



**Bharatiya Vidya Bhavan's**  
**SARDAR PATEL INSTITUTE OF TECHNOLOGY**  
(Autonomous Institute Affiliated to University of Mumbai)  
Munshi Nagar, Andheri (W), Mumbai – 400 058.  
Department of Computer Science and Engineering

<b>Experiment</b>	1
<b>Aim</b>	To install Flutter and its dependency. Create an app of your profile including educational qualification, hobby, Technical language known, social media handles etc.
<b>Objective</b>	1. To install flutter. 2. To create a basic app for your own profile using the UI components of flutter.
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<b>UCID</b>	2024510066
<b>Class</b>	FYMCA
<b>Batch</b>	C

<b>Technology used</b>	<b>Flutter</b>
<b>Task</b>	Part1: Installation of Flutter and its Dependencies Part 2: Create an app for your profile using your creative design.
<b>Code with proper label</b>	<b>main.dart</b> <pre>import 'package:flutter/material.dart';  void main() {   runApp(const ProfileApp()); }  class ProfileApp extends StatelessWidget {   const ProfileApp({super.key});    @override   Widget build(BuildContext context) {     return MaterialApp(       debugShowCheckedModeBanner: false,       theme: ThemeData(         fontFamily: 'Roboto',         primarySwatch: Colors.blue,       ),       home: ProfileScreen(),     );   } }  class ProfileScreen extends StatelessWidget {   @override</pre>



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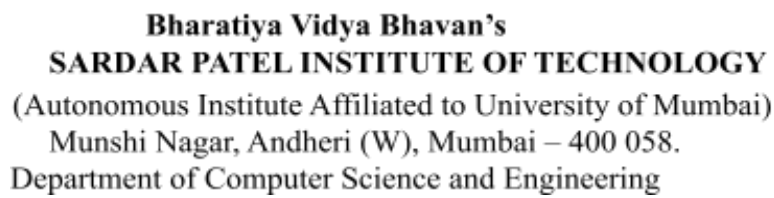
```
Widget build(BuildContext context) {  
  return Scaffold(  
    extendBodyBehindAppBar: true,  
    appBar: AppBar(  
      backgroundColor: Colors.transparent,  
      elevation: 0,  
      title: Text(  
        "My Portfolio",  
        style: TextStyle(fontWeight: FontWeight.bold,  
fontSize: 22),  
      ),  
      centerTitle: true,  
    ),  
    body: Stack(  
      children: [  
        Container(  
          decoration: BoxDecoration(  
            gradient: LinearGradient(  
              colors: [  
                Color(0xFFE5B2CA),  
                Color(0xFF7028E4),  
              ],  
              begin: Alignment.topCenter,  
              end: Alignment.bottomCenter,  
            ),  
          ),  
        ),  
        SingleChildScrollView(  
          padding: EdgeInsets.all(16.0),  
          child: Column(  
            crossAxisAlignment:  
CrossAxisAlignment.center,  
            children: [  
              SizedBox(height: 80),  
              Container(  
                padding: EdgeInsets.all(16),  
                decoration: BoxDecoration(  
                  color: Colors.white,  
                  borderRadius:  
BorderRadius.circular(16),  
                boxShadow: [  
                  BoxShadow(  

```



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```
        color: Colors.black12,  
        blurRadius: 10,  
        spreadRadius: 2,  
        offset: Offset(0, 5),  
      ),  
    ],  
  ),  
  child: Column(  
    children: [  
      CircleAvatar(  
        radius: 60,  
        backgroundImage:  
AssetImage("assets/profile.jpg"),  
      ),  
      SizedBox(height: 16),  
      Text(  
        "Prabhat Tiwari",  
        style: TextStyle(  
          fontSize: 26, fontWeight:  
FontWeight.bold),  
      ),  
      SizedBox(height: 8),  
      Text(  
        "prabhat.tiwari24@spit.ac.in",  
        style: TextStyle(fontSize: 16,  
color: Colors.grey[700]),  
      ),  
      SizedBox(height: 16),  
      ProfileDetailRow(  
        icon: Icons.phone, label: "+91  
8928038098"),  
      ProfileDetailRow(  
        icon: Icons.home, label:  
"Mumbai, India"),  
    ],  
  ),  
  ),  
  SizedBox(height: 20),  
  _buildSectionCard(  
    title: "Technologies",  
    child: SizedBox(  
      height: 80,
```



```

        child: SingleChildScrollView(
          scrollDirection: Axis.horizontal,
          child: Row(
            children: [
              _buildTechIcon("mongodb.png"),
              _buildTechIcon("express.png"),
              _buildTechIcon("nodejs.png"),
              _buildTechIcon("fastapi.png"),
              _buildTechIcon("django.png"),
            ],
          ),
        ),
      ),
    ),
    _buildSectionCard(
      title: "Experience",
      child: Text(
        "Backend Developer at AGenC.ai (June 2024 - August 2024)",
        style: TextStyle(fontSize: 16),
      ),
    ),
    _buildSectionCard(
      title: "Projects",
      child: Column(
        children: [
          ProjectCard(
            title: "Live E-commerce App",
            description:
              "A complete e-commerce solution using MERN stack as a freelance project. Website: https://gujjuboyclothing.com.",
          ),
          ProjectCard(
            title: "Trip Planner",
            description:
              "Planning trips with different and affordable transport modes reducing the trip cost.",
          ),
        ],
      ),
    ),
  ),
)

```



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```
        ),  
        ],  
        ),  
        ),  
        ],  
        ),  
    );  
}  
  
Widget _buildSectionCard({required String title,  
required Widget child}) {  
    return Container(  
        padding: EdgeInsets.all(16),  
        margin: EdgeInsets.symmetric(vertical: 10),  
        decoration: BoxDecoration(  
            color: Colors.white,  
            borderRadius: BorderRadius.circular(16),  
            boxShadow: [  
                BoxShadow(  
                    color: Colors.black12,  
                    blurRadius: 10,  
                    spreadRadius: 2,  
                    offset: Offset(0, 5),  
                ),  
            ],  
        ),  
        child: Column(  
            crossAxisAlignment: CrossAxisAlignment.start,  
            children: [  
                Text(title,  
                    style: TextStyle(fontSize: 20, fontWeight:  
FontWeight.bold)),  
                SizedBox(height: 10),  
                child,  
            ],  
        ),  
    );  
}  
  
Widget _buildTechIcon(String assetPath) {  
    return Padding(  
        padding: EdgeInsets.symmetric(horizontal: 12),
```



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```
        child: Column(  
          children: [  
            Container(  
              padding: EdgeInsets.all(8),  
              decoration: BoxDecoration(  
                color: Colors.grey[200],  
                borderRadius: BorderRadius.circular(10),  
              ),  
              child: Image.asset(assetPath, height: 50),  
            ),  
          ],  
        ),  
      );  
    }  
  }  
  
class ProfileDetailRow extends StatelessWidget {  
  final IconData icon;  
  final String label;  
  
  const ProfileDetailRow({required this.icon, required  
this.label});  
  
  @override  
  Widget build(BuildContext context) {  
    return Padding(  
      padding: const EdgeInsets.symmetric(vertical: 8.0),  
      child: Row(  
        children: [  
          Icon(icon, color: Colors.blue),  
          SizedBox(width: 10),  
          Text(  
            label,  
            style: TextStyle(fontSize: 16),  
          ),  
        ],  
      ),  
    );  
  }  
}  
  
class ProjectCard extends StatelessWidget {
```



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```
final String title;
final String description;

const ProjectCard({required this.title, required
this.description});

@override
Widget build(BuildContext context) {
  return Card(
    elevation: 4,
    margin: EdgeInsets.symmetric(vertical: 8),
    child: Padding(
      padding: const EdgeInsets.all(16.0),
      child: Column(
        crossAxisAlignment: CrossAxisAlignment.start,
        children: [
          Text(
            title,
            style: TextStyle(fontSize: 18, fontWeight:
FontWeight.bold),
          ),
          SizedBox(height: 4),
          Text(description),
        ],
      ),
    ),
  );
}
```

**Screenshots**



	<div data-bbox="624 232 1211 1494"><h3>My Portfolio</h3><div data-bbox="651 374 1187 837"><p><b>Prabhat Tiwari</b> prabhat.tiwari24@spit.ac.in</p><p>+91 8928038098</p><p>Mumbai, India</p></div><div data-bbox="651 880 1187 1088"><h4>Technologies</h4><div data-bbox="687 958 1161 1048"></div></div><div data-bbox="651 1120 1187 1281"><h4>Experience</h4><p>Backend Developer at AGenC.ai (June 2024 - August 2024)</p></div><div data-bbox="651 1312 1187 1494"><h4>Projects</h4><div data-bbox="671 1397 1166 1494"><p><b>Live E-commerce App</b> A complete e-commerce solution using MERN</p></div></div></div> <p>Scrollable:</p> <div data-bbox="445 1534 1011 1776"><h4>Technologies</h4><div data-bbox="477 1630 963 1727"></div></div>
<b>Question and Answers</b>	<p><b>1. What is flutter? features and benefits of flutter?</b></p> <p><b>Ans :</b> Flutter is an open-source UI framework by Google used to build natively compiled applications for mobile, web, and desktop from a single codebase. It provides high performance and fast development, especially with features like hot reload.</p>





**2. What is Dart? Why should we use Dart as the programming language?**

**Ans :** Dart is the programming language used in Flutter. It is optimized for UI development, and compiles to native code, ensuring high performance. Dart is especially useful for creating responsive, asynchronous applications.

**3. How is the basic program of Dart written?**

**Ans :** A basic Dart program prints "Hello, World!" to the console:

```
void main() {  
    print('Hello, World!');  
}
```

**4. What do you mean by widgets?**

**Ans :** Widgets are the basic building blocks of a Flutter application. They are immutable and represent a part of the user interface. Each widget in Flutter is a description of a part of the UI, and they can be combined to create complex interfaces.

**5. What do you mean by stateless widgets?**

**Ans :** Stateless widgets are widgets that do not maintain any state. They are immutable, meaning that once they are built, they cannot change. Stateless widgets are used when the UI does not depend on any dynamic data or user interactions. An example of a stateless widget is a text label or an icon.

**6. What are stateful widgets?**

**Ans :** Stateful widgets are widgets that maintain state that can change during the lifetime of the widget. They can rebuild themselves when their state changes, allowing for dynamic and interactive user interfaces. A stateful widget consists of two classes: the widget itself and a state class that holds the mutable state. An example of a stateful widget is a checkbox or a form input field.

**7. What is the structure of files in flutter?**

**Ans :** A typical Flutter project structure includes the following files and directories:

lib/: Contains the main Dart code for the application.

main.dart: The entry point of the application.

android/: Contains Android-specific code and configurations.

ios/: Contains iOS-specific code and configurations.

test/: Contains unit and widget tests for the application.

pubspec.yaml: The configuration file for the Flutter project, where dependencies are listed.

build/: Contains the build output files (generated automatically).

**8. Steps for installation of flutter. Give step by step installation. What dependent files are required ?**

**Ans :**

- a) Install required dependencies by running `sudo apt update` and `sudo apt install git curl unzip xz-utils`, then download and extract the Flutter SDK using `curl` and `tar`



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	<p>b) Move the extracted Flutter directory to a desired location (e.g., /opt) and update your PATH by adding <code>export PATH="\$PATH:/opt/flutter/bin"</code> to your .bashrc, then run <code>source ~/.bashrc</code>.</p> <p>c) Run flutter doctor to check for any additional dependencies needed for your development environment.</p> <p><b>9. Command to start flutter application ?</b> <b>Ans :</b> flutter create my_app</p> <p><b>10. Command to run a flutter application ?</b> <b>Ans :</b> flutter run</p> <p><b>11. Command to sync files with the emulator. ?</b> <b>Ans :</b> flutter pub get</p> <p><b>12. Command to check the issues in flutter application ?</b> <b>Ans :</b> flutter analyze</p>
<b>Conclusion</b>	<p>In this practical, we successfully installed Flutter and its dependencies, allowing us to create a personal profile app. This app showcases my educational qualifications, hobbies, technical skills, and social media handles. Through this project, I gained hands-on experience with Flutter's widget-based architecture and learned how to structure an application effectively. Overall, it was a valuable exercise in mobile app development.</p>