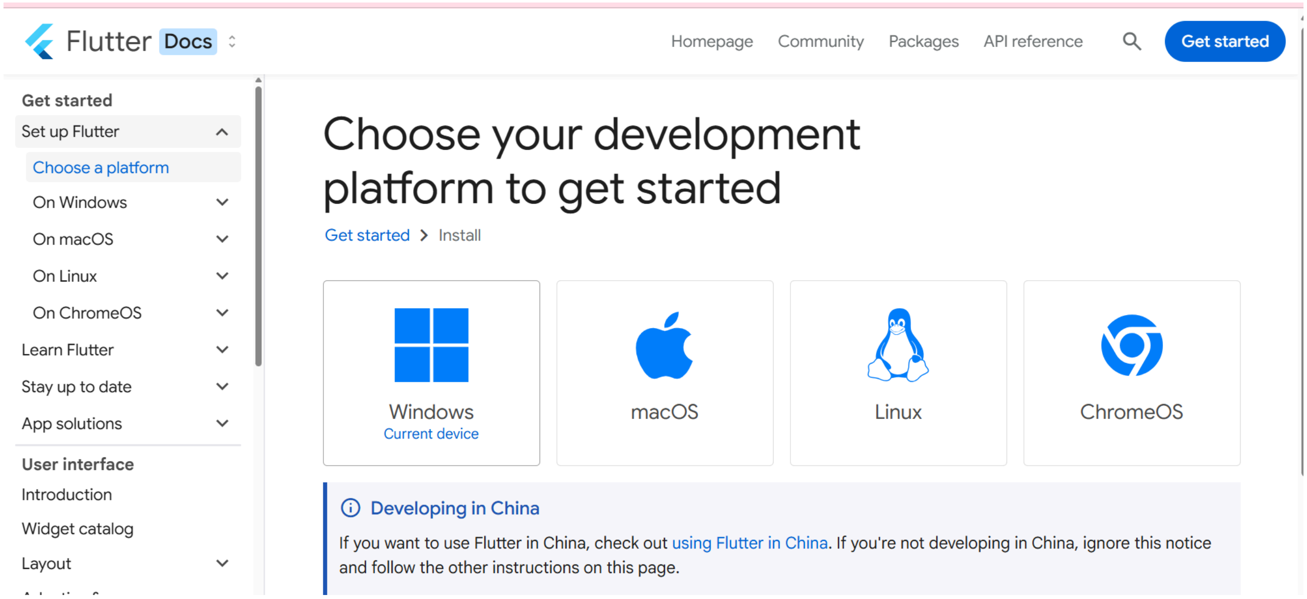
EXP 1

AIM: Installation and Configuration of Flutter Environment.

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.



Choose your development platform to get started

Get started > Install

ⓘ Developing in China

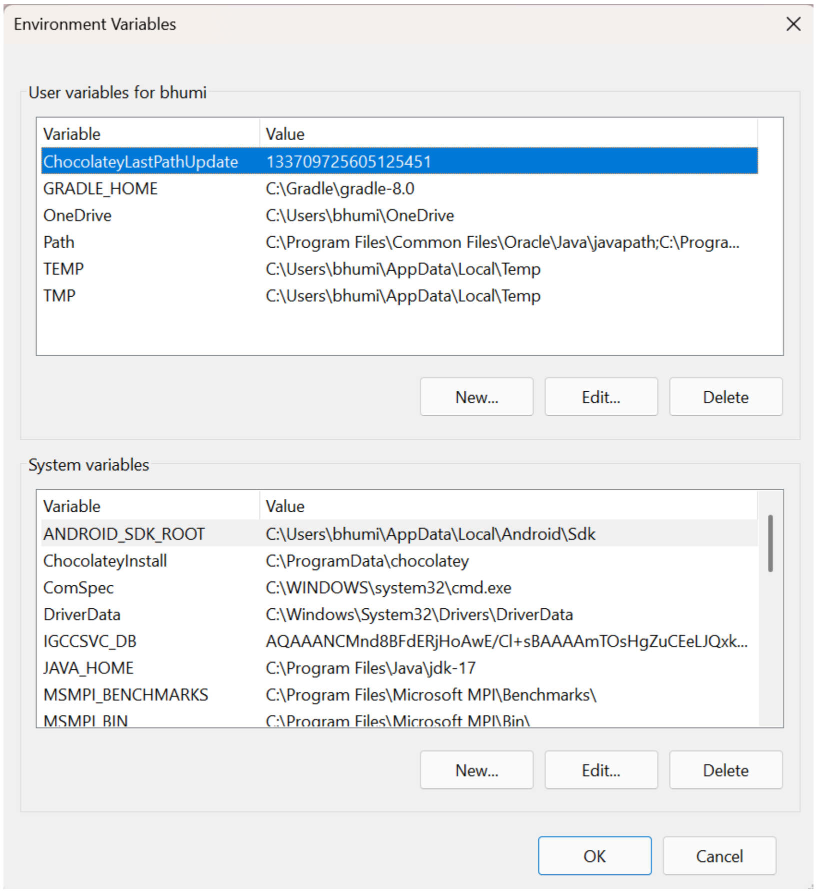
If you want to use Flutter in China, check out using Flutter in China. If you're not developing in China, ignore this notice and follow the other instructions on this page.

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.



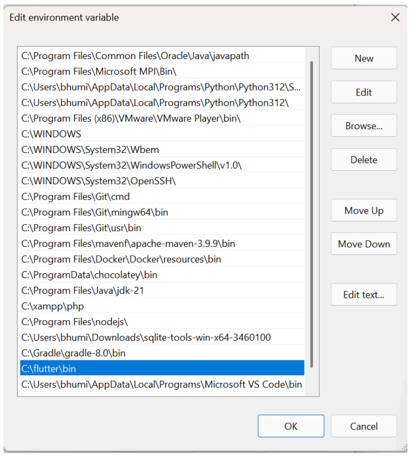
User variables for bhumi

Variable	Value
ChocolateyLastPathUpdate	133709725605125451
GRADLE_HOME	C:\Gradle\gradle-8.0
OneDrive	C:\Users\bhumi\OneDrive
Path	C:\Program Files\Common Files\Oracle\Java\javapath;C:\Progra...
TEMP	C:\Users\bhumi\AppData\Local\Temp
TMP	C:\Users\bhumi\AppData\Local\Temp

System variables

Variable	Value
ANDROID_SDK_ROOT	C:\Users\bhumi\AppData\Local\Android\Sdk
ChocolateyInstall	C:\ProgramData\chocolatey
ComSpec	C:\WINDOWS\system32\cmd.exe
DriverData	C:\Windows\System32\Drivers\DriverData
IGCCSVC_DB	AQAAANCMnd8BFdERjHoAwE/Cl+sBAAAAmTOsHgZuCEeLJQxk...
JAVA_HOME	C:\Program Files\Java\jdk-17
MSMPI_BENCHMARKS	C:\Program Files\Microsoft MPI\Benchmarks\
MSMPI_BIN	C:\Program Files\Microsoft MPI\Bin\

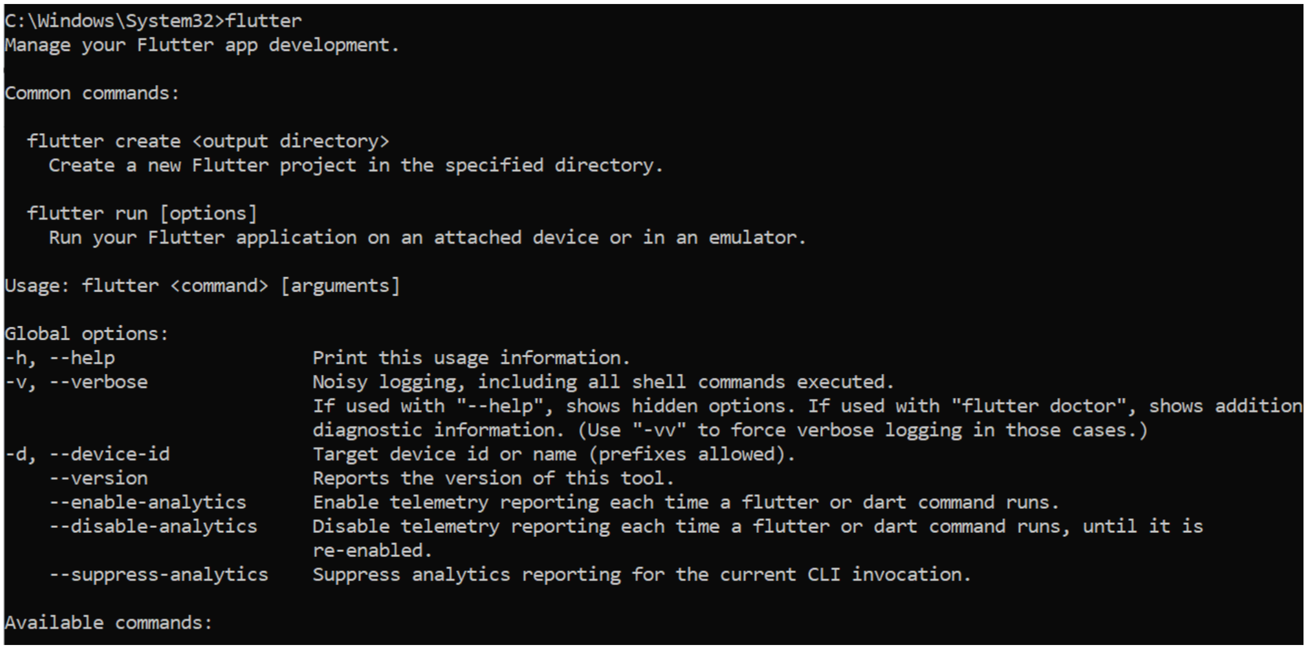
Step 4.2: Now, select path -> click on edit. The following screen appears



```
C:\Program Files\Common Files\Oracle\Java\javapath
C:\Program Files\Microsoft MPI\Bin\
C:\Users\bhumi\AppData\Local\Programs\Python\Python312\S...
C:\Users\bhumi\AppData\Local\Programs\Python\Python312\
C:\Program Files (x86)\VMware\VMware Player\bin\
C:\WINDOWS
C:\WINDOWS\System32\Wbem
C:\WINDOWS\System32\WindowsPowerShell\v1.0\
C:\WINDOWS\System32\OpenSSH\
C:\Program Files\Git\cmd
C:\Program Files\Git\mingw64\bin
C:\Program Files\Git\usr\bin
C:\Program Files\mavenf\apache-maven-3.9.9\bin
C:\Program Files\Docker\Docker\resources\bin
C:\ProgramData\chocolatey\bin
C:\Program Files\Java\jdk-21
C:\xampp\php
C:\Program Files\nodejs\
C:\Users\bhumi\Downloads\sqlite-tools-win-x64-3460100
C:\Gradle\gradle-8.0\bin
C:\flutter\bin
C:\Users\bhumi\AppData\Local\Programs\Microsoft VS Code\bin
```

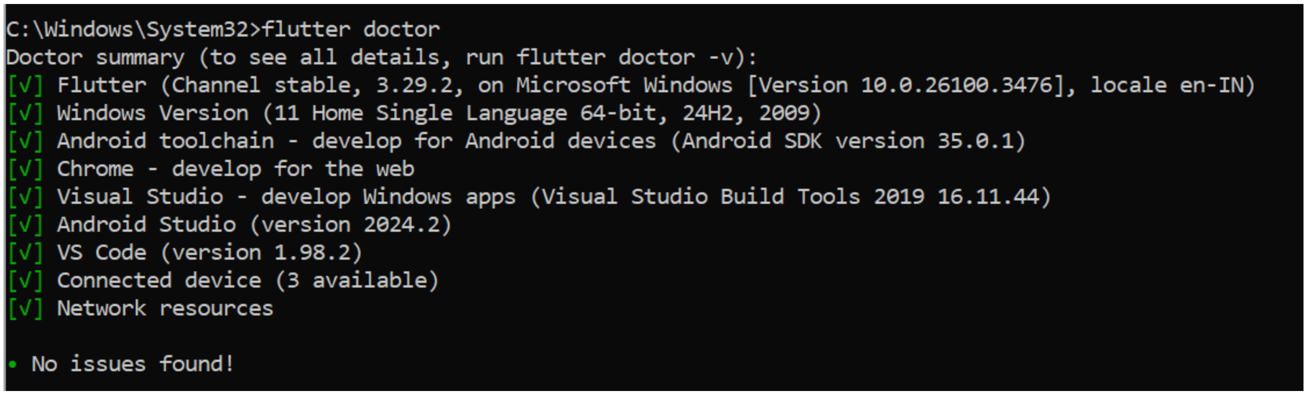
Step 4.3: In the above window, click on New->write path of Flutter bin folder in variable value -> ok -> ok -> ok.

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



```
C:\Windows\System32>flutter
Manage your Flutter app development.

Common commands:

  flutter create <output directory>
    Create a new Flutter project in the specified directory.

  flutter run [options]
    Run your Flutter application on an attached device or in an emulator.

Usage: flutter <command> [arguments]

Global options:
-h, --help                  Print this usage information.
-v, --verbose               Noisy logging, including all shell commands executed.
                            If used with "--help", shows hidden options. If used with "flutter doctor", shows addition
                            diagnostic information. (Use "-vv" to force verbose logging in those cases.)
-d, --device-id             Target device id or name (prefixes allowed).
    --version               Reports the version of this tool.
    --enable-analytics      Enable telemetry reporting each time a flutter or dart command runs.
    --disable-analytics     Disable telemetry reporting each time a flutter or dart command runs, until it is
                            re-enabled.
    --suppress-analytics    Suppress analytics reporting for the current CLI invocation.

Available commands:
```

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.



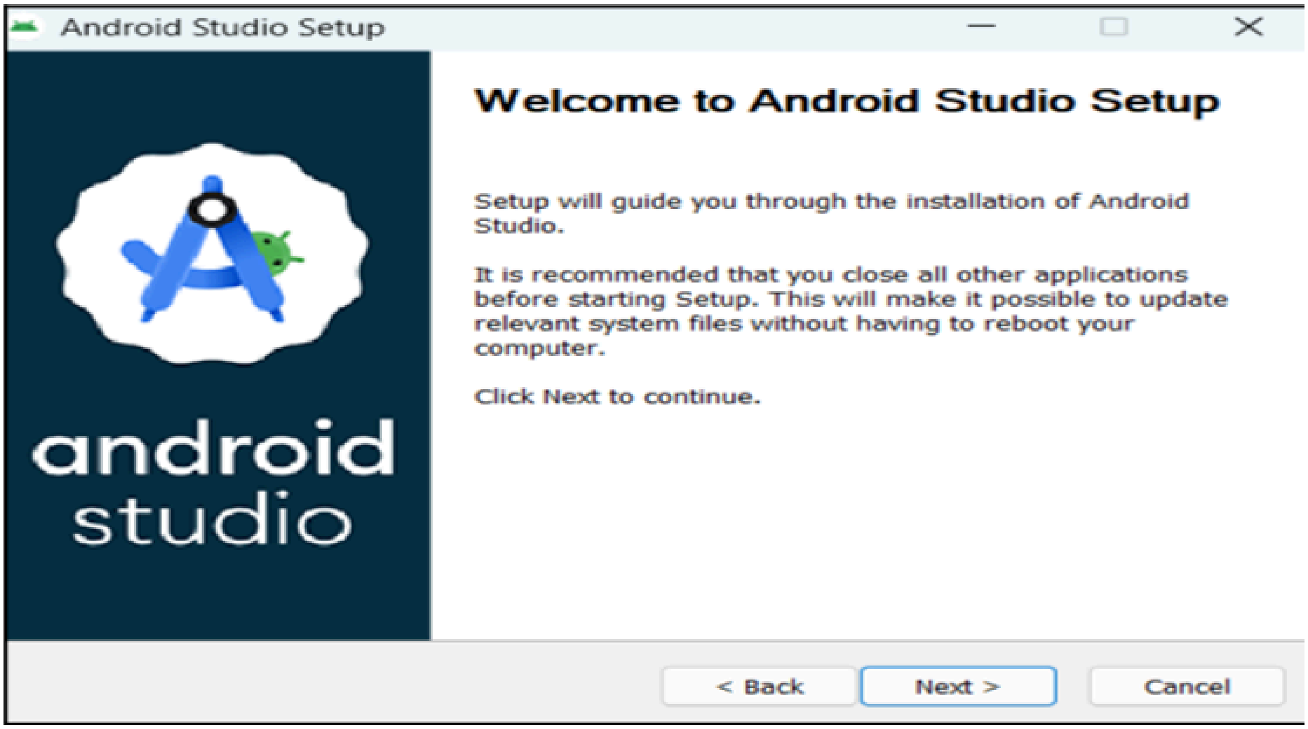
```
C:\Windows\System32>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[√] Flutter (Channel stable, 3.29.2, on Microsoft Windows [Version 10.0.26100.3476], locale en-IN)
[√] Windows Version (11 Home Single Language 64-bit, 24H2, 2009)
[√] Android toolchain - develop for Android devices (Android SDK version 35.0.1)
[√] Chrome - develop for the web
[√] Visual Studio - develop Windows apps (Visual Studio Build Tools 2019 16.11.44)
[√] Android Studio (version 2024.2)
[√] VS Code (version 1.98.2)
[√] Connected device (3 available)
[√] Network resources

• No issues found!
```

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.



Android Studio Setup

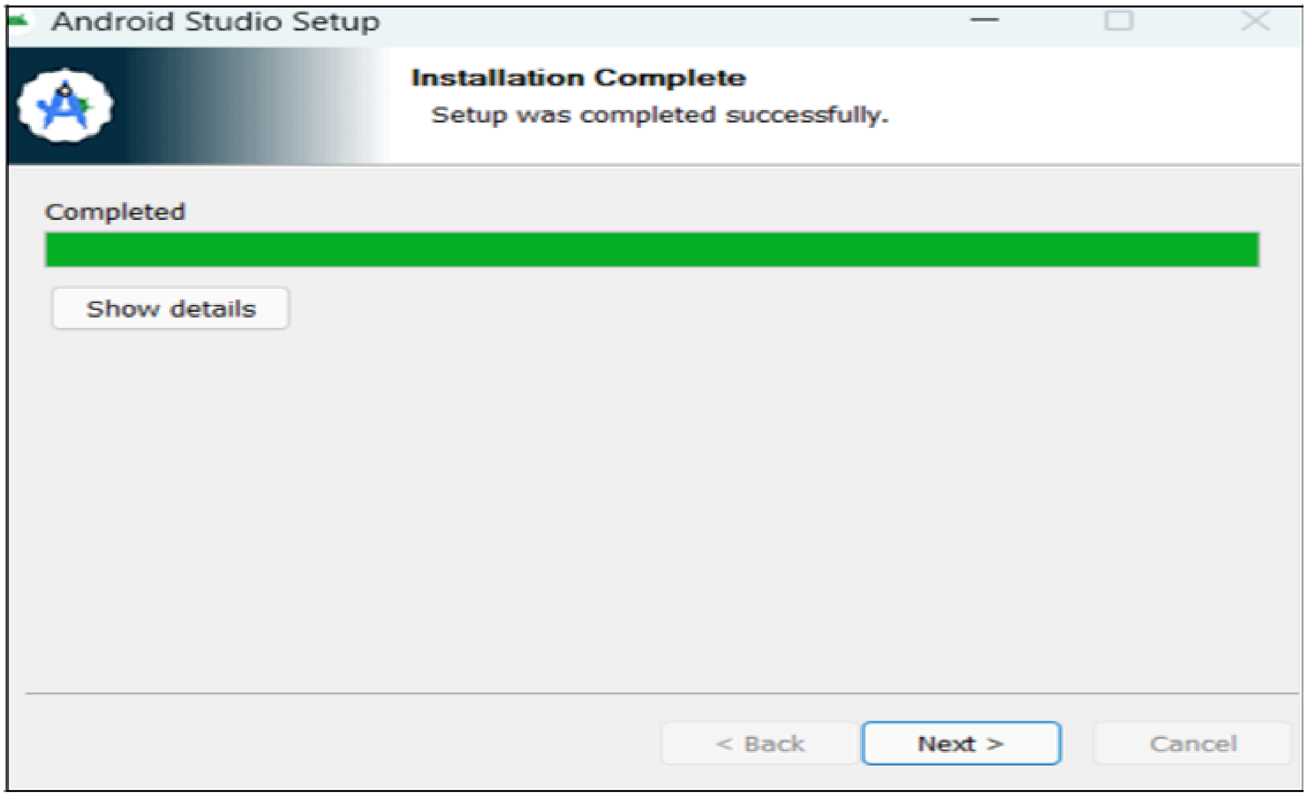
Welcome to Android Studio Setup

Setup will guide you through the installation of Android Studio.

It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.

Click Next to continue.

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



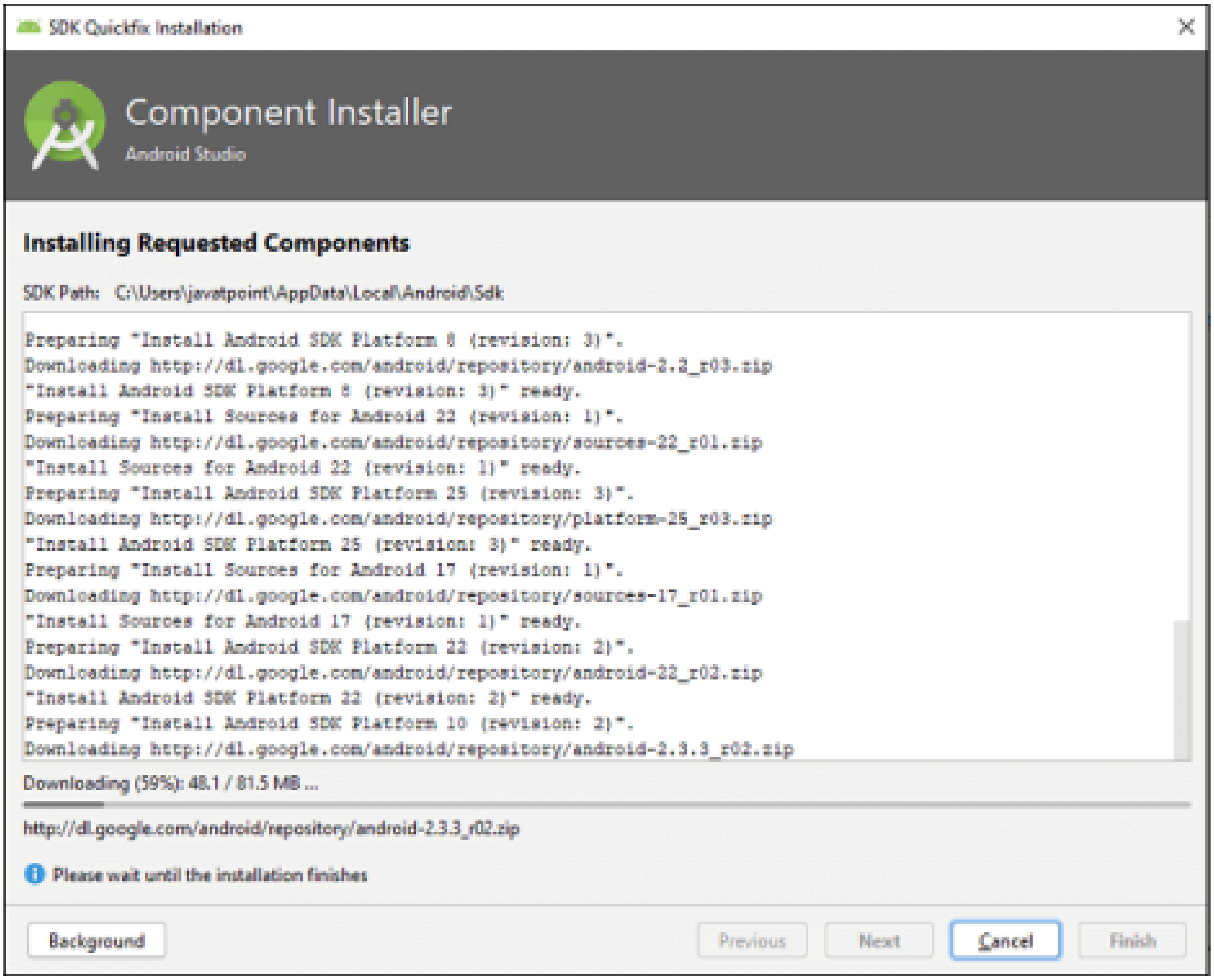
Android Studio Setup

Installation Complete

Setup was completed successfully.

Completed

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.



Installing Requested Components

SDK Path: C:\Users\javatpoint\AppData\Local\Android\Sdk

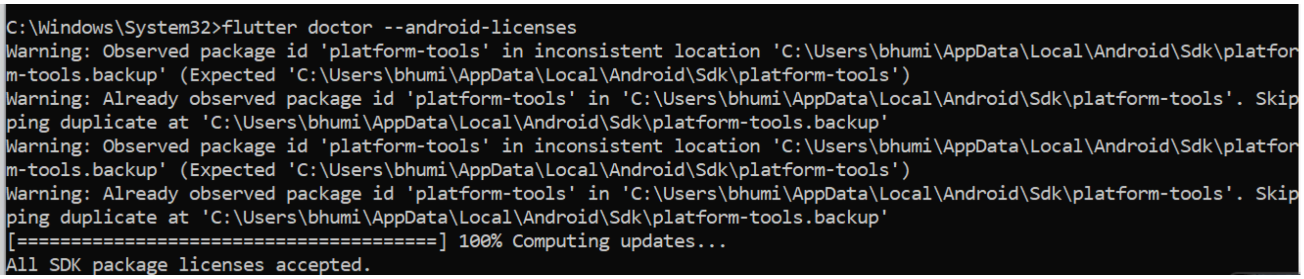
```
Preparing "Install Android SDK Platform 8 (revision: 3)".
Downloading http://dl.google.com/android/repository/android-2.2_r03.zip
"Install Android SDK Platform 8 (revision: 3)" ready.
Preparing "Install Sources for Android 22 (revision: 1)".
Downloading http://dl.google.com/android/repository/sources-22_r01.zip
"Install Sources for Android 22 (revision: 1)" ready.
Preparing "Install Android SDK Platform 25 (revision: 3)".
Downloading http://dl.google.com/android/repository/platform-25_r03.zip
"Install Android SDK Platform 25 (revision: 3)" ready.
Preparing "Install Sources for Android 17 (revision: 1)".
Downloading http://dl.google.com/android/repository/sources-17_r01.zip
"Install Sources for Android 17 (revision: 1)" ready.
Preparing "Install Android SDK Platform 22 (revision: 2)".
Downloading http://dl.google.com/android/repository/android-22_r02.zip
"Install Android SDK Platform 22 (revision: 2)" ready.
Preparing "Install Android SDK Platform 10 (revision: 2)".
Downloading http://dl.google.com/android/repository/android-2.3.3_r02.zip
```

Downloading (59%): 48.1 / 81.5 MB ...

http://dl.google.com/android/repository/android-2.3.3_r02.zip

Please wait until the installation finishes

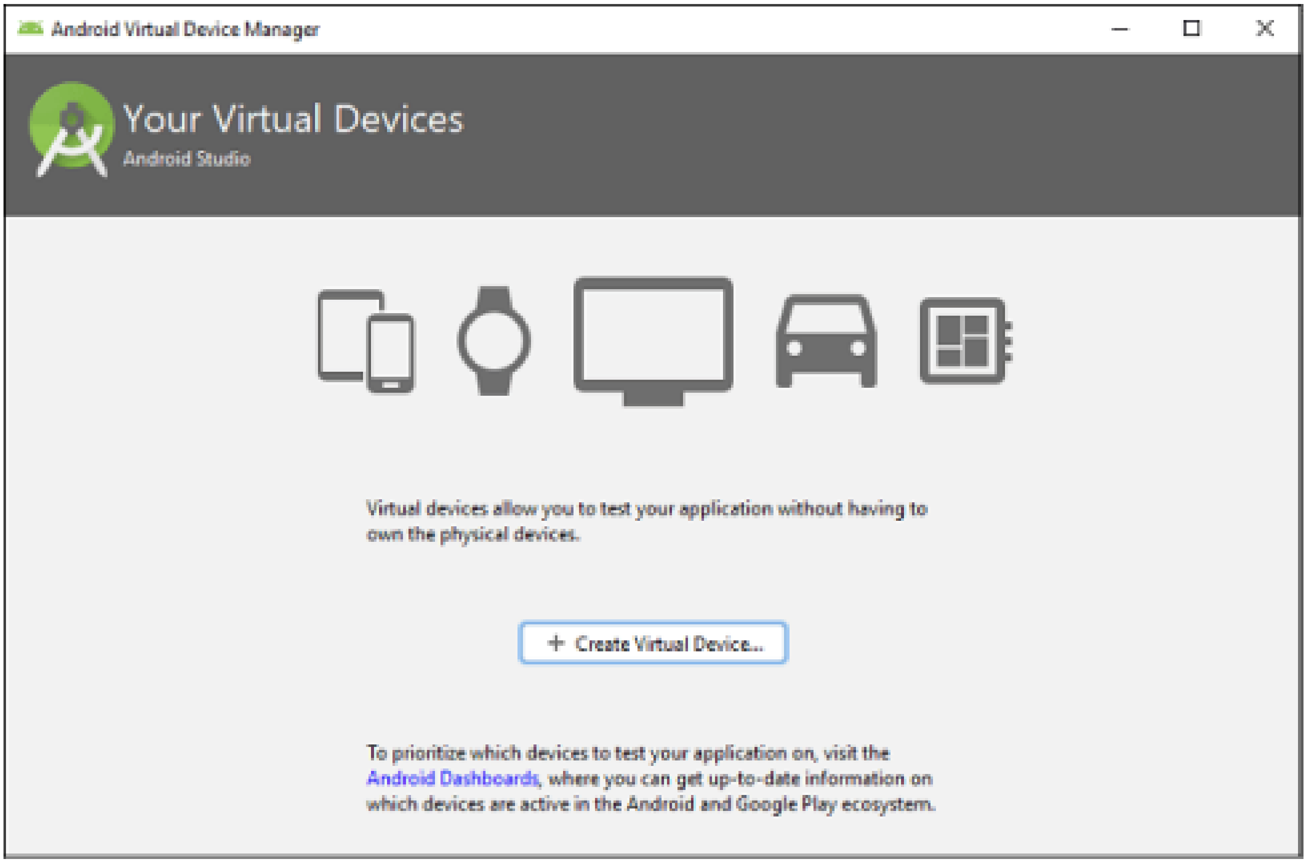
Step 7.5 run the $ **flutter doctor** command and Run flutter doctor --android-licenses command.



```
C:\Windows\System32>flutter doctor --android-licenses
Warning: Observed package id 'platform-tools' in inconsistent location 'C:\Users\bhumi\AppData\Local\Android\Sdk\platfor
m-tools.backup' (Expected 'C:\Users\bhumi\AppData\Local\Android\Sdk\platform-tools')
Warning: Already observed package id 'platform-tools' in 'C:\Users\bhumi\AppData\Local\Android\Sdk\platform-tools'. Skip
ping duplicate at 'C:\Users\bhumi\AppData\Local\Android\Sdk\platform-tools.backup'
Warning: Observed package id 'platform-tools' in inconsistent location 'C:\Users\bhumi\AppData\Local\Android\Sdk\platfor
m-tools.backup' (Expected 'C:\Users\bhumi\AppData\Local\Android\Sdk\platform-tools')
Warning: Already observed package id 'platform-tools' in 'C:\Users\bhumi\AppData\Local\Android\Sdk\platform-tools'. Skip
ping duplicate at 'C:\Users\bhumi\AppData\Local\Android\Sdk\platform-tools.backup'
[=======================================] 100% Computing updates...
All SDK package licenses accepted.
```

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.



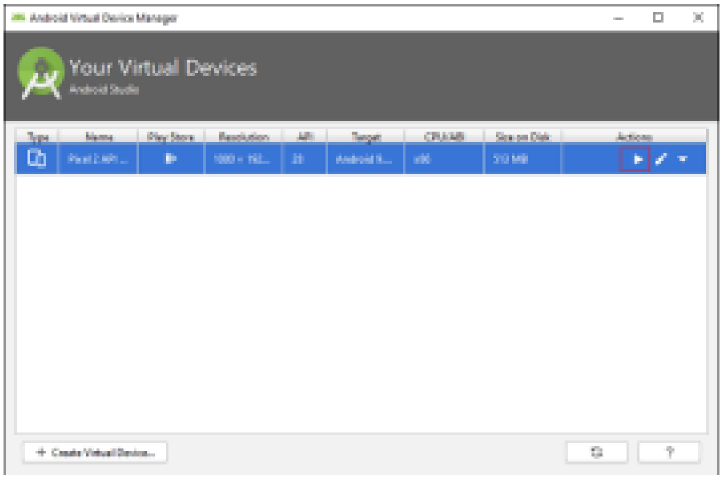
Virtual devices allow you to test your application without having to own the physical devices.

To prioritize which devices to test your application on, visit the Android Dashboards, where you can get up-to-date information on which devices are active in the Android and Google Play ecosystem.

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

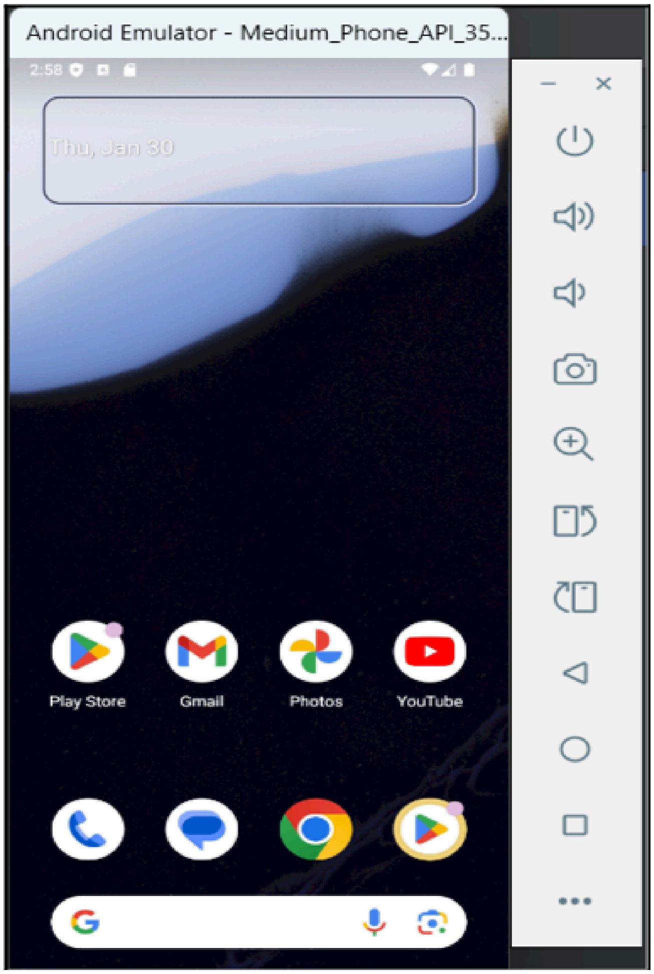
Step 8.3: Select the system image for the latest Android version and click on Next.

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



Type	Name	Play Store	Resolution	API	Target	CPU/ABI	Size on Disk	Actions
	Pixel 2 API ...	▶	1080 × 192...	28	Android 9...	x86	512 MB	▶ ✎ ▾

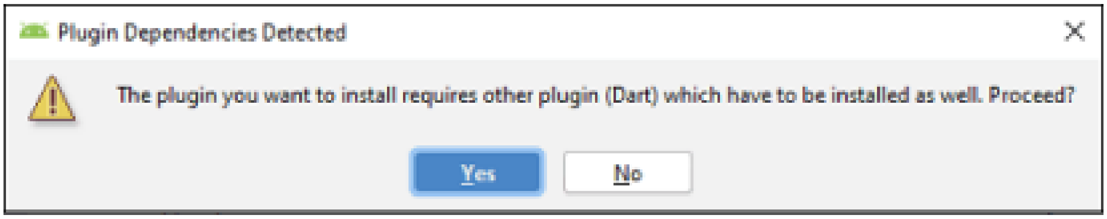
Step 8.5: Last, click on the icon pointed into the red color rectangle. The Android emulator displayed as shown below screen.



Step 9: Now, install the 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.


Plugin Dependencies Detected

The plugin you want to install requires other plugin (Dart) which have to be installed as well. Proceed?

Step 9.3: Restart the Android Studio.

Conclusion: This experiment demonstrates the complete process of setting up the Flutter development environment. The installation involves multiple components including the Flutter SDK, Android Studio IDE, and plugins that work together to create a functional development environment. The Flutter doctor tool helps identify and fix any missing dependencies. Once properly configured, developers can create Flutter projects and run them on emulators or physical devices, providing a foundation for mobile application development using Flutter's cross-platform capabilities.