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Experiment 5

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

Theory:

Navigation and Routing:

Navigation and routing in Flutter are managed using a Navigator widget, which maintains a stack of Route objects.

- Navigator Widget: The Navigator widget manages the app's routes and screens. It allows you to push and pop routes onto and off the navigation stack.
- Routes: Routes are individual screens or pages in your app. They are represented by MaterialPageRoute objects in Flutter.
- Named Routes: Named routes provide a convenient way to reference screens in your app by name. You can define named routes and their corresponding builder functions in the routes parameter of the MaterialApp widget.
- Navigation Methods: Flutter provides methods like Navigator.push() to navigate to a new screen by pushing a new route onto the navigation stack, and Navigator.pop() to go back to the previous screen by popping the current route off the stack.

Bottom Navigation Bar:

A bottom navigation bar is a common UI pattern used to provide navigation options at the bottom of the screen.

- BottomNavigationBar Widget: Flutter's BottomNavigationBar widget is used to create a bottom navigation bar. It typically contains multiple BottomNavigationBarItem widgets, each representing a navigation option.
- BottomNavigationBarItem: Each item in the bottom navigation bar is represented by a BottomNavigationBarItem. It usually contains an icon and optional label.
- Handling Navigation: You can handle navigation when a user taps on a bottom navigation bar item by using the onTap callback of the BottomNavigationBar widget. Inside the callback, you can use the Navigator to push a new route onto the stack.

Code:

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

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

```

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Kixify',
      initialRoute: '/',
      routes: {
        '/': (context) => HomePage(),
        '/profile': (context) => ProfilePage(),
      },
    );
  }
}

```

```

class HomePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(title: Text('Kixify')),
      body: Center(
        child: GestureDetector(
          onTap: () {
            Navigator.pushNamed(context, '/profile');
          },
          child: Text('HOME PAGE'),
        ),
      ),
      bottomNavigationBar: BottomNavigationBar(
        items: [
          BottomNavigationBarItem(
            icon: Icon(Icons.home),
            label: 'Home',
          ),
          BottomNavigationBarItem(

```

```

        icon: Icon(Icons.person),
        label: 'Profile',
      ),
    ],
    currentIndex: 0,
    onTap: (index) {
      if (index == 1) {
        Navigator.pushNamed(context, '/profile');
      }
    },
  ),
);
}
}

```

```

class ProfilePage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(title: Text('Profile')),
      body: Center(
        child: GestureDetector(
          onTap: () {
            Navigator.pop(context);
          },
          child: Text('PROFILE PAGE'),
        ),
      ),
    );
  }
}

```

Output:

