

MPL Experiment - 1

A1

* Aim: To install and configure the Flutter development environment for building cross-platform mobile applications.

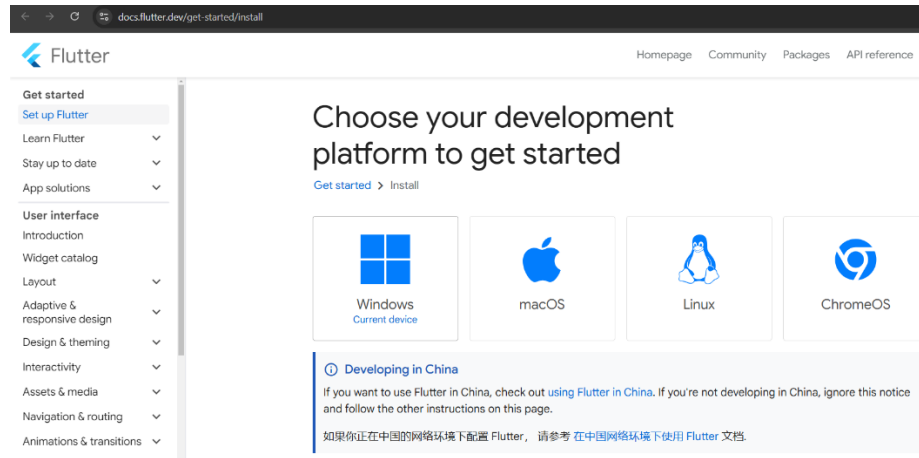
* Theory: Flutter is an open-source UI toolkit by Google for creating natively compiled applications for mobile, web, and desktop from a single codebase. It uses the Dart programming language and provides a rich set of pre-designed widgets. The Setup process involves:

1. Installing Flutter SDK: Downloading and Setting up Flutter from the official website.
2. Setting up an IDE: Configuring Visual Studio Code or Android Studio (in our experiment) with Flutter and Dart plugins.
3. Setting up an Emulator: Installing Android Emulator or using a real device for testing.
4. Configuring Environment Variables: Adding Flutter to the system PATH.
5. Verifying Installation: Running flutter doctor to check dependencies.

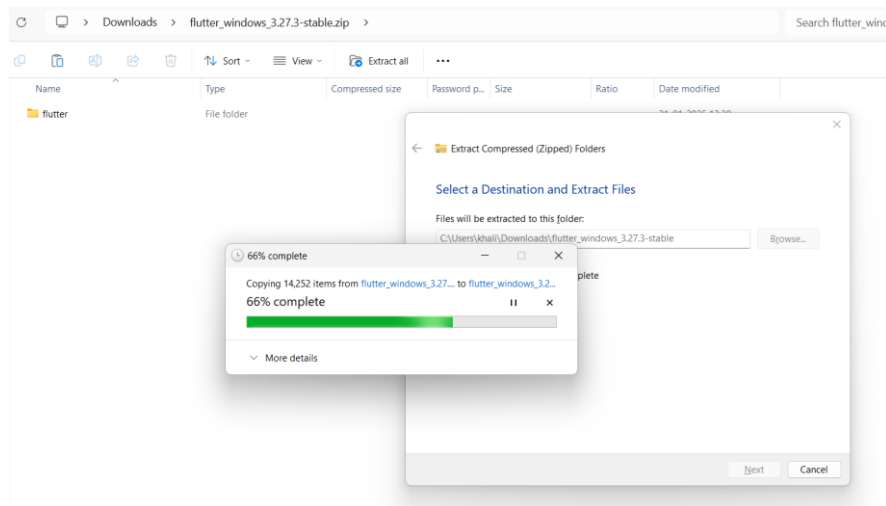
* Conclusion: In this experiment, we successfully installed and configured the Flutter development

environment. The Flutter SDK was downloaded and added to the system PATH, allowing global access. A suitable IDE, such as Android Studio, was set up with the required Flutter and Dart plugins. Additionally, an emulator or a real device was configured for testing Flutter applications. Finally, flutter doctor was executed to verify that all dependencies were properly installed, ensuring a fully functional Flutter development setup. With this environment ready, we can ~~now~~ now build, test, and deploy cross-platform applications efficiently.

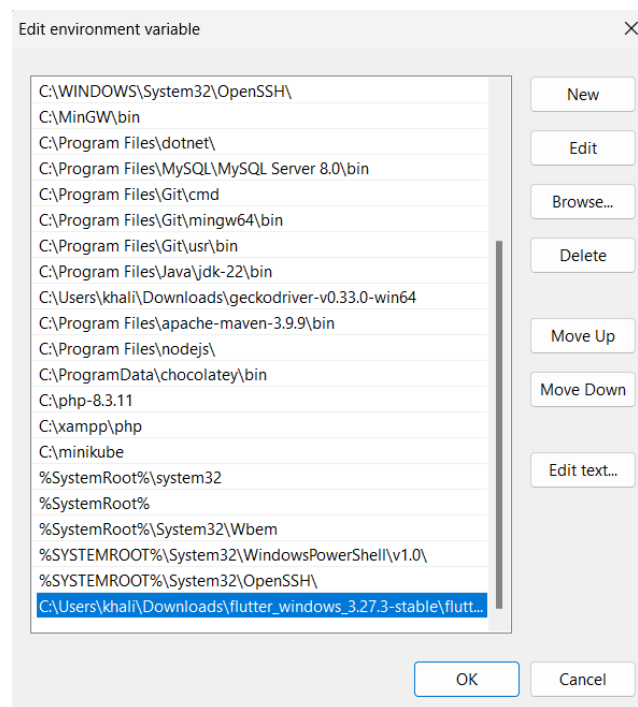
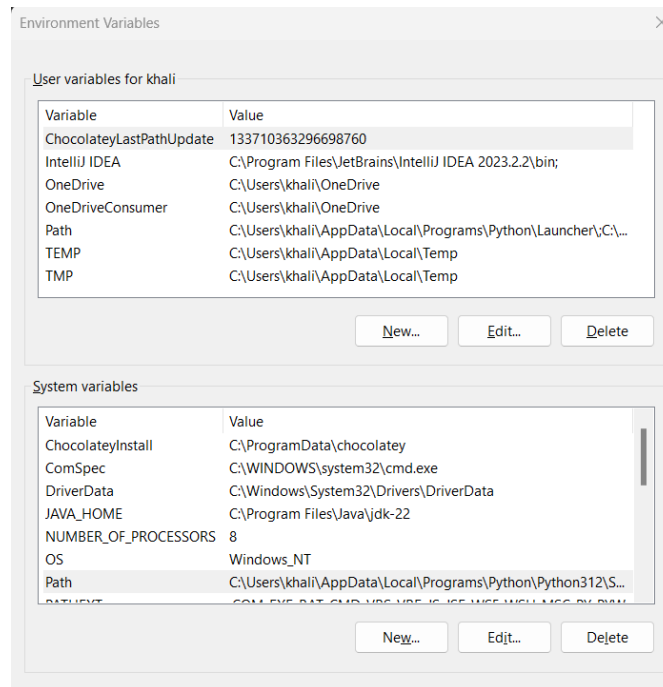
Step 1: Download the installation bundle of the Flutter Software Development Kit for windows.
To download Flutter SDK, Go to its official website <https://docs.flutter.dev/get-started/install> , you will get the following screen.



Step 2: When your download is complete, extract the zip file and place it in the desired installation folder or location.



Step 3: To run the Flutter command in regular windows console, you need to update the system path to include the flutter bin directory.



Step 4: 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.

```
Command Prompt - flutter - f x + v
Microsoft Windows [Version 10.0.22631.4751]
(c) Microsoft Corporation. All rights reserved.

C:\Users\khali>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. (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:
```

Step 5: Run the \$ flutter doctor command and Run flutter doctor --android-licenses command.

```
Command Prompt - flutter - f x + v

You have received two consent messages because the flutter tool is migrating to a new analytics system. Disabling
analytics collection will disable both the legacy and new analytics collection systems. You can disable analytics
reporting by running 'flutter --disable-analytics'

C:\Users\khali>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 3.27.3, on Microsoft Windows [Version 10.0.22631.4751], locale en-IN)
[✓] Windows Version (Installed version of Windows is version 10 or higher)
[✗] 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/to/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
[✓] Visual Studio - develop Windows apps (Visual Studio Build Tools 2019 16.11.40)
    ✗ The current Visual Studio installation is incomplete.
       Please use Visual Studio Installer to complete the installation or reinstall Visual Studio.
[!] Android Studio (not installed)
[✓] VS Code (version 1.96.2)
[✓] Connected device (3 available)
[✓] Network resources

! Doctor found issues in 3 categories.

Command Prompt - flutter d x + v

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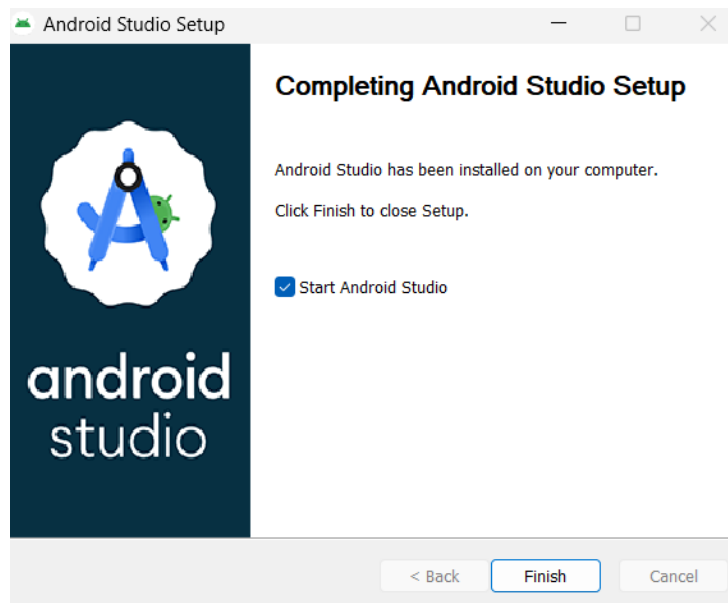
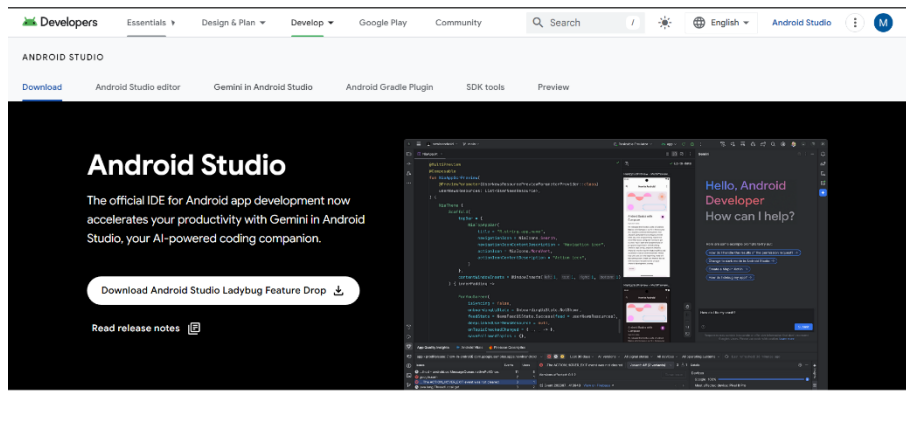
10.8 Open Source Software. In the event Open Source software is included with Evaluation Software, such Open Source soft
ware is licensed pursuant to the applicable Open Source software license agreement identified in the Open Source softwar
e comments in the applicable source code file(s) and/or file header as indicated in the Evaluation Software. Additional
detail may be available (where applicable) in the accompanying on-line documentation. With respect to the Open Source so
ftware, nothing in this Agreement limits any rights under, or grants rights that supersede, the terms of any applicable
Open Source software license agreement.
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Accept? (y/N): y
All SDK package licenses accepted

C:\Users\khali\AppData\Local\Android\Sdk\cmdline-tools\latest\bin>flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 3.27.3, on Microsoft Windows [Version 10.0.22631.4751], locale en-IN)
[✓] Windows Version (Installed version of Windows is version 10 or higher)
[✓] 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 16.11.40)
    ✗ The current Visual Studio installation is incomplete.
       Please use Visual Studio Installer to complete the installation or reinstall Visual Studio.
[✓] Android Studio (version 2024.2)
[✓] VS Code (version 1.96.2)
[✓] Connected device (3 available)
[✓] Network resources

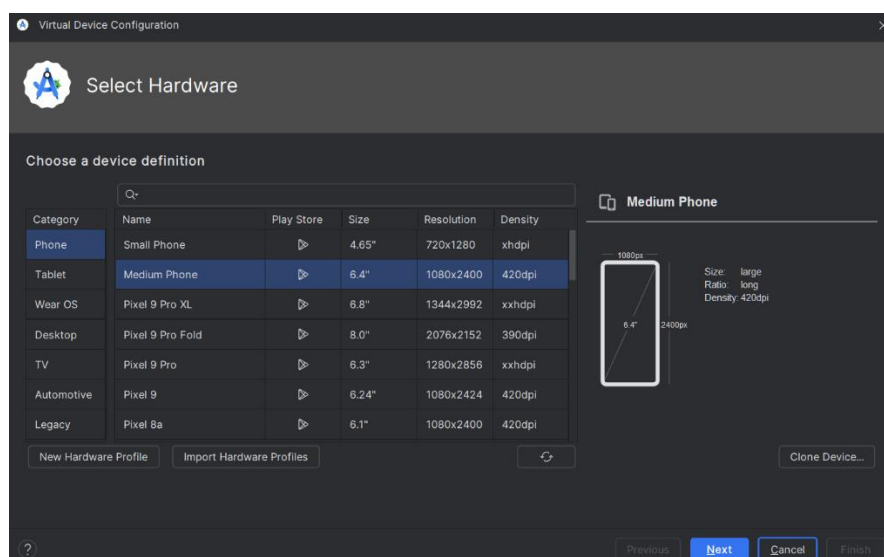
! Doctor found issues in 1 category.

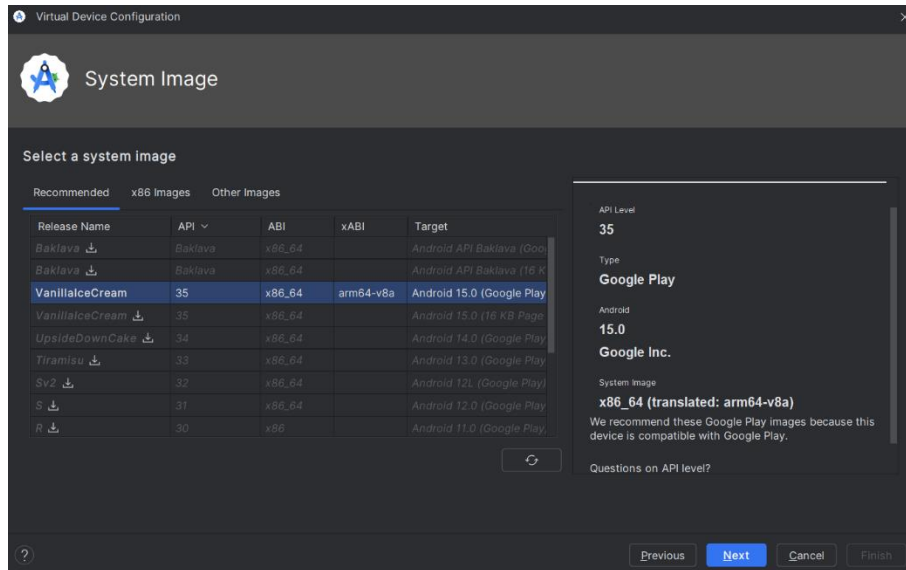
C:\Users\khali\AppData\Local\Android\Sdk\cmdline-tools\latest\bin>
```

Step 6: Download the latest Android Studio executable or zip file from the official site.

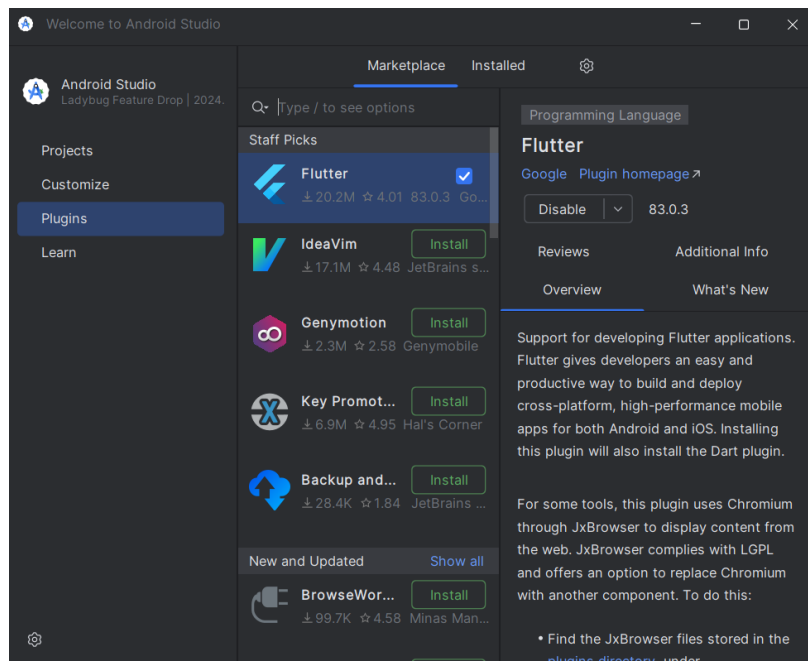


Step 7: To set an Android emulator, go to Android Studio > Tools > Android > AVD Manager and select Create Virtual Device. Or, go to Help->Find Action->Type Emulator in the search box, verify the all AVD configuration. If it is correct, click on Finish.

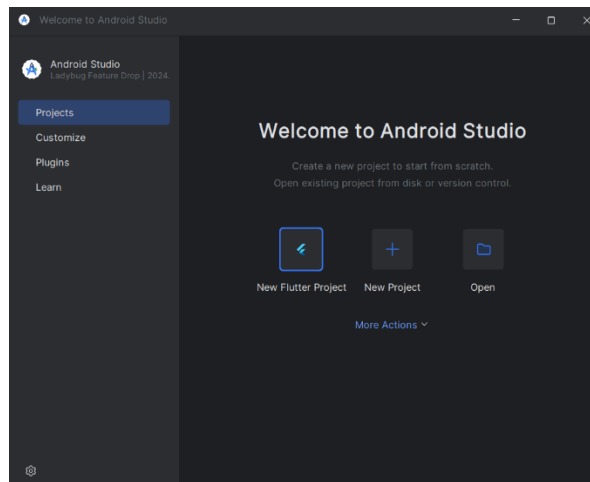




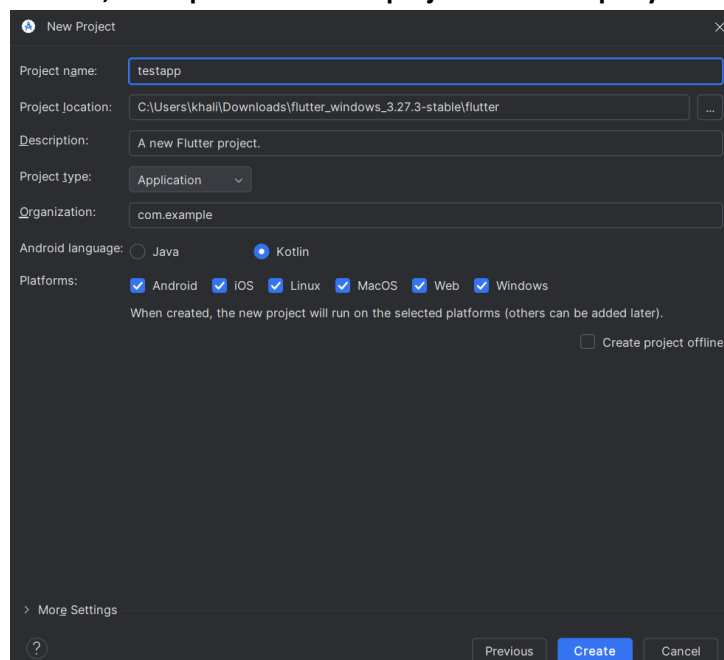
Step 8: Now, install Flutter and Dart plugin for building Flutter application in Android Studio. These plugins provide a template to create a Flutter application, give an option to run and debug Flutter application in the Android Studio itself.



Step 9: Now we can a new create Flutter Project.



Step 10: Set name, location, description and other project details as per your choice.



Step 11: Now start the emulator and we are ready to execute the code and it will be displayed on the emulator.

