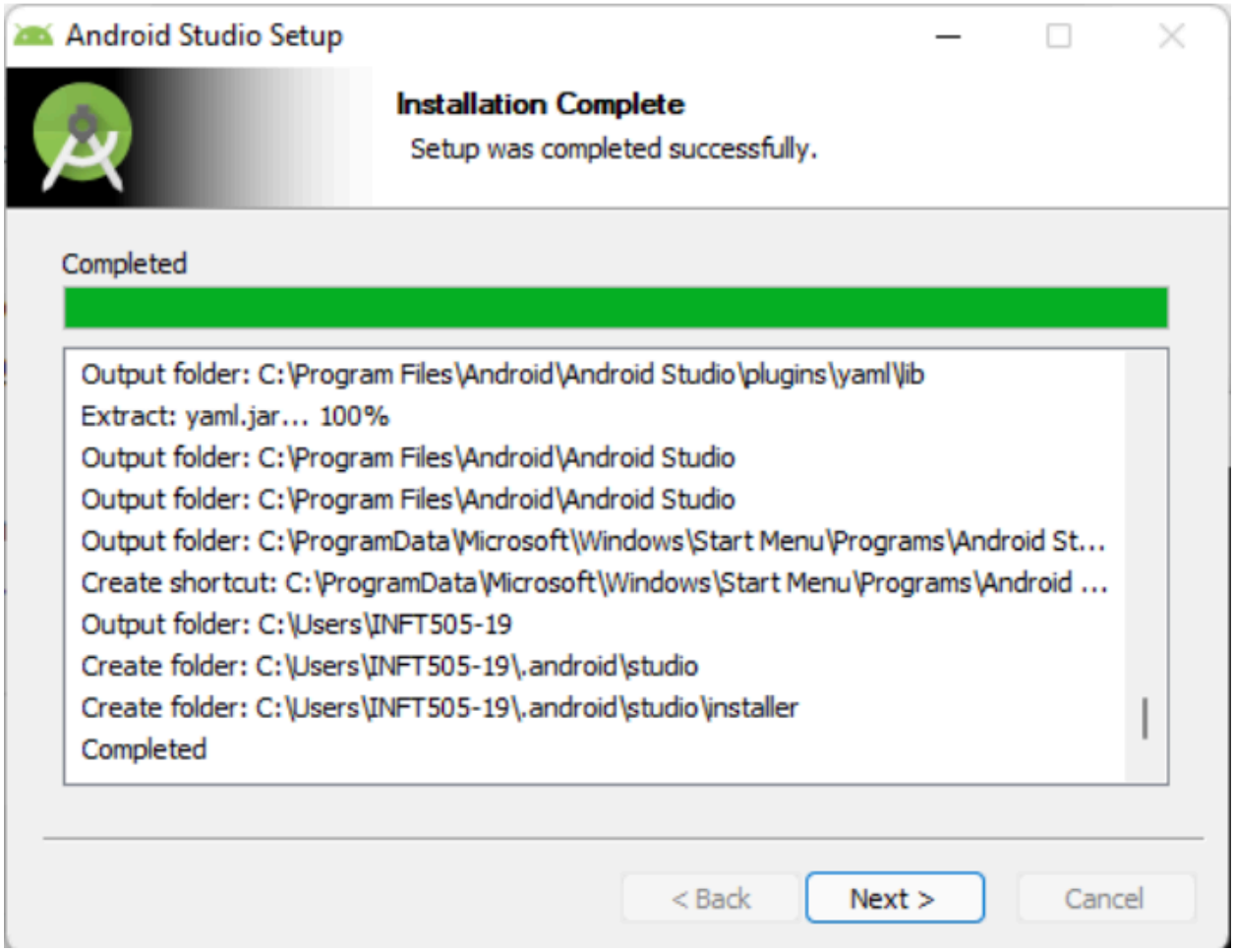
Step 7.1: Download the latest Android Studio executable or zip file from the official site.



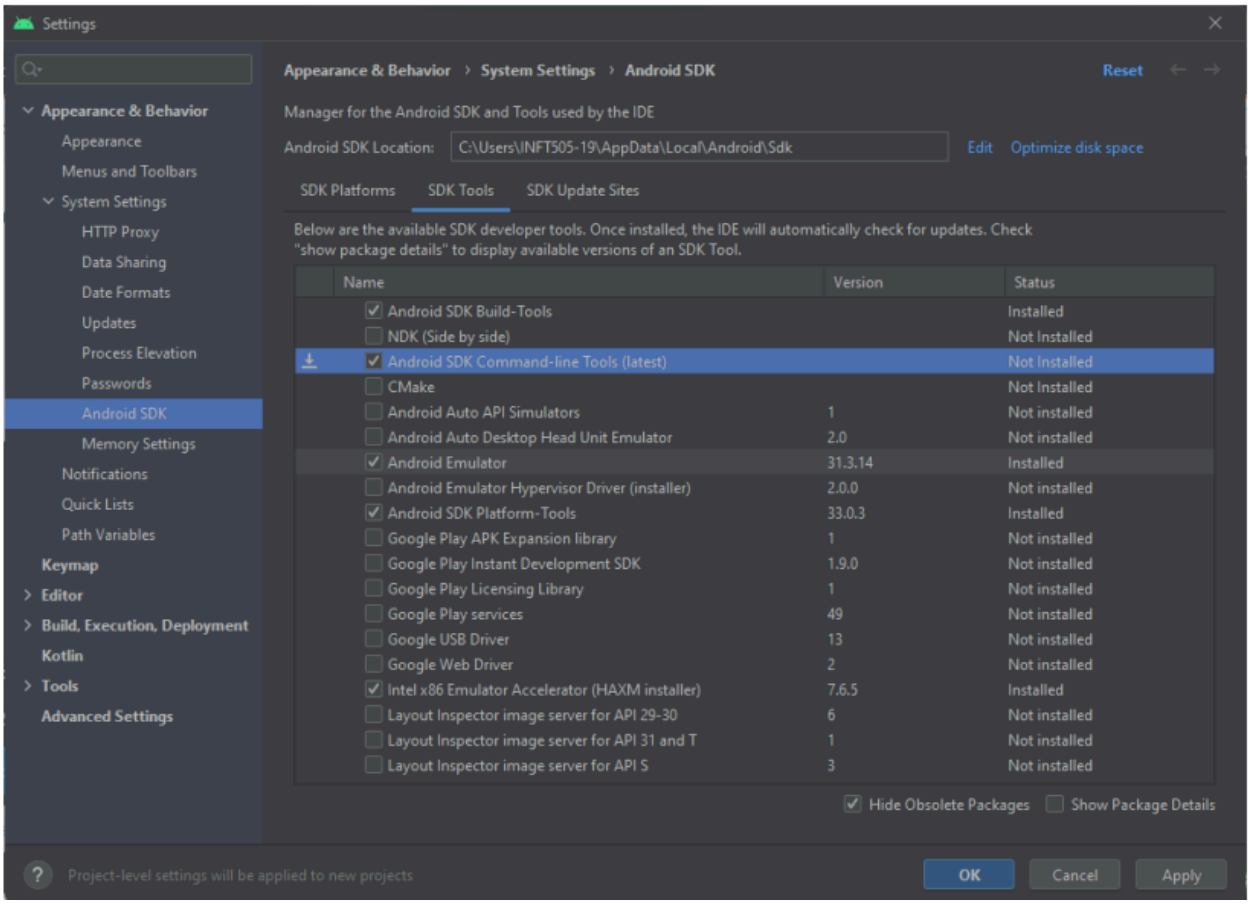
Step 7.2: When the download is complete, open the .exe file and run it. You will get the following dialog box.



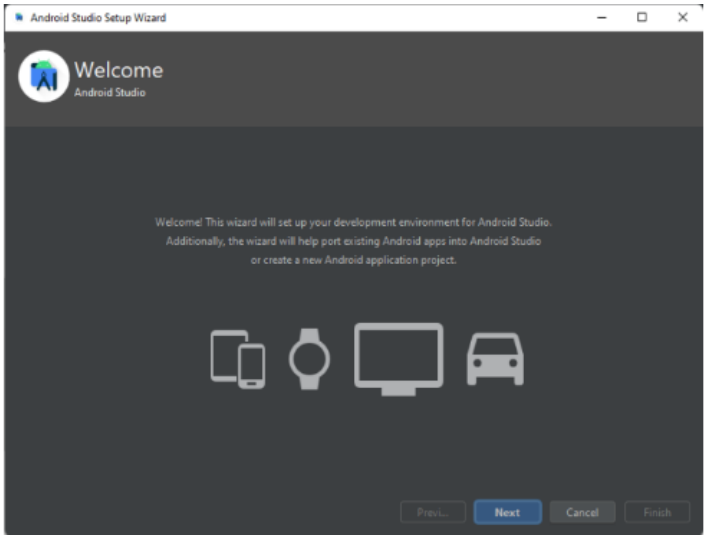
Step 7.3: Follow the steps of the installation wizard. Once the installation wizard completes, you
will get the following screen.

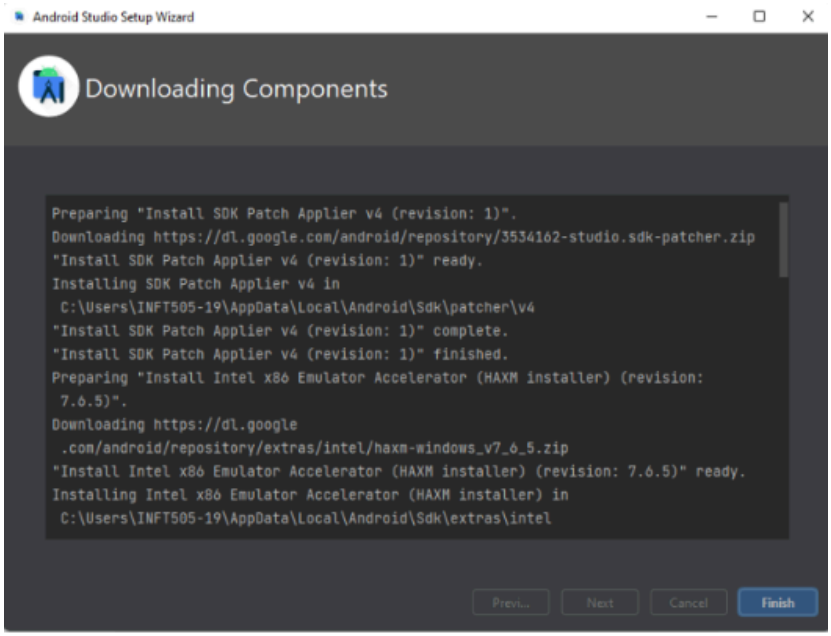


Step 7.4: In the above screen, click Next-> Finish. Once the Finish button is clicked, you need to
choose the 'Don't import Settings option’ and click OK. It will start the Android Studio.

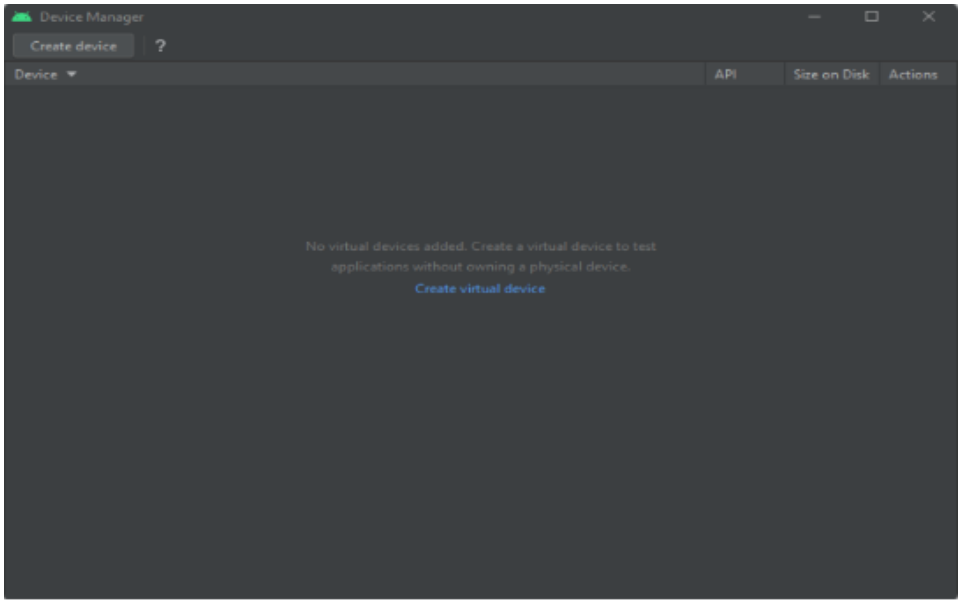


Step 7.5: Next, you need to set up an Android emulator. It is responsible for running and testing the Flutter application.

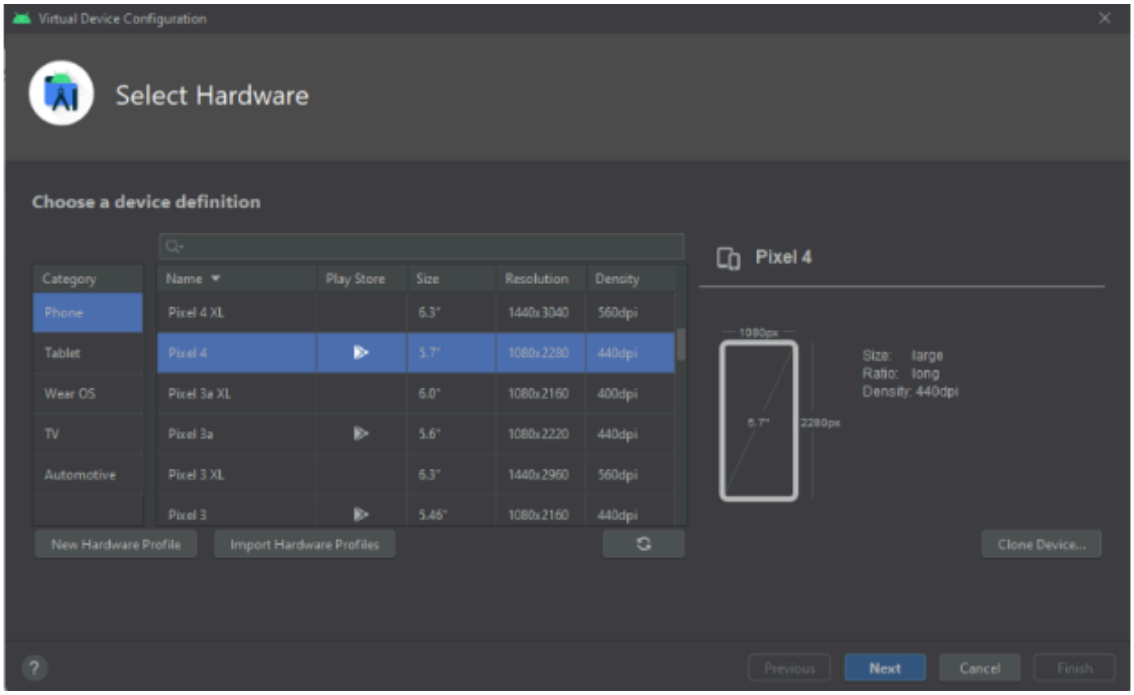




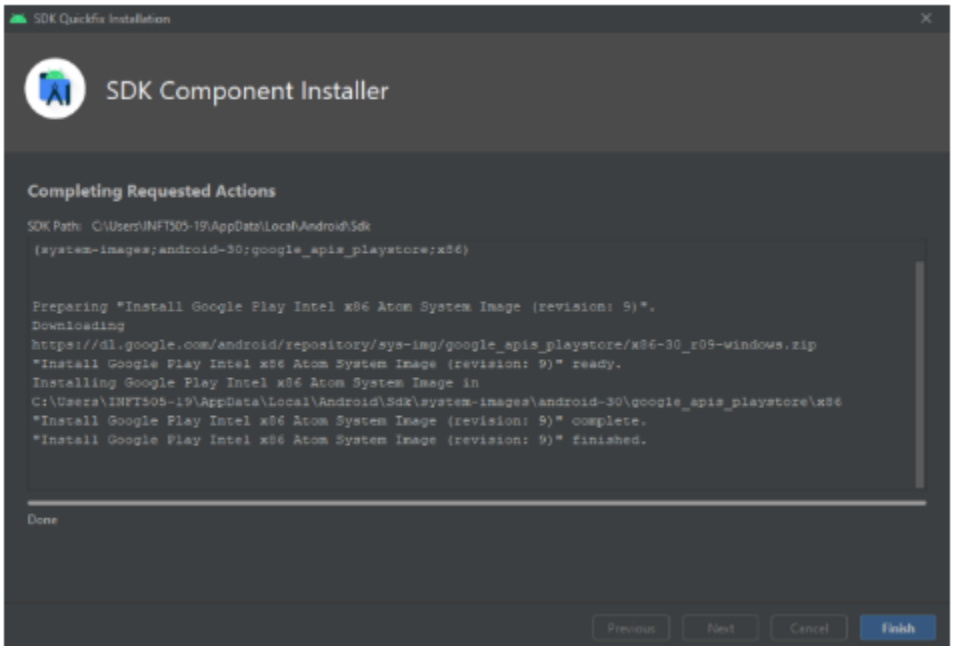
Step 8: To set an Android emulator, go to Android Studio > Tools > SDK Manager and select Create Virtual Device. You will get the following screen:



Step 8.1 : Choose your device definition and click on Next.



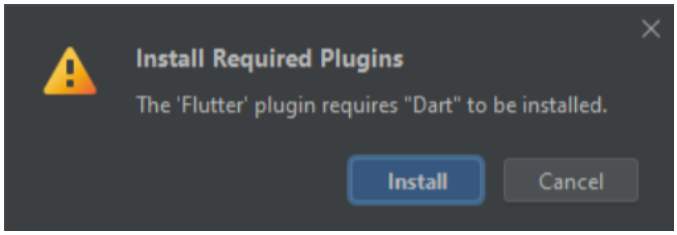
Step 8.2: Select and download the latest operating system for our Emulator and click on Finish.



Step 8.3: Click on the Run button and the following screen will be displayed.

Step 8.4: Now, install Flutter and Dart plugins for building the Flutter application in Android Studio. These plugins provide a template to create a Flutter application and give the option to run and debug the Flutter application in the Android Studio itself.

Open the Android Studio and then go to File->Settings->Plugins. Now, search the Flutter plugin. If found, select the Flutter plugin and click install. When you click on install, it will ask you to install Dart plugin as below screen. Click Install to proceed.



Finally when all these Steps are followed restart the Android Studio once and then your Flutter environment is successfully configured.

Conclusion:

The installation and configuration of the Flutter environment on a Windows operating system involved the sequential steps of installing the Flutter SDK, using the flutter doctor command for environment validation, and incorporating Android Studio. The latter facilitated development, offering a comprehensive toolkit. Additionally, a virtual device was created within Android Studio for testing and visualizing Flutter applications. This experiment highlights the importance of a systematic approach for a successful Flutter development setup on Windows.