Practical 1: Android Studio setup for Flutter development with along with Dart SDK.Solution:

Step 1: Installing a Flutter.

i. System Requirements:

- Assure that your system meets the minimum requirements. Flutter supports macOS, Linux, and Windows.
- On macOS, you need Xcode with the command-line tools installed. ○ On Linux, you need to have git, lib32stdc++6, and other dependencies installed.

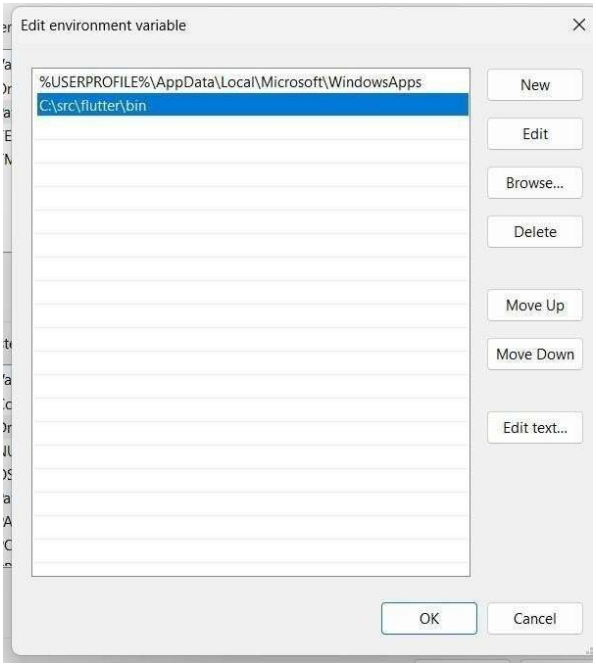
ii. Download Flutter: ○ Visit Flutter Website for Installation of Flutter -> **https://docs.flutter.dev/get-started/install**.

iii. Extract Flutter:

- If you downloaded the ZIP file, extract it to a location on your machine. **(C:\src\flutter)**. **iv.**

Set Up Environment Variables:

- Add the **C:\src\flutter\bin** directory to your system's PATH variable.



v. Run flutter doctor:

- Open a terminal and run the following command: flutter doctor
- This command checks your environment and displays a report of any missing dependencies or issues.

vi. Install Flutter Dependencies:

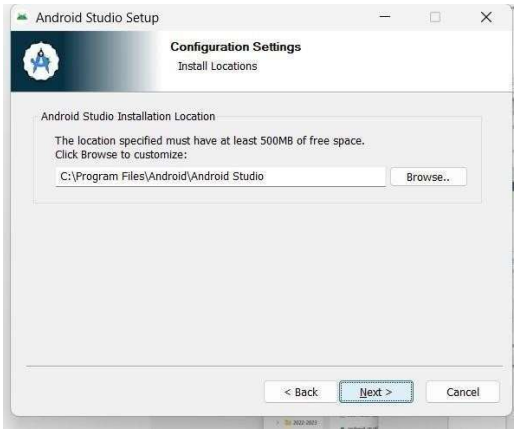
- Follow the instructions provided by flutter doctor to install any missing dependencies. This may include things like Android Studio, Xcode command-line tools, etc.

Step 2: Installing Android Studio.

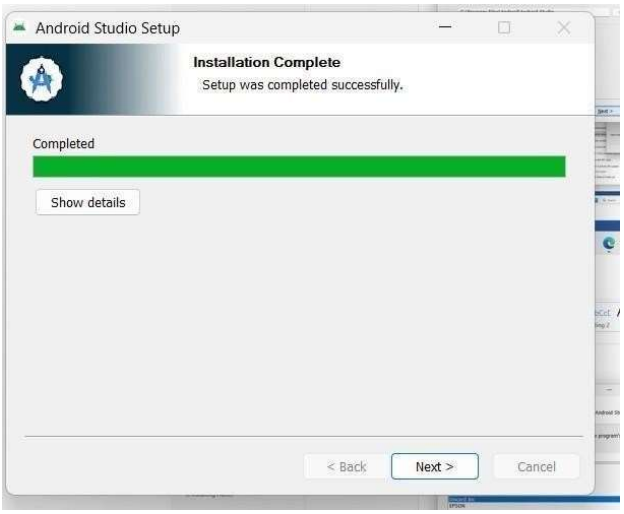
i. Download Android Studio: ○ Visit the Android Studio download page.

○ Click on the "Download" button and download the Windows version.

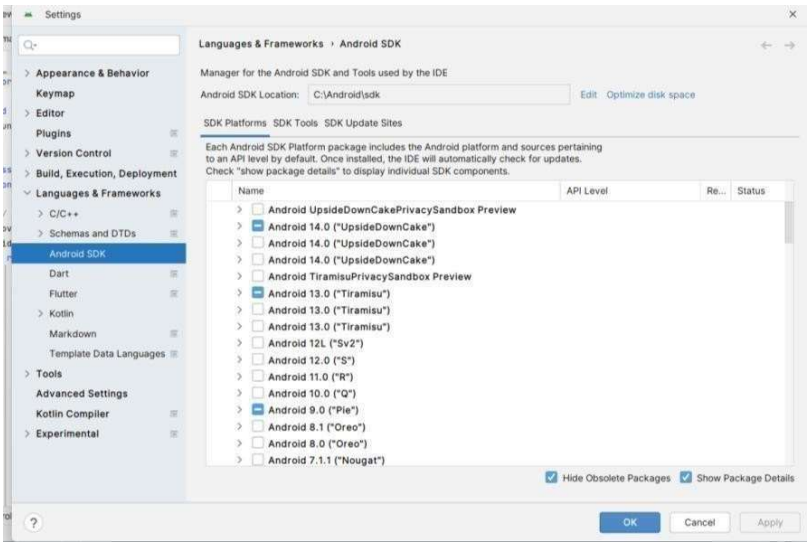
ii. Run the Installer: ○ Once the download is complete, run the installer executable (.exe) file. **iii. Follow Installation Wizard:**


Android Studio Setup
Configuration Settings
Install Locations
Android Studio Installation Location
The location specified must have at least 500MB of free space.
Click Browse to customize:
C:\Program Files\Android\Android Studio
Browse..
< Back
Next >
Cancel

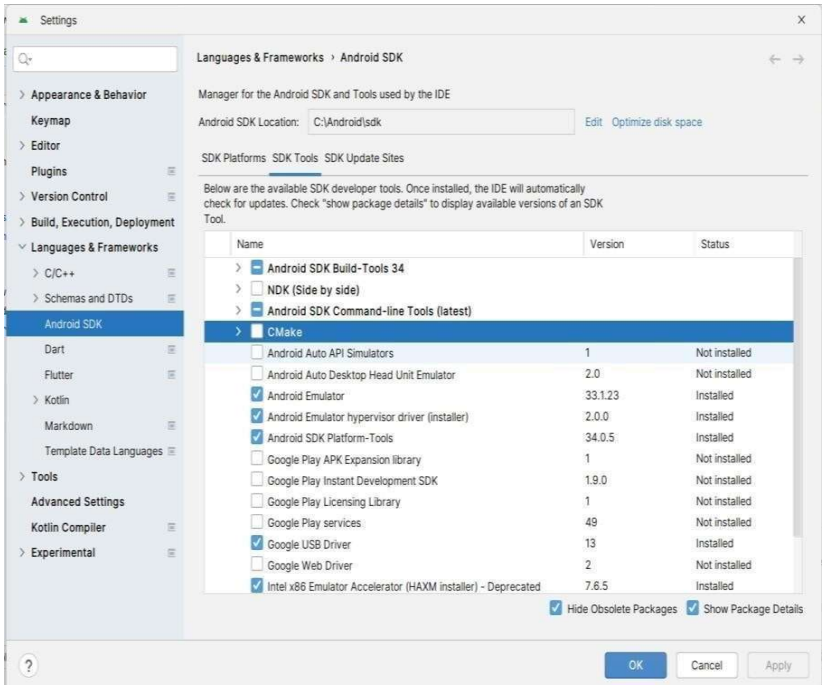

Android Studio Setup
Choose Start Menu Folder
Choose a Start Menu folder for the Android Studio shortcuts.
Select the Start Menu folder in which you would like to create the program's shortcuts. You can also enter a name to create a new folder.
Discord Inc\Android Studio
Accessibility
Accessories
Administrative Tools
Android Studio
Canon Printer Uninstaller
Discord Inc
EPSON
Genshin Impact
Git
HP
IGI 2 - Covert Strike
Do not create shortcuts
< Back
Install
Cancel


Android Studio Setup
Installation Complete
Setup was completed successfully.
Completed
Show details
< Back
Next >
Cancel

- **Android SDK Platforms**:



- **Android SDK Tools:**



Step 3: Run Following Command for checking Flutter dependencies on after installation of android.

iv. **Accept Android Licenses** ○ Flutter doctor --android-licenses to develop for Android, you need to accept the Android licenses.
○ Run the following command: **flutter doctor --android-licenses**

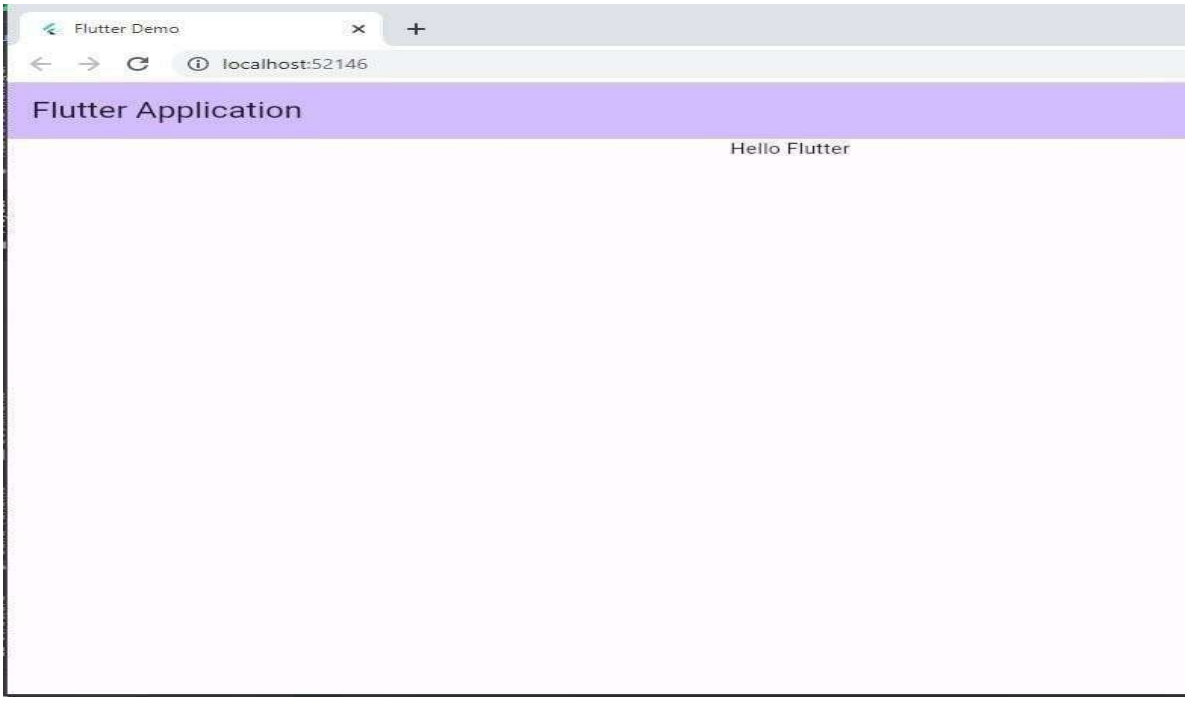
Practical 2:Create a “hello flutter” application

Main.dart

```
import 'package:flutter/material.dart';
void main() {
  runApp(const MyApp());
}
class MyApp extends StatelessWidget
{ const MyApp({super.key});

  @override
  Widget build(BuildContext context)
{     return MaterialApp(       title:
'Flutter Demo',       theme: ThemeData(         colorScheme:
ColorScheme.fromSeed(seedColor: Colors.deepPurple),
useMaterial3: true,
      ),
      home: const MyHomePage(title: 'Flutter Application'),
    );
  }
}

class MyHomePage extends StatefulWidget {
  const MyHomePage({super.key, required this.title});
  final String title;
  @override
  State<MyHomePage> createState() => _MyHomePageState();
}
class _MyHomePageState extends State<MyHomePage>
{ int _counter = 0;
  void _incrementCounter()
{ setState(() {
      _counter++;
    });
  }

  @override
  Widget build(BuildContext context)
    { return Scaffold(
appBar: AppBar(
title: Text(widget.title),
      ),
```

```
      body:
Center( child:
Column( children:
<Widget>[ const
Text(
              'Hello Flutter',
            ),
          ],
        ),
      ),
      floatingActionButton:
FloatingActionButton( onPressed:
_incrementCounter,
        tooltip: 'Increment',
child: const Icon(Icons.add),
      ),
    );
  }
}
```

OUTPUT:



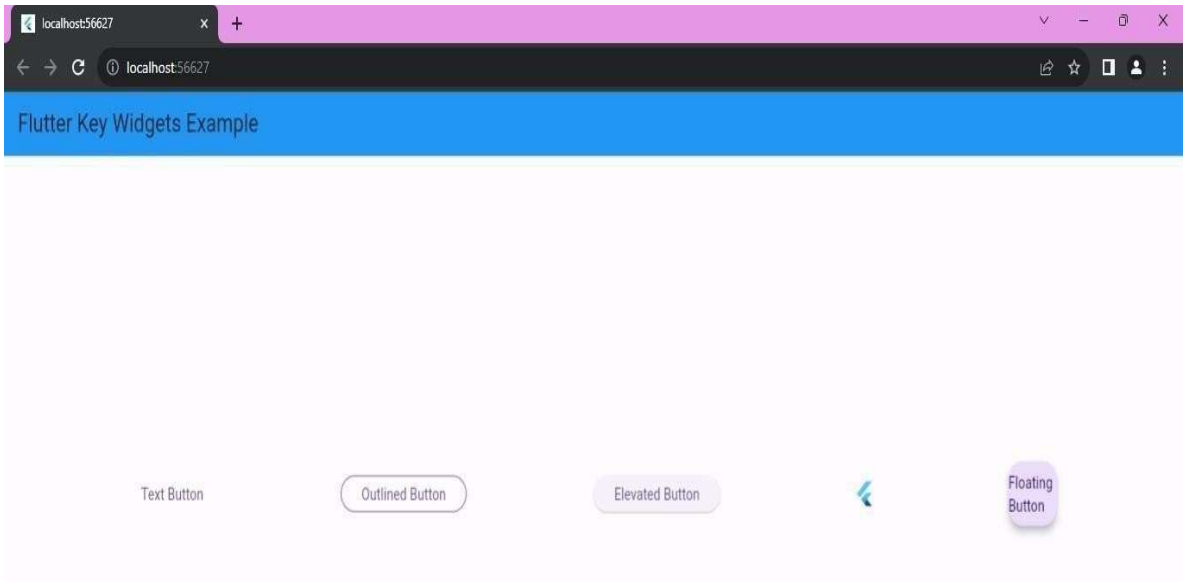
Practical 3: Create and application using Flutter Key Widgets.

Main.dart

```
import 'package:flutter/material.dart';
void main() {
 runApp(MyApp());
}
class MyApp extends StatelessWidget
 {@override
 Widget build(BuildContext context) {   return
MaterialApp(
    debugShowCheckedModeBanner: false,
    home: Scaffold(       appBar:
AppBar(
        title: Text('Flutter Key Widgets Example'),
backgroundColor: Colors.blue,
      ),
      body: MyHomePage(),
    ),
  );
 }
}
class MyHomePage extends StatelessWidget
 {@override
 Widget build(BuildContext context)
  {return Center(
child: Column(
      mainAxisAlignment: MainAxisAlignment.center,
children: [          Row(
         mainAxisAlignment: MainAxisAlignment.spaceEvenly,
children: [              TextButton(              onPressed: () {
            },
            child: Text('Text Button'),
           ),
           OutlinedButton(
            onPressed: () {
            },
            child: Text('Outlined Button'),
           ),
```

```
            IconButton(onPressed: (){},
              icon: FlutterLogo()
            ),
          ],
        ),
      ],
    ),
  );
 }
}
```

Output:



Practical 4 : Create an application using row, column, container widgets

Main.dart

```
import 'package:flutter/material.dart';
void main() {
  runApp(const MyApp());
}
class MyApp extends StatelessWidget
{const MyApp({super.key});
  @override
  Widget build(BuildContext context)
{       return MaterialApp(          title:
'Flutter Demo',      theme: ThemeData(
        colorScheme: ColorScheme.fromSeed(seedColor: Colors.deepPurple),useMaterial3:
true,
      ),
      home: const MyHomePage(title: 'Flutter Demo Home Page'),
    );
  }
}

class MyHomePage extends StatefulWidget {
  const MyHomePage({super.key, required this.title});
  final String title;
  @override
  State<MyHomePage> createState() => _MyHomePageState();
}

class _MyHomePageState extends State<MyHomePage>
{int _counter = 0;
  void          _incrementCounter()
                {setState(() {
      _counter++;
    });
  }

  @override
  Widget build(BuildContext context)
 {return               Scaffold(
appBar: AppBar(
        title: Text(widget.title),
      ),
```

```
      body:              Row(
 children:                    [
Container(
         child: FlutterLogo(),
       ),
         Container(
           child: FlutterLogo(),
         ),
         Container(
            padding: EdgeInsets.all(80),           margin:
EdgeInsets.all(80),                          decoration:
BoxDecoration(                             borderRadius:
(BorderRadius.circular(80)),
               boxShadow: [new BoxShadow(color: Color.fromRGBO(0, 1, 0, 100), offset:
new Offset(0, 0))]              ),
         ),
         Column( childre
n:                           [
Container(
              child: FlutterLogo(),
            ),
          ],
         ),
       ],
     ),
    floatingActionButton:
                                        FloatingActionButton(
onPressed: _incrementCounter,
      tooltip:             'Increment',
child: const Icon(Icons.add),
     ),
   );
  }
}
```

OUTPUT: