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Date:-17/01/24

AIM:- Installation and Configuration of 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.

Flutter revolves around the concept of a reactive framework for building user interfaces. Key principles include:

- Single Codebase, Multiple Platforms:

Flutter allows developers to write code once and deploy it on multiple platforms, such as iOS, Android, web, and desktop.
The Dart programming language is used to write Flutter applications, providing a concise and efficient syntax for building expressive UIs.

- Widget-based Architecture:

The fundamental building blocks of Flutter applications are widgets. Widgets are UI elements that define the structure and behavior of the user interface.
Flutter follows a declarative approach, where the UI is described by composing and nesting widgets, making it easy to visualize and understand the application's structure.

- Hot Reload:

One of Flutter's standout features is the "Hot Reload" capability, allowing developers to instantly see the effects of code changes without restarting the entire application.
This facilitates a faster development cycle and enhances productivity during the coding and debugging phases.

- Highly Customizable UI:

Flutter provides a rich set of pre-designed widgets, but it also allows developers to create custom widgets to achieve a unique and branded user interface.
This flexibility empowers developers to craft highly customized and visually appealing designs.

- Performance:

Flutter achieves high-performance by compiling its Dart code to native ARM code, providing near-native performance on both iOS and Android platforms.
The use of a reactive framework and a customizable rendering engine contributes to smooth animations and efficient rendering.

- Community and Ecosystem:

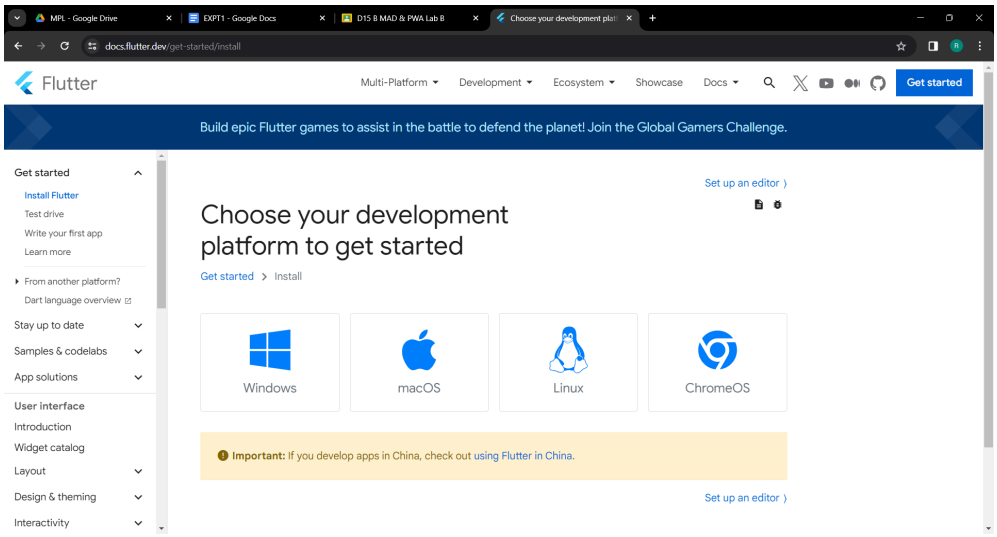
Flutter has a growing and vibrant community of developers contributing to its ecosystem. This includes a vast collection of plugins and packages that extend Flutter's capabilities and integration with various services.

- Adaptability:

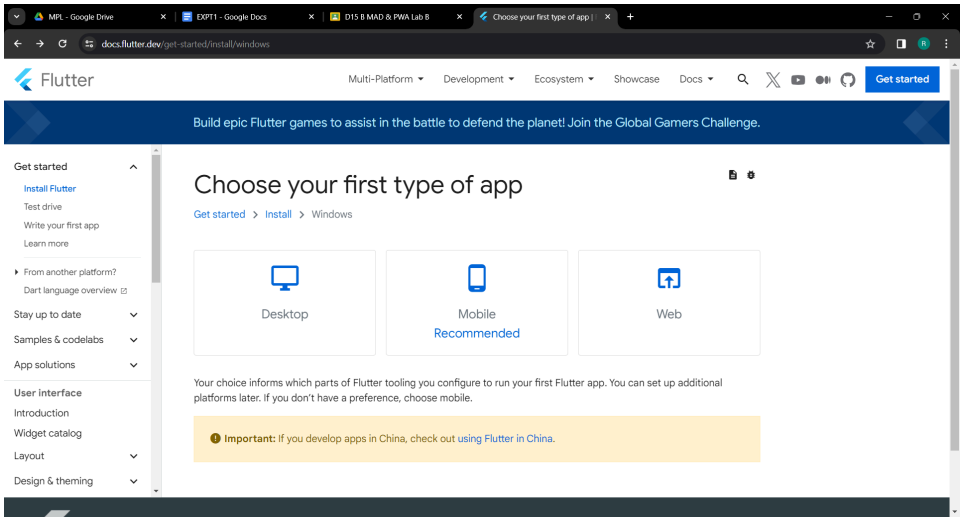
Flutter is designed to adapt to different screen sizes and form factors, making it suitable for a variety of devices, including smartphones, tablets, web browsers, and desktop environments.

OUTPUT :-

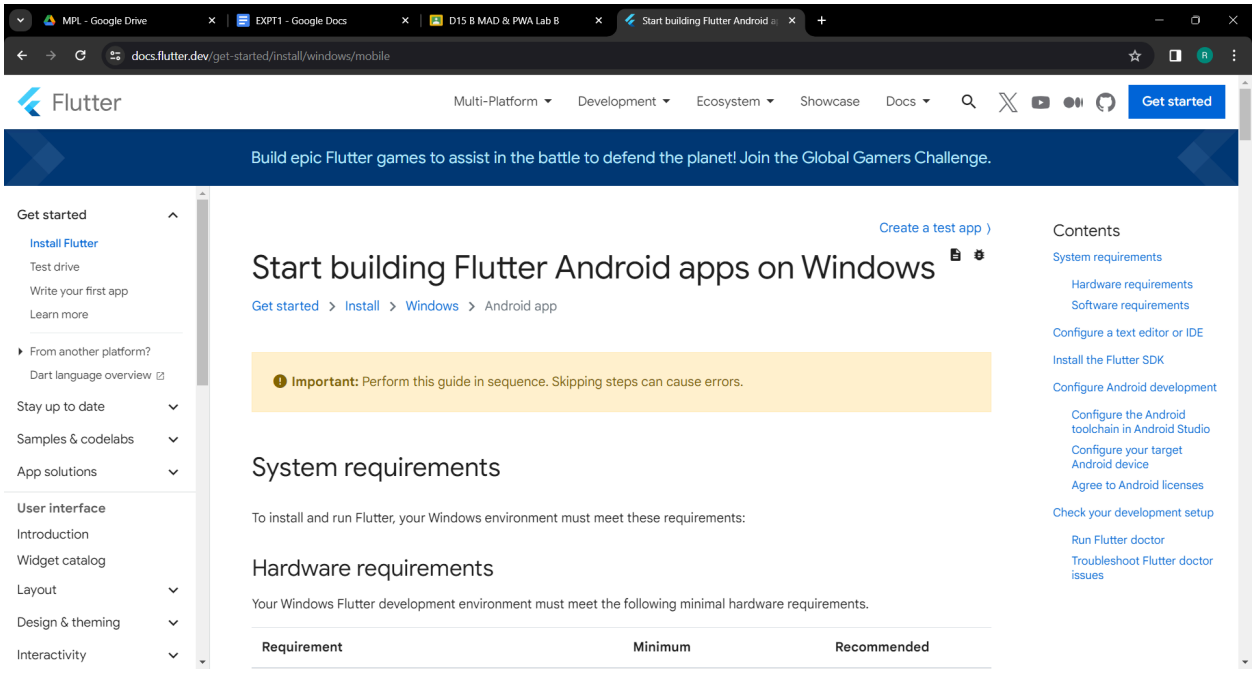
Step 1:-Visit the official website of Flutter.

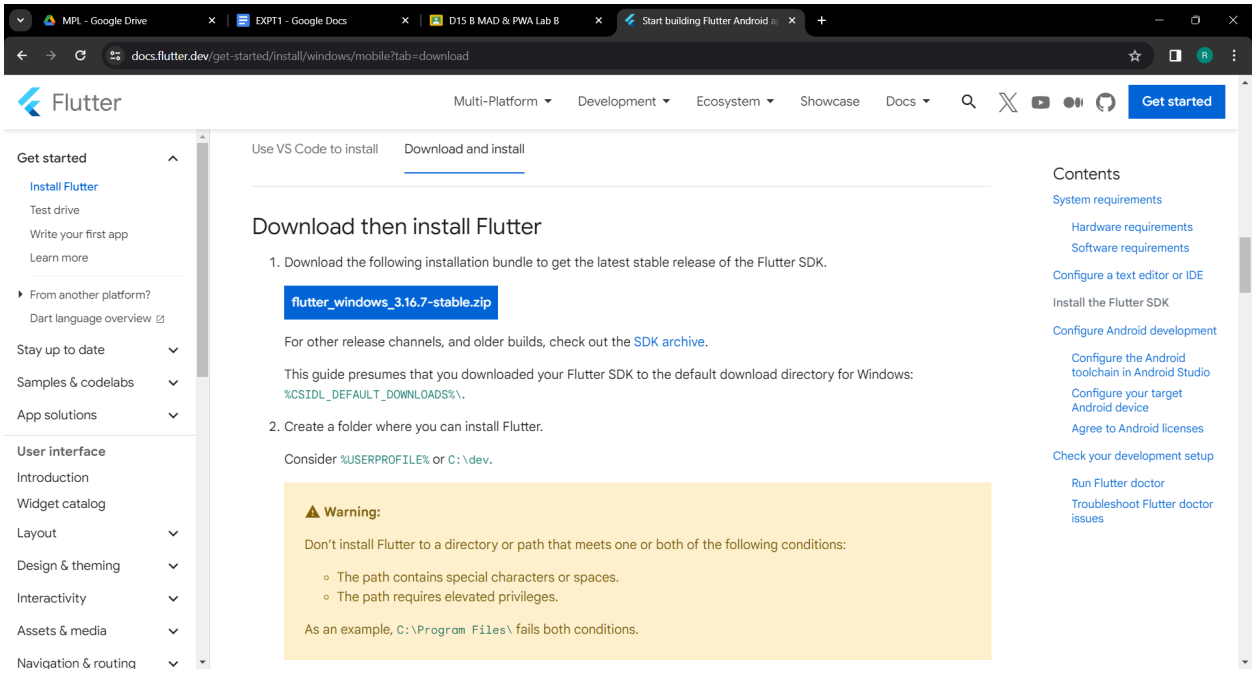


Step 2:-Select the type of App



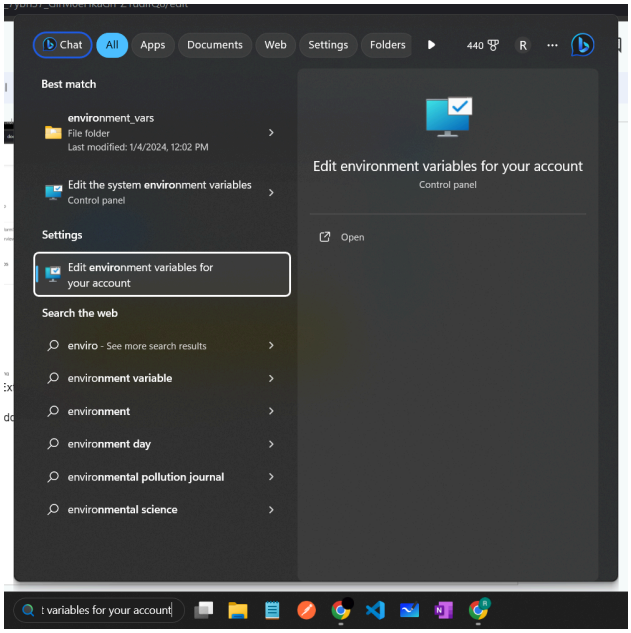
Step 3:- Download Flutter SDK

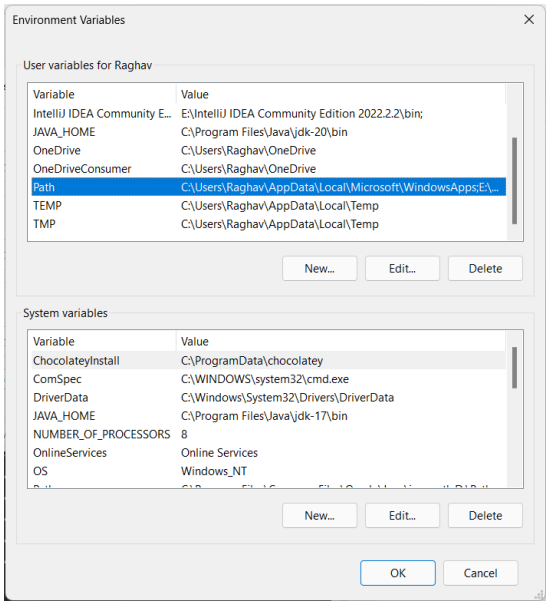


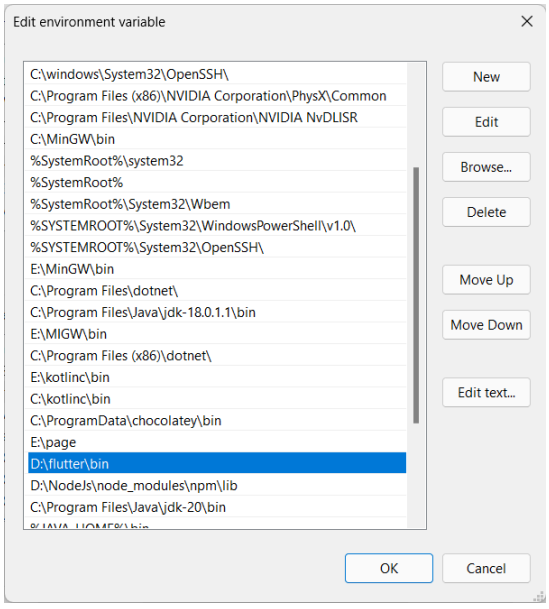


Step 4:- Extract the ZIP File

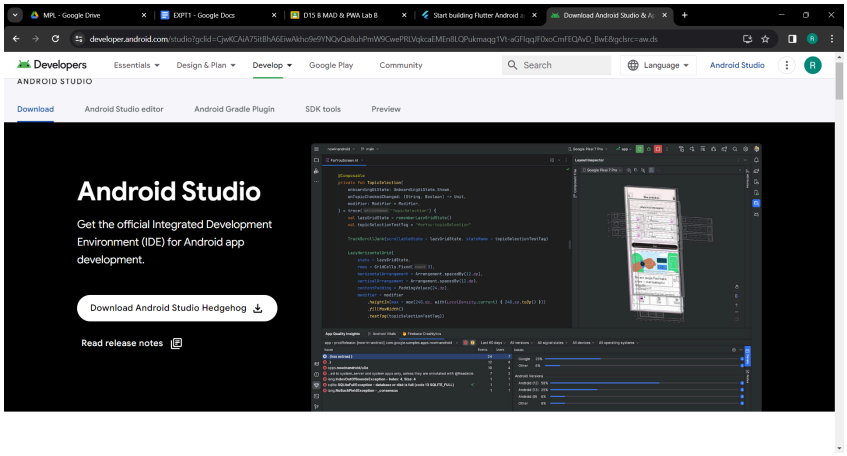
Step 5:-Add Flutter SDK path to environment variables
Go to extracted file -> select Bin Path -> search for environment variables -> Edit Path -> Paste the copied path -> OK

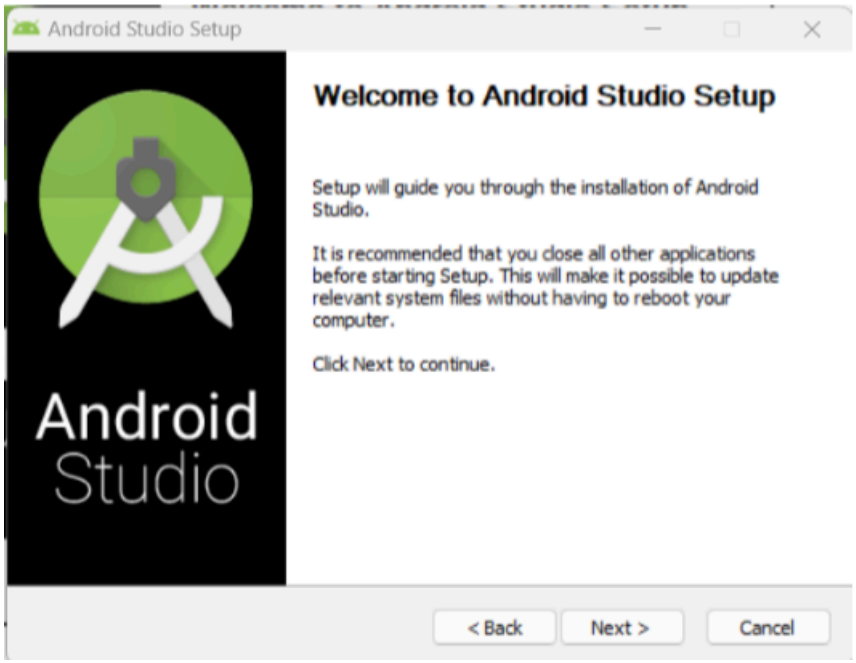




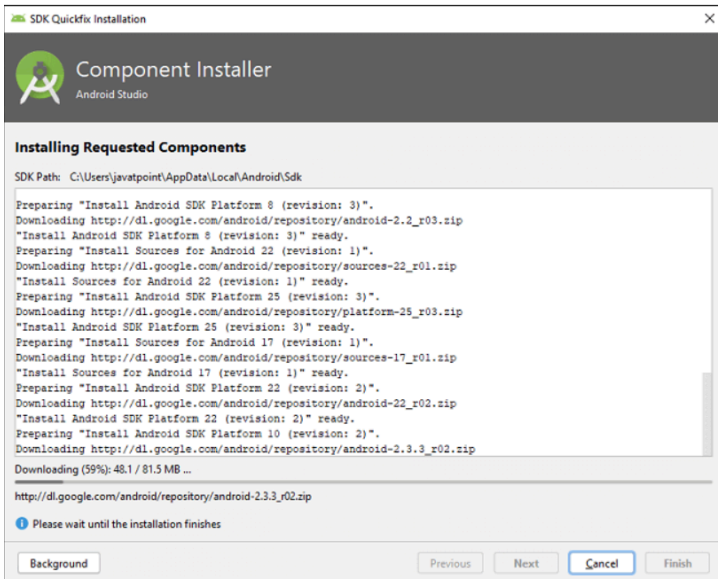


Step 6:- Visit Official Site for Android Studio



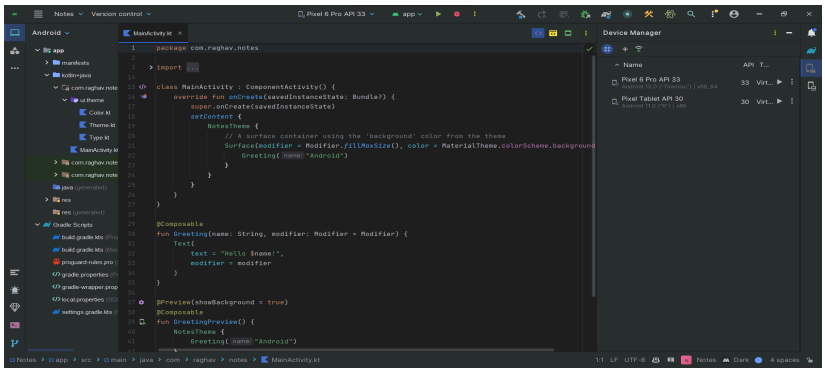


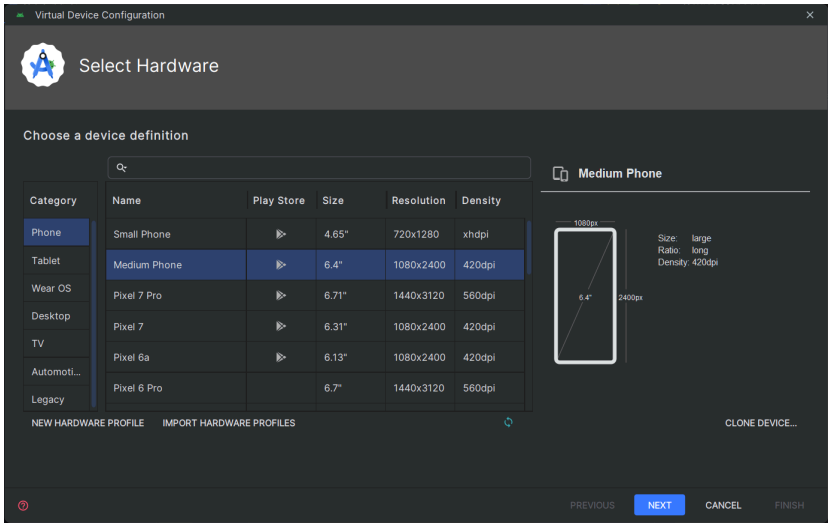
Step 7:-Install Android SDK

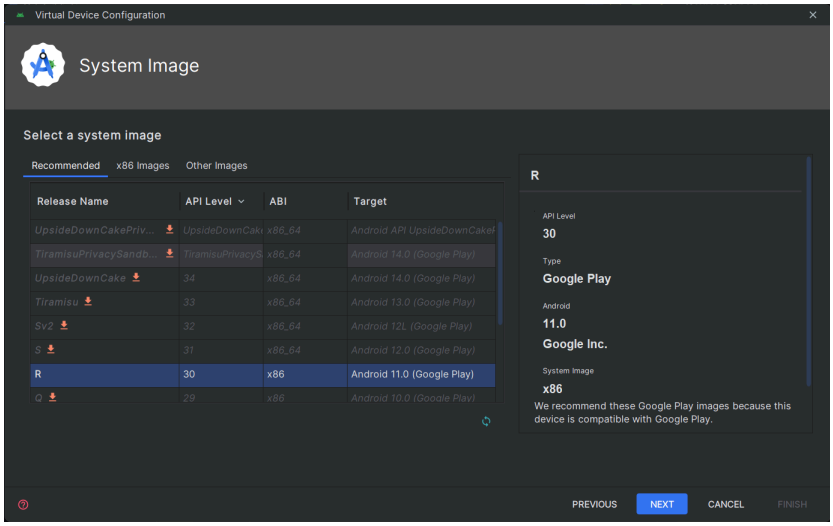


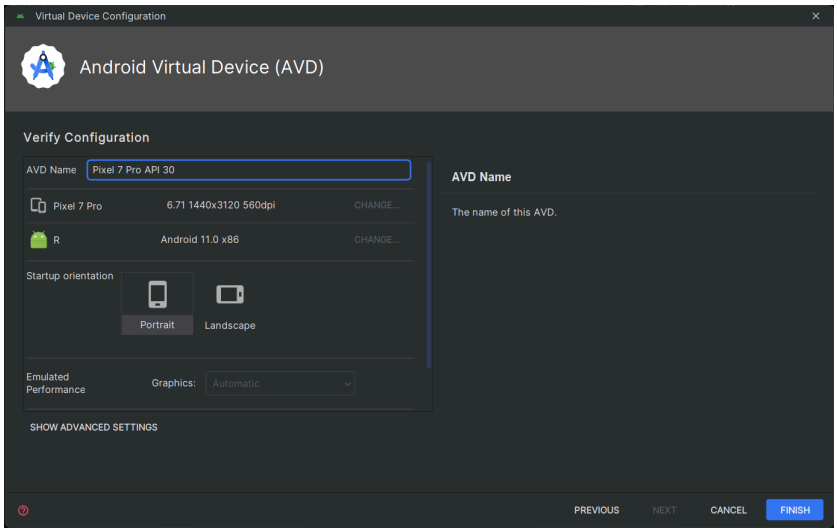
Step 8:-Accept Android License

Step 9:-Install AVD (Android Virtual Device) from Android Studio
Device Manager -> Add Device ->Select Model ->Select System Image - > Finish

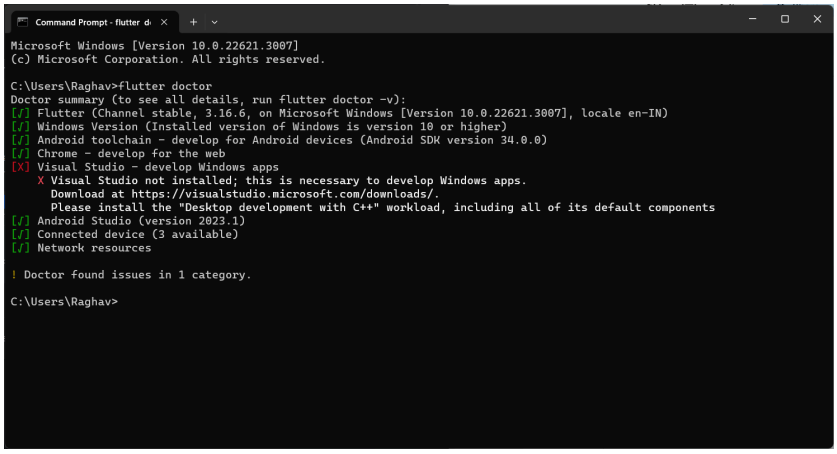





Virtual Device Configuration
System Image
Select a system image
Recommended
x86 Images
Other Images
Release Name
API Level
ABI
Target
UpsideDownCakePriv...
UpsideDownCak
x86_64
Android API UpsideDownCakeP
TiramisuPrivacySandb...
TiramisuPrivacyS
x86_64
Android 14.0 (Google Play)
UpsideDownCake
34
x86_64
Android 14.0 (Google Play)
Tiramisu
33
x86_64
Android 13.0 (Google Play)
Sv2
32
x86_64
Android 12L (Google Play)
S
31
x86_64
Android 12.0 (Google Play)
R
30
x86
Android 11.0 (Google Play)
Q
29
x86
Android 10.0 (Google Play)
R
API Level
30
Type
Google Play
Android
11.0
Google Inc.
System Image
x86
We recommend these Google Play images because this device is compatible with Google Play.
PREVIOUS
NEXT
CANCEL
FINISH

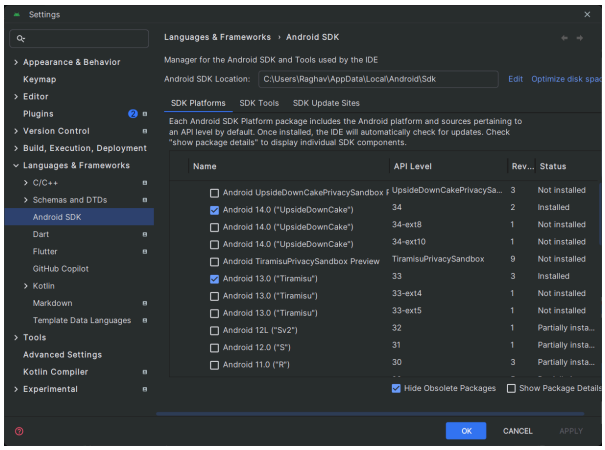

Virtual Device Configuration
Android Virtual Device (AVD)
Verify Configuration
AVD Name
Pixel 7 Pro API 30
Pixel 7 Pro
6.71 1440x3120 560dpi
CHANGE...
R
Android 11.0 x86
CHANGE...
Startup orientation
Portrait
Landscape
Emulated Performance
Graphics:
Automatic
SHOW ADVANCED SETTINGS
AVD Name
The name of this AVD.
PREVIOUS
NEXT
CANCEL
FINISH

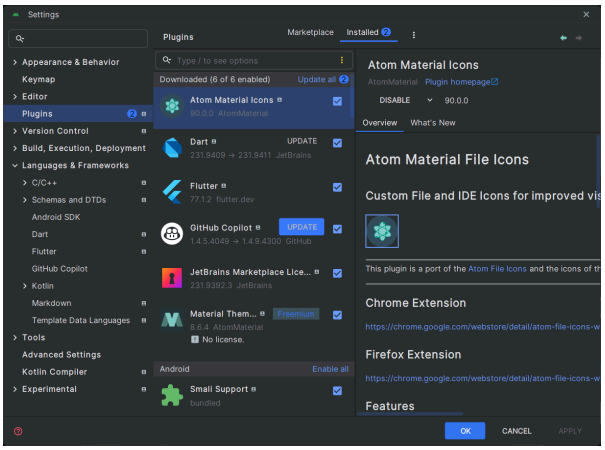
Step 10:- Open command prompt on your machine and run command ‘flutter doctor’



Step 11:- Resolve Errors if any

Step 12:- Install Dart and Flutter plugins in Android Studio
Settings -> Plugins -> Search for Dart and Flutter





Conclusion:- In this experiment , we installed Flutter SDK , Android Studio , Dart and Flutter Plugins . Also we accepted an Android Licence and Installed Android SDK and AVD using Android Studio.