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EXP 1: Installation and Configuration of Flutter Environment.

Aim: To install and configure Flutter and Android Studio in our system.

Theory:

What is Flutter?

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.

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.
- Quick turn of events.
- 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 of flutter

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.

4. **Time Constraint:** The time required to launch the app into the market, also reduces as only a single app has to be made, which would work independently of the platform.

5. **Powerful Design:** Flutter mobile framework is the latest in the market, and this helps to create a very powerful app design with minimum efforts.

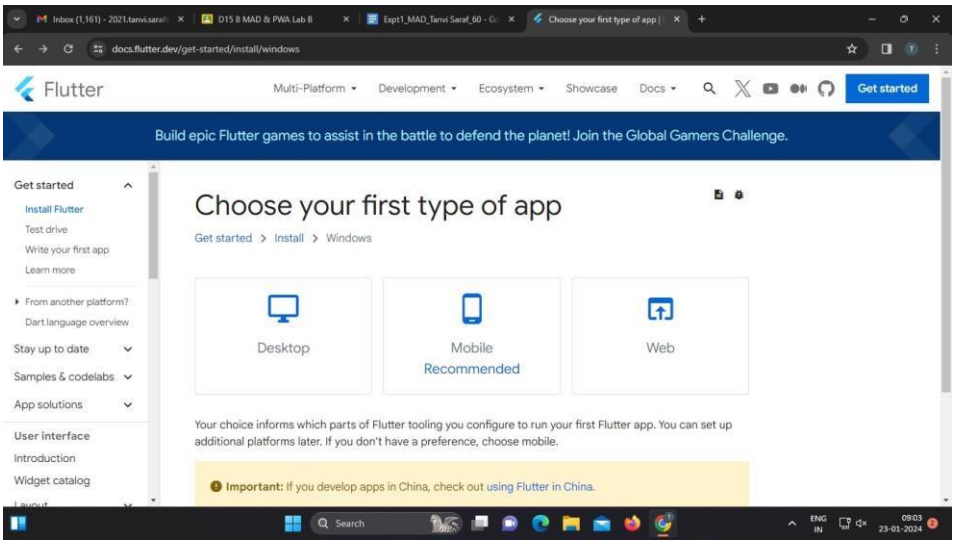
Disadvantages of flutter

In spite of its many benefits, vacillate has the accompanying downsides in it:

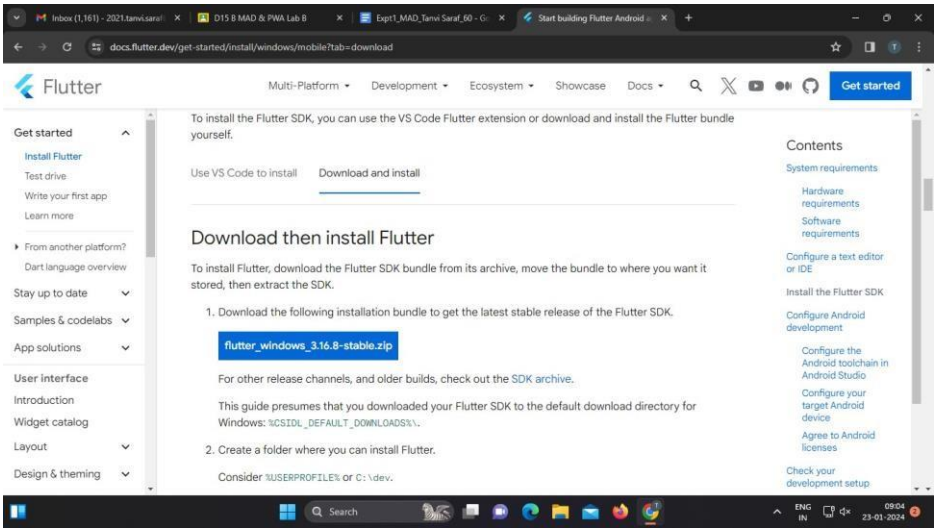
- However, since it is coded in Dart language, a designer needs to learn a new dialect, although it is not difficult to learn.
- Current system attempts to isolate rationale and UI however much as could be expected at the same time, in Shudder,
- UI and rationale are intermixed. We can beat this utilizing savvy coding and utilizing significant level modules to isolate UI and rationale.
- Ripple is one more system to make versatile applications. Designers are having a tough time in picking the right improvement devices in immensely populated portion.

Install the Flutter SDK

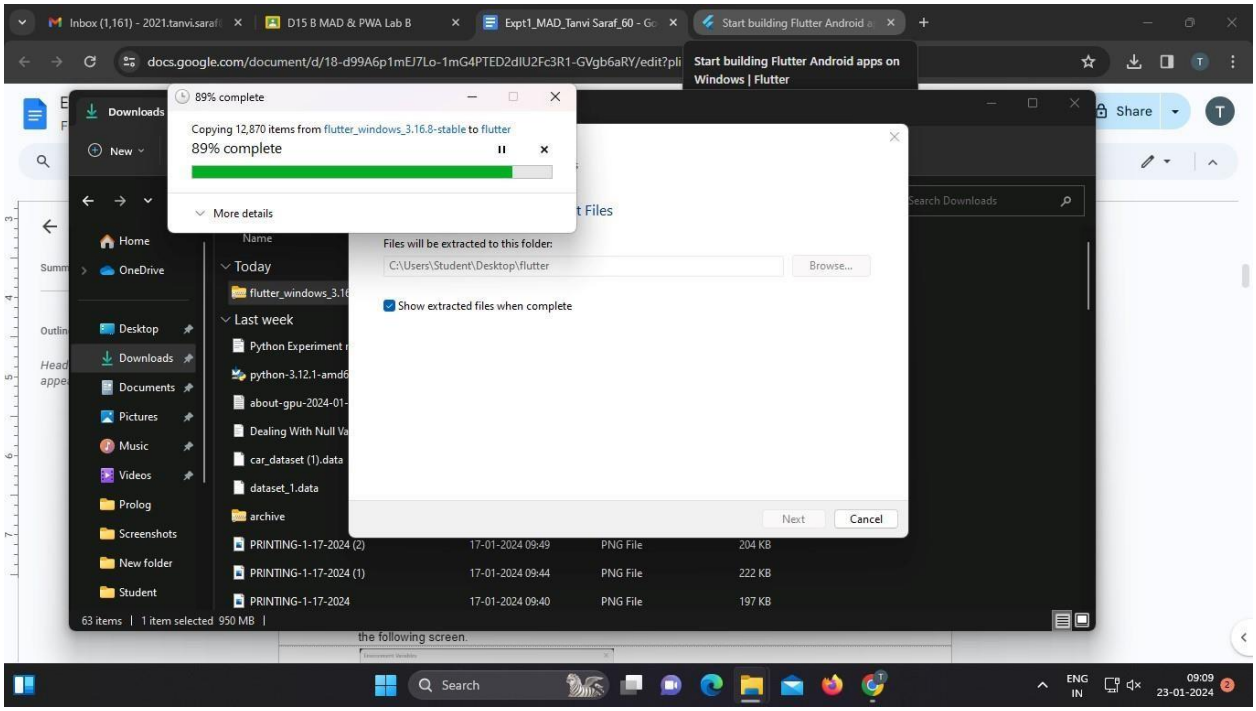
Step 1: Download the installation bundle of the Flutter Software Development Kit for windows. To download Flutter SDK, Go to its official website https://docs.flutter.dev/get-started/install , you will get the following screen.



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

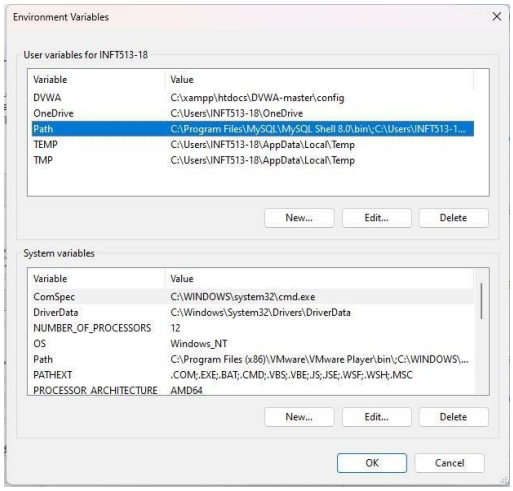


Step 3: When your download is complete, extract the zip file and place it in the desired installation folder or location, for example, C: /Flutter.

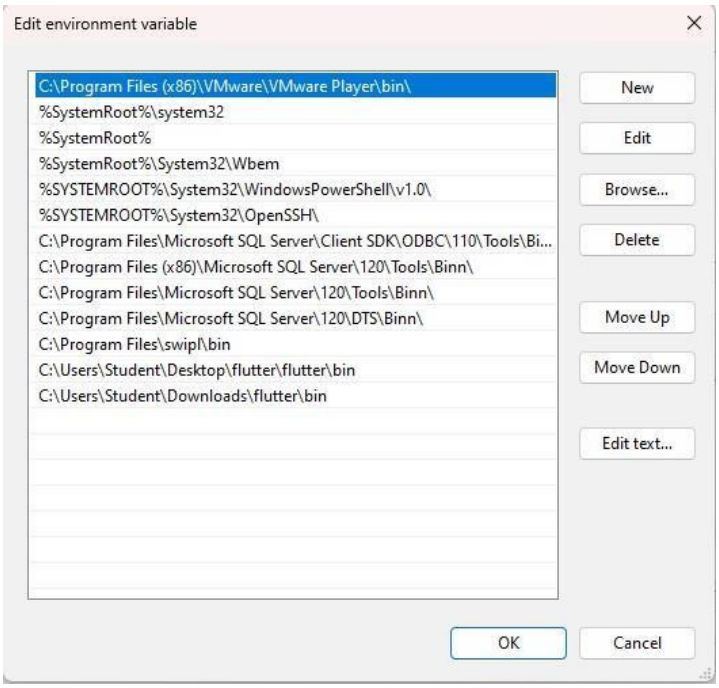


Step 4: To run the Flutter command in regular windows console, you need to update the system path to include the flutter bin directory. The following steps are required to do this:

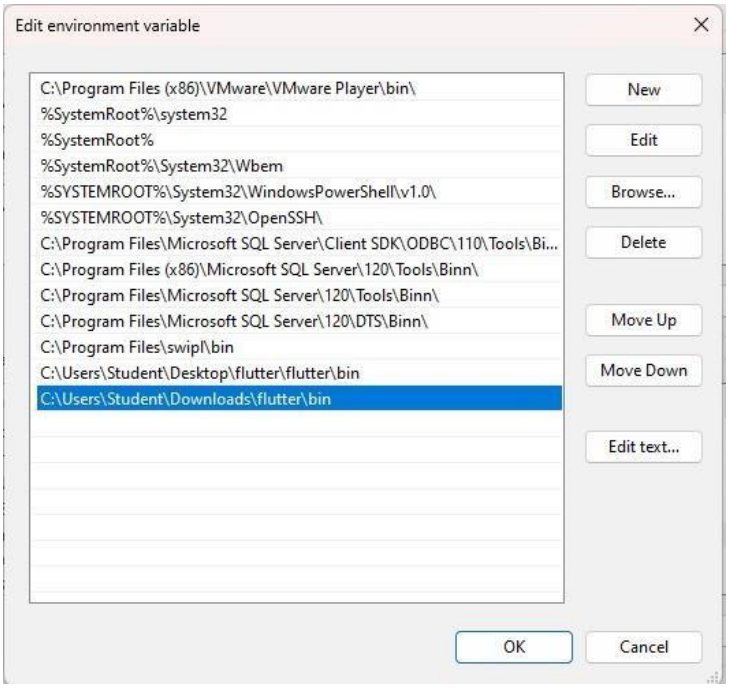
Step 4.1: Go to MyComputer properties -> advanced tab -> environment variables. You will get the following screen.



Step 4.2: Now, select path -> click on edit. The following screen appears

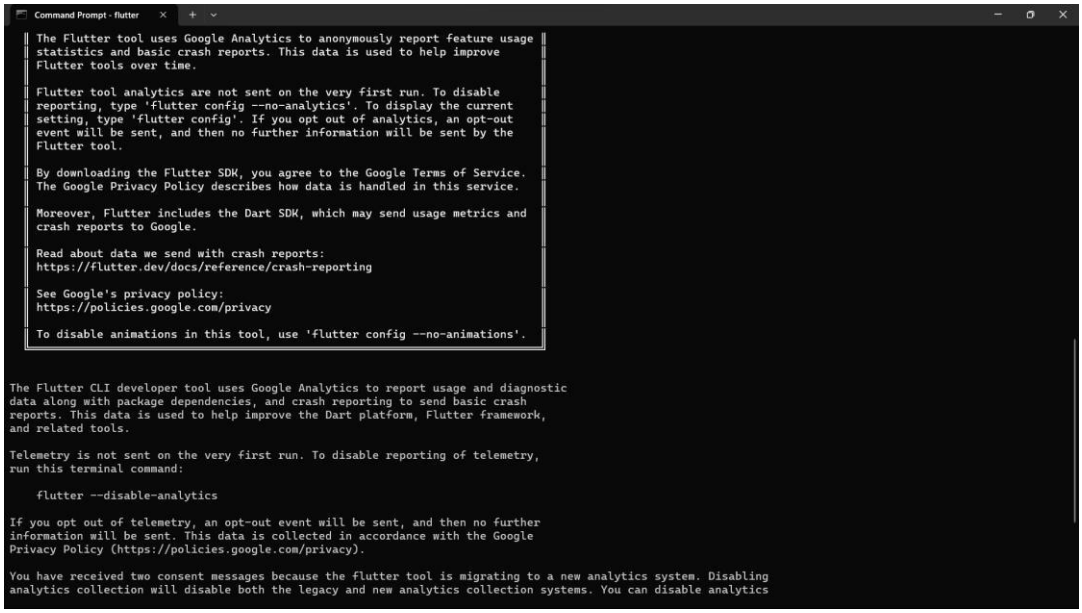


Step 4.3: In the above window, click on New->write path of Flutter bin folder in variable value > ok -> ok -> ok.

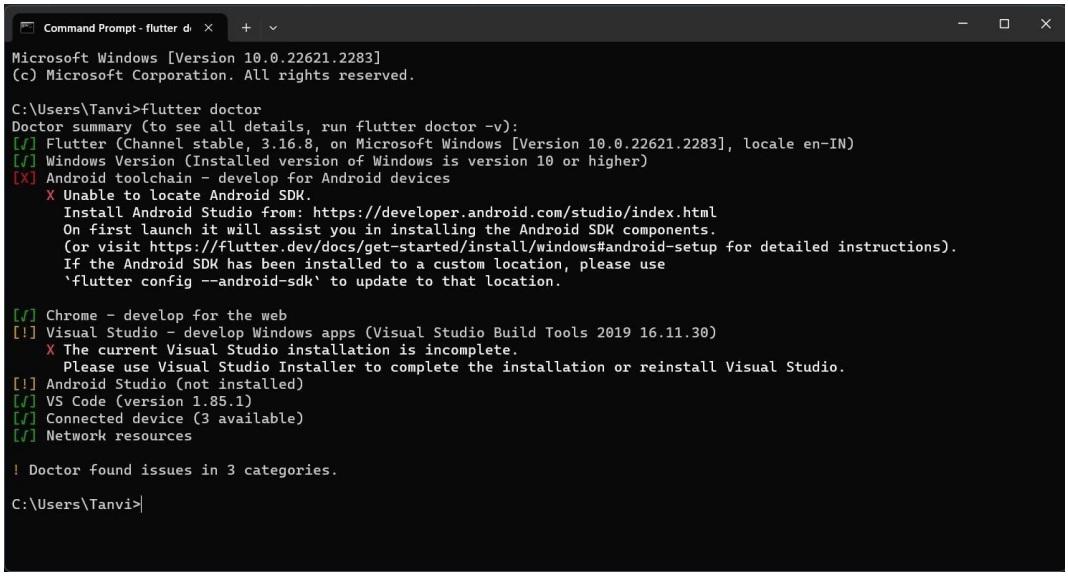


Step 5: Now, run the $ flutter command in command prompt.

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.

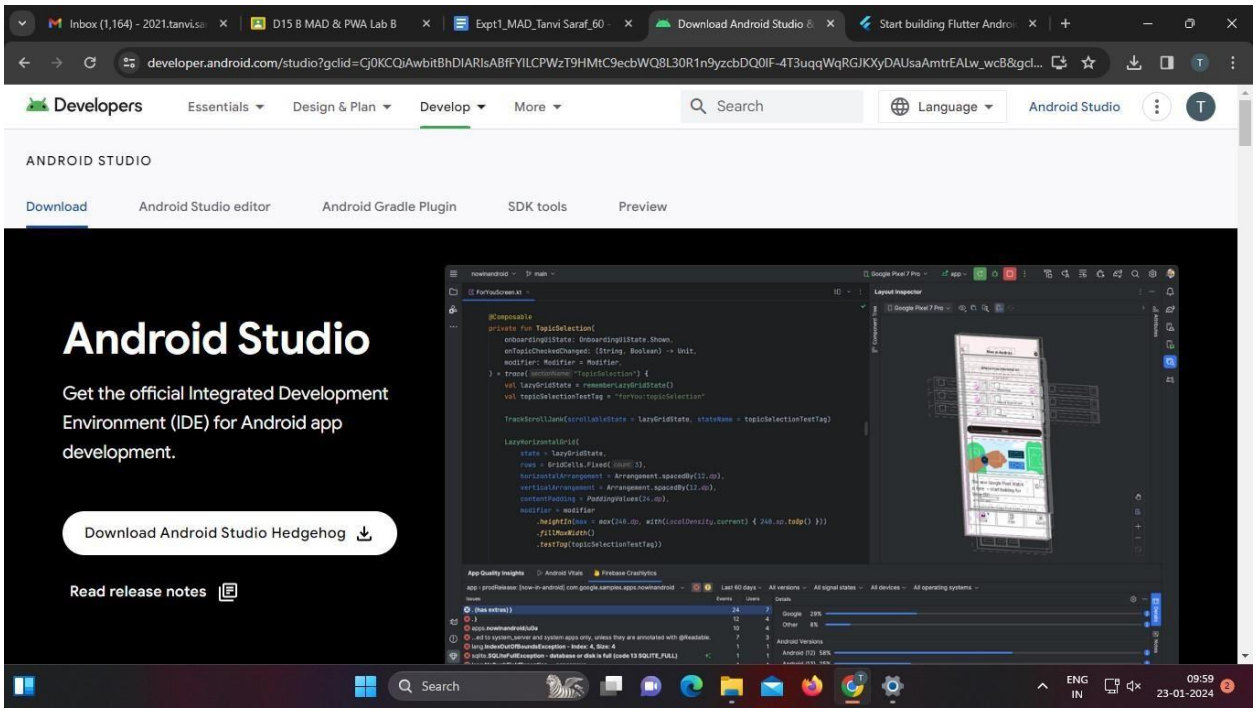


Step 6: When you run the above command, it will analyze the system and show its report, as shown in the below image. Here, you will find the details of all missing tools, which required to run Flutter as well as the development tools that are available but not connected with the device.



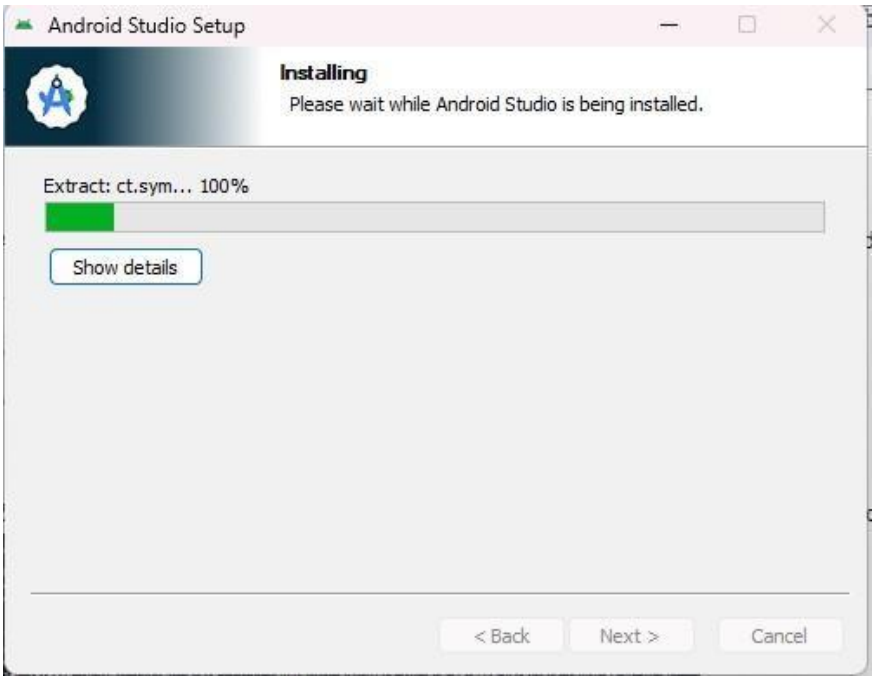
Step 7: Install the Android SDK. If the flutter doctor command does not find the Android SDK tool in your system, then you need first to install the Android Studio IDE. To install Android Studio IDE, do the following steps.

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

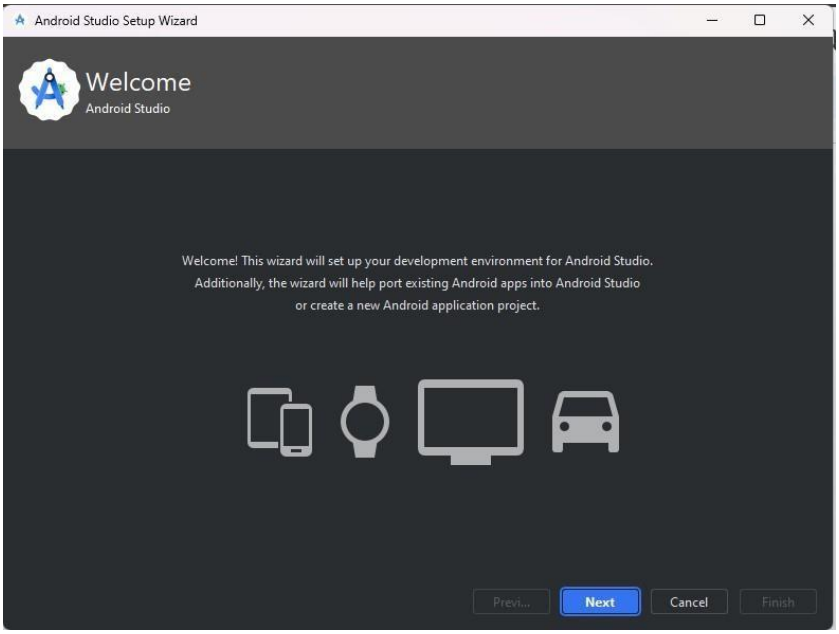


Step 7.2: When the download is complete, open the .exe file and run it. You will get the following dialog box.

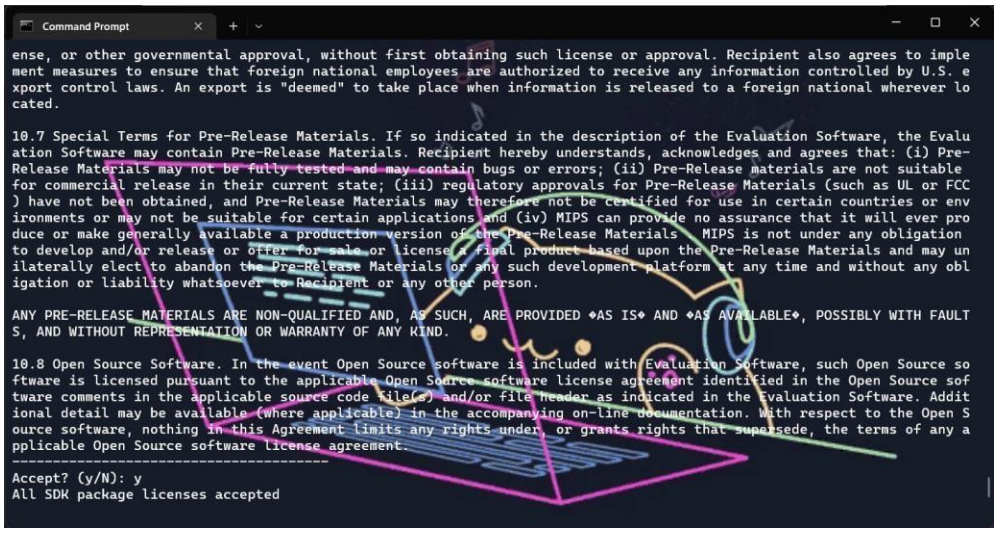
Step 7.3: Follow the steps of the installation wizard. Once the installation wizard completes, you will get the following screen.

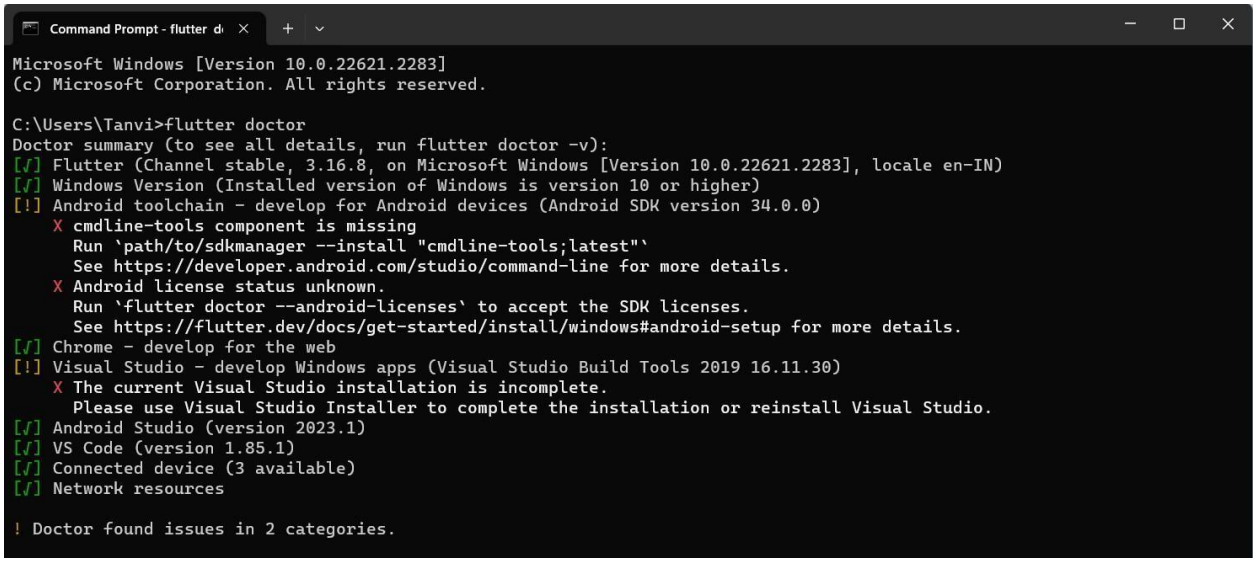


Step 7.4: In the above screen, click Next-> Finish. Once the Finish button is clicked, you need to choose the 'Don't import Settings option' and click OK. It will start the Android Studio.



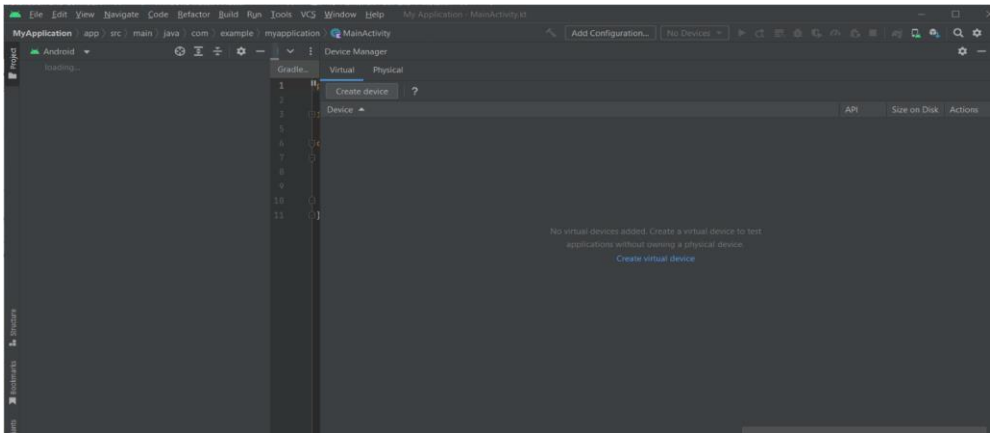
Step 7.5: run the $ flutter doctor command and Run flutter doctor --android-licenses command.



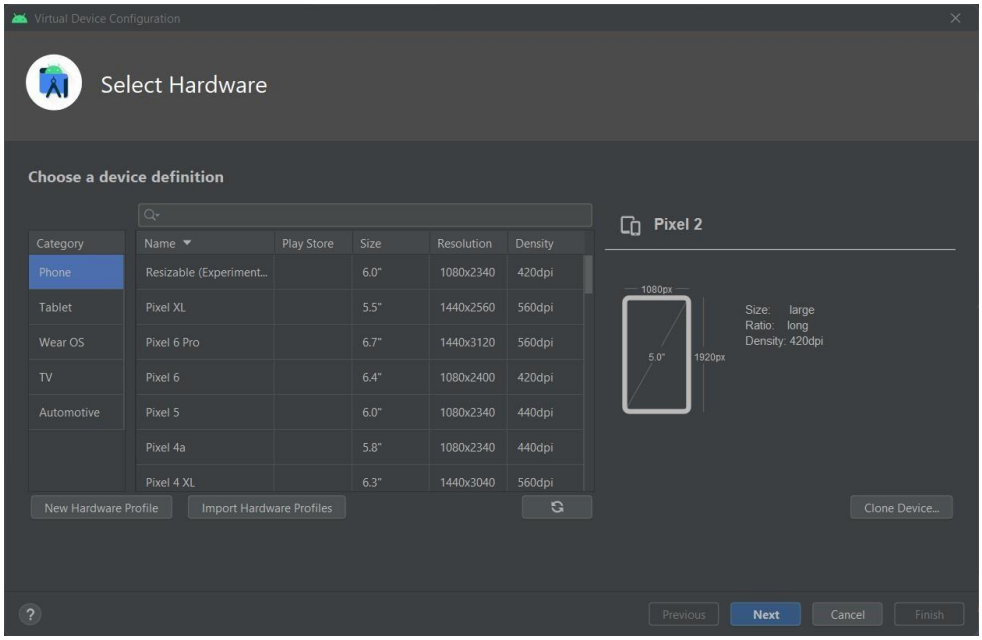


Step 8: Next, you need to set up an Android emulator. It is responsible for running and testing the Flutter application.

Step 8.1: To set an Android emulator, go to Android Studio > Tools > Android > AVD Manager and select Create Virtual Device. Or, go to Help->Find Action->Type Emulator in the search box. You will get the following screen.

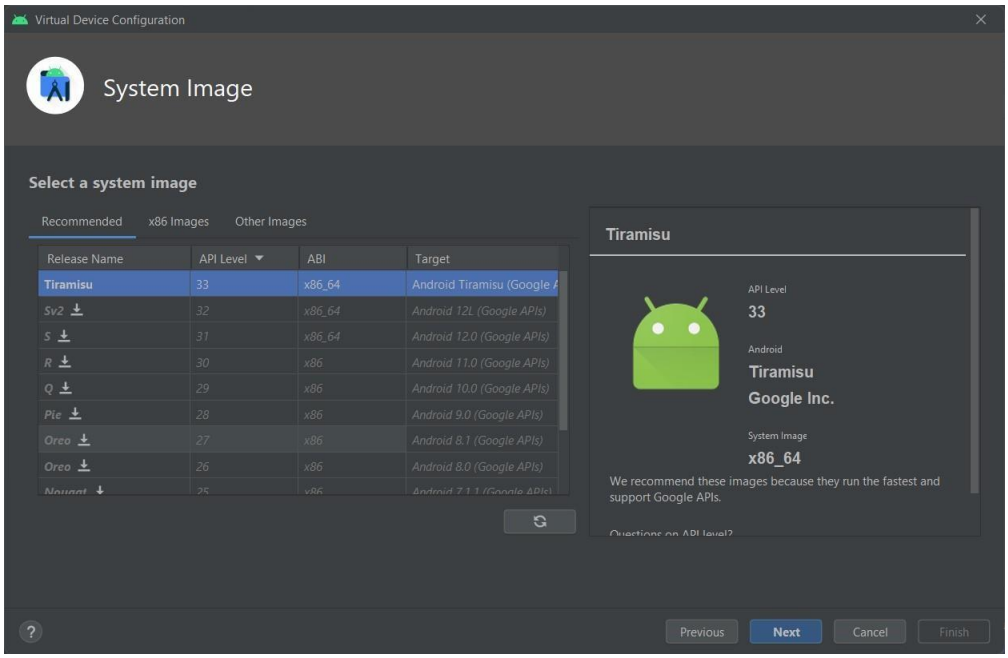


Step 8.2: Choose your device definition and click on Next.

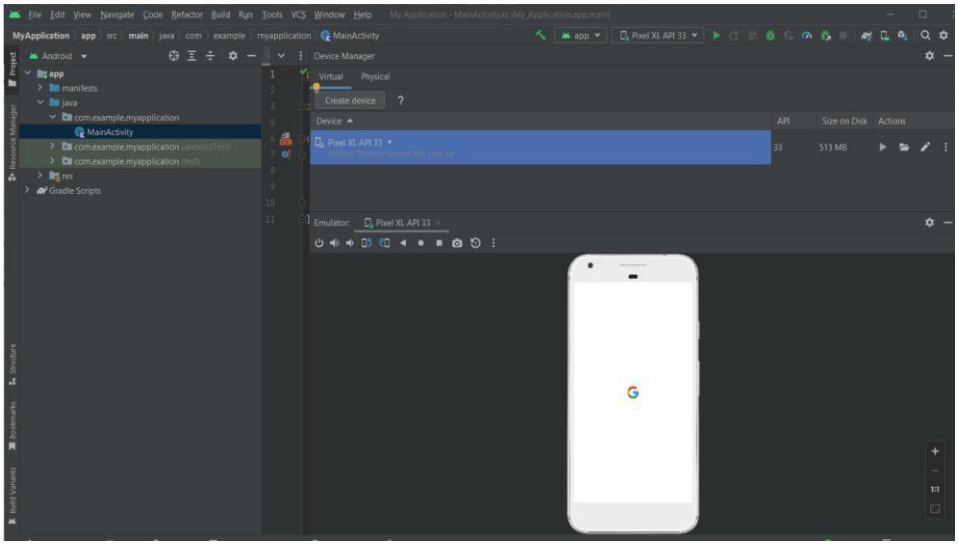


Step 8.3: Select the system image for the latest Android version and click on Next.

Step 8.4: Now, verify the all AVD configuration. If it is correct, click on Finish. The following screen appears.

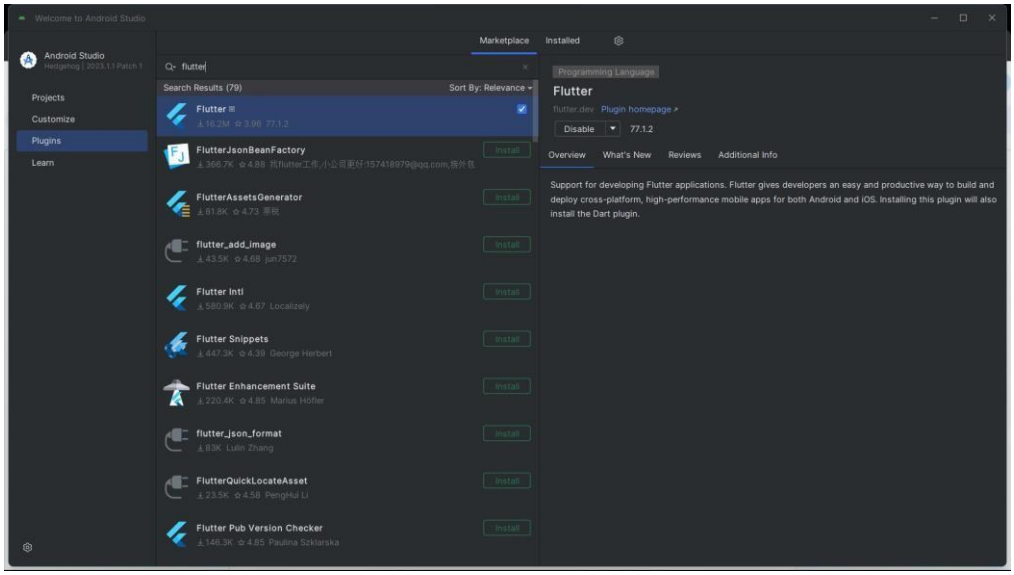


Step 8.5: Last, click on the icon pointed into the red color rectangle. The Android emulator displayed as below screen.



Step 9: Now, install Flutter and Dart plugin for building Flutter application in Android Studio. These plugins provide a template to create a Flutter application, give an option to run and debug Flutter application in the Android Studio itself. Do the following steps to install these plugins.

Step 9.1: Open the Android Studio and then go to File->Settings->Plugins.



Step 9.2: Now, search the Flutter plugin. If found, select Flutter plugin and click install. When you click on install, it will ask you to install Dart plugin as below screen. Click yes to proceed.

Step 9.3: Restart the Android Studio.

Conclusion:

In this experiment we understood basic installation steps. First of all we installed flutter for windows operating system. Then we copied the extracted folder’s path into the environment variables path. Then we installed Android Studios. Then we edited some settings from SDK Manager. Then we installed the Flutter and Dart plugin for android studio. In this way our experiment 100% of our experiment and successfully achieved our objective.