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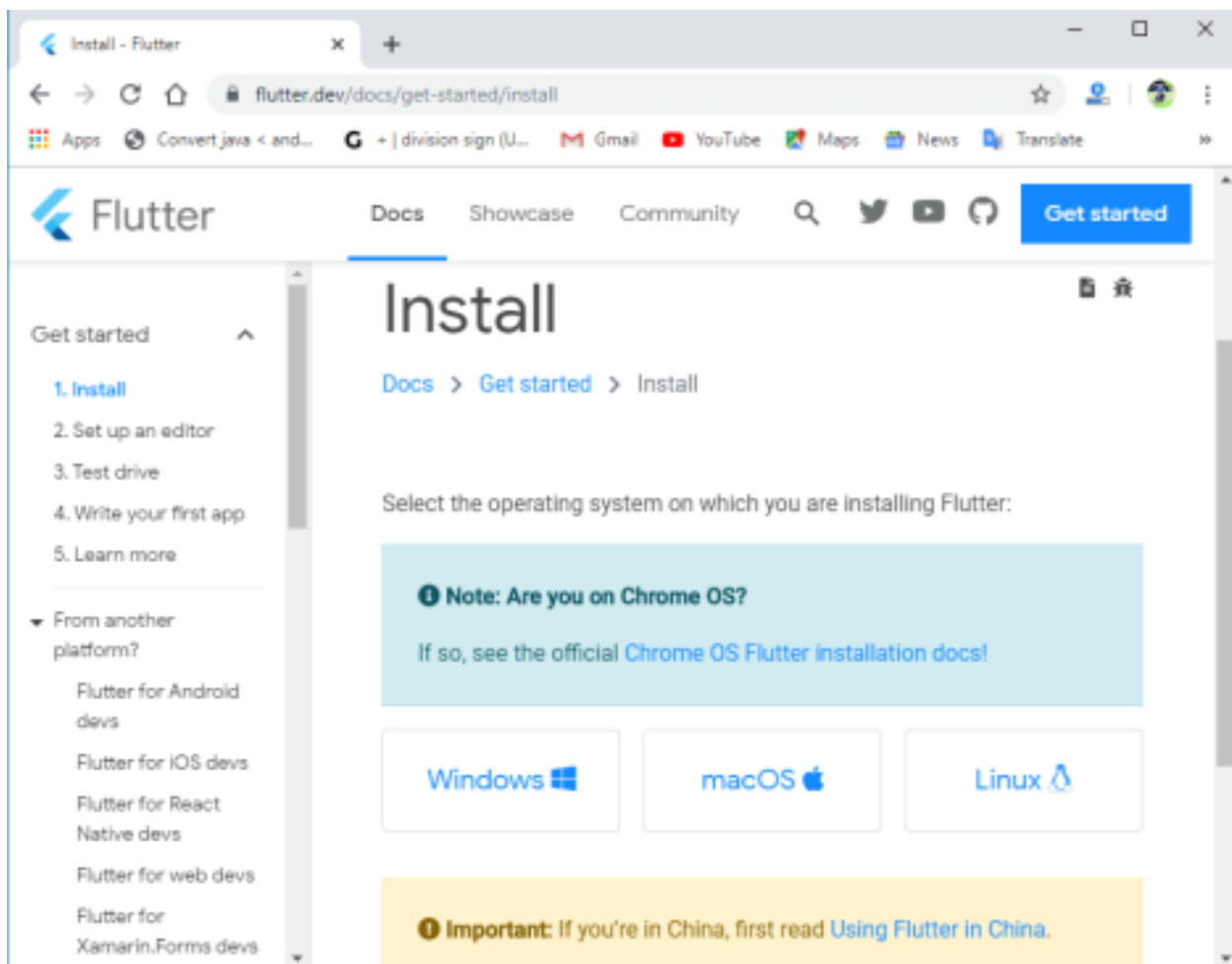
Experiment No. 1

Aim: To Install and Configure Flutter Environment

Pre Requisites:

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.

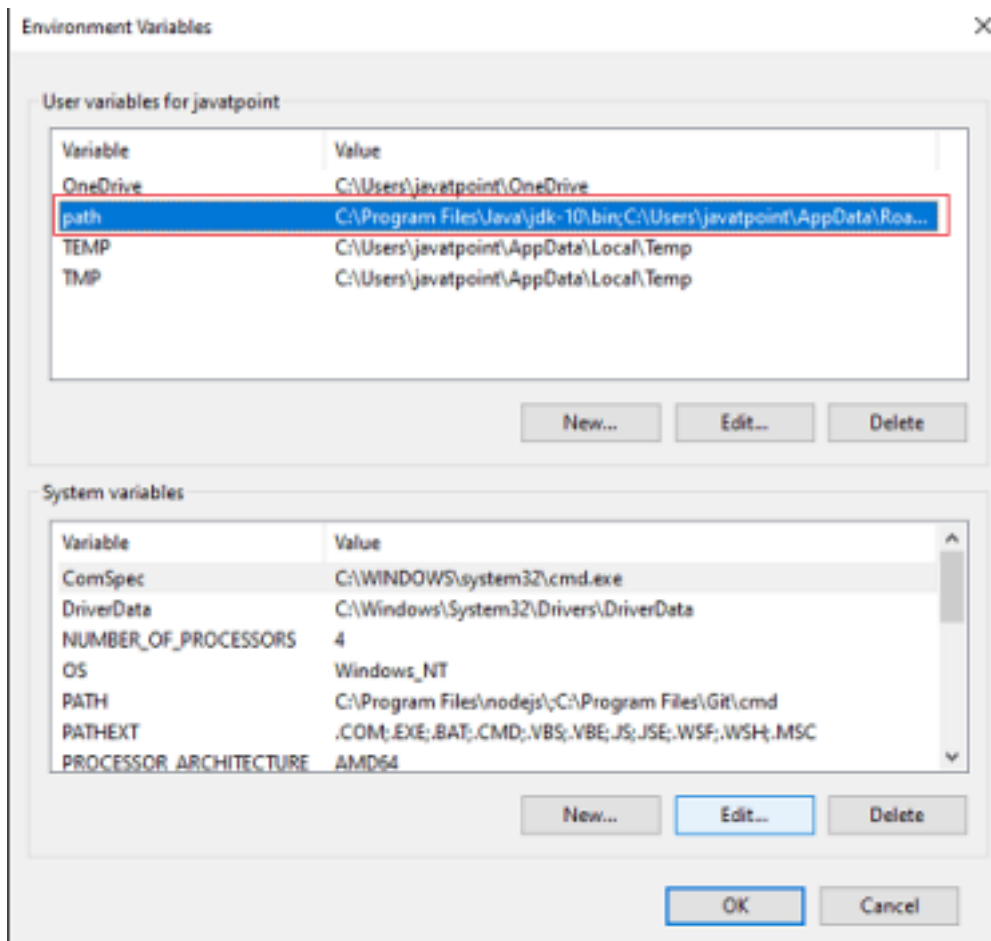


Step 2: Next, to download the latest Flutter SDK, click on the Windows icon. Here, you will find the download link for SDK.

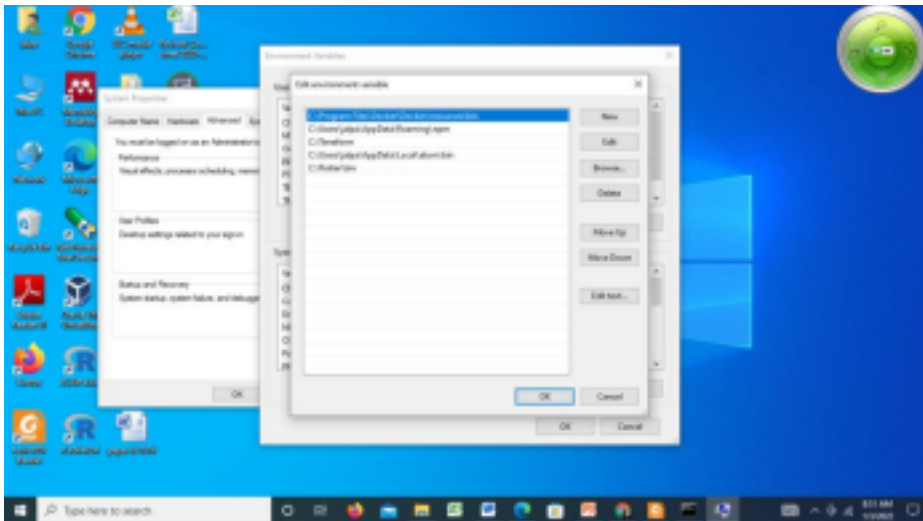
Step 3: When your download is complete, extract the **zip** file and place it in the desired installation folder or location, for example, C: /Flutter.

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.

```

Microsoft Windows [Version 10.0.19042.1435]
(c) Microsoft Corporation. All rights reserved.

C:\Users\jaipal>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 additional
                        diagnostic information.
-o, --output <file>  Write output to the file <file>.
-d, --device-id <id> Target device id or name (prefixes allowed).
--version             Reports the version of this tool.
--suppress-analytics  Suppress analytics reporting when this command runs.

Available commands:

Flutter SDK
  bash-completion  Output command line shell completion setup scripts.
  channel          List or switch Flutter channels.
  config           Configure Flutter settings.
  doctor           Show information about the installed tooling.
  downgrade        Downgrade Flutter to the last active version for the current channel.
  precache         Repopulate the Flutter tool's cache of binary artifacts.
  upgrade          Upgrade your copy of Flutter.

Project
  analyze          Analyze the project's Dart code.
  assemble        Assemble and build Flutter resources.
  build            Build an executable app or install bundle.
  clean           Delete the build/ and .dart_tool/ directories.
  create          Create a new Flutter project.
  drive           Run integration tests for the project on an attached device or emulator.
  format          Format one or more Dart files.
  
```

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.

```
Select Command Prompt
See Google's privacy policy:
https://policies.google.com/privacy

C:\Users\jalpa>
C:\Users\jalpa>
C:\Users\jalpa>flutter doctor
Running "flutter pub get" in flutter_tools... 37.8s
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 2.8.1, on Microsoft Windows [Version 10.0.22042.1435], locale en-US)
[✗] Android toolchain - develop for Android devices
    ✗ Unable to locate Android SDK.
      Install Android Studio from: https://developer.android.com/studio/index.html
      On first launch it will assist you in installing the Android SDK components.
      (or visit https://flutter.dev/docs/get-started/install/windows#android-setup for detailed instructions).
      If the Android SDK has been installed to a custom location, please use
      'flutter config --android-sdk' to update to that location.

[✓] Chrome - develop for the web
[✓] Android Studio (not installed)
[✓] VS Code (version 1.55.2)
[✓] Connected device (2 available)

! Doctor found issues in 2 categories.

C:\Users\jalpa>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 2.8.1, on Microsoft Windows [Version 10.0.22042.1435], locale en-US)
[✗] Android toolchain - develop for Android devices (Android SDK version 32.0.0)
    ✗ cmdline-tools component is missing
      Run 'path/to/sdkmanager --install "cmdline-tools;latest"'
      See https://developer.android.com/studio/command-line for more details.
    ✗ Android license status unknown.
      Run 'flutter doctor --android-licenses' to accept the SDK licenses.
      See https://flutter.dev/docs/get-started/install/windows#android-setup for more details.

[✓] Chrome - develop for the web
[✓] Android Studio (version 2020.3)
[✓] VS Code (version 1.55.2)
[✓] Connected device (2 available)

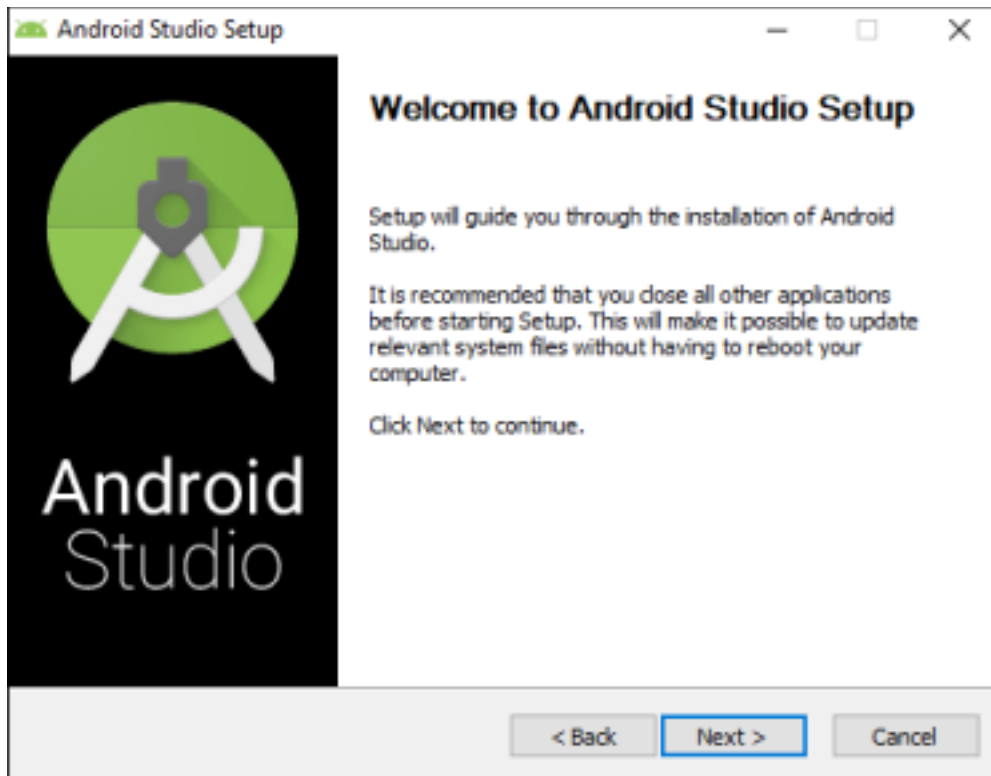
! Doctor found issues in 1 category.
```

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.

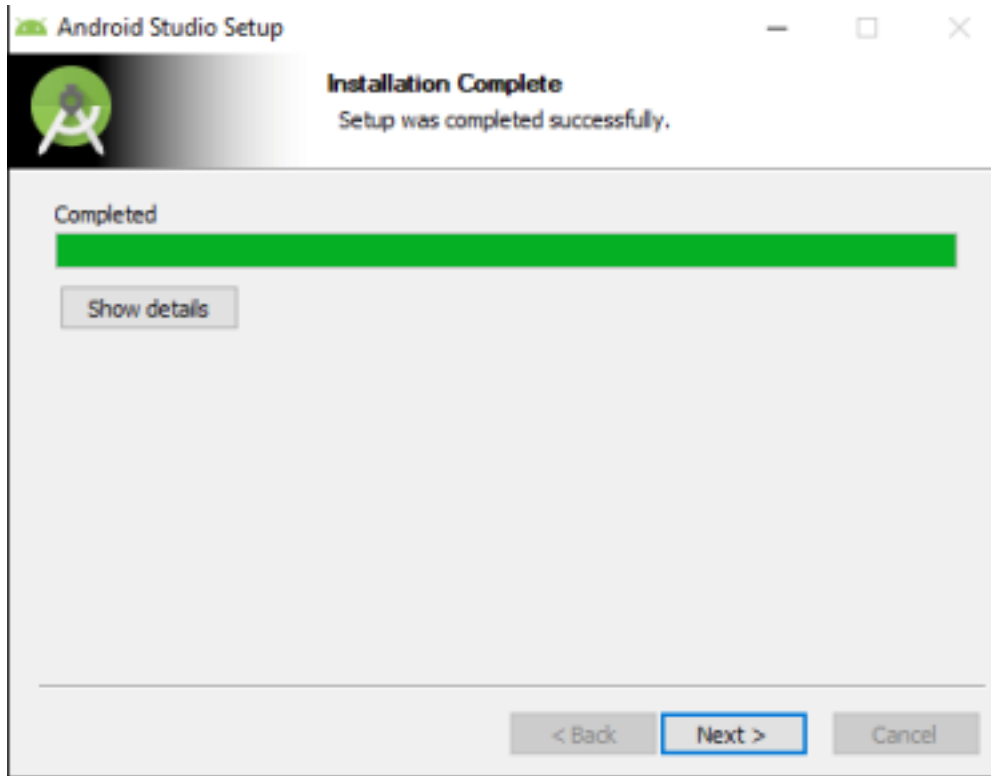
Step 7: Install the Android SDK. If the flutter doctor command does not find the Android SDK tool in your system, then you need first to install the Android Studio IDE. To install Android Studio IDE, do the following steps.

Step 7.1: Download the latest Android Studio executable or zip file from the [official site](#).

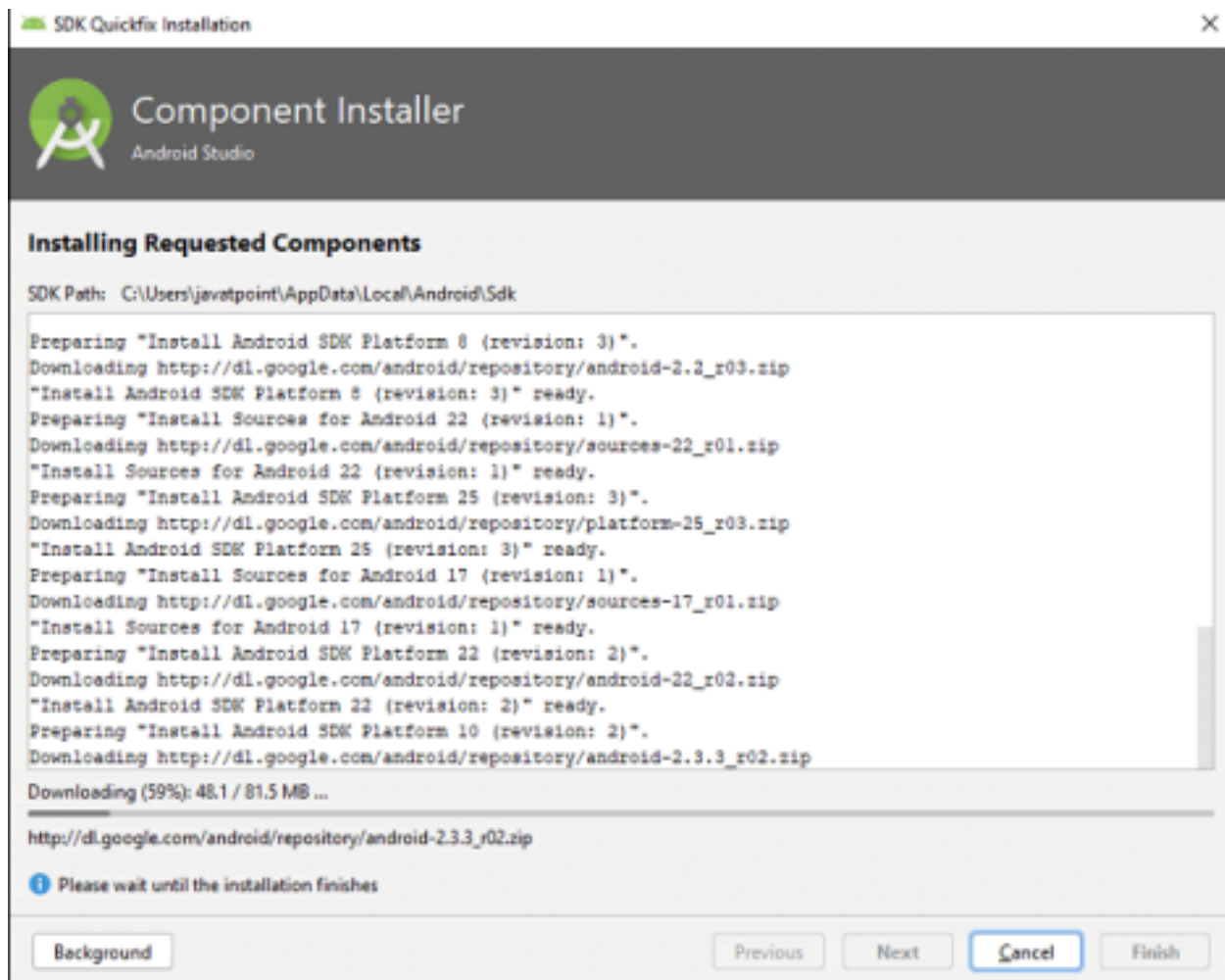
Step 7.2: When the download is complete, open the .exe file and run it. You will get the following dialog box.



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.

```
Command Prompt

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Accept? (y/N): y
All SDK package licenses accepted

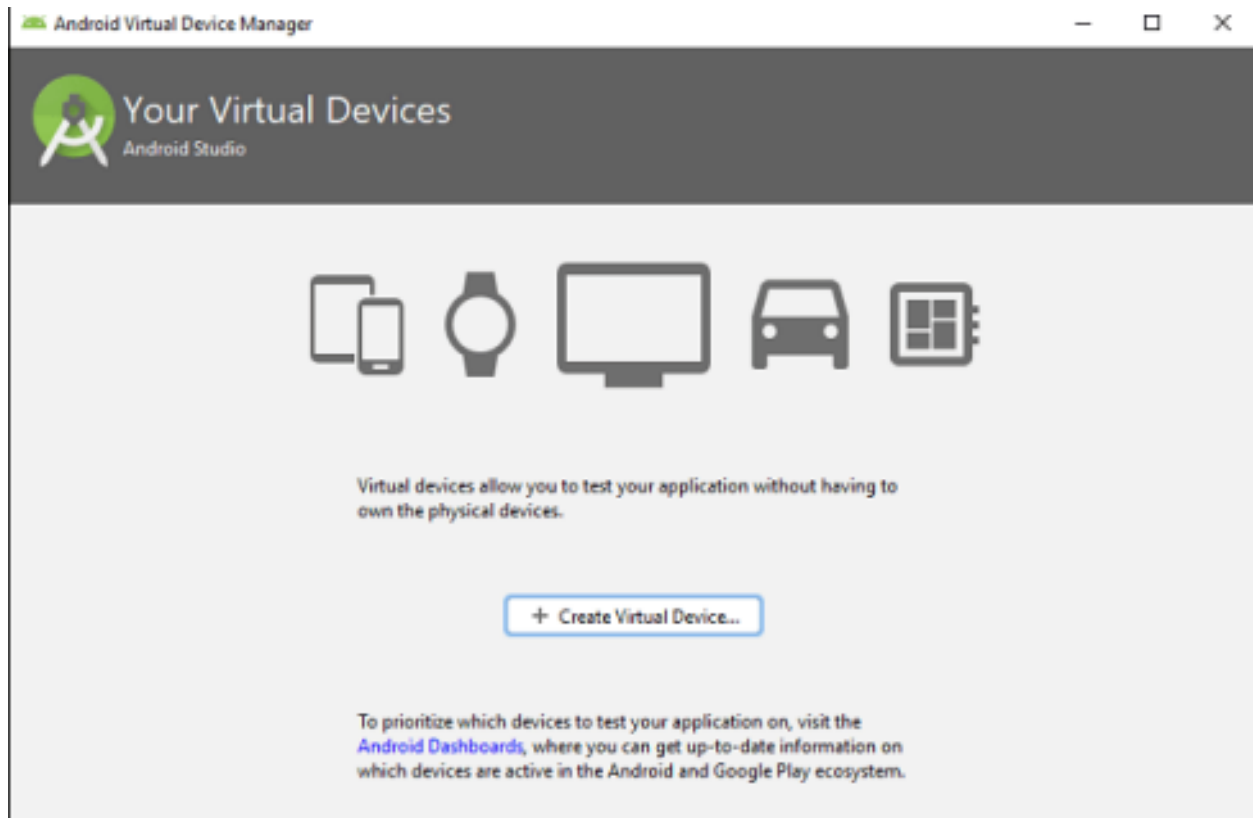
C:\Users\jalpa>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 2.6.1, on Microsoft Windows [Version 10.0.19042.1455], locale en-US)
[✓] Android toolchain - develop for android devices (Android SDK version 32.0.0)
[✓] Chrome - develop for the web
[✓] Android Studio (version 2020.3)
[✓] VS Code (version 1.55.2)
[✓] Connected device (2 available)

• No issues found!

C:\Users\jalpa>flutter doctor_
```

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.



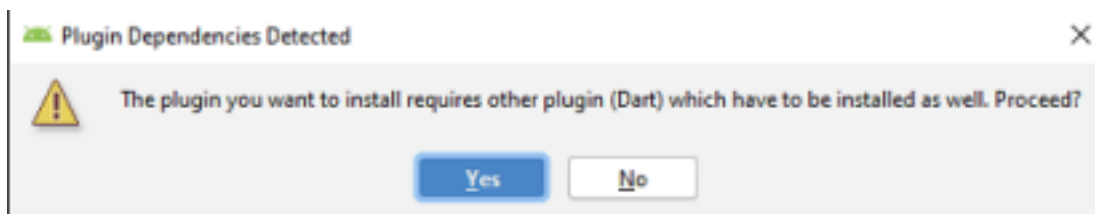
Step 8.5: Last, click on the icon pointed into the red color rectangle. The Android emulator displayed as below screen.



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.

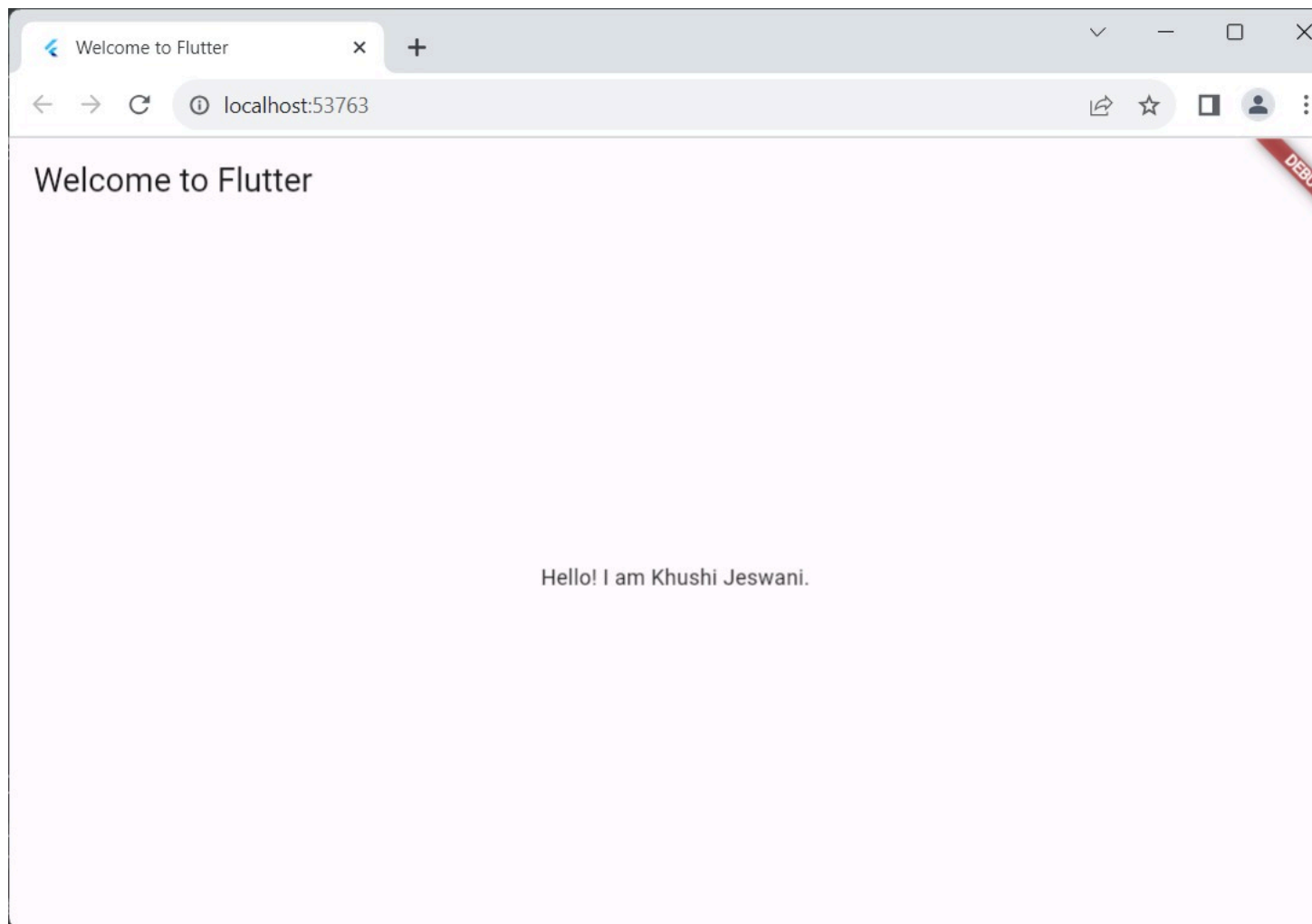


Step 9.3: Restart the Android Studio.

Code:

```
import 'package:flutter/material.dart';
void main() {
  runApp(const MyApp());
}
class MyApp extends StatelessWidget {
  const MyApp({Key? key}) : super(key: key);
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Welcome to Flutter',
      home: Scaffold(
        appBar: AppBar(
          title: const Text('Welcome to Flutter'),
        ),
        body: const Center(
          child: Text('Vedang Khandagale'),
        ),
      ),
    );
  }
}
```

Output



Conclusion: Hence We ran a simple program on running a simple text, on flutter, running on a virtual device