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ISO 9001:2015 Certified | DTE Code No: 3423, Recognized under Section 2(f) of the UGC Act 1956, Minority Status (Hindi Linguistic)

Criteria 2- Teaching- Learning and Evaluation

Key Indicator- 2.5. Evaluation Process and Reforms

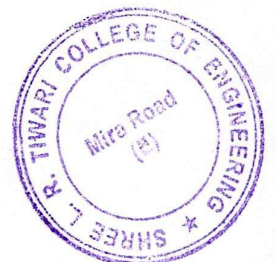
Lab Journal (Sample)

Dr. Deven Shah

Principal

Principal

Shree L. R. Tiwari College of Engineering
Kanakiya Park, Mira Road (E.)





Shree Rahul Education Society's (Regd.)

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Certificate

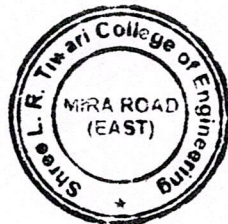
This is to Certify that Mr. / Ms. Sumeet Ganesh Choudhary

Class T.E - I.T Roll No. 04 Exam Seat No. _____

has completed the required number of Practicals / Term Work /

Sessional in the subject PWA & MAD Lab Dept. of Information Technology

during the academic year of 2021 - 2022



Medam
22/14

Lecturer In-Charge

Jne

Principal

HEAD OF DEPT.
Shree L. R. Tiwari
College of Engineering
Mira Road

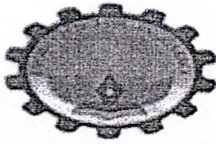
R

Head of Dept.

Principal

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Shree Rajah Education Society (P) Ltd.

SHREE L. R. TIWARI COLLEGE OF ENGINEERING

Department of Information Technology

Institute's Vision

To be a world-class institute and a front runner in the educational and socio-economic development of the nation by providing high-quality technical education to students from all sections of society.

Institute's Mission

To provide superior learning experiences in a caring and conducive environment so as to empower students to be successful in life and contribute positively to society

Department's Vision

To develop competent, skilled, self-disciplined, and ethically sound IT engineers with a professional attitude to match global standards.

Department's Mission

M1: To employ innovative teaching techniques and provide experiential knowledge to create proficient and responsible IT professionals.

M2: To provide sufficient research opportunities and acquaint students with recent trends in industry.

M3: To enhance creativity and entrepreneurial approach to contribute positively to society with lifelong learning and commitment to professional ethics.

Program Educational Objectives (PEO's)

PEO1: To expose students to a strong foundation in the field of Information Technology for creating proficient and responsible IT Professionals.

PEO2: To prepare competent IT Engineers as per global career requirements with the ability to engage in life-long learning.

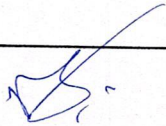
PEO3: To equip students to gain proficiency in recognizing and understanding the social, cultural, ethical, global, and environmental responsibilities of a professional engineer and the need for sustainable development.

PEO4: To encourage students to develop life skills and gain interest in research, entrepreneurship, and higher studies in the field of Information Technology.

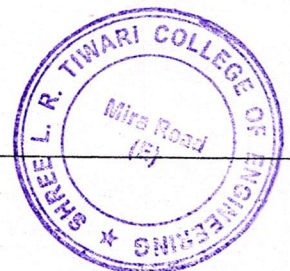
Program Specific Outcomes (PSO's)

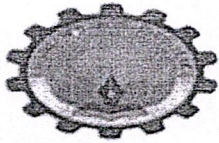
PSO1: Students will be able to apply the knowledge of Information Technology to Define, Analyze, Design, Test, and Integrate subsystems to provide domain-specific IT solutions for real-world problems.

PSO2: Students will be able to apply innovative tools and techniques in the field of Information Security, Data Analytics, Artificial Intelligence, Cloud Computing, and Information Retrieval.


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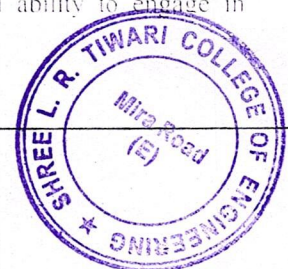
(Approved by AICTE & DEU, Maharashtra) & (Approved by UGC, New Delhi)
(Approved by Maharashtra State Board of Technical Education, Mumbai)

Program Outcomes (PO's)

- PO1: Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2: Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3: Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and the cultural, societal, and environmental considerations.
- PO4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis, and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO6: The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.
- PO7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9: Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO11: Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12: Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.


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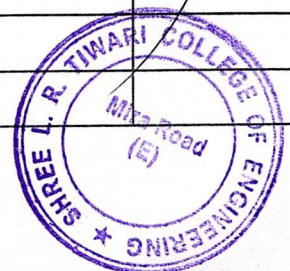
Date :

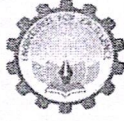
INDEX

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DEPARTMENT OF INFORMATION TECHNOLOGY

ITL 603 PWA & MAD Lab

Sixth Semester, 2021-2022 (Even Semester)

Name of Student : Sumeet Choudhary

Roll No. : 04

Division : B

Batch : B1

Day / Session : Friday

Venue : 507

Experiment No. : 01

Title of Experiment : Installing Flutter environment and creating Hello world App

Date of Conduction : 25/02/22

Date of Submission : 4/3/22

Particulars	Max. Marks	Marks Obtained
Preparedness and Efforts(PE)	3	3
Knowledge of tools(KT)	3	3
Debugging and results(DR)	3	3
Documentation(DN)	3	3
Punctuality & Lab Ethics(PL)	3	2
Total	15	14

Grades – Meet Expectations (3 Marks), Moderate Expectations (2 Marks), Below Expectations (1 Mark)

Checked and Verified by

Name of Faculty : Prof. Madhuri Gedam

Signature :

Date : 25/02/22

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Experiment 1

Title of the Experiment: Installing Flutter Environment and Creating Hello World App

Date of the Experiment: 06/01/2022

Date of Submission:

Aim:

Flutter SDK

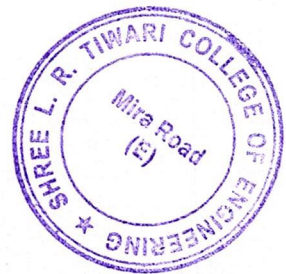
Software Requirements:

- Android Studio
- Android Emulator
-

A) Installation and Configuration of Flutter Environment.

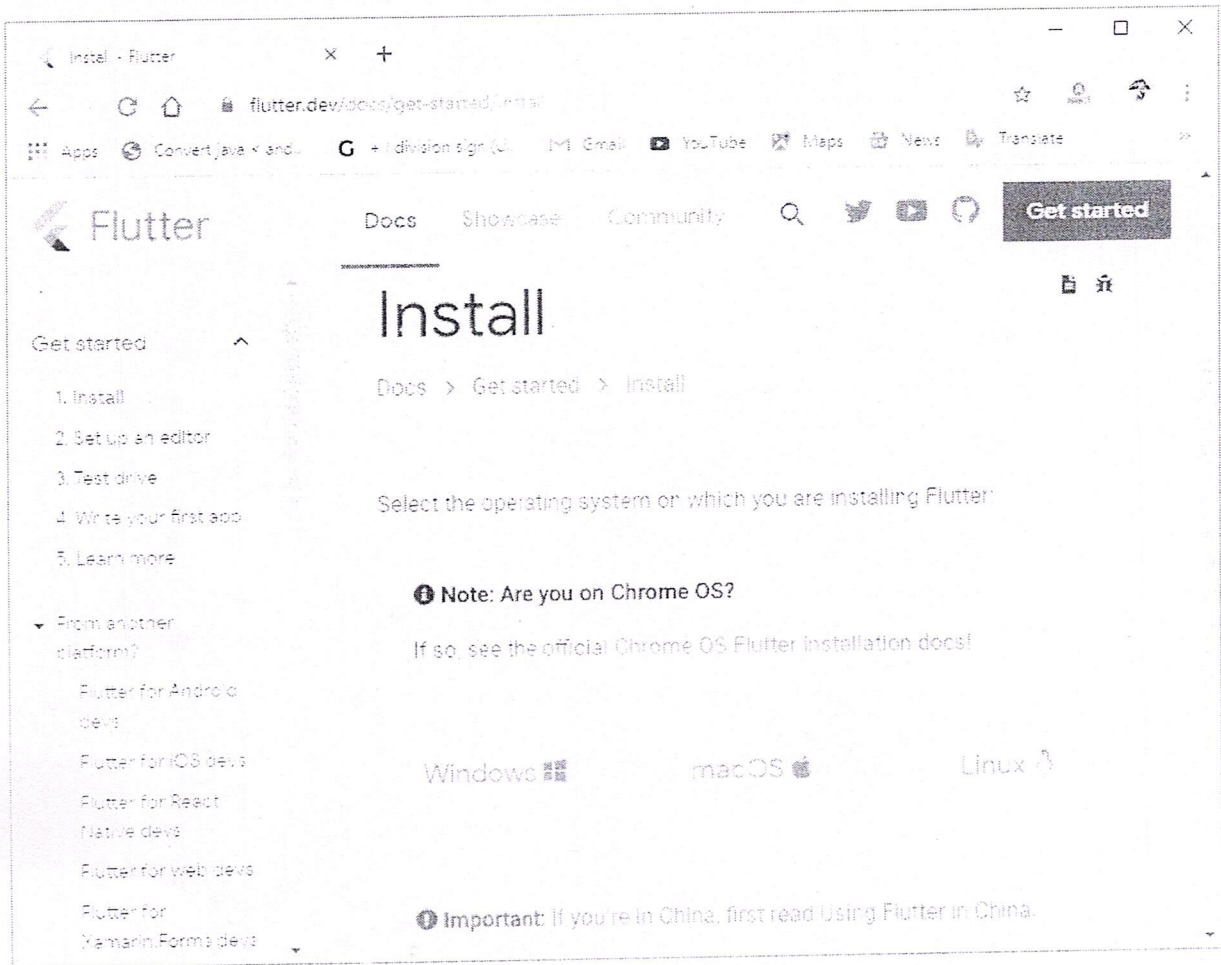
Install the Flutter SDK

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.




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

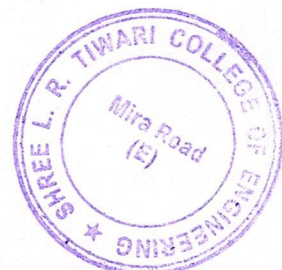
Step 3: When your download is complete, extract the zip file and place it in the desired installation folder or location, for example, C: /Flutter.

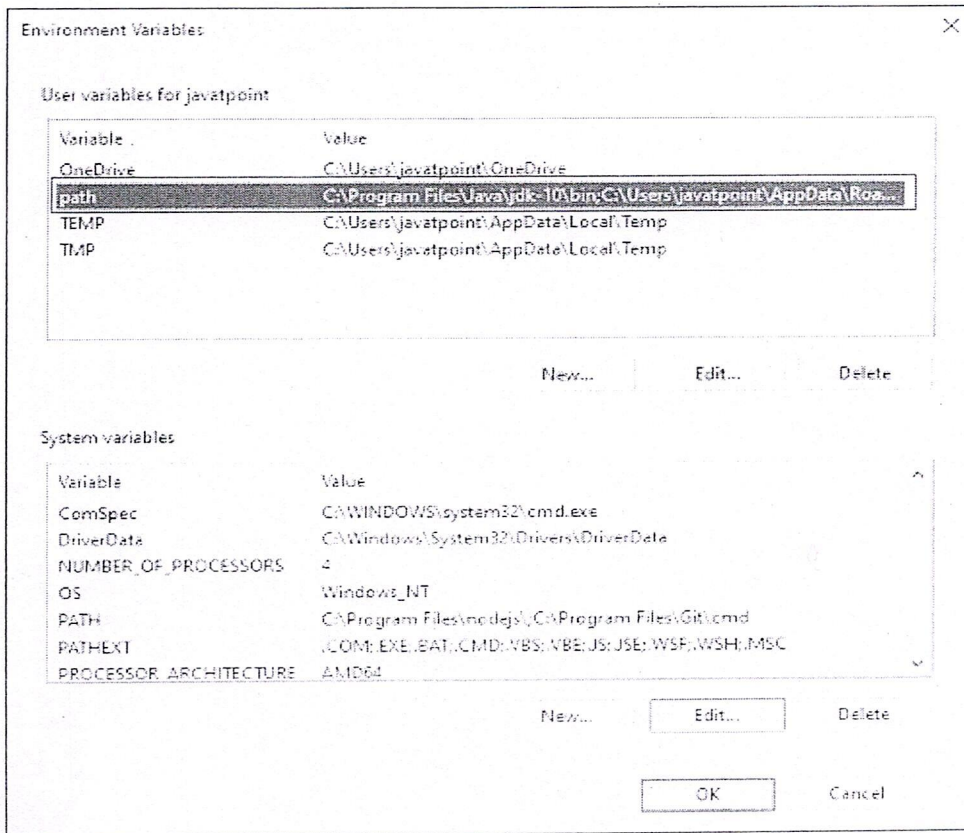
Step 4: To run the Flutter command in regular windows console, you need to update the system path to include the flutter bin directory. The following steps are required to do this:

Step 4.1: Go to MyComputer properties -> advanced tab -> environment variables. You will get the following screen.

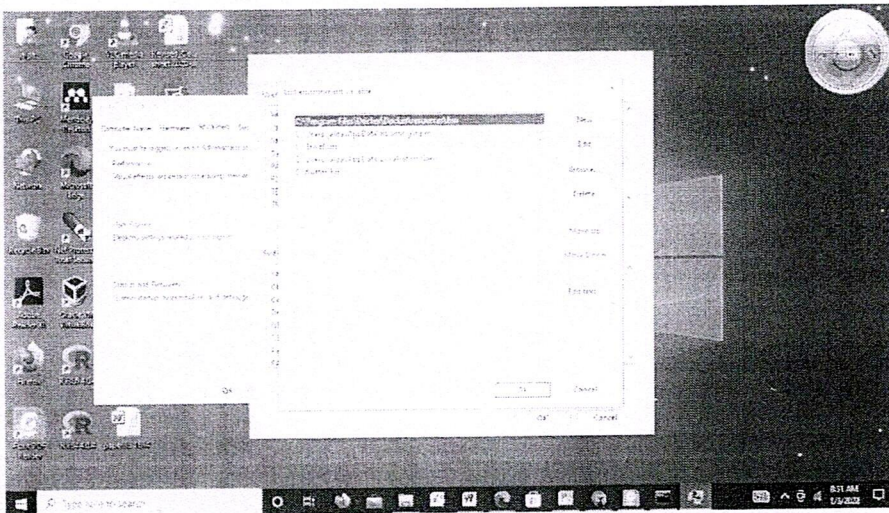

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Step 4.2: Now, select path -> click on edit. The following screen appears



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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 10.0.19042.1415]
(c) Microsoft Corporation. All rights reserved.

C:\Users\jalpa>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.
on, (Use "-w" to force verbose logging in those cases.)
-d, --device-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       Populate 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>Flutter doctor
Running "flutter pub get" in flutter tools... 17.8s
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 2.8.1, on Microsoft Windows [Version 10.0.19042.1415], 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 10.0.19042.1415], 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.
```

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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.

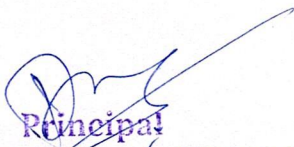
Step 7: Install the Android SDK. If the flutter doctor command does not find the Android SDK tool in your system, then you need first to install the Android Studio IDE. To install Android Studio IDE, do the following steps.

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

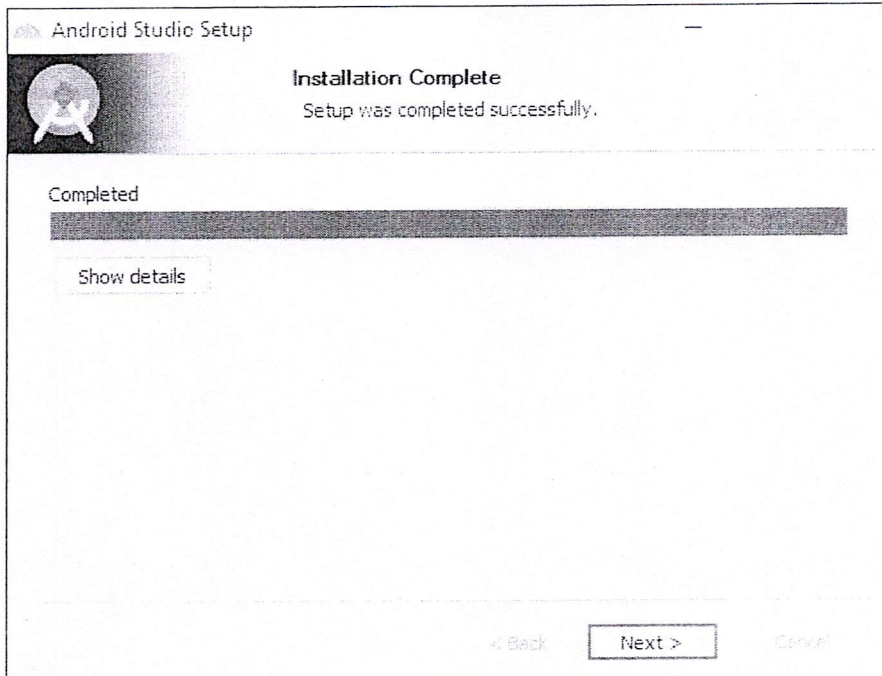
Step 7.2: When the download is complete, open the .exe file and run it. You will get the following dialog box.



Step 7.3: Follow the steps of the installation wizard. Once the installation wizard completes, you will get the following screen.


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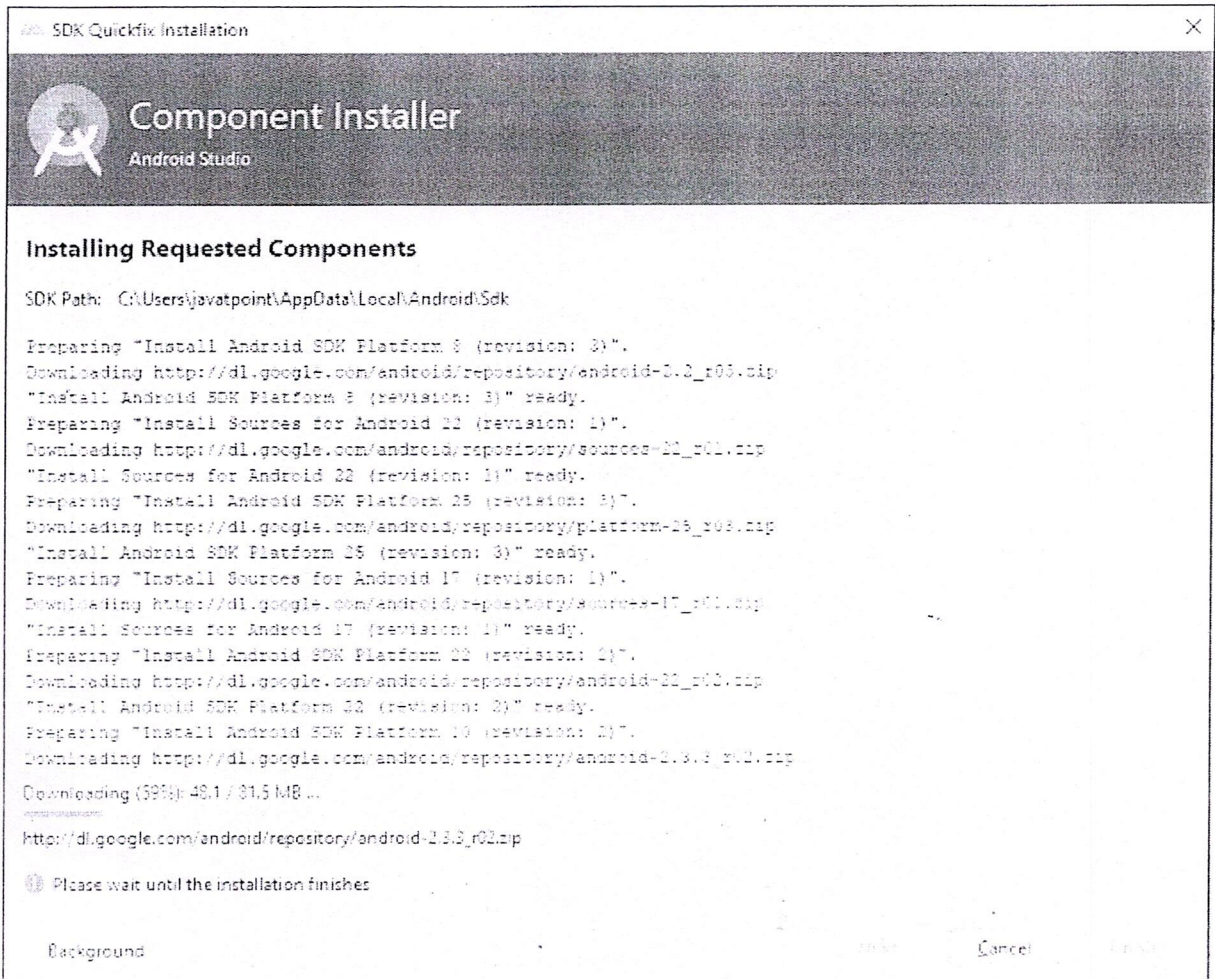


Step 7.4: In the above screen, click Next-> Finish. Once the Finish button is clicked, you need to choose the 'Don't import Settings option' and click OK. It will start the Android Studio.

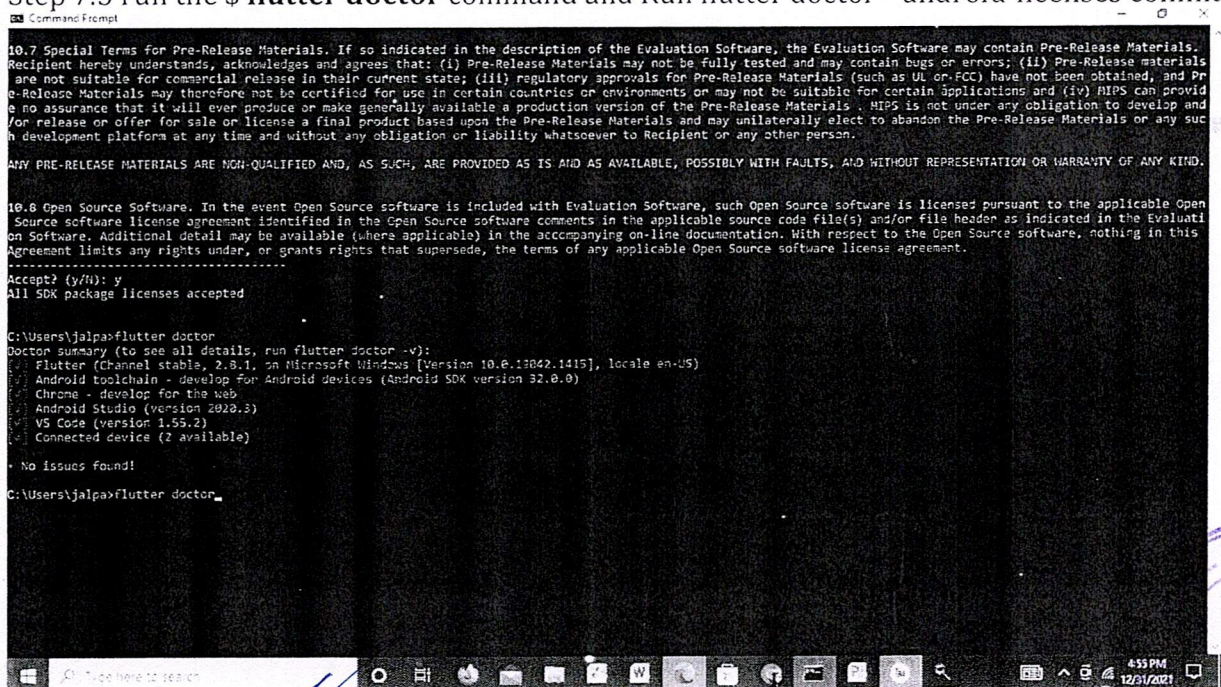


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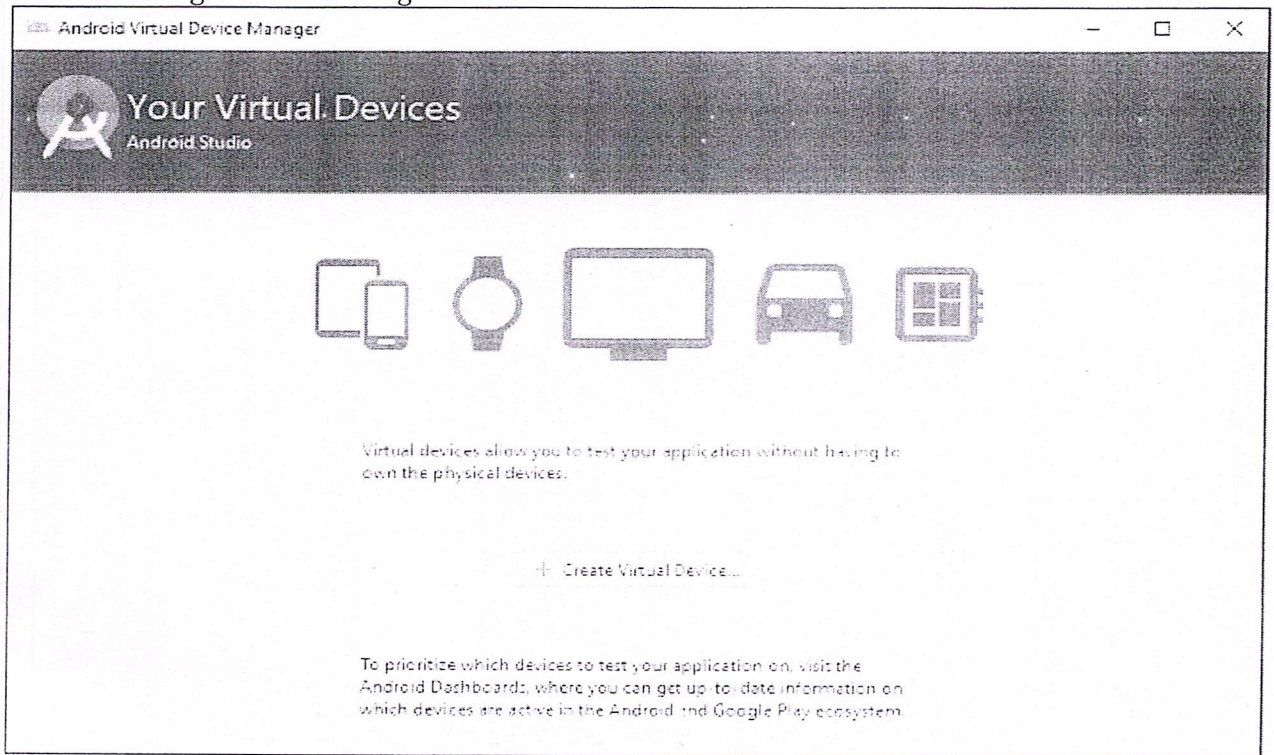
Step 7.5 run the \$ flutter doctor command and Run flutter doctor --android-licenses command.



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Step 8: Next, you need to set up an Android emulator. It is responsible for running and testing the Flutter application.

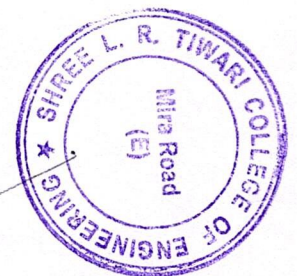
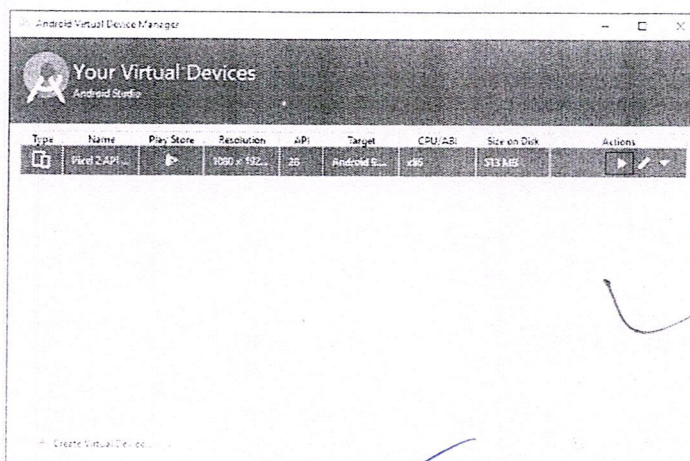
Step 8.1: To set an Android emulator, go to Android Studio > Tools > Android > AVD Manager and select Create Virtual Device. Or, go to Help->Find Action->Type Emulator in the search box. You will get the following screen.



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.

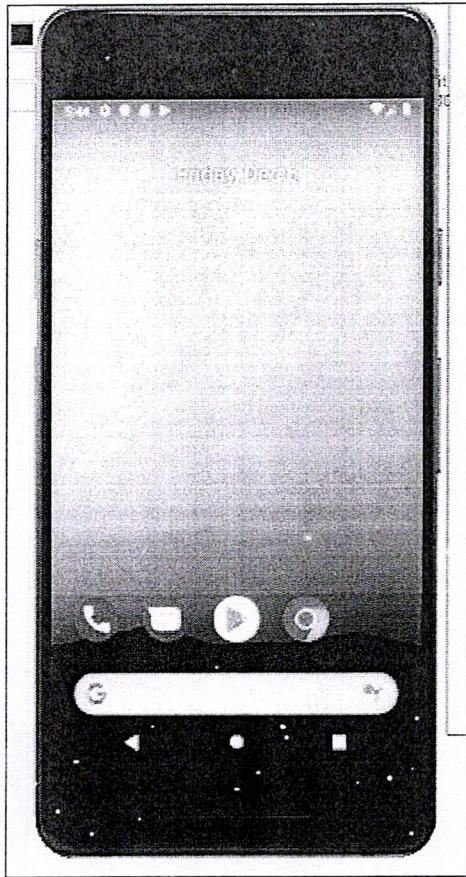
Step 8.4: Now, verify the all AVD configuration. If it is correct, click on Finish. The following screen appears.



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

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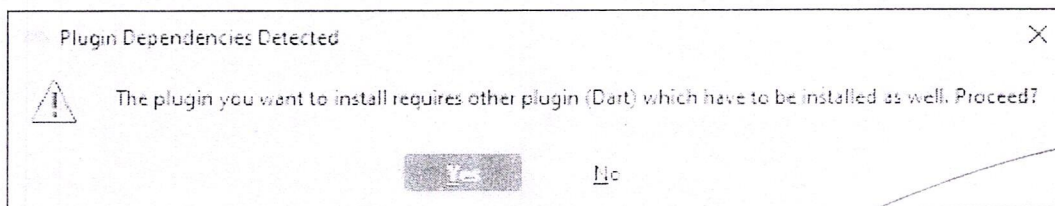
displayed as below screen.



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.

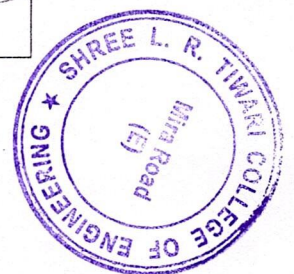
Step 9.2: Now, search the Flutter plugin. If found, select Flutter plugin and click install. When you click on install, it will ask you to install Dart plugin as below screen. Click yes to proceed.



Step 9.3: Restart the Android Studio.


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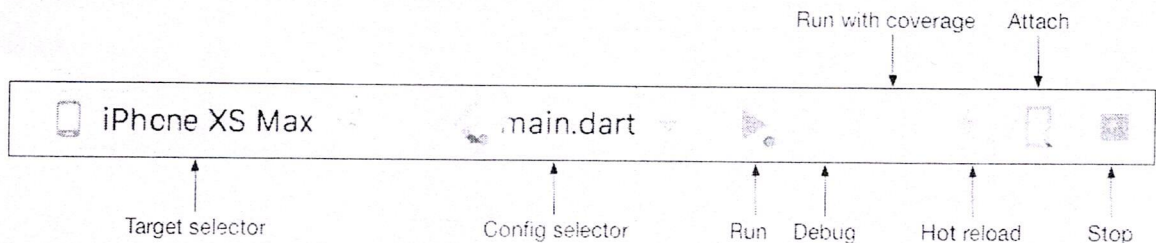
B) Creating Hello World App in Flutter:

Step 1 : Create the app

1. Open the IDE and select **Create New Flutter Project**.
2. Select **Flutter Application** as the project type. Then click **Next**.
3. Verify the Flutter SDK path specifies the SDK's location (select **Install SDK...** if the text field is blank).
4. Enter a project name (for example, myapp). Then click **Next**.
5. Click **Finish**.
6. Wait for Android Studio to install the SDK and create the project.

Step 2: Run the app

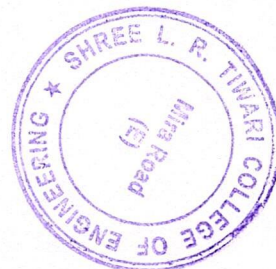
1. Locate the main Android Studio toolbar:

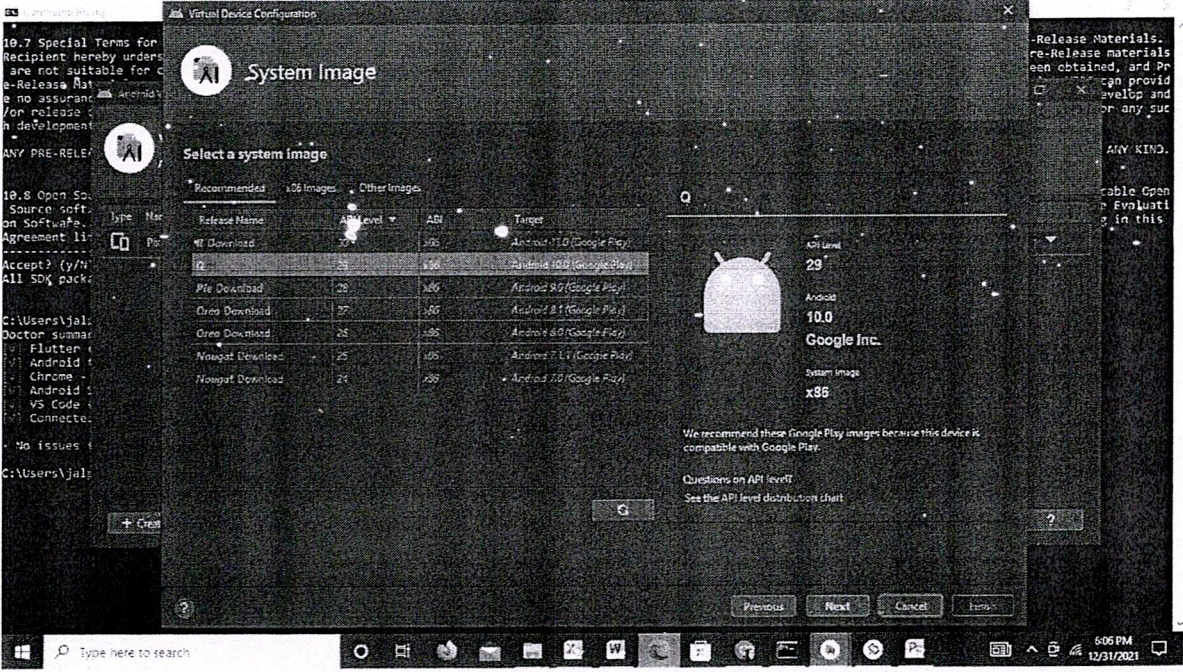
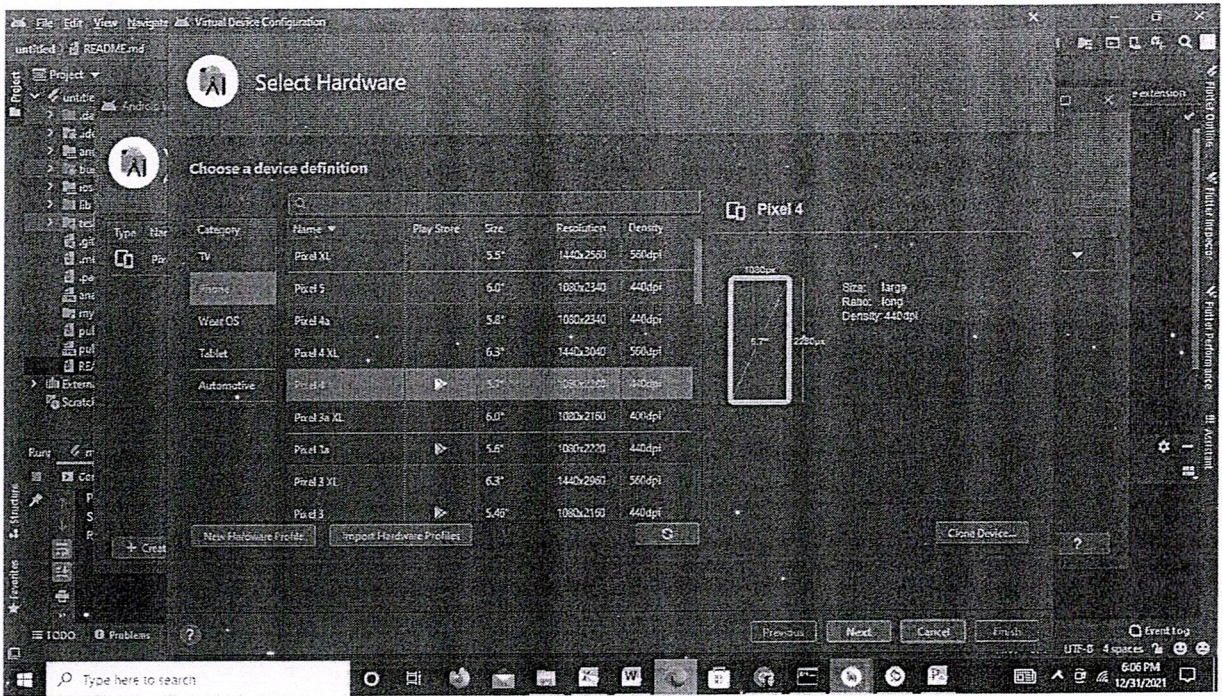


2. In the **target selector**, select an Android device for running the app. If none are listed as available, select **Tools > AVD Manager** and create one there.


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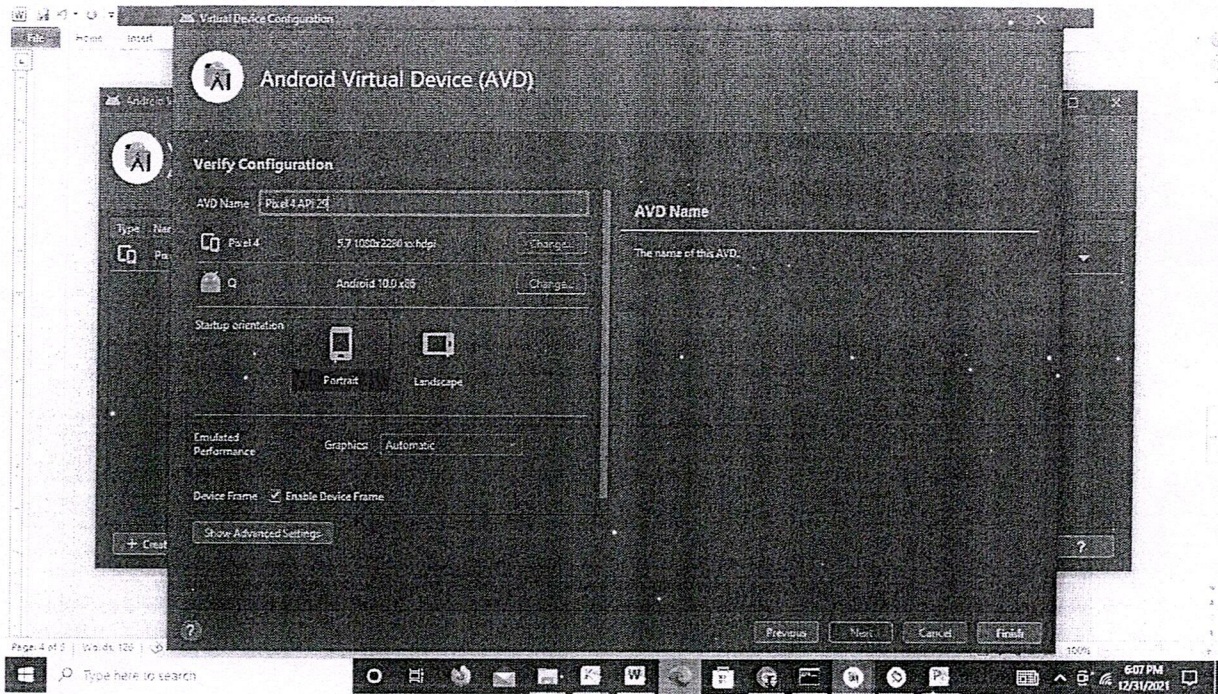




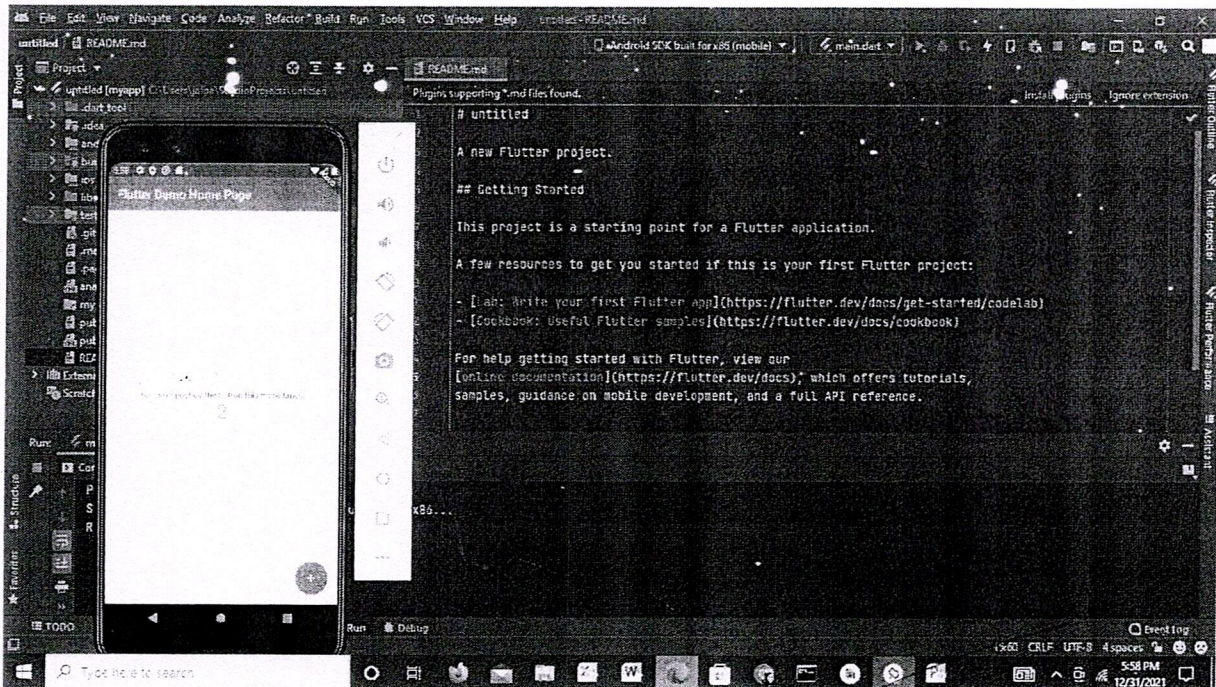
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3. Click the run icon in the toolbar, or invoke the menu item **Run > Run**.



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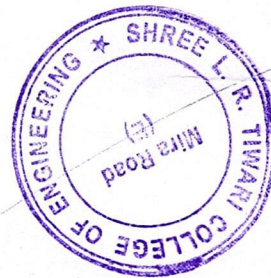
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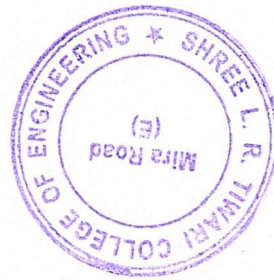
Step 3 : Creating Hello world app

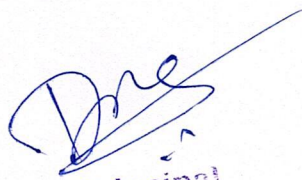
1. Replace the contents of lib/main.dart. - Delete all of the code from **lib/main.dart**.
2. Replace with the following code, which displays "Hello World" in the center of the screen.

```
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('Hello World'),
  ),
  ),
  ),
  );
}
}
```



3. Run the app by selecting Run> Run „main.dart“ and see the output in emulator device.




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