

## Experiment 5

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

Theory:

Navigation and Routing

Navigation and routing are some of the core concepts of all mobile application, which allows the user to move between different pages. We know that every mobile application contains several screens for displaying different types of information. For example, an app can have a screen that contains various products. When the user taps on that product, immediately it will display detailed information about that product.

In Flutter, the screens and pages are known as routes, and these routes are just a widget. In Android, a route is similar to an Activity, whereas, in iOS, it is equivalent to a ViewController

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.

Navigation:

Navigation in Flutter refers to the ability to move between different screens or pages within an app. Flutter provides a `Navigator` widget to manage the navigation stack and perform common navigation operations.

Navigation Operations:

- Pushing a Screen:

Use `Navigator.push` to navigate to a new screen.

Example:

```
Navigator.push(context, MaterialPageRoute(builder: (context) =>
DetailsScreen()));
```

- Popping a Screen:

Use `Navigator.pop` to go back to the previous screen.

Example:

```
Navigator.pop(context);
```

Routing:

Routing, in the context of Flutter, involves defining the paths or routes that lead to different screens in your app. It allows you to organize and structure the flow of your application. Flutter supports both named routes and unnamed (or default) routes.

- Named Routes:

Named routes are routes identified by a unique string identifier. They provide a more organized and maintainable way to navigate between screens. You can define named routes in the `MaterialApp` widget using the `routes` property.

Example,

```
MaterialApp(  
  routes: {  
    '/': (context) => HomeScreen(),  
    '/details': (context) => DetailsScreen(),  
  },  
)
```

- Unnamed (Default) Routes:

-Unnamed routes refer to the default route that is used when the app starts.

-You can set the `initialRoute` property in `MaterialApp` to specify the initial route.

Example,

```
MaterialApp(  
  initialRoute: '/',  
  routes: {  
    '/': (context) => HomeScreen(),  
    '/details': (context) => DetailsScreen(),  
  },  
)
```

Gestures in Flutter:

Gestures in Flutter refer to user interactions with the screen, such as taps, swipes, pinches, etc. Gestures are an interesting feature in Flutter that allows us to interact with the mobile app (or any touch-based device). Generally, gestures define any physical action or movement of a user in the intention of specific control of the mobile device. Flutter provides various widgets for gesture detection:

GestureDetector:

The GestureDetector widget is a versatile widget that can detect various gestures. It wraps its child and provides callbacks for different types of gestures.

```
Example,  
GestureDetector(  
  onTap: () {  
    // Handle tap gesture  
  },  
  onDoubleTap: () {  
    // Handle double tap gesture  
  },  
  // Other gesture callbacks...  
  child: YourWidget(),  
)
```

Code:

Home.dart:

```
import 'package:flutter/material.dart';  
import 'package:khyaalapp/pages/games_page.dart';  
import 'package:khyaalapp/pages/login_page.dart';  
import 'package:khyaalapp/pages/profile_page.dart';  
import 'package:khyaalapp/pages/register_for_workshop.dart';  
  
class HomePage extends StatelessWidget {  
  const HomePage({Key? key}) : super(key: key);  
  
  // Logout function  
  void logout(BuildContext context) async {  
    try {  
      // Your logout implementation  
      Navigator.of(context).pushReplacement(  
        MaterialPageRoute(  
          builder: (context) => LoginPage(  
            onTap: () {},  
          )),  
      );  
    } catch (e) {  
      print("Error logging out: $e");  
    }  
  }  
}
```

```

}

void goToProfilePage(BuildContext context) {
  Navigator.push(
    context,
    MaterialPageRoute(builder: (context) => const ProfilePage()),
  );
}

void goToGamePage(BuildContext context) {
  Navigator.push(
    context,
    MaterialPageRoute(builder: (context) => const GamePage()),
  );
}

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: const Text("Hello, sir!"),
      centerTitle: true,
      backgroundColor: Colors.green.shade500,
      leading: const Padding(
        padding: EdgeInsets.all(8.0),
        child: CircleAvatar(
          backgroundImage: AssetImage('lib/images/homepageimg1.png'),
        ),
      ),
      actions: [
        IconButton(
          onPressed: () => logout(context), // Call logout function
          icon: const Icon(Icons.logout),
        ),
      ],
    ),
    body: SingleChildScrollView(
      child: Column(
        crossAxisAlignment: CrossAxisAlignment.center,
        children: [

```

```

        Padding(
          padding: const EdgeInsets.all(16.0),
          child: Text(
            'Join Our Workshops',
            style: TextStyle(
              fontSize: 28.0,
              fontWeight: FontWeight.bold,
              color: Colors.green.shade900),
          ),
        ),
        WorkshopOptions(),
      ],
    ),
  ),
  bottomNavigationBar: BottomAppBar(
    child: Row(
      mainAxisAlignment: MainAxisAlignment.spaceAround,
      children: [
        IconButton(
          onPressed: () {
            // Add functionality for the 'Home' button
          },
          icon: Icon(Icons.home),
        ),
        IconButton(
          onPressed: () {
            // Add functionality for the 'New Programs' button
          },
          icon: Icon(Icons.add),
        ),
        IconButton(
          onPressed: () {
            goToGamePage(context);
          },
          icon: Icon(Icons.gamepad),
        ),
        IconButton(
          onPressed: () {
            goToProfilePage(context);
            // Add functionality for the 'Profile' button
          },
        ),
      ],
    ),
  ),
);

```

```

        },
        icon: Icon(Icons.person),
      ),
    ],
  ),
),
// floatingActionButton: FloatingActionButton.extended(
//   onPressed: () {
//     // Add functionality for registration button
//   },
//   label: Text('Register'),
//   icon: Icon(Icons.add),
//   backgroundColor: Colors.green,
// ),
floatingActionButtonLocation:
FloatingActionButtonLocation.centerFloat,
);
}
}

class WorkshopOptions extends StatelessWidget {
  const WorkshopOptions({Key? key}) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return ListView(
      shrinkWrap: true,
      physics: const NeverScrollableScrollPhysics(),
      children: const [
        WorkshopOption(
          title: 'Yoga Sessions',
          description: 'Join our yoga sessions for relaxation and
fitness.',
          imagePath: 'lib/images/Yogasessionworkshop1.png',
        ),
        WorkshopOption(
          title: 'Meditation Sessions',
          description: 'Learn to meditate and find inner peace.',
          imagePath: 'lib/images/Meditationworkshop2.png',
        ),
      ],
    );
  }
}

```

```

        WorkshopOption(
            title: 'Fitness Workshops',
            description: 'Get fit and stay healthy with our fitness
workshops.',
            imagePath: 'lib/images/exercisesworkshop3.png',
        ),
        WorkshopOption(
            title: 'Art and Craft Classes',
            description:
                'Explore your creativity with our art and craft
classes.',
            imagePath: 'lib/images/artandcraftworkshop4.png',
        ),
        WorkshopOption(
            title: 'Cooking Classes',
            description: 'Master the art of cooking with our cooking
classes.',
            imagePath: 'lib/images/cookingworkshop5.png',
        ),
    ],
);
}
}

```

```

class WorkshopOption extends StatelessWidget {
    final String title;
    final String description;
    final String imagePath;

    const WorkshopOption({
        Key? key,
        required this.title,
        required this.description,
        required this.imagePath,
    }) : super(key: key);

    @override
    Widget build(BuildContext context) {
        return Padding(
            padding: const EdgeInsets.all(16.0),

```

```

child: GestureDetector(
  onTap: () {
    Navigator.push(
      context,
      MaterialPageRoute(
        builder: (context) =>
          RegisterForWorkshopPage(workshopTitle: title),
      ),
    );
  },
child: Container(
  decoration: BoxDecoration(
    color: Colors.white,
    borderRadius: BorderRadius.circular(15.0),
    boxShadow: [
      BoxShadow(
        color: Color.fromARGB(255, 67, 66,
66).withOpacity(0.5),
        spreadRadius: 3,
        blurRadius: 7,
        offset: Offset(0, 3), // changes position of shadow
      ),
    ],
  ),
child: Column(
  crossAxisAlignment: CrossAxisAlignment.start,
  children: [
    ClipRRect(
      borderRadius: BorderRadius.circular(15.0),
      child: Image.asset(
        imagePath,
        width: double.infinity,
        height: 150,
        fit: BoxFit.cover,
      ),
    ),
    Padding(
      padding: const EdgeInsets.all(8.0),
      child: Text(
        title,

```




```


        style: TextStyle(
          fontSize: 20.0,
          fontWeight: FontWeight.bold,
          color: Colors.green.shade900),
      ),
    ),
    Padding(
      padding: const EdgeInsets.symmetric(horizontal: 8.0),
      child: Text(
        description,
        style: TextStyle(fontSize: 16.0, color:
Colors.black87),
      ),
    ),
    SizedBox(height: 8.0),
    ElevatedButton(
      onPressed: () {
        Navigator.push(
          context,
          MaterialPageRoute(
            builder: (context) =>
              RegisterForWorkshopPage(workshopTitle:
title),
          ),
        );
      },
      child: Text('Register', style: TextStyle(fontSize:
16.0)),
      style: ElevatedButton.styleFrom(
        backgroundColor: Colors.green,
        padding:
          EdgeInsets.symmetric(vertical: 10.0, horizontal:
20.0),
      ),
    ),
  ],
),
),
),
);

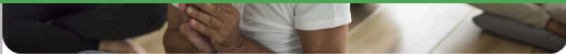
```





Hello, sir!






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## Profile



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30



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