

PRACTICAL 2

Aim: To design flutter ui by including common widgets.

Theory:

Introduction to Flutter

Flutter is an open-source UI toolkit developed by Google for building natively compiled applications for mobile, web, and desktop from a single codebase. It uses the Dart programming language and provides a fast development experience with features like Hot Reload and customizable widgets.

Flutter follows a widget-based architecture, where everything in the UI is represented as a widget. It includes two main types of widgets:

1. StatelessWidget – These widgets do not change once they are built.
2. StatefulWidget – These widgets maintain state and can change dynamically.

Flutter provides a rich set of pre-built widgets, such as Scaffold, AppBar, ListTile, ElevatedButton, BottomNavigationBar, and many more, allowing developers to create highly interactive applications.

Objective

The objective of this experiment is to design and implement a Home Screen for the Senior Assistance App using Flutter. This screen serves as the main interface where users can view their tasks, reminders, and navigate through the application.

Implementation

The code consists of a main.dart file that implements the HomeScreen. Below are the key components of the implementation:

1. MaterialApp and Theme Customization

- We use **MaterialApp** as the root widget and set **debugShowCheckedModeBanner: false** to remove the debug banner.
- The application follows a dark theme, where the background color is set to black, and the primary color is red.

2. AppBar (Top Navigation Bar)

- The **AppBar** is customized with a black background and white text.
- An action button (mail icon) is added with a red notification indicator to represent unread messages.

3. Displaying Medication Reminders

- The body contains a **Column** with a **ListTile** wrapped inside a **Card**, representing a medication reminder.

- The reminder includes:
 - Time (20:00)
 - Person's Name (Yash)
 - Medication Information (1 pill)
 - A status icon (gray circle)

4. Floating Action Button

- At the bottom, an `ElevatedButton` is added to allow users to create a one-time medication entry.
- The button is styled with a brown background, white text, and rounded corners.

5. Bottom Navigation Bar

- A `BottomNavigationBar` is implemented for easy navigation between different sections of the app.
- The navigation bar contains four items:
 - Today (Current tasks)
 - Progress (Health progress)
 - Support (Help & Assistance)
 - Treatment (Medical-related features)
- The selected item is highlighted in red, while unselected items remain gray.

CODE

```
import 'package:flutter/material.dart';

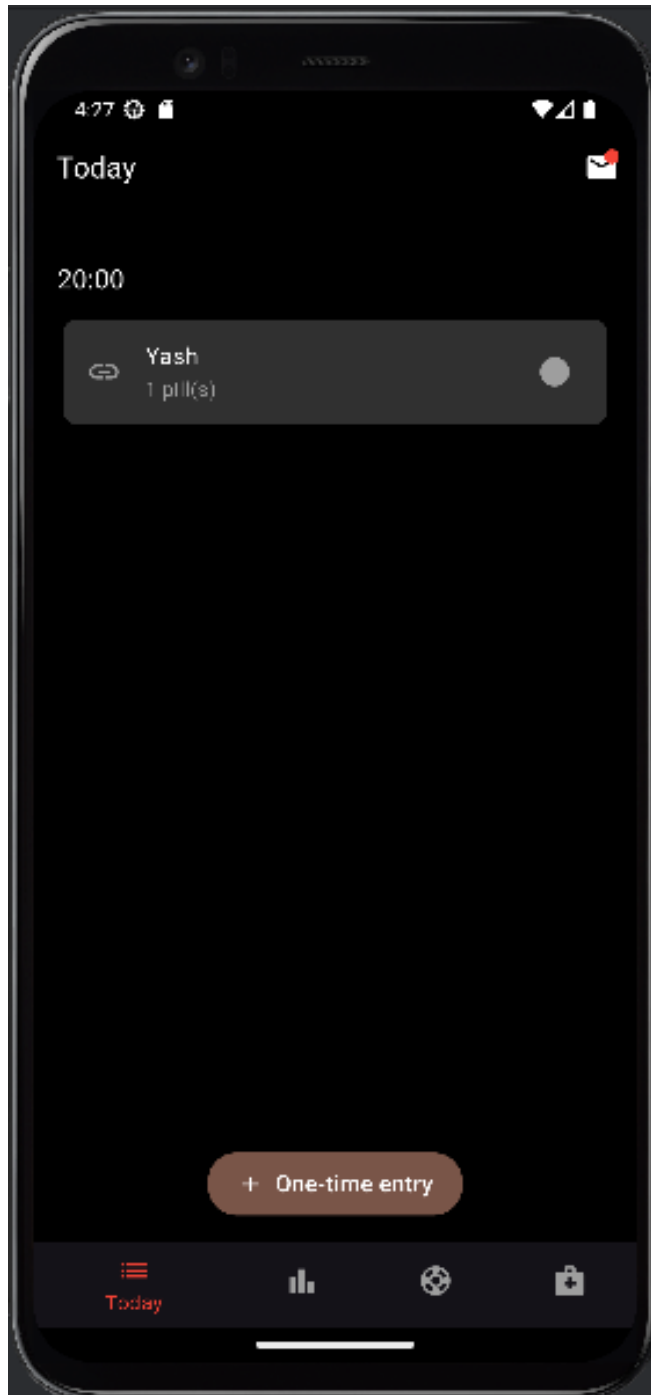
void main() {
  runApp(MyApp());
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      home: HomeScreen(),
      theme: ThemeData.dark().copyWith(
        scaffoldBackgroundColor: Colors.black,
        primaryColor: Colors.red,
      ),
    );
  }
}
```

```
class HomeScreen extends StatelessWidget {  
  @override  
  Widget build(BuildContext context) {  
    return Scaffold(  
      appBar: AppBar(  
        backgroundColor: Colors.black,  
        elevation: 0,  
        title: Text(  
          'Today',  
          style: TextStyle(color: Colors.white, fontSize: 20),  
        ),  
        actions: [  
          IconButton(  
            icon: Stack(  
              children: [  
                Icon(Icons.mail, color: Colors.white),  
                Positioned(  
                  top: 0,  
                  right: 0,  
                  child: CircleAvatar(  
                    radius: 5,  
                    backgroundColor: Colors.red,  
                  ),  
                ),  
              ],  
            ),  
            onPressed: () {},  
          )  
        ],  
      ),  
      body: Padding(  
        padding: const EdgeInsets.all(16.0),  
        child: Column(  
          crossAxisAlignment: CrossAxisAlignment.start,  
          children: [  
            SizedBox(height: 20),  
            Text(  
              '20:00',  
              style: TextStyle(  
                color: Colors.white,  
                fontSize: 18,  
              ),  
            ),  
            SizedBox(height: 10),  
          ],  
        ),  
      ),  
    );  
  }  
}
```

```
Card(  
  color: Colors.grey[850],  
  shape: RoundedRectangleBorder(  
    borderRadius: BorderRadius.circular(10),  
  ),  
  child: ListTile(  
    leading: Icon(  
      Icons.link,  
      color: Colors.grey,  
    ),  
    title: Text(  
      'Yash',  
      style: TextStyle(  
        color: Colors.white,  
        fontSize: 16,  
      ),  
    ),  
    subtitle: Text(  
      '1 pill(s)',  
      style: TextStyle(  
        color: Colors.grey,  
        fontSize: 14,  
      ),  
    ),  
    trailing: CircleAvatar(  
      radius: 12,  
      backgroundColor: Colors.transparent,  
      child: Icon(  
        Icons.circle,  
        color: Colors.grey,  
      ),  
    ),  
  ),  
  Spacer(),  
  Align(  
    alignment: Alignment.bottomCenter,  
    child: ElevatedButton.icon(  
      style: ElevatedButton.styleFrom(  
        backgroundColor: Colors.brown,  
        shape: RoundedRectangleBorder(  
          borderRadius: BorderRadius.circular(20),  
        ),  
      ),  
      padding: EdgeInsets.symmetric(horizontal: 20, vertical: 10),  
    ),  
  ),  
),
```

```
    ),
    onPressed: () {},
    icon: Icon(Icons.add, color: Colors.white),
    label: Text(
      'One-time entry',
      style: TextStyle(fontSize: 16, color: Colors.white),
    ),
  ),
)
],
),
),
bottomNavigationBar: BottomNavigationBar(
  backgroundColor: Colors.black,
  selectedItemColor: Colors.red,
  unselectedItemColor: Colors.grey,
  items: [
    BottomNavigationBarItem(
      icon: Icon(Icons.list),
      label: 'Today',
    ),
    BottomNavigationBarItem(
      icon: Icon(Icons.bar_chart),
      label: 'Progress',
    ),
    BottomNavigationBarItem(
      icon: Icon(Icons.support),
      label: 'Support',
    ),
    BottomNavigationBarItem(
      icon: Icon(Icons.medical_services),
      label: 'Treatment',
    ),
  ],
),
);
}
```

Screenshot:**Conclusion**

In this experiment, we implemented the Home Screen for the Senior Assistance App with a dark theme, a medication reminder card, a floating action button, and a bottom navigation bar for easy navigation. During implementation, we initially faced issues with widget alignment and styling inconsistencies, which we resolved by adjusting padding, using `SizeBox` for spacing, and refining the `Card` and `ListTile` properties for a better UI experience.