

St. Francis Institute of Technology, Mumbai-400 103
Department of Information Technology

A.Y. 2024-2025
Class: TE-ITA/B, Semester: VI
Subject: **MAD & PWA LAB**

Experiment – 1b: Installation and Configuration of Flutter Environment.

1. **Aim:** To install and configure Flutter Environment.
2. **Objectives:** After study of this experiment, the student will be able to
 - Learn the basics of the Flutter framework.
 - Install and configure Flutter Environment.
 - Execute program in flutter environment.
3. **Outcomes:** After study of this experiment, the student will be able to
 - Understand cross platform mobile application development using Flutter framework. (L604.1)
4. **Prerequisite:** None.
5. **Requirements:** Personal Computer, 8 GB RAM, Internet Connection, Web browser.

6. **Pre-Experiment Exercise:**

Brief Theory:

Flutter framework

Flutter is a UI toolkit for building fast, beautiful, natively compiled applications for mobile, web, and desktop with one programming language and single codebase. It is free and open source. Initially, it was developed from Google and now managed by an ECMA standard. Flutter apps use Dart programming language for creating an app.

Flutter is a powerful framework that enables developers to build cross-platform applications with a single codebase, targeting mobile, web, and desktop platforms. It uses a widget-based architecture, where each UI component is a customizable widget, providing flexibility in design. With its native compilation capabilities, Flutter ensures high performance by compiling directly to ARM code. The framework also offers features like hot reload, which allows developers to instantly view changes during development, enhancing productivity. Additionally, Flutter supports easy integration with native device features and has a growing ecosystem of libraries and plugins, making it a robust choice for creating modern, efficient applications.

7. **Laboratory Exercise**

A. Procedure

- i. List down the steps to install Flutter framework.

B. Result/Observation

- i. Installation screenshots.
- ii. Print out of program code and output.

8. Post-Experiments Exercise

A. Extended Theory:

1. Describe the Flutter project hierarchy in any IDE (Android Studio or VS Code).

B. Questions:

1. Execution of 'Hello world' program in Flutter.

C. Conclusion:

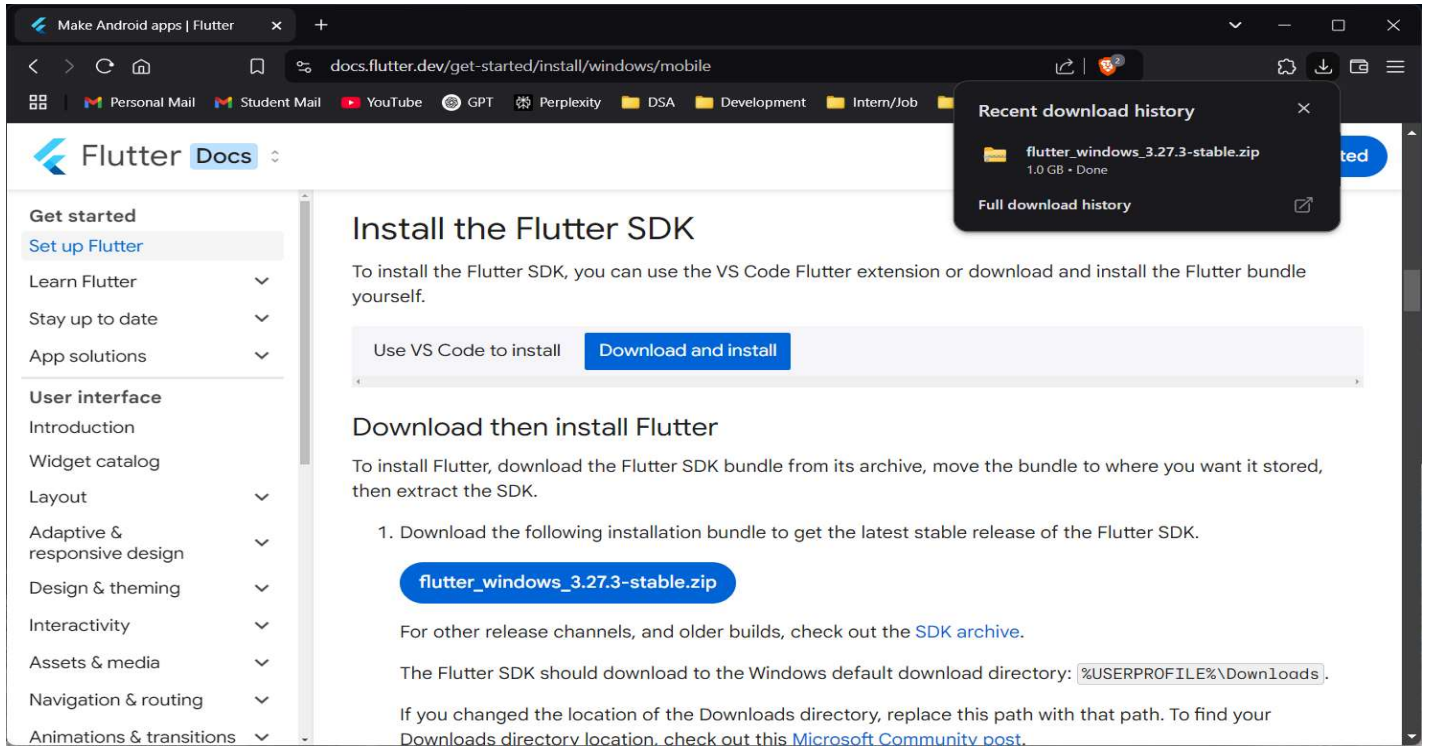
1. Write what was performed in the experiment.
2. Mention a few applications of what was studied.
3. Write the significance of the topic studied in the experiment.

D. References:

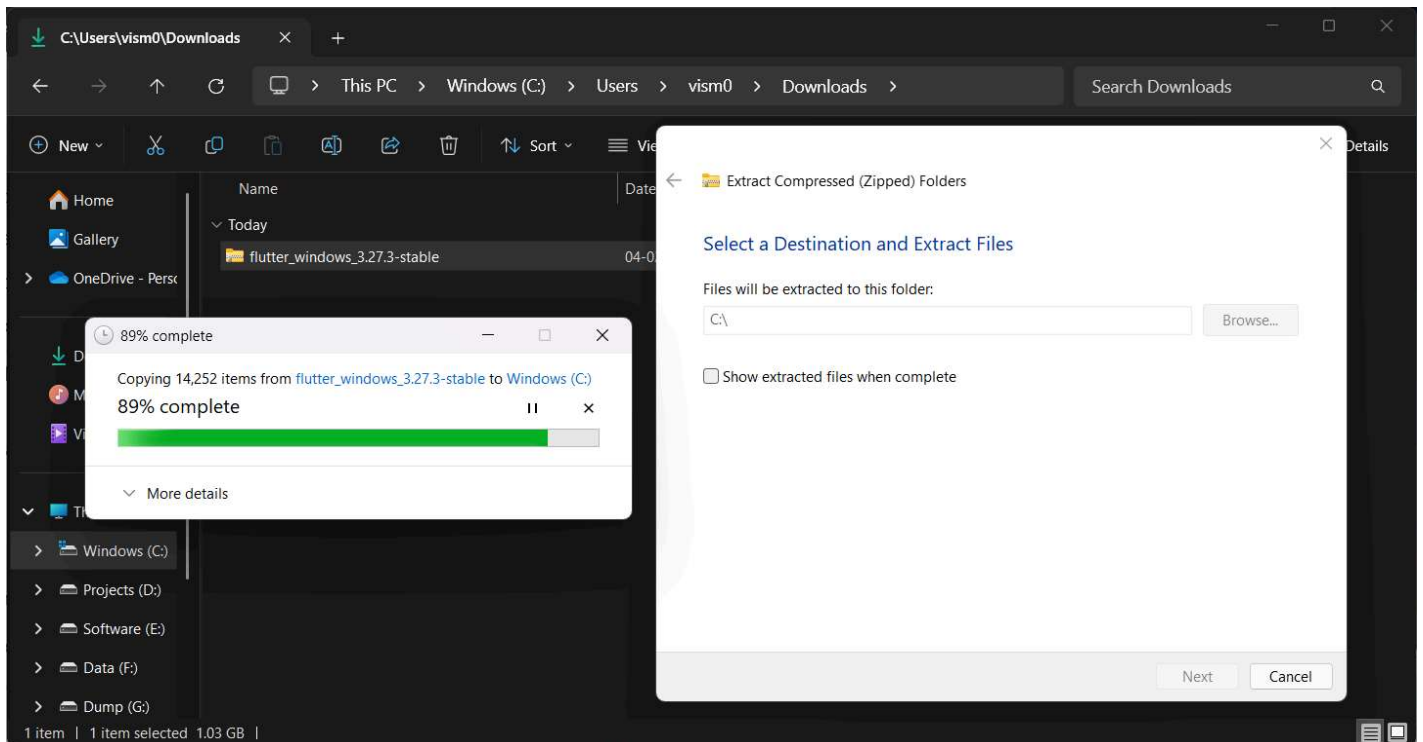
1. <https://docs.flutter.dev/get-started/install>.
2. <https://www.javatpoint.com/flutter>

Laboratory Exercise

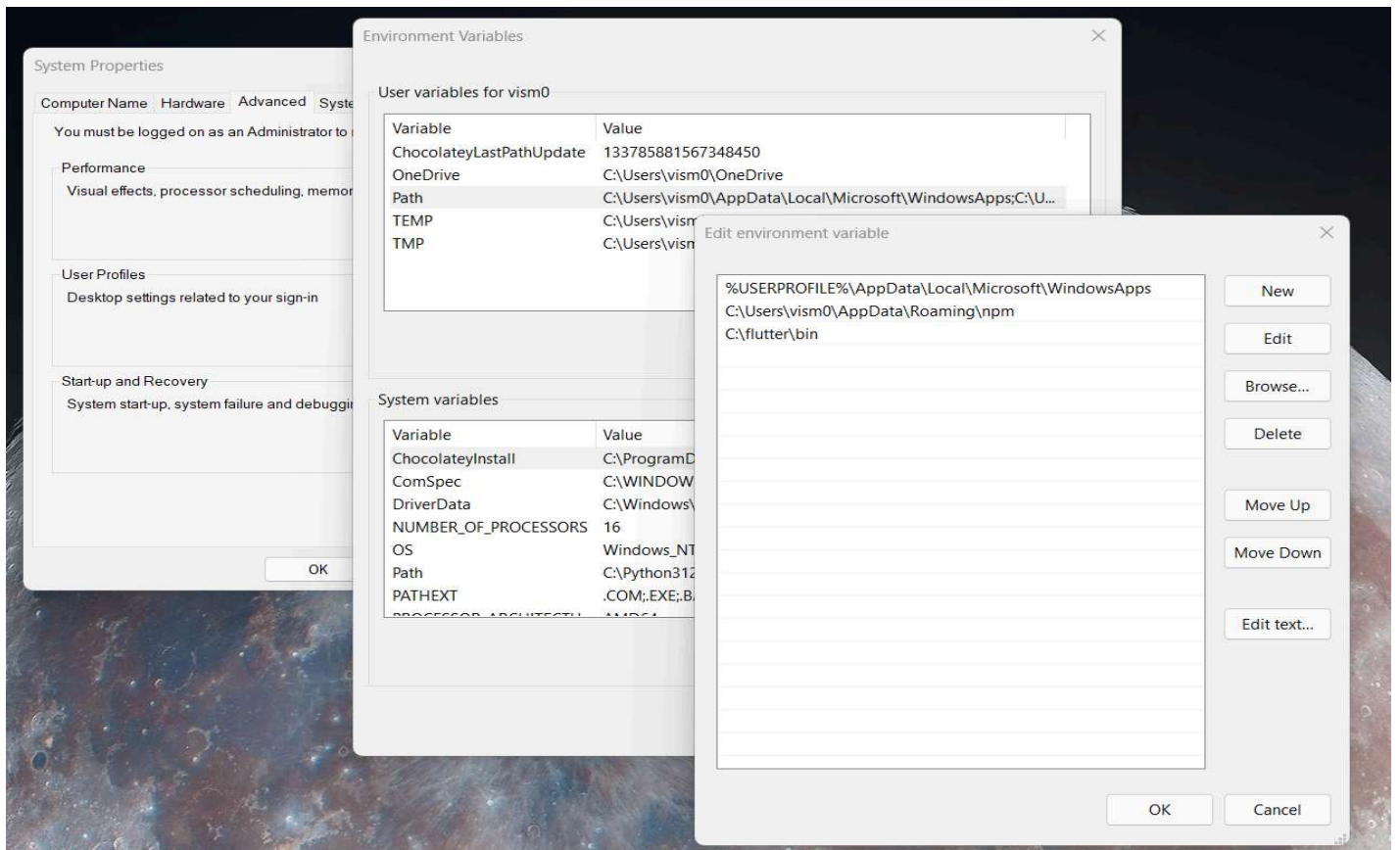
1. Go to <https://docs.flutter.dev/get-started/install/windows/mobile> and download the following zip file



2. Extract the zip file



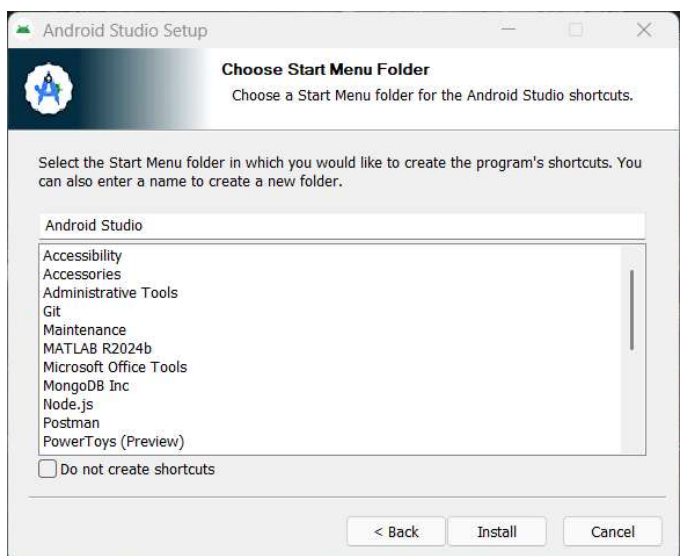
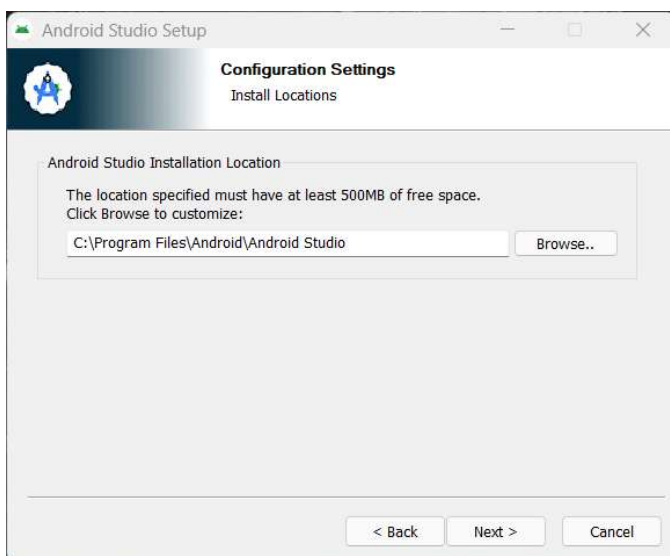
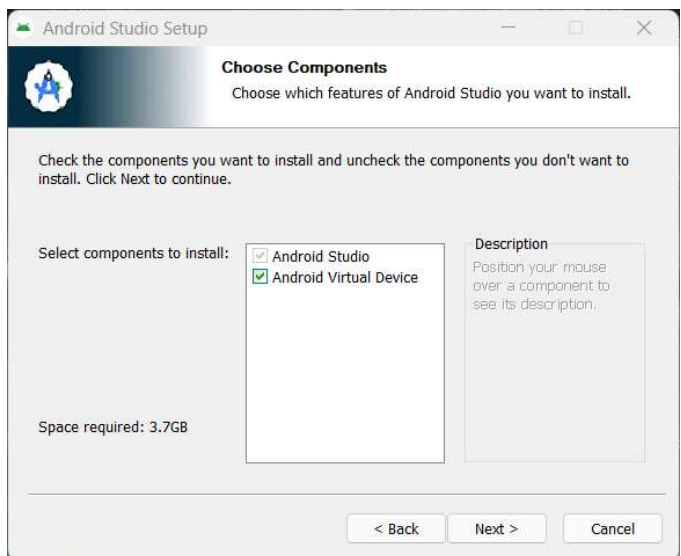
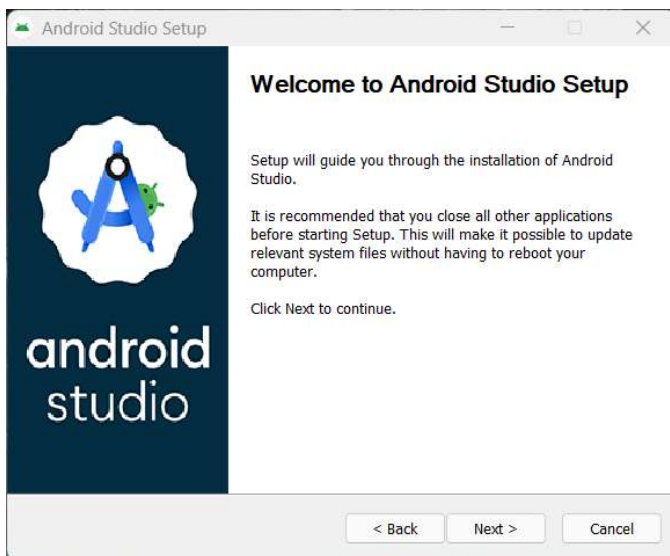
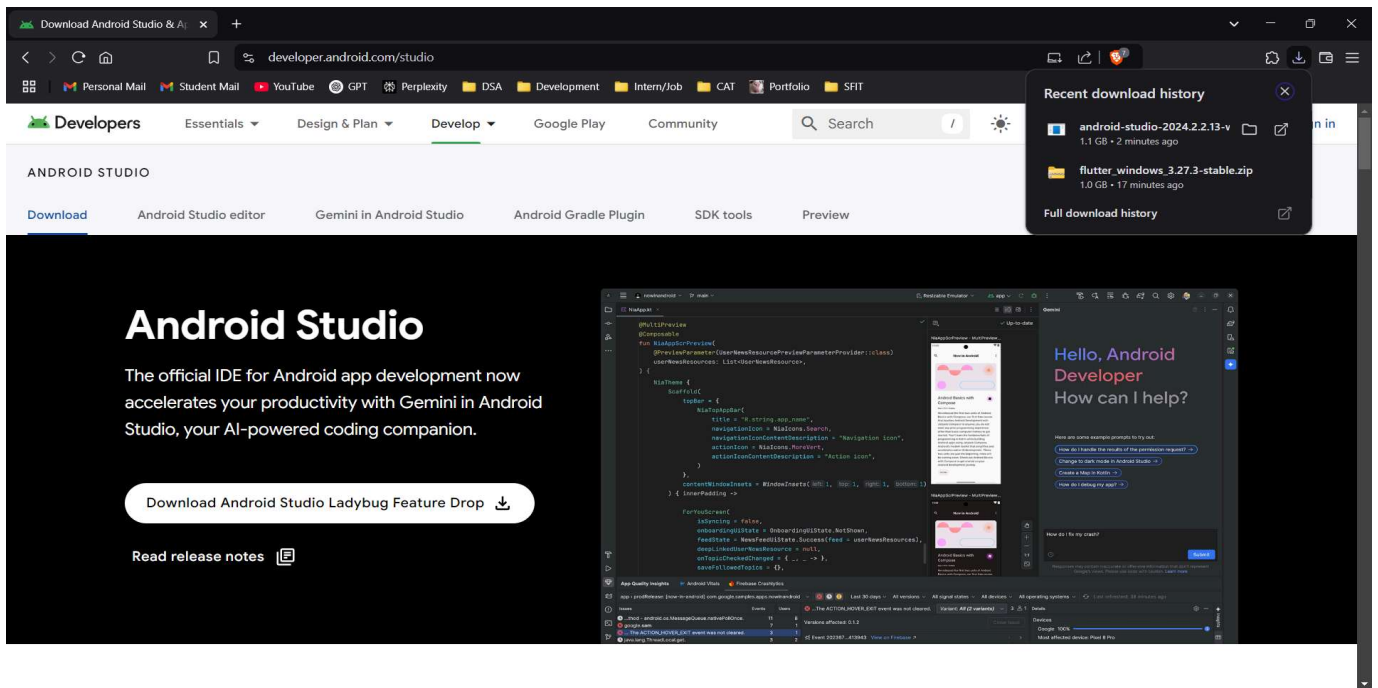
3. Add Path in Environment Variable.

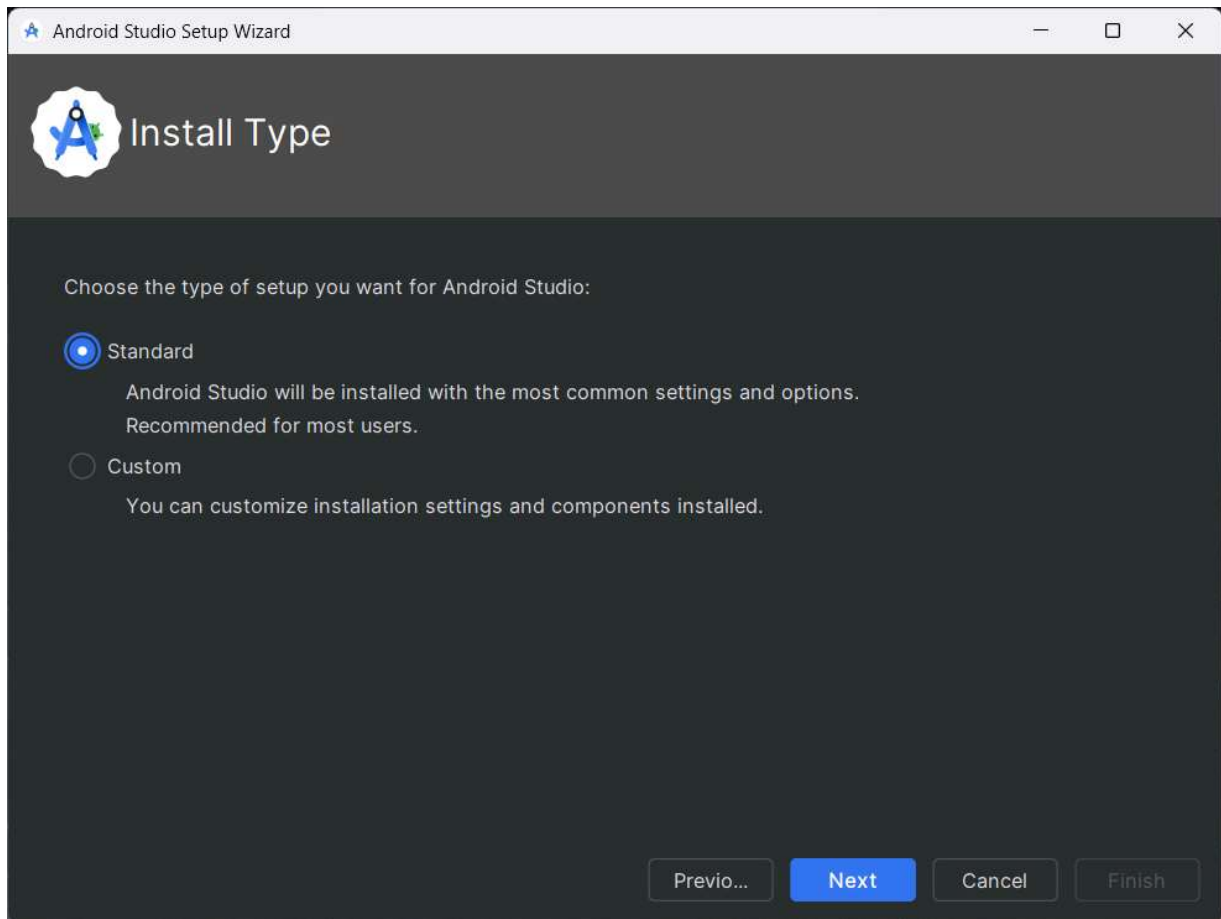
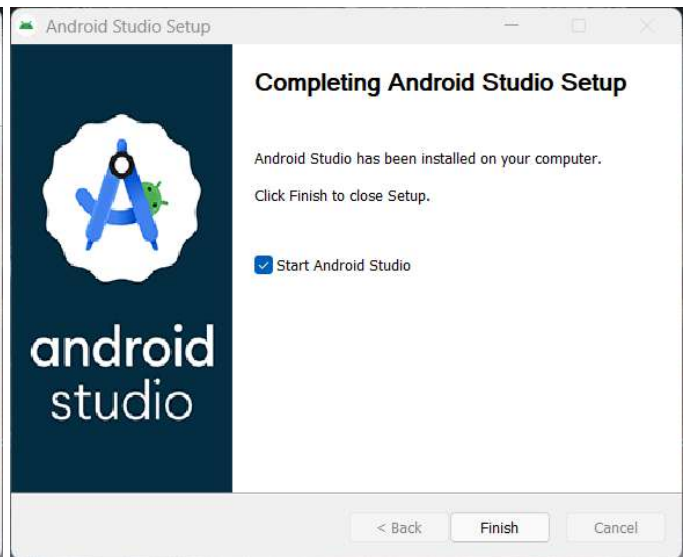
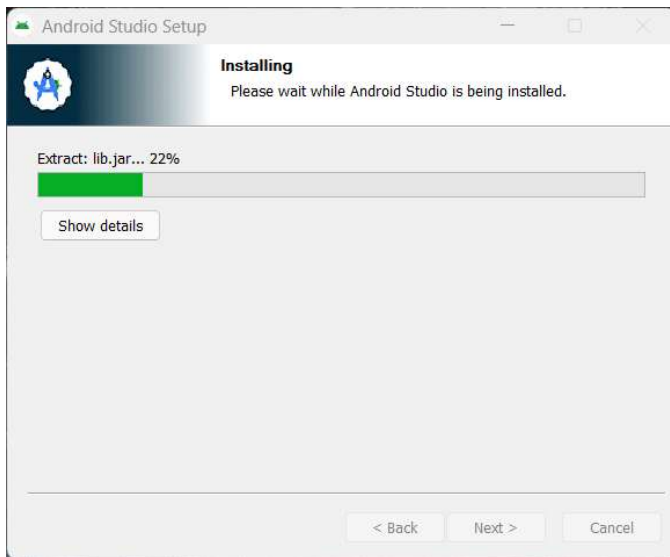


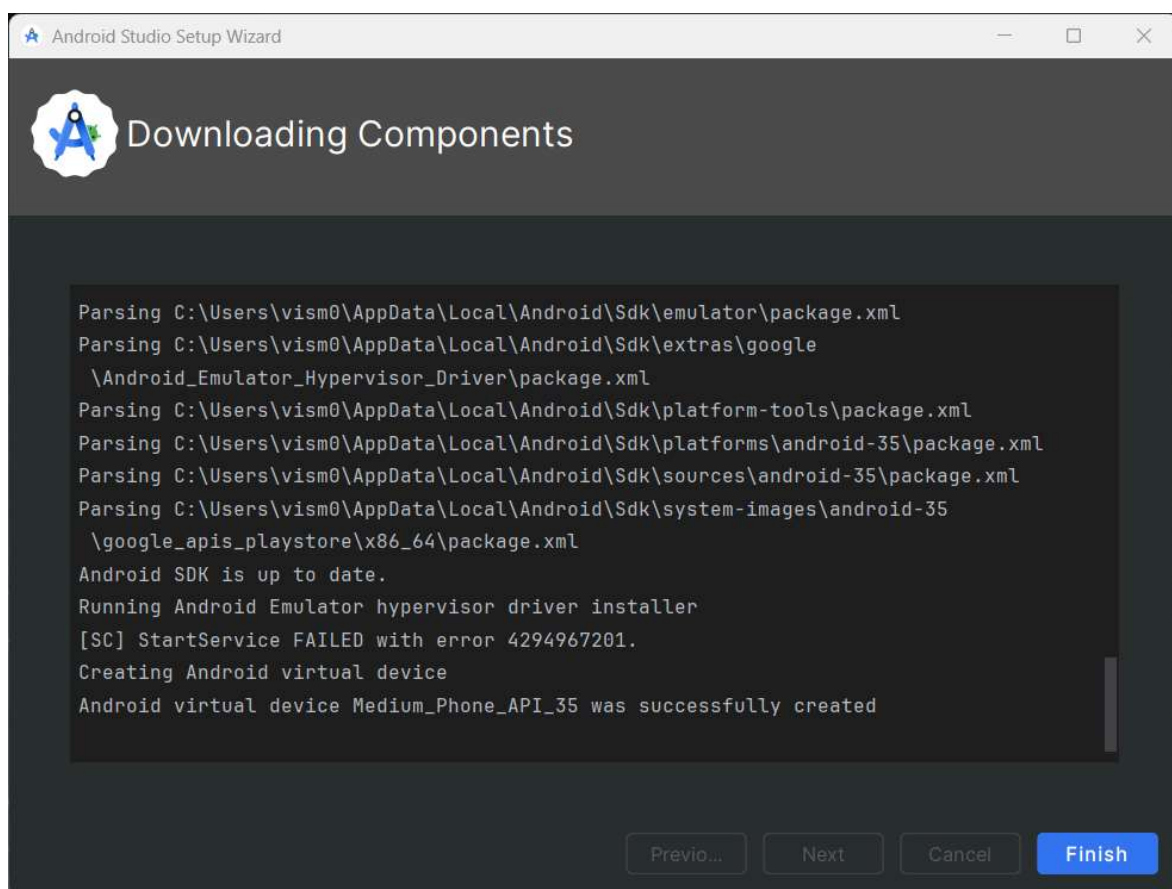
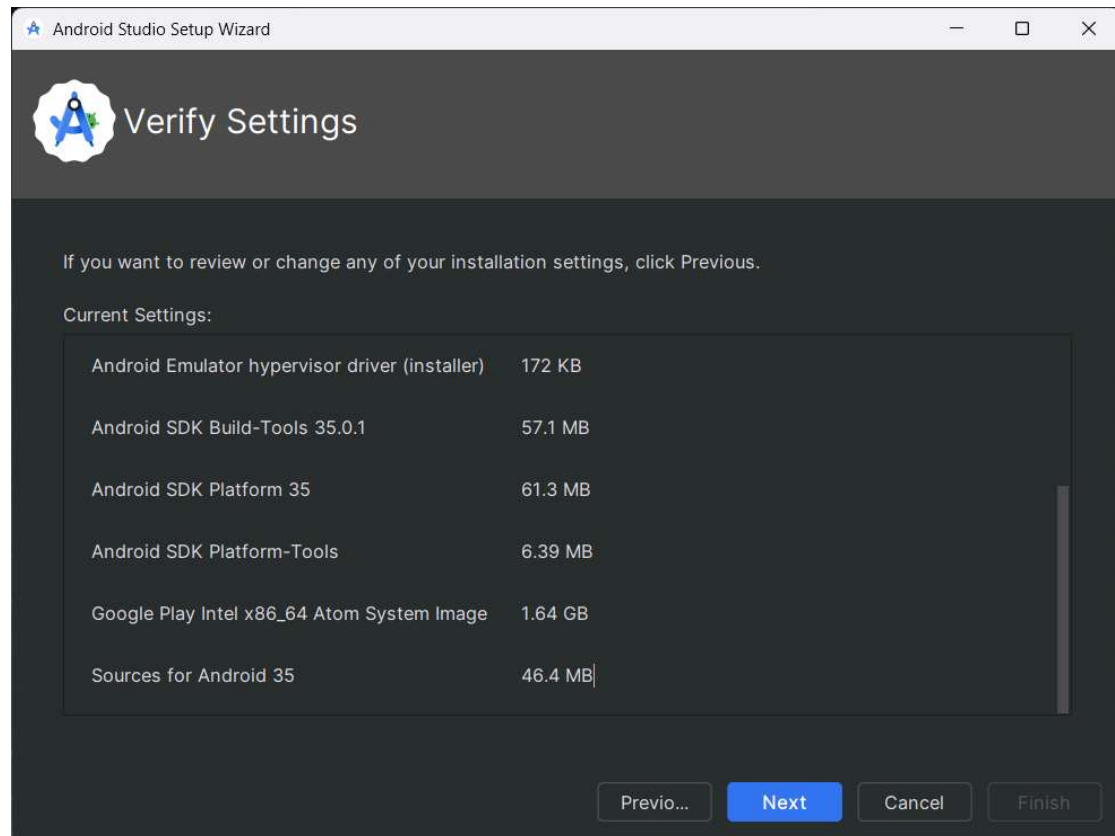
4. Check if flutter is installed successfully or not

```
Windows PowerShell
PS C:\Users\vism0> flutter --version
Flutter 3.27.3 • channel stable • https://github.com/flutter/flutter.git
Framework • revision c519ee916e (2 weeks ago) • 2025-01-21 10:32:23 -0800
Engine • revision e672b006cb
Tools • Dart 3.6.1 • DevTools 2.40.2
```

5. Navigate <https://developer.android.com/studio> to and download android studio







Post Experiment Exercise

Q. Execution of 'Hello world' program in Flutter.

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

void main() {
  runApp(
    Center(
      child: Text(
        'Hello, World!',
        textDirection: TextDirection.ltr,
      ),
    ),
  );
}
```

Output:

