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Experiment 5

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

Theory: - In Flutter, navigation, routing, and gestures play vital roles in creating engaging and intuitive user experiences.

Navigation and Routing: Navigation refers to moving between different screens or pages within an app. Routing is the mechanism that defines the paths and transitions between these screens. In Flutter, navigation and routing are managed using a Navigator widget.

- **Navigator Widget:** Each Flutter app has a Navigator widget that manages a stack of Route objects. These Route objects represent individual screens or pages in the app.

- **Navigation Stack:** The Navigator maintains a stack of routes. Pushing a new route onto the stack navigates to a new screen, and popping a route removes the topmost route from the stack, navigating back to the previous screen.

- **Routes:** Routes are represented by instances of PageRoute or its subclasses like MaterialPageRoute. They define the content and behavior of each screen.

- **Routing Methods:** Flutter provides methods like Navigator.push, Navigator.pop, Navigator.pushNamed, and Navigator.popUntil to navigate between routes. **Gestures:** Gestures enable users to interact with the app using touch inputs like tapping, dragging, swiping, etc. Flutter provides a rich set of gesture recognizers that make it easy to handle various touch interactions.

- **Gesture Detector:** The GestureDetector widget is the primary way to add gesture recognition to widgets in Flutter. It listens for various touch events and provides callbacks for handling those events.

- **Handling Gestures:** When a gesture is detected, the corresponding callback (e.g., onTap, onLongPress, onPanUpdate, etc.) is invoked, allowing you to respond to user interactions accordingly.

- **Gesture Widgets:** Some widgets like ListView, GestureDetector, InkWell, Draggable, Dismissible, etc., come with built-in gesture handling capabilities

The Code of Centres.dart:

```
import 'package:flutter/material.dart';
import 'package:unacademy_app/BookVisit.dart';
import 'BookVisit.dart'; // Importing the BookVisit.dart file
import 'DownloadBrochure.dart';
class Centres extends StatefulWidget {
  const Centres({super.key});

  @override
  _CentresState createState() => _CentresState();
}
class _CentresState extends State<Centres> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const SingleChildScrollView(
          scrollDirection: Axis.horizontal,
          child: Row(
            children: [
              Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  Row(
                    children: [
                      Icon(Icons.location_on),
                      Text(
                        'Mumbai',
                        style: TextStyle(fontWeight: FontWeight.bold, fontSize: 25),
                      ),
                    ],
                  ),
                  SizedBox(height: 0.5),
                  Text(
                    'Unacademy Mumbai Center',
                    style: TextStyle(color: Colors.blue, fontSize: 20),
                  ),
                ],
              ),
            ],
          ),
        ),
      ),
      body: SingleChildScrollView(
        child: Column(
          children: [
            SizedBox(
              width: 800, // Adjust width as needed
              height: 225, // Adjust height as needed
              child: Image.asset('assets/images/building.png'),
            ),
            SizedBox(
              width: 500, // Adjust width as needed
              height: 225, // Adjust height as needed
              child: Image.asset('assets/images/Office.jpg'),
            ),
            SizedBox(
              width: 800, // Adjust width as needed
              height: 225, // Adjust height as needed
```

```

      child: Image.asset('assets/images/closer.jpeg'),
    ),
    const SizedBox(height: 15),
    const Text(
      'Why Unacademy Centre?',
      style: TextStyle(fontSize: 29, fontWeight: FontWeight.bold),
    ),
    const SizedBox(height: 2),
    const Text(
      'Get an all-encompassing learning package ',
      textAlign: TextAlign.center,
    ),
    const SizedBox(height: 2),
    const Text(
      'that includes the best study material, ',
      textAlign: TextAlign.center,
    ),
    const SizedBox(height: 2),
    const Text(
      'library resources, advanced technology,',
      textAlign: TextAlign.center,
    ),
    const SizedBox(height: 2),
    const Text(
      'double-clearing sessions, 1:1 mentorship and more',
      textAlign: TextAlign.center,
    ),
    const SizedBox(height: 5),
    Row(
      mainAxisAlignment: MainAxisAlignment.center,
      children: [
        ElevatedButton(
          onPressed: () {
            Navigator.push( // Navigating to BookVisit page
              context,
              MaterialPageRoute(builder: (context) => const BookVisit()),
            );
          },
          child: Text('Book a Visit'),
          style: ElevatedButton.styleFrom(
            primary: Colors.blue,
            onPrimary: Colors.white,
          ),
        ),
        const SizedBox(width: 20),
        ElevatedButton(
          onPressed: () {
            Navigator.push( // Navigating to BookVisit page
              context,
              MaterialPageRoute(builder: (context) => DownloadBrochure()),
            ); // Add functionality for downloading brochure
          },
          style: ElevatedButton.styleFrom(
            primary: Colors.white,
            onPrimary: Colors.black,
            side: const BorderSide(color: Colors.black),
          ),
          child: const Text('See Brochure'),
        ),
      ],
    ),
  ],

```

```

    ),
    SizedBox(
      width: 1000, // Adjust width as needed
      height: 650, // Adjust height as needed
      child: Image.asset('assets/images/service.jpeg'),
    ),
    SizedBox(
      width: 1000, // Adjust width as needed
      height: 1330, // Adjust height as needed
      child: Image.asset('assets/images/rankers.jpeg'),
    ),
    SizedBox(
      width: 3000, // Adjust width as needed
      height: 350, // Adjust height as needed
      child: Image.asset('assets/images/mumbai.jpeg'),
    ),
  ],
),
),
bottomNavigationBar: BottomNavigationBar(
  items: const [
    BottomNavigationBarItem(
      icon: Icon(Icons.home),
      label: 'Home',
      backgroundColor: Colors.grey,
    ),
    BottomNavigationBarItem(
      icon: Icon(Icons.apartment),
      label: 'Centres',
    ),
    BottomNavigationBarItem(
      icon: Icon(Icons.storefront_sharp),
      label: 'Store',
    ),
    BottomNavigationBarItem(
      icon: Icon(Icons.account_circle),
      label: 'Me',
    ),
  ],
),
);
}
}

```

The code of BookVisit.dart:

```

import 'package:flutter/material.dart';
class BookVisit extends StatefulWidget {
  const BookVisit({super.key});
  @override
  _BookVisitState createState() => _BookVisitState();
}
class _BookVisitState extends State<BookVisit> {
  TextEditingController nameController = TextEditingController();
  TextEditingController phoneController = TextEditingController();
  bool isSubmitted = false;
  @override
  Widget build(BuildContext context) {
    return Scaffold(

```

```

appBar: AppBar(
  title: const Text('Book a Visit'),
),
body: SingleChildScrollView(
  padding: const EdgeInsets.all(20.0),
  child: Column(
    crossAxisAlignment: CrossAxisAlignment.center,
    children: [
      const Text(
        'Start your preparation at our Unacademy Centre',
        style: TextStyle(fontSize: 20.0, fontWeight: FontWeight.bold),
      ),
      const SizedBox(height: 20.0),
      Image.asset(
        'assets/images/building.png', // Replace with your image path
        width: 800.0, // Adjust the width as needed
        height: 205.0, // Adjust the height as needed
      ),
      const SizedBox(height: 20.0),
      const Text(
        'Register with Unacademy',
        style: TextStyle(fontSize: 18.0, fontWeight: FontWeight.bold),
      ),
      const SizedBox(height: 10.0),
      const Text(
        'Personal details',
        style: TextStyle(fontSize: 16.0),
      ),
      const SizedBox(height: 10.0),
      buildTextField('Name', nameController),
      const SizedBox(height: 10.0),
      buildTextField('Phone No.', phoneController),
      const SizedBox(height: 20.0),
      ElevatedButton(
        onPressed: () {
          if (nameController.text.isNotEmpty && phoneController.text.isNotEmpty) {
            setState(() {
              isSubmitted = true;
            });
          }
        },
        child: const Text('Submit'),
      ),
      const SizedBox(height: 20.0),
      if (isSubmitted)
        const Text(
          'Your response has been noted.',
          style: TextStyle(fontSize: 16.0),
        ),
    ],
  ),
),
);
}

Widget buildTextField(String labelText, TextEditingController controller) {

```

```

return TextFormField(
  controller: controller,
  decoration: InputDecoration(
    labelText: labelText,
    border: const OutlineInputBorder(),
  ),
);
}
}

```

The code of DownloadBrochure.dart:

```

import 'package:flutter/material.dart';
class DownloadBrochure extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Unacademy Brochure'),
      ),
      body: SingleChildScrollView(
        padding: EdgeInsets.all(10.0),
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: [
            SizedBox(height: 1.0),
            Image.asset(
              'assets/images/Page1.png', // Replace with your image path
              width: 900.0, // Adjust the width as needed
              height: 540.0, // Adjust the height as needed
            ),
            SizedBox(height: 1.0),
            Image.asset(
              'assets/images/Page2.png', // Replace with your image path
              width: 900.0, // Adjust the width as needed
              height: 540.0, // Adjust the height as needed
            ),
            SizedBox(height: 1.0),
            Image.asset(
              'assets/images/Page3.png', // Replace with your image path
              width: 900.0, // Adjust the width as needed
              height: 540.0, // Adjust the height as needed
            ),
            SizedBox(height: 1.0),
            Image.asset(
              'assets/images/Page4.png', // Replace with your image path
              width: 900.0, // Adjust the width as needed
              height: 540.0, // Adjust the height as needed
            ),
            SizedBox(height: 1.0),
            Image.asset(
              'assets/images/Page5.png', // Replace with your image path
              width: 900.0, // Adjust the width as needed
              height: 540.0, // Adjust the height as needed
            ),
          ],
        ),
      ),
    );
  }
}

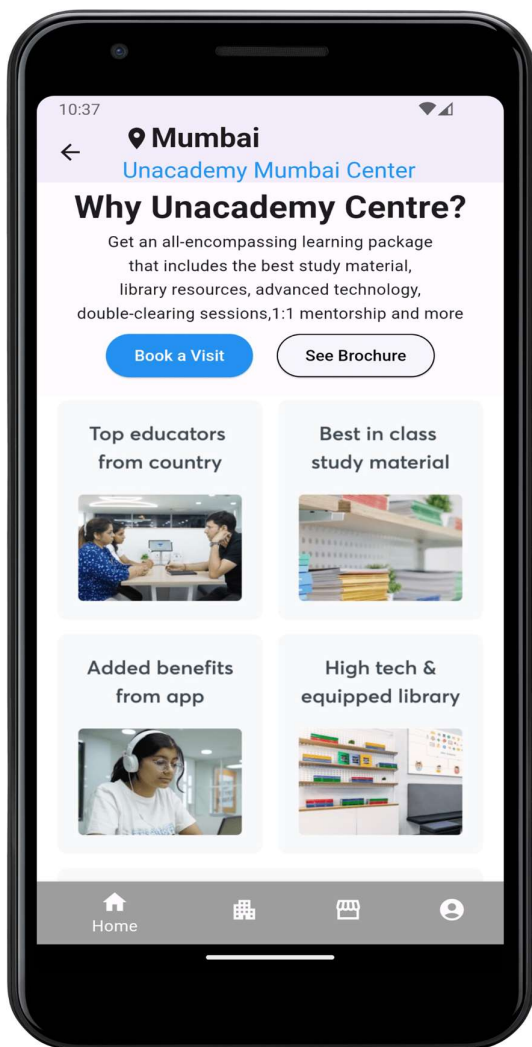
```

```

        SizedBox(height: 1.0),
        Image.asset(
          'assets/images/Page6.png', // Replace with your image path
          width: 900.0, // Adjust the width as needed
          height: 540.0, // Adjust the height as needed
        ),
        SizedBox(height: 1.0),
        Image.asset(
          'assets/images/Page7.png', // Replace with your image path
          width: 900.0, // Adjust the width as needed
          height: 540.0, // Adjust the height as needed
        ),
        SizedBox(height: 1.0),
        Image.asset(
          'assets/images/Page8.png', // Replace with your image path
          width: 900.0, // Adjust the width as needed
          height: 540.0, // Adjust the height as needed
        ),
        SizedBox(height: 1.0),
        Image.asset(
          'assets/images/Page9.png', // Replace with your image path
          width: 900.0, // Adjust the width as needed
          height: 540.0, // Adjust the height as needed
        ),
        SizedBox(height: 1.0),
        Image.asset(
          'assets/images/Page10.png', // Replace with your image path
          width: 900.0, // Adjust the width as needed
          height: 540.0, // Adjust the height as needed
        ),
      ],
    ),
  ),
);
}
}

```

Output: -



10:48



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10:50

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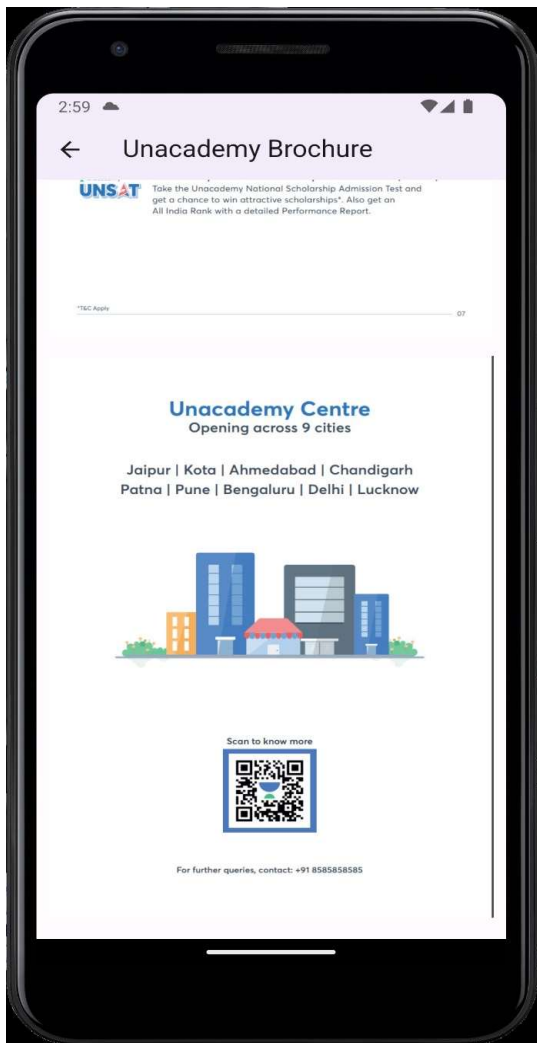
IIT JEE



*Source: The Indian Edtech Story: Q1 2022 Round-Up by Marketytics

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Conclusion: - Thus, we studied navigation, routing and gesture features in Flutter Application.