Experiment 1

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Aim: To install and configure the Flutter Environment

Theory:

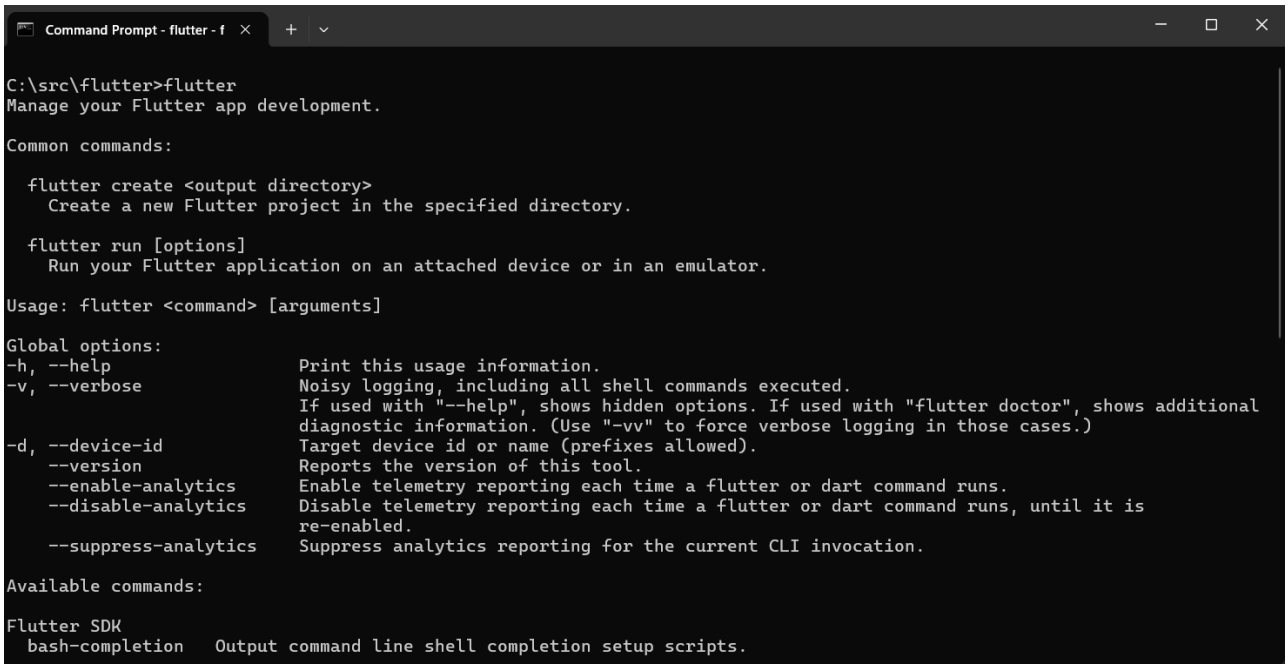
Flutter is an open-source UI software development toolkit created by Google for building natively compiled applications for mobile, web, and desktop from a single codebase. It was first introduced in 2015 and has gained popularity for its ability to create high-performance and visually appealing applications with a smooth and consistent user experience.

Key features of Flutter include:

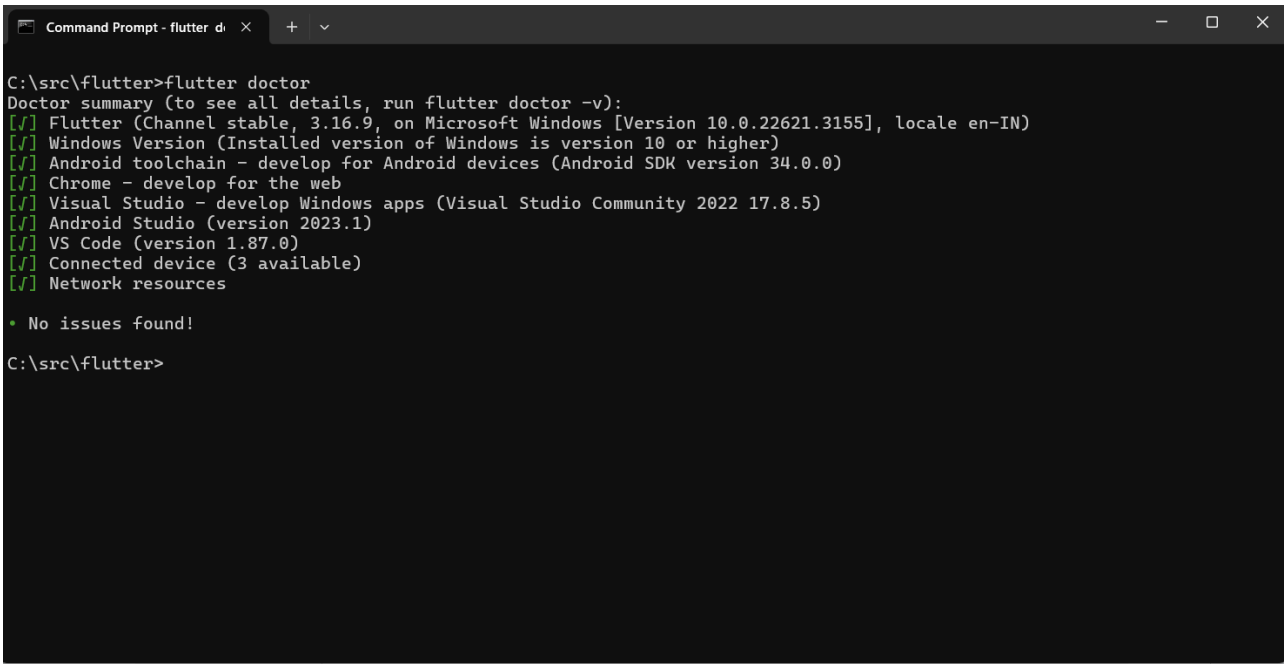
1. **Single Codebase:** With Flutter, you can write your application code once and deploy it on multiple platforms, such as iOS, Android, web, and desktop. This reduces development time and effort, as you don't need separate codebases for each platform.
2. **Widgets:** Flutter uses a reactive framework with a wide range of customizable widgets that allow developers to create complex and interactive user interfaces. Widgets are building blocks for the UI, and Flutter provides a rich set of both material design (for Android) and Cupertino (for iOS) widgets.
3. **Hot Reload:** One of Flutter's standout features is Hot Reload, which enables developers to instantly see the results of code changes in their running application. This significantly speeds up the development and debugging process.
4. **High Performance:** Flutter compiles to native ARM code for mobile devices, providing high performance comparable to native applications. It also has a GPU-accelerated rendering engine called Skia, contributing to smooth animations and a responsive user interface.
5. **Dart Programming Language:** Flutter applications are typically written in Dart, a modern, object-oriented language developed by Google. Dart is known for its simplicity, efficiency, and ease of learning.
6. **Community and Ecosystem:** Flutter has a growing and active community of developers and a rich ecosystem of packages and plugins available through the Flutter pub.dev repository. This allows developers to easily integrate various functionalities into their applications.

- Android Studio is the official integrated development environment (IDE) for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development. It is available for download on Windows, macOS and Linux based operating systems. It is a replacement for the Eclipse Android Development Tools (E-ADT) as the primary IDE for native Android application development.

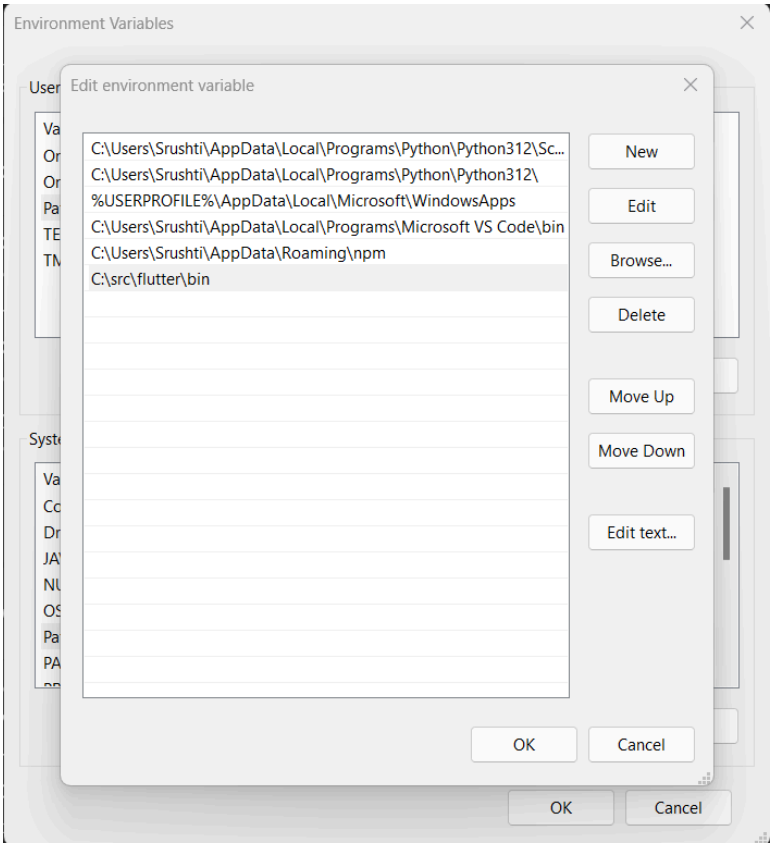
Flutter is successfully installed



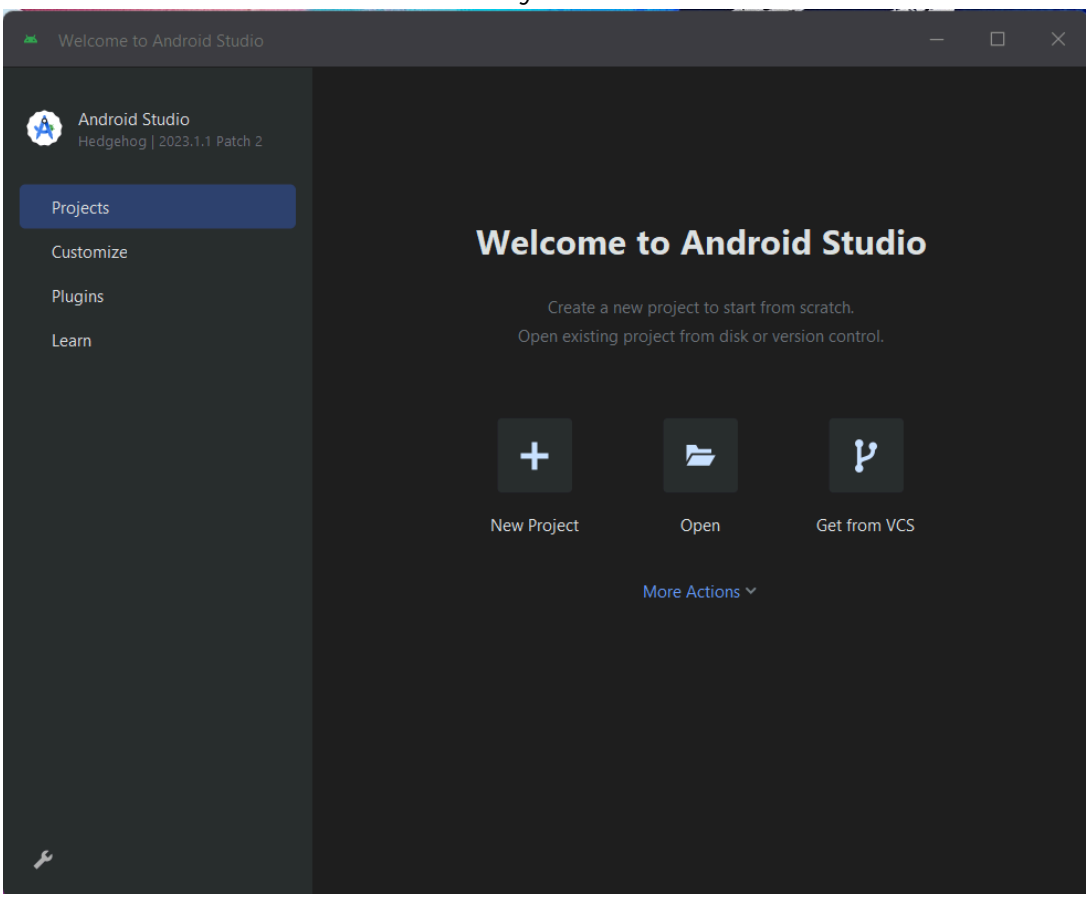
Flutter Doctor:



Flutter and related dependencies are installed correctly and added to the path environment variables.



Installed Android Studio successfully:

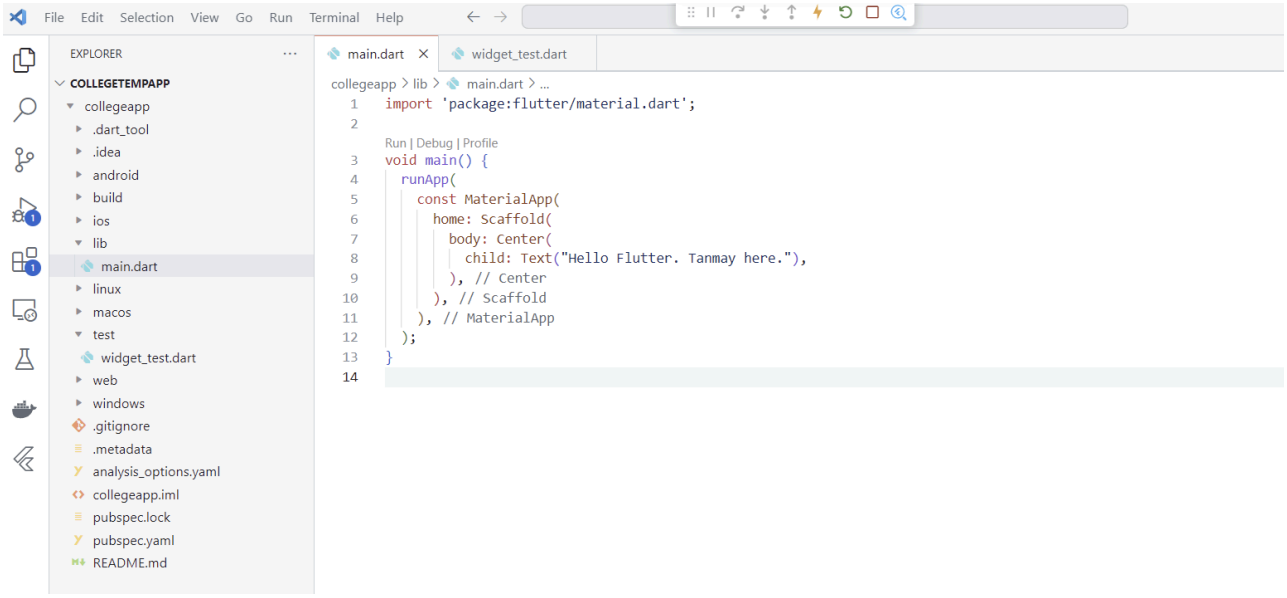


Entering code into the main.dart file:

Code:

```dart
import 'package:flutter/material.dart';

void main() {
  runApp(
    const MaterialApp(
      home: Scaffold(
        body: Center(
          child: Text("Hello Flutter. Tanmay here."),
        ),
      ),
    ),
  );
}
```



Output: