EXPERIMENT NO: - 05

Name : Anushka Shahane Class : D15A Roll No : 54

AIM: - To apply navigation, routing and gestures in Flutter App.

Theory: -
In Flutter, the screens and pages are known asroutes, and these routes are just a widget. In Android, a route is similar to an Activity. In any mobile app, navigating to different pages defines the workflow of the application, and the way to handle the navigation is known as routing. Flutter provides a basic routing class MaterialPageRoute and two methods Navigator.push() and Navigator.pop() that shows how to navigate between two routes. The following steps are required to start navigation in your application.

Gestures enable the app to respond to user interactions, making the application more dynamic and responsive.
Navigation and Routing in Flutter
Navigation is the process of moving between different screens or pages in an app. Flutter provides a simple and effective way to handle this through the use of the Navigator widget and routes.
1. Using Navigator Widget
The Navigator widget manages a stack of routes, allowing for pushing and popping routes on the stack.
• Pushing a Route: To navigate to a new screen, use Navigator.push().
• Popping a Route: To go back to the previous screen, use Navigator.pop(). app, navigating to different pages defines the workflow of the application, and the way to handle the navigation is known as routing.

Handling Gestures in Flutter
Gestures refer to user interactions with the app, such as taps, swipes, pinches, and drags. Flutter provides several widgets and gesture detectors to handle these interactions.
Tap Gestures
The most common gesture is the tap, which can be handled using the GestureDetector widget or specific buttons like InkWell or ElevatedButton.
Long Press Gesture
For long press gestures, Flutter provides the onLongPress callback in GestureDetector or InkWell.
Swipe and Drag Gestures
Flutter also provides swipe and drag gesture handling. The onHorizontalDragUpdate and onVerticalDragUpdate callbacks are used for dragging gestures.

Code:
Home_page.dart

```
import 'package:flutter/material.dart';
import '../widgets/stories_widget.dart';
import '../widgets/news_feed_widget.dart' as news_feed;
import '../widgets/bottom_nav_widget.dart'; // Import the BottomNavWidget
import 'about_page.dart'; // Import the AboutPage

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

  @override
  Widget build(BuildContext context) {
    // List of image URLs for the stories
    final List<String> imageUrls = [
      'images/post.jpeg',
      'images/download.jpg',
      // Add more image URLs as needed
    ];

    return Scaffold(
      appBar: AppBar(
        title: const Text('facebook'),
        actions: [
          IconButton(
            icon: const Icon(Icons.search),
            onPressed: () {
              Navigator.pushNamed(context, '/search_results');
            },
          ),
          IconButton(
            icon: const Icon(Icons.chat),
            onPressed: () {
              Navigator.pushNamed(context, '/messages');
            },
          ),
          IconButton(
            icon: const Icon(Icons.person),
            onPressed: () {
              Navigator.push(
                context,
                MaterialPageRoute(builder: (context) => const AboutPage()),
              );
            },
          ),
        ],
      ),
      body: GestureDetector(
        onHorizontalDragEnd: (details) {
          if (details.primaryVelocity! > 0) {
            // User swiped Right
            Navigator.pushNamed(context, '/notifications');
          } else if (details.primaryVelocity! < 0) {
            // User swiped Left
            Navigator.pushNamed(context, '/messages');
          }
        },
        child: Column(
          children: [
            Expanded(
              child: SingleChildScrollView(
                child: Column(
                  children: [
                    StoriesWidget(imageUrls: imageUrls),
                    news_feed.NewsFeedWidget(),
                  ],
                ),
              ),
            ),
          ],
        ),
      ),
      bottomNavigationBar: const BottomNavWidget(), // Add the BottomNavWidget
    );
  }
}
```

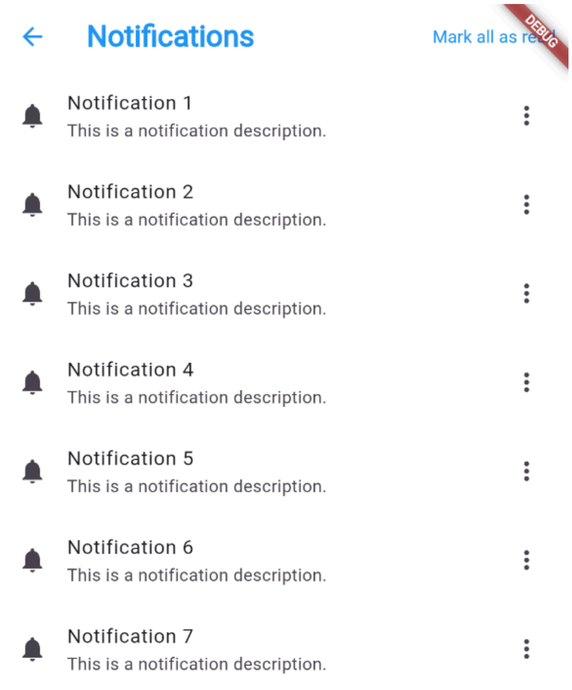
Notifications_page.dart

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

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

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
      title: const Text('Notifications'),
      actions: [
        TextButton(
          onPressed: () {
            // Handle mark all as read
          },
          child: const Text(
            'Mark all as read',
            style: TextStyle(color: Colors.blue), // Blue color for the text
          ),
        ),
      ],
    ),
    body: ListView.builder(
      itemCount: 7, // Replace with the actual number of notifications
      itemBuilder: (context, index) {
        return GestureDetector(
          onLongPress: () {
            showDialog(
              context: context,
              builder: (context) {
                return AlertDialog(
                  title: const Text('Notification'),
                  content:
                      Text('You long-pressed on notification ${index + 1}'),
                  actions: [
                    TextButton(
                      onPressed: () {
                        Navigator.of(context).pop();
                      },
                      child: const Text('OK'),
                    ),
                  ],
                );
              },
            );
          },
          child: ListTile(
            leading: const Icon(Icons.notifications),
            title: Text('Notification ${index + 1}'),
            subtitle: const Text('This is a notification description.'),
            trailing: const Icon(Icons.more_vert),
          ),
        );
        },
      ),
    );
  }
}
```

Output:



Notifications

Notification 1
This is a notification description.

Notification 2
This is a notification description.

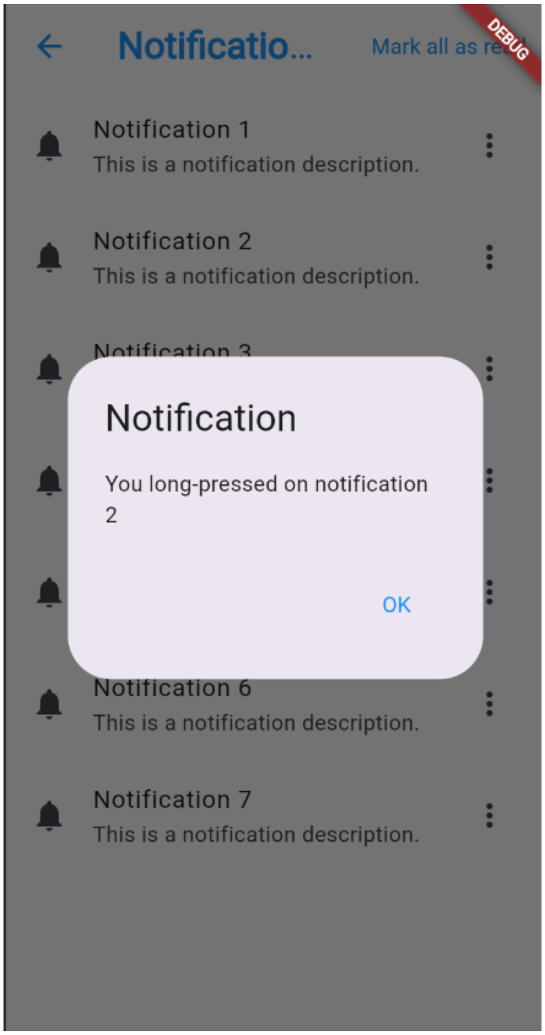
Notification 3
This is a notification description.

Notification 4
This is a notification description.

Notification 5
This is a notification description.

Notification 6
This is a notification description.

Notification 7
This is a notification description.



Notificatio...

Notification 1
This is a notification description.

Notification 2
This is a notification description.

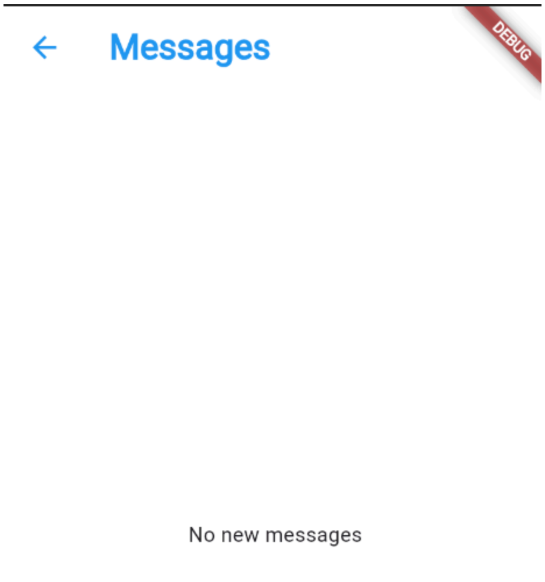
Notification 3

Notification

You long-pressed on notification 2

Notification 6
This is a notification description.

Notification 7
This is a notification description.



Messages

No new messages