

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

**THEORY:**

Navigation: In Flutter, navigation refers to the ability to move between different screens or "routes" within your app. Flutter provides a Navigator class which manages a stack of Route objects. Each route typically corresponds to a different screen or page in your app. You can push new routes onto the navigator's stack to navigate forward, and pop routes off the stack to navigate backward. Navigation can be triggered by user actions such as tapping on buttons or by programmatically invoking navigation methods.

Routing: Routing in Flutter involves defining the routes for different screens in your app and handling navigation between these routes. You can define routes using the MaterialApp widget's routes parameter, which maps route names to builder functions that create the corresponding screens. For example, you can define a route named "/home" that maps to a function that builds the home screen widget. When you want to navigate to a particular route, you use the Navigator to push that route onto the stack.

Gestures: Gestures in Flutter refer to user interactions such as tapping, swiping, dragging, pinching, etc. Flutter provides a rich set of widgets and classes for handling gestures, such as GestureDetector, InkWell, Draggable, Dismissible, etc. These widgets allow you to detect various types of gestures and respond to them accordingly. For exple, you can wrap a widget with a GestureDetector to detect taps and then perform some action in response to the tap event.

To apply these concepts in your Flutter app, you would typically do the following:

- Define the routes for different screens in your app using the MaterialApp widget's routes parameter.
- Implement navigation logic to navigate between screens using the Navigator class, either in response to user actions or programmatically.
- Use gesture detection widgets like GestureDetector to detect user gestures and trigger navigation or other actions in response to those gestures.

**CODE:**

selectservice.dart

```
import 'package:animate_do/animate_do.dart';
import 'package:day35/models/service.dart';
import 'package:day35/pages/cleaning.dart';
import 'package:flutter/material.dart';

class SelectService extends StatefulWidget {
  const SelectService({ Key? key }) : super(key: key);
```

```

@override
_SelectServiceState createState() => _SelectServiceState();
}

class _SelectServiceState extends State<SelectService> {
  List<Service> services = [
    Service('Cleaning',
'https://img.icons8.com/external-vitaliy-gorbachev-flat-vitaliy-gorbachev/2x/external-cleaning-lab
our-day-vitaliy-gorbachev-flat-vitaliy-gorbachev.png'),
    Service('Plumber',
'https://img.icons8.com/external-vitaliy-gorbachev-flat-vitaliy-gorbachev/2x/external-plumber-lab
our-day-vitaliy-gorbachev-flat-vitaliy-gorbachev.png'),
    Service('Electrician',
'https://img.icons8.com/external-wanicon-flat-wanicon/2x/external-multimeter-car-service-wanic
on-flat-wanicon.png'),
    Service('Painter',
'https://img.icons8.com/external-itim2101-flat-itim2101/2x/external-painter-male-occupation-avat
ar-itim2101-flat-itim2101.png'),
    Service('Carpenter', 'https://img.icons8.com/fluency/2x/drill.png'),
    Service('Gardener',
'https://img.icons8.com/external-itim2101-flat-itim2101/2x/external-gardener-male-occupation-av
atar-itim2101-flat-itim2101.png'),
    Service('Tailor', 'https://img.icons8.com/fluency/2x/sewing-machine.png'),
    Service('Maid', 'https://img.icons8.com/color/2x/housekeeper-female.png'),
    Service('Driver',
'https://img.icons8.com/external-sbts2018-lineal-color-sbts2018/2x/external-driver-women-profes
sion-sbts2018-lineal-color-sbts2018.png'),
    Service('Cook',
'https://img.icons8.com/external-wanicon-flat-wanicon/2x/external-cooking-daily-routine-wanico
n-flat-wanicon.png'),
  ];

  int selectedService = -1;

@override
Widget build(BuildContext context) {
  return Scaffold(
    backgroundColor: Colors.white,
    floatingActionButton: selectedService >= 0 ? FloatingActionButton(
      onPressed: () {
        Navigator.push(
          context,
          MaterialPageRoute(
            builder: (context) => CleaningPage(),
          ),
        );
      },
    ),
  ),
}

```

```

        child: Icon(Icons.arrow_forward_ios, size: 20,),
        backgroundColor: Colors.blue,
      ) : null,
      body: NestedScrollView(
        headerSliverBuilder: (BuildContext context, bool innerBoxIsScrolled) {
          return <Widget>[
            SliverToBoxAdapter(
              child: FadeInUp(child: Padding(
                padding: EdgeInsets.only(top: 120.0, right: 20.0, left: 20.0),
                child: Text(
                  'Which service \ndo you need?',
                  style: TextStyle(
                    fontSize: 40,
                    color: Colors.grey.shade900,
                    fontWeight: FontWeight.bold,
                  ),
                ),
              ),
            ),
          ],
        ),
      );
    },
    body: Padding(
      padding: EdgeInsets.all(20.0),
      child: Column(
        crossAxisAlignment: CrossAxisAlignment.start,
        children: <Widget>[
          Expanded(
            child: GridView.builder(
              gridDelegate: SliverGridDelegateWithFixedCrossAxisCount(
                crossAxisCount: 2,
                childAspectRatio: 1.0,
                crossAxisSpacing: 20.0,
                mainAxisSpacing: 20.0,
              ),
              physics: NeverScrollableScrollPhysics(),
              itemCount: services.length,
              itemBuilder: (BuildContext context, int index) {
                return FadeInUp(
                  delay: Duration(milliseconds: 500 * index),
                  child: serviceContainer(services[index].imageUrl, services[index].name, index));
              },
            ),
          ],
        ),
      ),
    ),
  ),

```

```

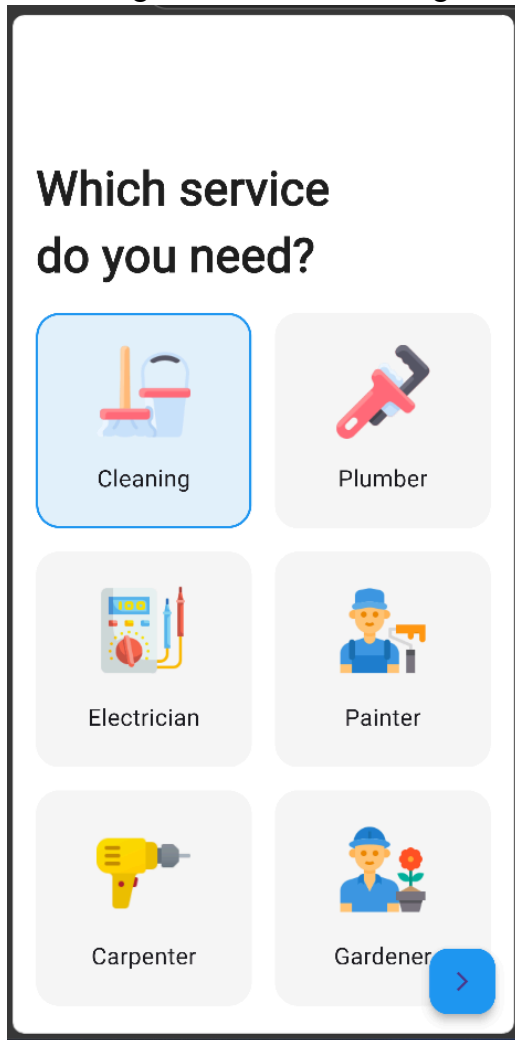
    )
  );
}

serviceContainer(String image, String name, int index) {
  return GestureDetector(
    onTap: () {
      setState(() {
        if (selectedService == index)
          selectedService = -1;
        else
          selectedService = index;
      });
    },
    child: AnimatedContainer(
      duration: Duration(milliseconds: 300),
      padding: EdgeInsets.all(10.0),
      decoration: BoxDecoration(
        color: selectedService == index ? Colors.blue.shade50 : Colors.grey.shade100,
        border: Border.all(
          color: selectedService == index ? Colors.blue : Colors.blue.withOpacity(0),
          width: 2.0,
        ),
        borderRadius: BorderRadius.circular(20.0),
      ),
      child: Column(
        mainAxisAlignment: MainAxisAlignment.center,
        children: <Widget>[
          Image.network(image, height: 80),
          SizedBox(height: 20,),
          Text(name, style: TextStyle(fontSize: 20),)
        ]
      ),
    ),
  );
}
}

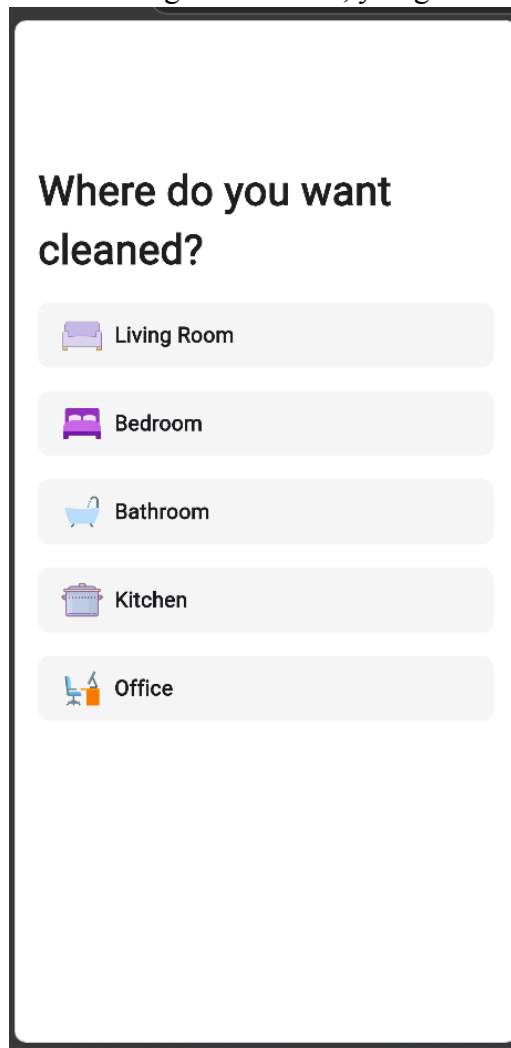
```

## SCREENSHOT:

Following is the SelectServie Page:



On selecting service icon, you get navigated to the following page:



## CONCLUSION

The routing in this code is implemented in the `onPressed` callback of the `MaterialButton` inside the `FadeInUp` widget. Specifically, the following code handles navigation to the `SelectService` page.

