

EXPERIMENT 5

AIM: To navigation, routing, and gestures in flutter ap

THEORY:

In Flutter, building interactive and multi-screen applications involves the use of navigation, routing, and gesture handling. These features are essential for creating user-friendly, responsive, and intuitive mobile applications.

1. Navigation in Flutter

Navigation refers to the ability to move between different screens or pages in an app. Flutter uses a stack-based navigation system, where each new screen is placed on top of a stack. When the user wants to return to the previous screen, the current screen is removed (or "popped") from the stack.

Navigation helps manage the flow of an app by enabling users to move from a login screen to a home screen, open a settings page, or return to the previous screen.

2. Routing in Flutter

Routing is the process of defining how users navigate between screens. Flutter supports two main routing techniques:

- Basic Routing: Involves directly specifying the screen to navigate to.
- Named Routing: Uses predefined route names to manage navigation in a structured way, especially in apps with many screens.

Routing ensures that screen transitions are organized and manageable, and it helps maintain code readability and scalability in large applications.

3. Gestures in Flutter

Gestures are physical interactions made by the user, such as tapping, swiping, pinching, or long-pressing on the screen. Flutter provides robust support for gesture detection, allowing developers to define responses to specific user actions.

Gesture handling improves the user experience by making the app more dynamic and responsive. For example, a swipe can be used to delete an item, or a long press might show additional options.

Importance of Navigation, Routing, and Gestures

- **User Flow:** Navigation and routing create a logical and smooth flow through the app.
- **Usability:** Gestures provide intuitive ways for users to interact with the interface.
- **Scalability:** Routing helps manage transitions and maintain code in larger applications.
- **Interactivity:** Gestures contribute to a richer, more engaging user experience.

CODE:

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

class SearchPage extends
StatelessWidget {
  const SearchPage({super.key});

  @override
  Widget build(BuildContext context)
  {
    final List<Map<String, dynamic>>
communities = [
```

```
{
  "rank": 415, "name":
  "r/patientgamers", "members":
  "512"},
  {
    "rank": 416, "name":
    "r/spikes", "members": "904"},
    {
      "rank": 417, "name":
      "r/Costco", "members": "28.4k"},
      {
        "rank": 418, "name":
        "r/Cartalk", "members": "28.1k"},
        {
          "rank": 419, "name":
          "r/3amjokes", "members": "28.7k"},
          {
            "rank": 421, "name":
            "r/oculus", "members": "27.7k"},

```

```

        {"rank": 422, "name":
"r/liberalgunowners", "members":
"24.6k"},
        {"rank": 423, "name":
"r/TrollMUA", "members": "22.5k"},
    ];

    return Scaffold(
        backgroundColor: Colors.black,
        appBar: AppBar(
            title: const Text("Search"),
            backgroundColor:
Colors.black,
        ),
        body: ListView.builder(
            itemCount:
communities.length,
            itemBuilder: (context,
index) {
                final community =
communities[index];
                return ListTile(
                    leading: CircleAvatar(
                        backgroundColor:
Colors.grey[800],
                        child: Text(
community['rank'].toString(),
                            style: const
TextStyle(color: Colors.white),
                        ),
                    ),
                    title: Text(
                        community['name'],
                        style: const
TextStyle(color: Colors.white,
fontSize: 18),
                    ),
                    trailing: Text(
                        community['members'],

```

```

                        style: const
TextStyle(color: Colors.grey,
fontSize: 16),
                    ),
                    onTap: () {
                        Navigator.push(
                            context,
                            MaterialPageRoute(
                                builder: (context)
=> SubredditScreen(
                                    subredditName:
community['name'],
                                ),
                            ),
                        );
                    },
                ),
            ),
        );
    }
}

sub_screen.dart:
import
'package:flutter/material.dart';
import
'package:firebase_auth/firebase_auth
.dart';
import
'package:cloud_firestore/cloud_fires
tore.dart';

class SubredditScreen extends
StatelessWidget {
    final String subredditName;

    const SubredditScreen({super.key,
required this.subredditName});

    @override
    Widget build(BuildContext context)
{

```

```

    return Scaffold(
      backgroundColor: Colors.black,
      appBar: AppBar(
        backgroundColor:
Colors.black,
        elevation: 0,
        leading: IconButton(
          icon: const
Icon(Icons.arrow_back, color:
Colors.white),
          onPressed: () =>
Navigator.pop(context),
        ),
      body: Column(
        crossAxisAlignment:
CrossAxisAlignment.start,
        children: [
          Container(
            height: 120,
            decoration: const
BoxDecoration(
              gradient:
LinearGradient(
                colors: [Colors.red,
Colors.orange, Colors.yellow],
                begin:
Alignment.topCenter,
                end:
Alignment.bottomCenter,
              ),
            ),
          Padding(
            padding: const
EdgeInsets.all(16.0),
            child: Row(
              children: [
                const CircleAvatar(
                  backgroundColor:
Colors.grey,

```

```

              child:
Icon(Icons.reddIt, color:
Colors.white),
            ),
            const
SizedBox(width: 12),
            Text(
              subredditName,
              style: const
TextStyle(
                color:
Colors.white,
                fontSize: 20,
                fontWeight:
FontWeight.bold),
            ),
            const Spacer(),
            ElevatedButton(
              onPressed: ()
async {
                final user =
FirebaseAuth.instance.currentUser;
                if (user !=
null) {
                  final userDoc
=
FirebaseFirestore.instance.collection(
                    'users').doc(user.uid);
                  await
userDoc.set({
                    'followedCommunities':
FieldValue.arrayUnion([subredditName
]),
                  },
SetOptions(merge: true));
                }
              },
              style:
ElevatedButton.styleFrom(backgroundColor:
Colors.grey[800]),

```

```

                child: const
Text("Follow", style:
TextStyle(color: Colors.white)),
            ),
            const
SizedBox(width: 8),
            ElevatedButton(
                onPressed: () {},
                style:
ElevatedButton.styleFrom(
backgroundColor: Colors.grey[800]),
                child: const
Text("Mod Tools",
                    style:
TextStyle(color: Colors.white)),
                ),
            ],
        ),
        const Divider(color:
Colors.grey),
        Expanded(
            child: Padding(
                padding: const
EdgeInsets.all(16.0),
                child: Column(
                    crossAxisAlignment:
CrossAxisAlignment.start,
                    children: [
                        Text(

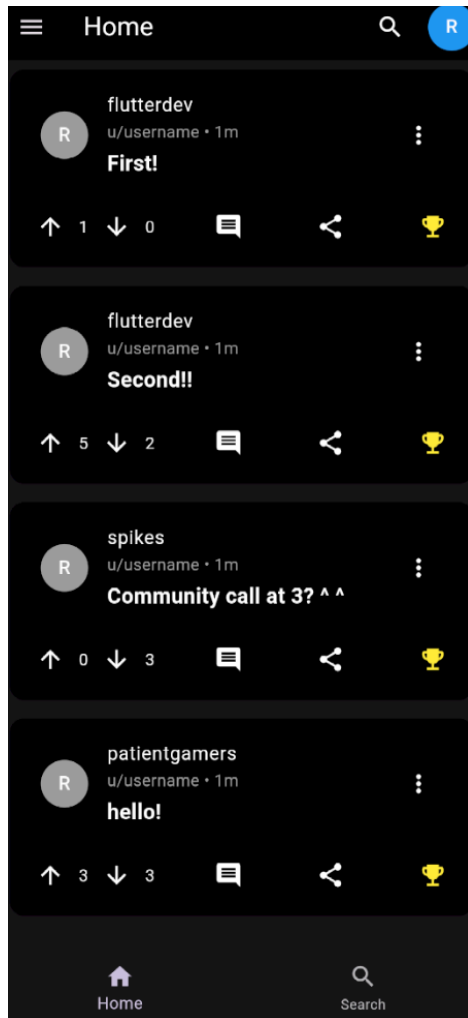
```

```

                "Lorem Ipsum
History",
                style: const
TextStyle(
                    color:
Colors.white,
                    fontSize:
18,
                    fontWeight:
FontWeight.bold),
            ),
            const
SizedBox(height: 8),
            Text(
                "Contrary to
popular belief, Lorem Ipsum is not
simply random text...",
                style: const
TextStyle(color: Colors.grey),
            ),
        ],
    ),
),
),
],
),
);
}
}

```

OUTPUT:



after clicking on search icon or using the swipe gesture:



Search



R

Search

415	r/patientgamers	512
416	r/spikes	904
417	r/Costco	28.4k
418	r/Cartalk	28.1k
419	r/3amjokes	28.7k
421	r/oculus	27.7k
422	r/liberalgunowners	24.6k
423	r/TrollMUA	22.5k



Home



Search