

EXPERIMENT NO 2

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CLASS-D15A

ROLL NO-13

AIM-To design Flutter UI by including common widgets

THEORY-

Flutter is an open-source UI framework by Google that allows developers to build natively compiled applications for mobile, web, and desktop using a single codebase. It uses the Dart programming language and follows a widget-based architecture. In Flutter, everything is a widget, from layout components to UI elements.

Some of the common widgets

- **Container** – A flexible box that can hold other widgets and be styled with padding, margins, borders, and background colors. It is often used for layout structuring.
- **Text** – Used to display text with various styles, such as font size, color, weight, and alignment.
- **Image** – Loads and displays images from different sources like assets, networks, and memory.
- **Row & Column** – These layout widgets help arrange child widgets horizontally (Row) or vertically (Column). They are essential for structuring UI components.
- **Scaffold** – Provides a basic page structure, including an AppBar, body, floating action button, and drawer. It is the foundation of most Flutter screens.
- **AppBar** – A top navigation bar that usually contains a title, icons, and action buttons.
- **ListView** – A scrollable list widget that efficiently displays multiple items, often used for dynamic content like messages or product lists.

- **Text Field** – Allows users to input text, commonly used in forms and search fields.

SYNTAX-

AppBar creates a top navigator bar with title and icons.

```
AppBar (
  title: Text("Title"),
  leading: IconButton(
    icon: Icon(Icons.menu),
    onPressed: () {},
  ),
  bottom: TabBar(),
)
```

Scaffold creates the basic layout structure of the app.

```
Scaffold (
  appBar: AppBar(),
  body: Widget(),
  drawer: Drawer(),
  bottomNavigationBar: BottomNavigationBar(),
)
```

TabBar creates tabs for switching views

```
TabBar(
  tabs: [
    Tab(text: "Tab 1"),
    Tab(text: "Tab 2"),
  ],
)
```

Drawer a side menu that slides in from left

```
Drawer(
  child: ListView(
    children: [
      DrawerHeader(
        decoration: BoxDecoration(color: Colors.blue),
        child: Text("Header"),
      ),
      ListTile(
        leading: Icon(Icons.star),
```

```
        title: Text("Menu Item"),
        onTap: () {},
    ),
],
),
)
```

Listview creates a scrollable list dynamically

```
ListView.builder(
    itemCount: items.length,
    itemBuilder: (context, index) {
        return ListTile(
            title: Text(items[index]),
        );
    },
)
```

Widget Properties

Scaffold

key → Used to manage state
appBar → Adds a top navigation bar
body → The main content of the screen
drawer → A slide-out menu on the left
bottomNavigationBar → A navigation bar at the bottom

AppBar

title → Sets a title or an icon
leading → Adds an icon or button on the left
backgroundColor → Changes the background color
elevation → Controls the shadow effect
centerTitle → Aligns the title in the center
bottom → Adds a TabBar

Drawer

child → Contains a list of menu items
ListView → Displays menu options in a scrollable list

ListView

padding → Controls spacing around the list
children → Contains multiple widgets inside the list

ListTile

leading → Adds an icon on the left
title → The main text of the item
trailing → Adds an icon on the right
onTap → Defines what happens when tapped

CODE

```
import 'package:flutter/material.dart';
import 'package:font_awesome_flutter/font_awesome_flutter.dart';
import 'package:my_app/pages/homepage.dart';
import 'package:my_app/pages/userprofile.dart'; // Import User Profile Page

class TwitterHomePage extends StatefulWidget {
  const TwitterHomePage({super.key});

  @override
  _TwitterHomePageState createState() => _TwitterHomePageState();
}

class _TwitterHomePageState extends State<TwitterHomePage> {
  final GlobalKey<ScaffoldState> _scaffoldKey = GlobalKey<ScaffoldState>(); // Global Key for Scaffold

  List<Map<String, dynamic>> tweets = [
    {
      "username": "John Doe",
      "userAvatar": "https://via.placeholder.com/150",
    }
  ]
}
```

```
"content": "This is a sample tweet from John!",  
    "likes": 10,  
},  
{  
    "username": "Jane Smith",  
    "userAvatar": "https://via.placeholder.com/150",  
    "content": "Hello world! First tweet 🎉",  
    "likes": 25,  
},  
];  
  
@override  
Widget build(BuildContext context) {  
    return DefaultTabController(  
        length: 2,  
        child: Scaffold(  
            key: _scaffoldKey, // Assign key to Scaffold  
            appBar: AppBar(  
                backgroundColor: Colors.white,  
                elevation: 1,  
                title: FaIcon(FontAwesomeIcons.twitter, color: Colors.blue, size: 30),  
                centerTitle: true,  
                leading: IconButton(  
                    icon: const Icon(Icons.menu, color: Colors.black), // Menu button  
                    onPressed: () {  
                        _scaffoldKey.currentState?.openDrawer(); // Open drawer correctly  
                    },  
                ),  
                bottom: const TabBar(  

```

```
labelColor: Colors.black,  
indicatorColor: Colors.blue,  
tabs: [  
    Tab(text: "For You"),  
    Tab(text: "Following"),  
,  
,  
),  
drawer: Drawer(  
    child: ListView(  
        padding: EdgeInsets.zero,  
        children: [  
            DrawerHeader(  
                decoration: BoxDecoration(color: Colors.blue),  
                child: Column(  
                    mainAxisAlignment: MainAxisAlignment.start,  
                    children: [  
                        GestureDetector(  
                            onTap: () {  
                                Navigator.push(  
                                    context,  
                                    MaterialPageRoute(builder: (context) => const UserProfilePage()),  
                                );  
                            },  
                            child: Row(  
                                children: [  
                                    CircleAvatar(  
                                        radius: 30,
```

```
        backgroundImage:  
NetworkImage("https://upload.wikimedia.org/wikipedia/commons/c/cb/Elon_Musk_Royal_Society_crop.jpg"),  
    ),  
    SizedBox(width: 10),  
    Column(  
        mainAxisAlignment: MainAxisAlignment.start,  
        children: [  
            Text(  
                "Elon Musk",  
                style: TextStyle(color: Colors.white, fontSize: 18, fontWeight:  
FontWeight.bold),  
            ),  
            Text(  
                "@elonatmusk",  
                style: TextStyle(color: Colors.white70, fontSize: 14),  
            ),  
        ],  
    ),  
    ],  
),  
),  
],  
),  
),  
),  
ListTile(  
    leading: Icon(Icons.star, color: Colors.black),  
    title: Text("Premium"),  
    onTap: () {},  
),
```

```
ListTile(  
    leading: Icon(Icons.bookmark, color: Colors.black),  
    title: Text("Bookmarks"),  
    onTap: () {},  
,  
ListTile(  
    leading: Icon(Icons.work, color: Colors.black),  
    title: Text("Jobs"),  
    onTap: () {},  
,  
ListTile(  
    leading: Icon(Icons.list, color: Colors.black),  
    title: Text("Lists"),  
    onTap: () {},  
,  
ListTile(  
    leading: Icon(Icons.group, color: Colors.black),  
    title: Text("Spaces"),  
    onTap: () {},  
,  
ListTile(  
    leading: Icon(Icons.monetization_on, color: Colors.black),  
    title: Text("Monetisation"),  
    onTap: () {},  
,  
Divider(),  
ListTile(  
    leading: Icon(Icons.logout, color: Colors.red),  
    title: Text("Logout", style: TextStyle(color: Colors.red)),
```

```
        onTap: () {
            Navigator.pushReplacement(
                context,
                MaterialPageRoute(builder: (context) => const TwitterLoginPage())
            );
        },
    ),
],
),
),
),
body: TabBarView(
    children: [
        TweetList(tweets: tweets),
        TweetList(tweets: tweets),
    ],
),
),
bottomNavigationBar: BottomNavigationBar(
    selectedItemColor: Colors.blue,
    unselectedItemColor: Colors.grey,
    showUnselectedLabels: false,
    items: const [
        BottomNavigationBarItem(icon: Icon(Icons.home), label: "Home"),
        BottomNavigationBarItem(icon: Icon(Icons.search), label: "Search"),
        BottomNavigationBarItem(icon: Icon(Icons.notifications), label: "Notifications"),
        BottomNavigationBarItem(icon: Icon(Icons.mail), label: "Messages"),
    ],
),
);
});
```

```
    }

}

class TweetList extends StatefulWidget {

    final List<Map<String, dynamic>> tweets;

    const TweetList({super.key, required this.tweets});

    @override
    _TweetListState createState() => _TweetListState();
}

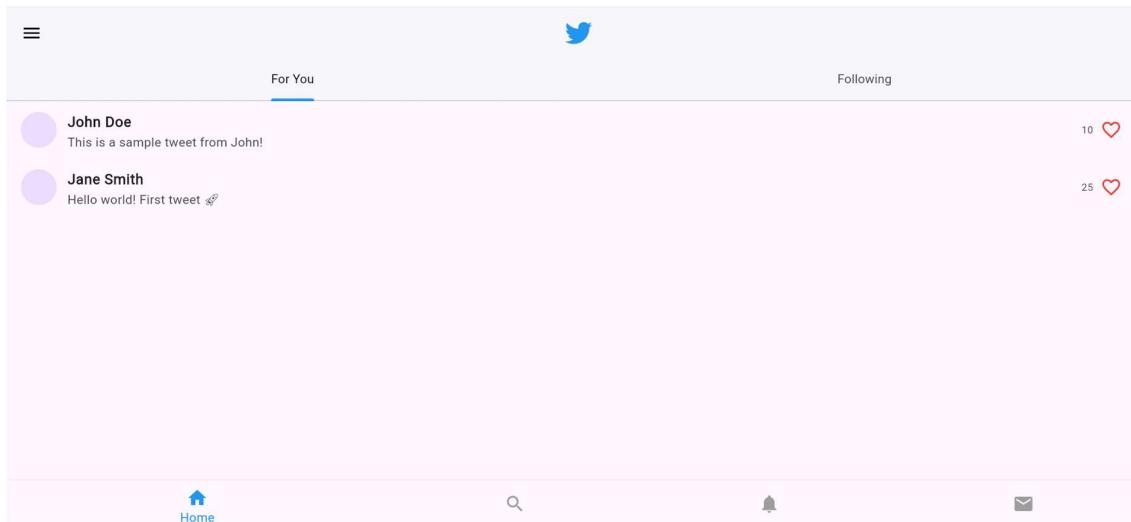
class _TweetListState extends State<TweetList> {

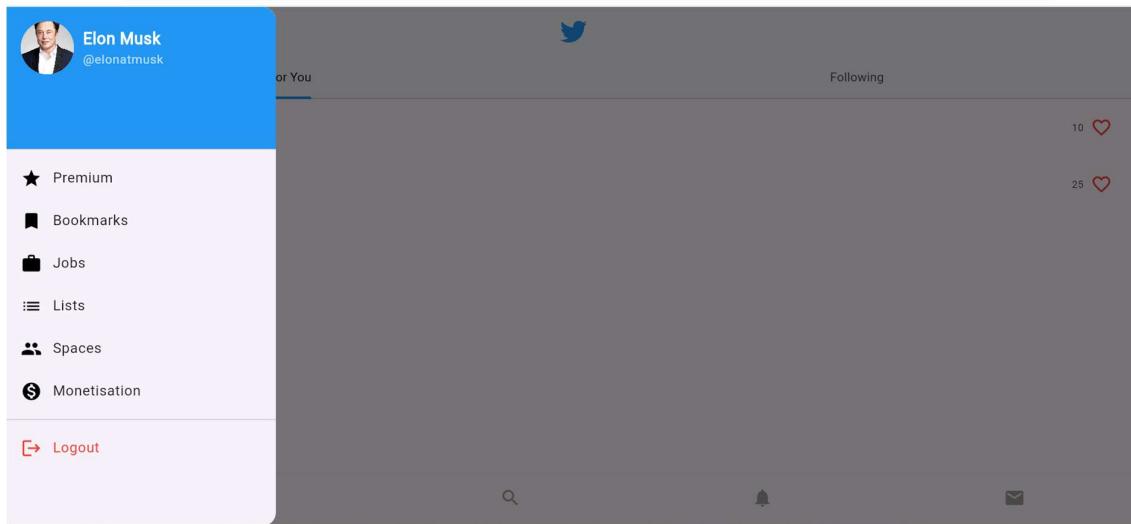
    @override
    Widget build(BuildContext context) {
        return ListView.builder(
            itemCount: widget.tweets.length,
            itemBuilder: (context, index) {
                var tweet = widget.tweets[index];
                return ListTile(
                    leading: CircleAvatar(
                        backgroundImage: NetworkImage(tweet['userAvatar']),
                    ),
                    title: Text(tweet['username'], style: const TextStyle(fontWeight: FontWeight.bold)),
                    subtitle: Text(tweet['content']),
                    trailing: Row(
                        mainAxisSize: MainAxisSize.min,
                        children: [
                            Text("\${tweet['likes']}"),
                            IconButton(

```

```
icon: const Icon(Icons.favorite_border, color: Colors.red),  
onPressed: () {  
    setState(() {  
        tweet['likes'] += 1;  
    });  
},  
,  
],  
,  
);  
},  
);  
},  
);  
}  
}
```

OUTPUT





User Profile page

when clicked on User Icon on top right corner

CODE

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

```
class UserProfilePage extends StatelessWidget {
```

```
  const UserProfilePage({super.key});
```

```
@override
```

```
Widget build(BuildContext context) {
```

```
  return Scaffold(
```

```
appBar: AppBar(  
    title: const Text("User Profile"),  
,  
body: Padding(  
    padding: const EdgeInsets.all(16.0),  
    child: Column(  
        crossAxisAlignment: CrossAxisAlignment.start,  
        children: [  
            // Profile Picture Section  
            Center(  
                child: CircleAvatar(  
                    radius: 60,  
                    backgroundImage:  
                        NetworkImage('https://upload.wikimedia.org/wikipedia/commons/c/cb/Elon_Musk_Royal_Society_crop.jpg'), // Replace with actual image URL  
                ),  
            ),  
            const SizedBox(height: 16),  
            // Username Section  
            Center(  
                child: const Text(  
                    'Elon Musk',  
                    style: TextStyle(fontSize: 24, fontWeight: FontWeight.bold),  
                ),  
            ),  
            const SizedBox(height: 8),  
            // Bio Section  
            Center(  
                child: const Text(  
                    'This is my official Account',  
                ),  
            ),  
        ],  
    ),  
);
```

```
        style: TextStyle(fontSize: 16, color: Colors.grey),  
    ),  
    ),  
    const SizedBox(height: 16),  
    // Followers and Following Section  
    Row(  
        mainAxisAlignment: MainAxisAlignment.spaceEvenly,  
        children: const [  
            Column(  
                children: [  
                    Text(  
                        'Followers',  
                        style: TextStyle(fontSize: 18, color: Colors.grey),  
                    ),  
                    SizedBox(height: 4),  
                    Text(  
                        '200', // Random number for followers  
                        style: TextStyle(fontSize: 24, fontWeight: FontWeight.bold),  
                    ),  
                ],  
            ),  
            Column(  
                children: [  
                    Text(  
                        'Following',  
                        style: TextStyle(fontSize: 18, color: Colors.grey),  
                    ),  
                    SizedBox(height: 4),  
                    Text(  
                        '200', // Random number for following  
                        style: TextStyle(fontSize: 24, fontWeight: FontWeight.bold),  
                    ),  
                ],  
            ),  
        ],  
    ),  
);
```

```
'150', // Random number for following
style: TextStyle(fontSize: 24, fontWeight: FontWeight.bold),
),
],
),
],
),
),
const SizedBox(height: 16),
// Bio and Other Info Section (if needed)
Padding(
padding: const EdgeInsets.symmetric(vertical: 8.0),
child: const Text(
",
style: TextStyle(fontSize: 16, color: Colors.black),
),
),
),
],
),
),
);
}
}
```

OUTPUT

← User Profile



Elon Musk

This is my official Account

Followers

200

Following

150