

# INDEX

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## Practical 1

**Aim :** Introduction to Flutter, create new project, Simple “Hello world” program.

### Steps to create new project:

step 1 : create a new folder and open newly created folder in vs code.

Step 2 : open new terminal and type commands :

**flutter create abc** (abc is a project folder name).

**cd abc**

**flutter run**

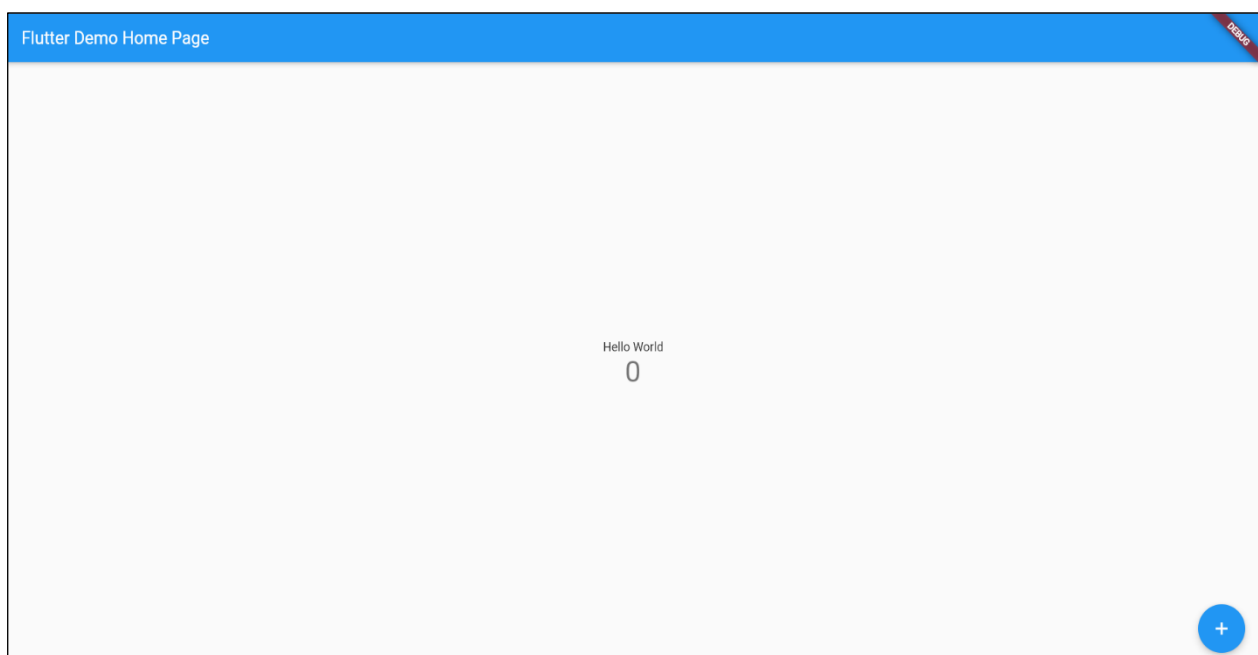
### Simple “hello world” program :

In main.dart file, inside replace the text of Text widget with ”hello world”.

Code:

```
body: Center(  
  child: Column(  
    mainAxisAlignment: MainAxisAlignment.center,  
    children: <Widget>[  
      const Text(  
        'Hello World',  
      ),  
      Text(  
        '$_counter',  
        style: Theme.of(context).textTheme.headlineMedium,  
      ),  
    ],  
  ),  
)
```

Output :



## Practical 2

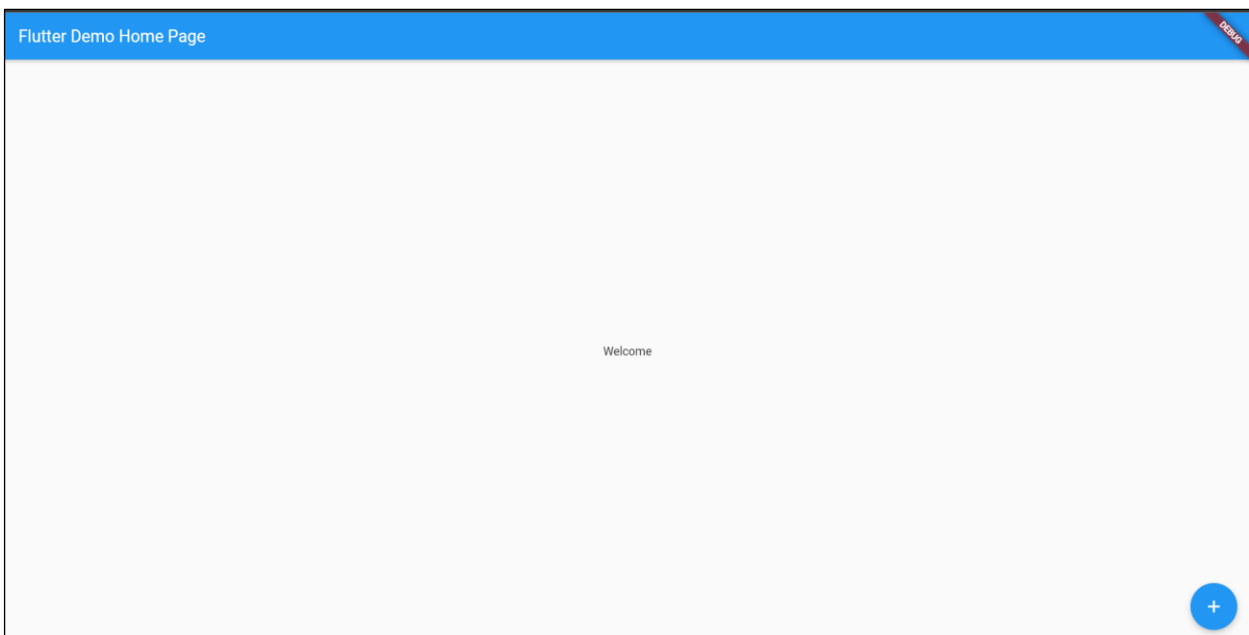
**Aim : Widgets : Center, Container, InkWell, Row, Column.**

**Center widget :**

Code :

```
body: Center(  
  child: Text('Welcome'),  
),
```

Output :

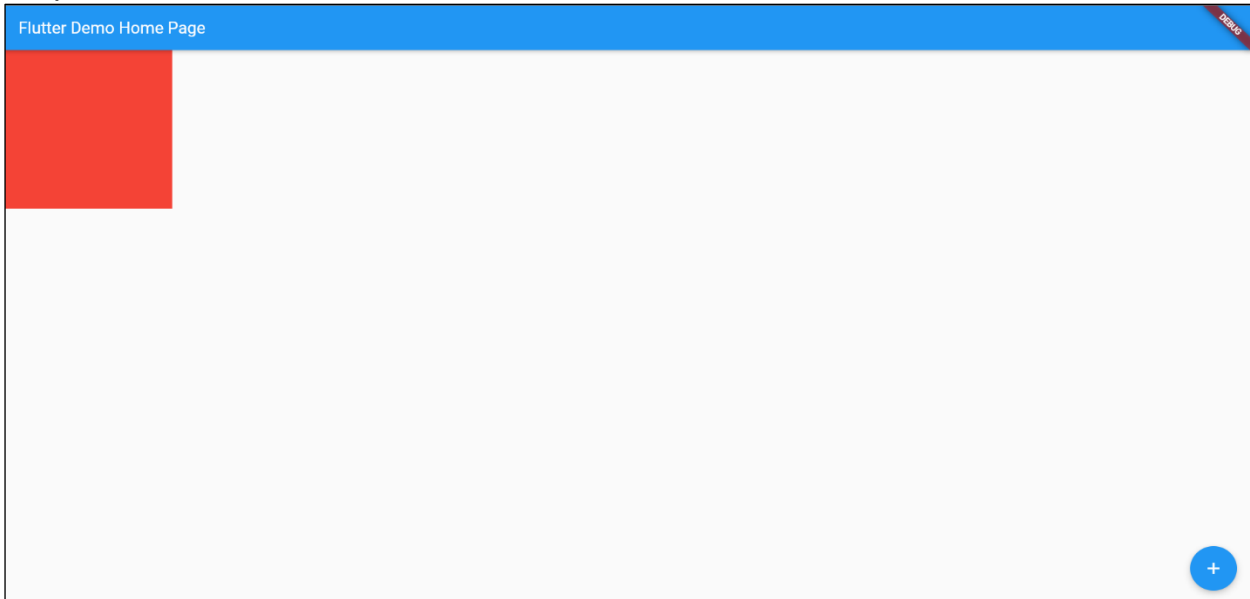


## Container widget :

Code:

```
body: Container(  
  height: 200,  
  width: 200,  
  color: Colors.red,  
),
```

Output:



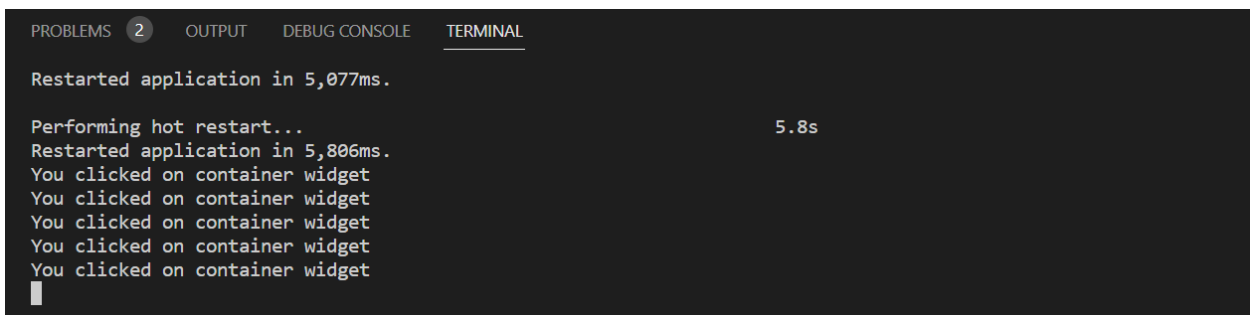
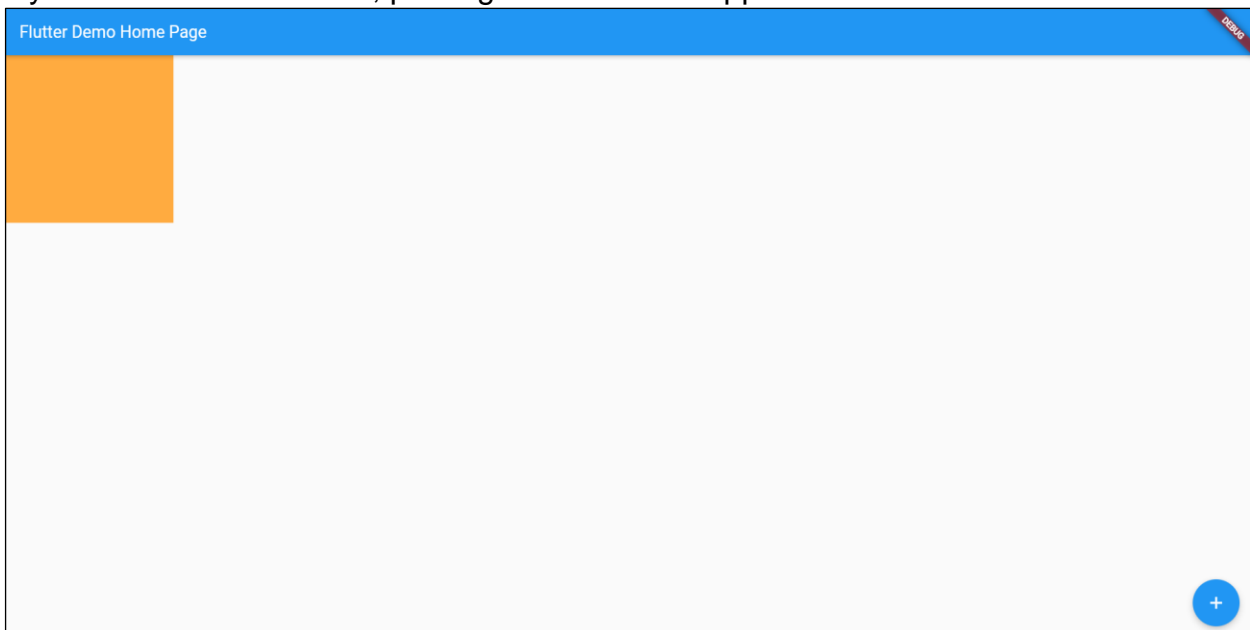
## InkWell widget:

Code:

```
body: InkWell(  
  child: Container(  
    width: 200,  
    height: 200,  
    color: Colors.orangeAccent,  
  ),  
  onTap: () {  
    return print('You clicked on container widget');  
  },  
),
```

Output :

If you clicked on container, printing statement will appear on terminal.



## Row:

Code :

```
body: Row(  
  children: [  
    Text('one '),  
    Text('two '),  
    Text('three '),  
    Text('four '),  
    Text('five '),  
    Text('six'),  
  ],  
)
```

Output :

Flutter Demo Home Page

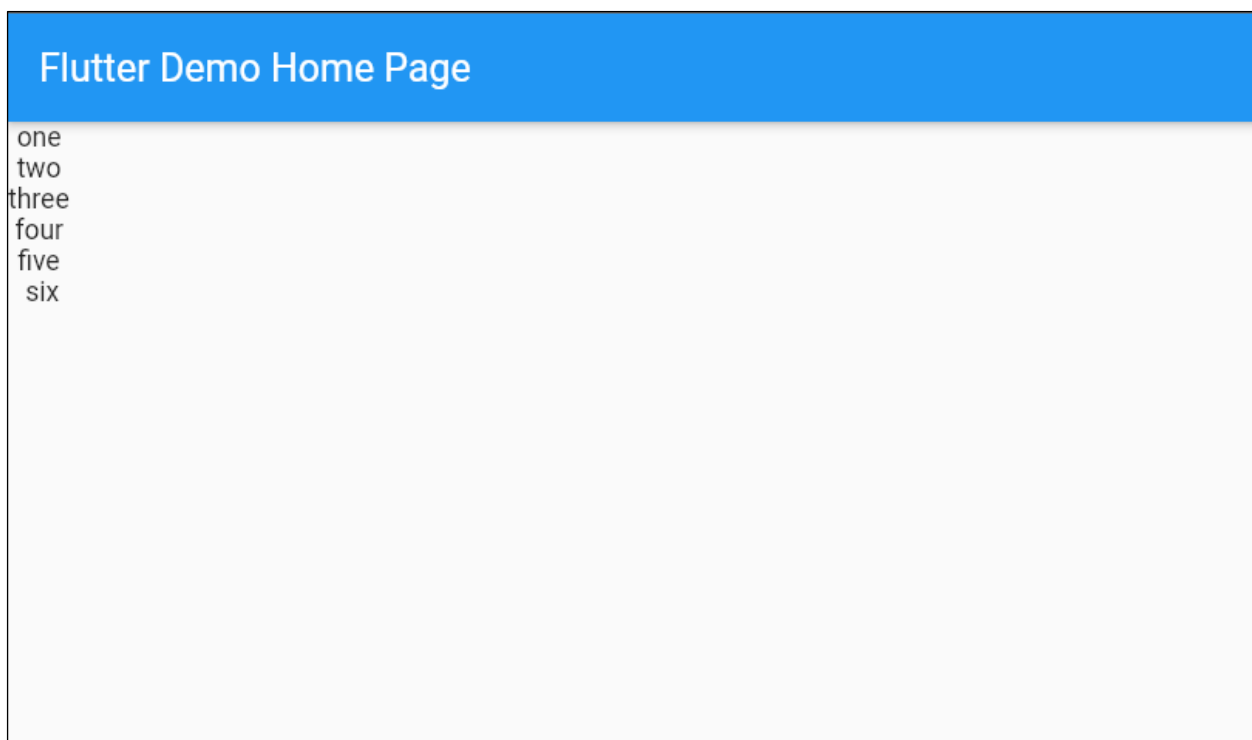
one two three four five six

## Column:

### Code:

```
body: Column(  
  children: [  
    Text('one '),  
    Text('two '),  
    Text('three '),  
    Text('four '),  
    Text('five '),  
    Text('six'),  
  ],  
)
```

### Output :



## Add image in project folder and display it on screen.

Steps :

- Create new folder with name 'asset'
- Add image with .jpg or .png extension in that folder
- Open pubspec.yaml file and remove the comments of line number 63 and 64 and save file.
- In main.dart file inside body, type code for image widget and add path inside image widget.

Code:

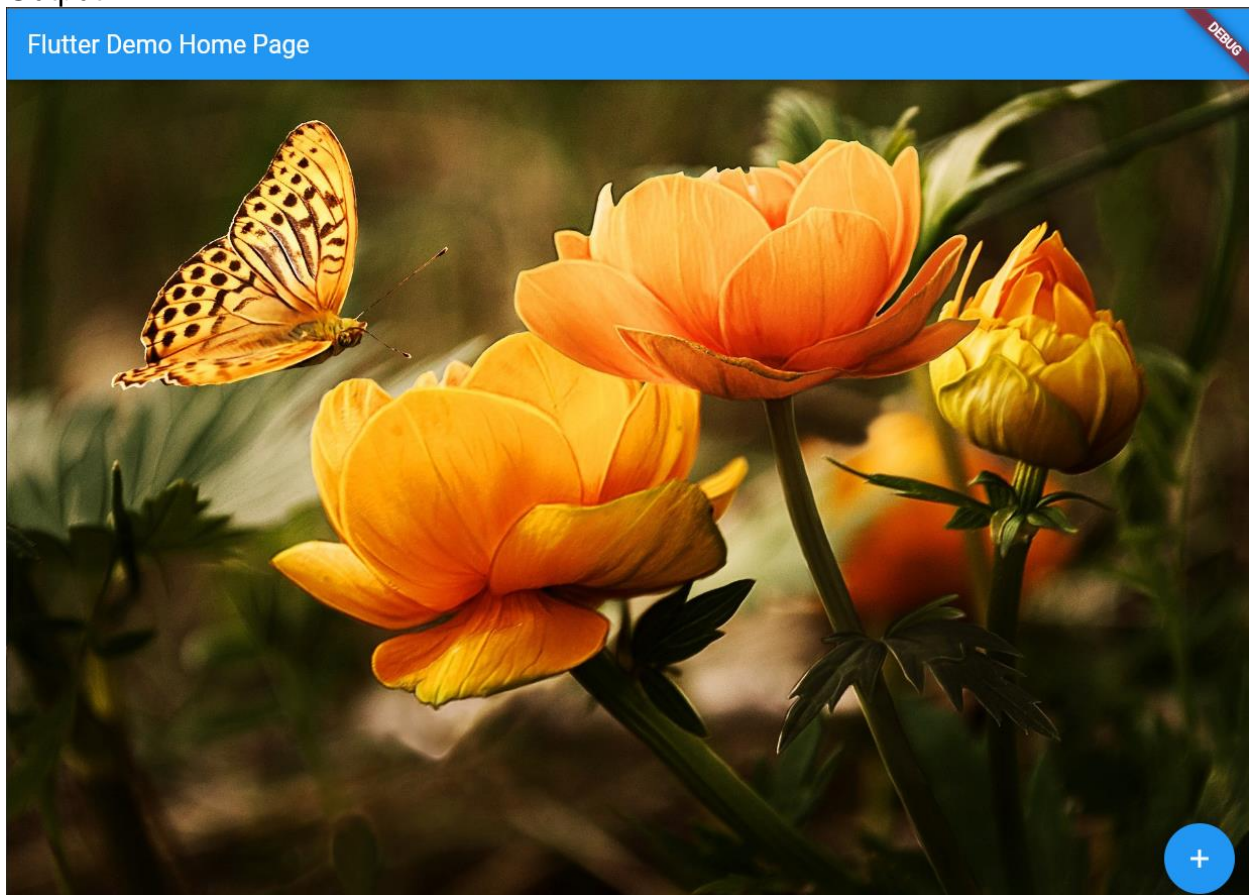
Pubspec.yaml

```
59 # To add assets to your application, add an assets section, like this:
60 assets:
61   - asset/
62   # - images/a_dot_ham.jpeg
63
```

Main.dart

```
body: Image.asset('asset/flower.jpg'),
```

Output:





## Practical 3

**Aim : Demonstration of SingleChildScrollView, ListView, ListView.builder and GridView widgets.**

### SingleChildScrollView:

Code :

```
body: SingleChildScrollView(
  child: Column(children: [
    Container(
      height: 200,
      color: Colors.red,
    ),
    Container(
      height: 200,
      color: Colors.green,
    ),
    Container(
      height: 200,
      color: Colors.blue,
    ),
    Container(
      height: 200,
      color: Colors.black,
    ),
    Container(
      height: 200,
      color: Colors.grey,
    ),
  ]),
),
```

Output:



## ListView:

Code:

```
body: ListView(  
  children: [  
    Text('one'),  
    Text('two'),  
    Text('three'),  
    Text('four'),  
    Text('five'),  
    Text('six'),  
  ],  
),
```

Output:

Flutter Demo Home Page

one  
two  
three  
four  
five  
six


## ListView.builder:

Code:


```
@override
Widget build(BuildContext context) {
  var arrName = ['fifth', 'first', 'ninth', 'second', 'eight'];
  return Scaffold(
    appBar: AppBar(
      title: Text(widget.title),
    ),

    body: ListView.builder(
      itemBuilder: (context, index) {
        return Text(arrName[index]);
      },
      itemCount: arrName.length,
    ),
  );
}
```

Output:



Flutter Demo Home Page



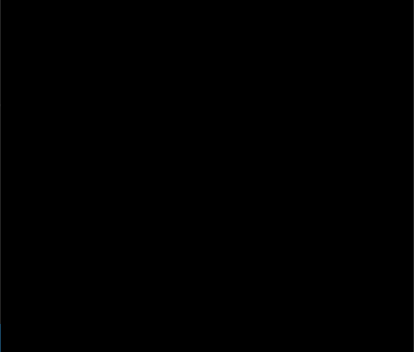
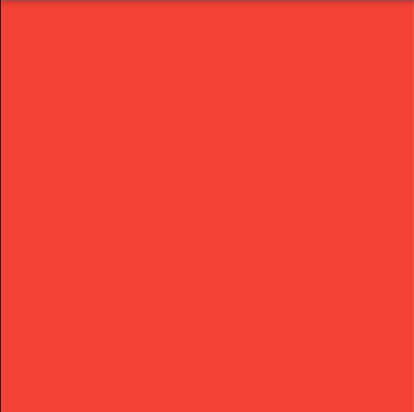
fifth  
first  
ninth  
second  
eight

## GridView:

Code :

```
body: GridView.count(  
  crossAxisCount: 3,  
  children: [  
    Container(  
      height: 200,  
      color: Colors.red,  
    ),  
    Container(  
      height: 200,  
      color: Colors.green,  
    ),  
    Container(  
      height: 200,  
      color: Colors.blue,  
    ),  
    Container(  
      height: 200,  
      color: Colors.black,  
    ),  
    Container(  
      height: 200,  
      color: Colors.grey,  
    ),  
    Container(  
      height: 200,  
      color: Colors.green,  
    ),  
    Container(  
      height: 200,  
      color: Colors.blue,  
    ),  
  ],  
)
```

Output :



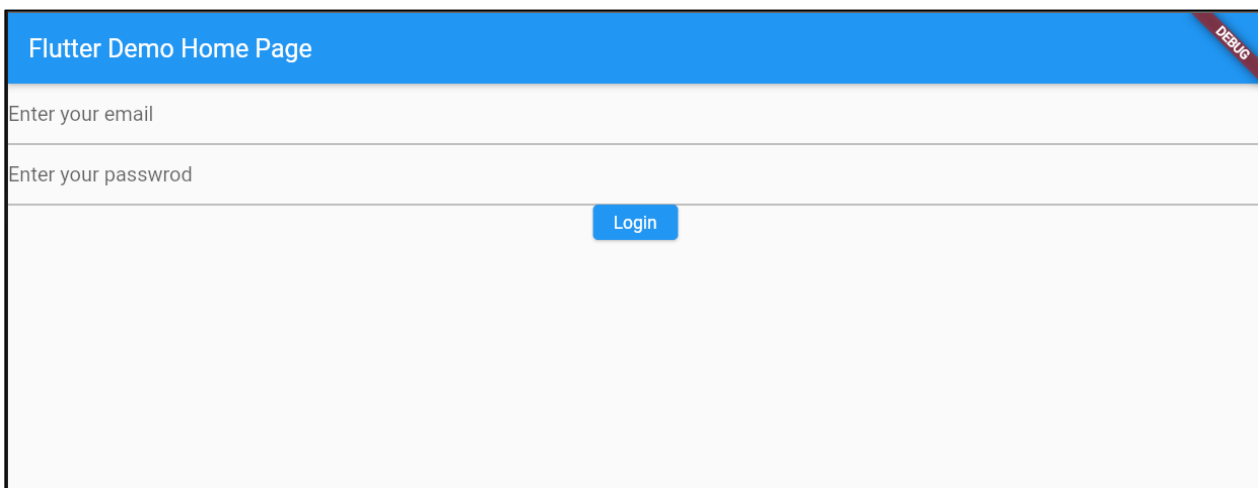
## Practical 4

**Aim: Create simple ui of login page using TextField widget and Elevated button.**

Code:

```
body: Column(  
  children: [  
    TextField(  
      decoration: InputDecoration(hintText: 'Enter your email'),  
    ),  
    TextField(  
      decoration: InputDecoration(hintText: 'Enter your passwrod'),  
    ),  
    ElevatedButton(  
      onPressed: () {  
        return print('You clicked on login button');  
      },  
      child: Text('Login'))  
  ],  
)
```

Output :



## Practical 5

**Aim : Program to Navigate from one page to another page.**

Steps:

- create a file with name 'FirstScreen.dart'
- in order to launch this screen first when we open app we will make some changes in main.dart file.
- In main.dart set **home: FirstScreen()**
- write a code in FirstScreen.dart file, that will display a button in center
- after click on button, **MyHomePage** screen will appear.

Code:

**Main.dart :**

```
class MyApp extends StatelessWidget {
  const MyApp({super.key});
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Flutter Demo',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: FirstScreen(),
    );
  }
}
```

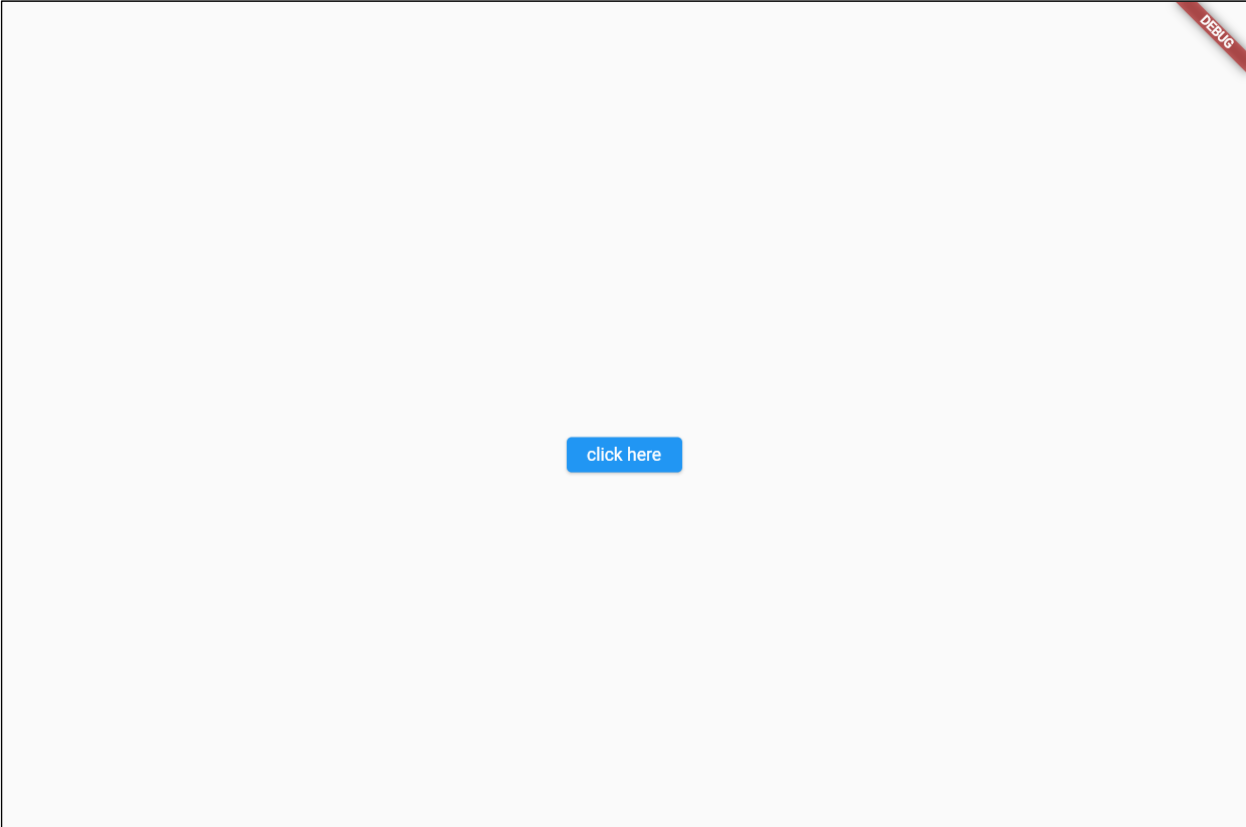
**FirstScreen.dart:**

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

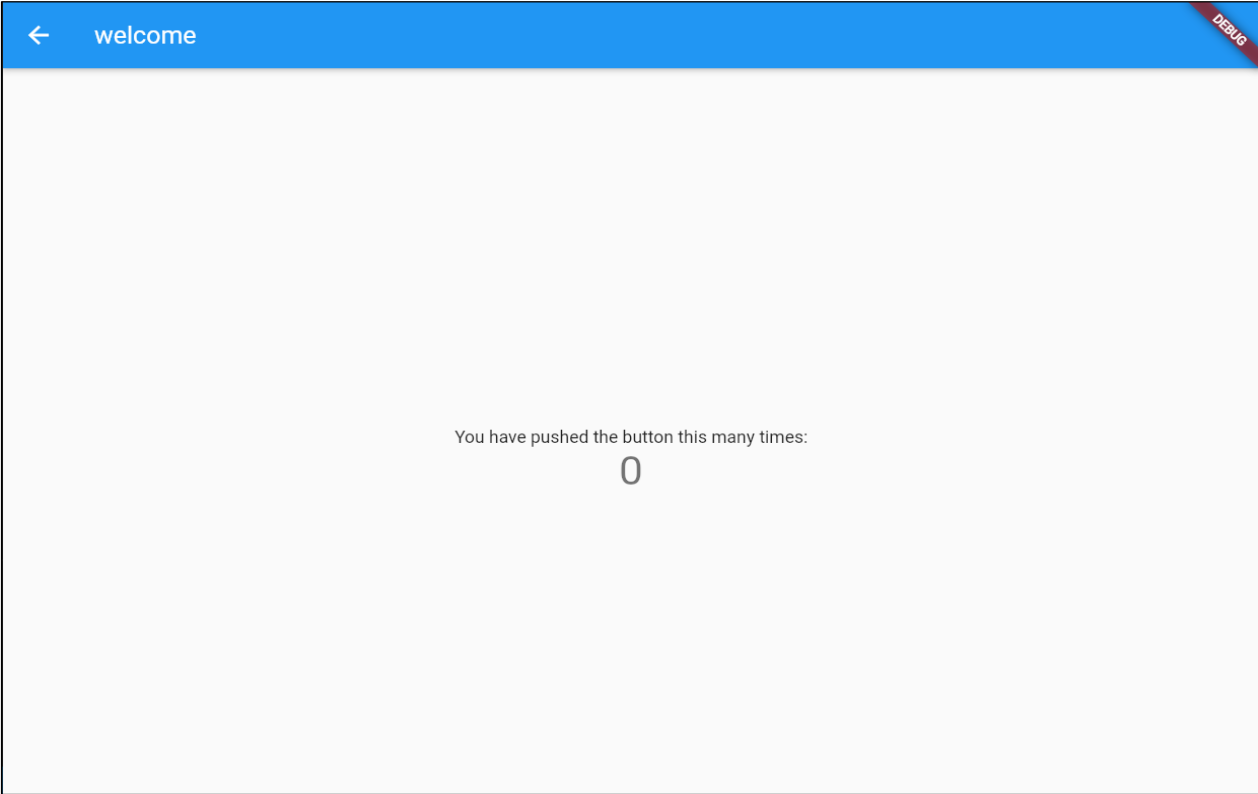
class FirstScreen extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    // TODO: implement build
    return Scaffold(
      body: Center(
        child: ElevatedButton(
          onPressed: () {
            Navigator.push(context, MaterialPageRoute(builder: (context) {
              return MyHomePage(title: 'welcome');
            }));
          }
        ),
        child: Text('click here'),
      ),
    );
  }
}
```



Output :



After clicked on 'click here' button.



## Practical 6

**Aim : Program to Passing data from one page to another page.**

Code:

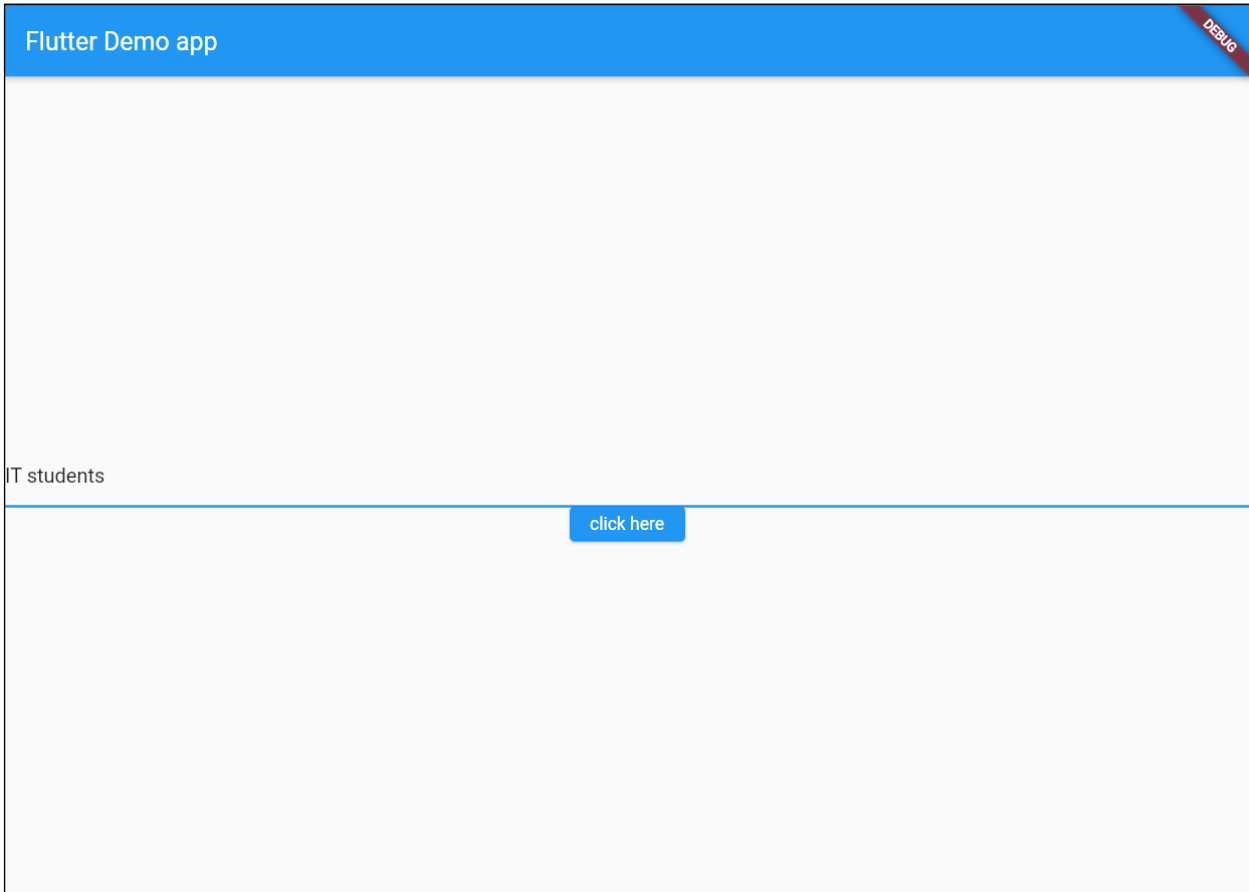
Main.dart:

```
body: Center(  
  child: Column(  
    mainAxisAlignment: MainAxisAlignment.center,  
    children: [  
      TextField(  
        decoration: InputDecoration(hintText: 'Enter text here'),  
        controller: nameController,  
      ),  
      ElevatedButton(  
        onPressed: () {  
          Navigator.push(context, MaterialPageRoute(builder: (context) {  
            return SecondScreen(nameController.text.toString());  
          }));  
        },  
        child: Text('click here'))  
    ],  
  ),  
)  
);
```

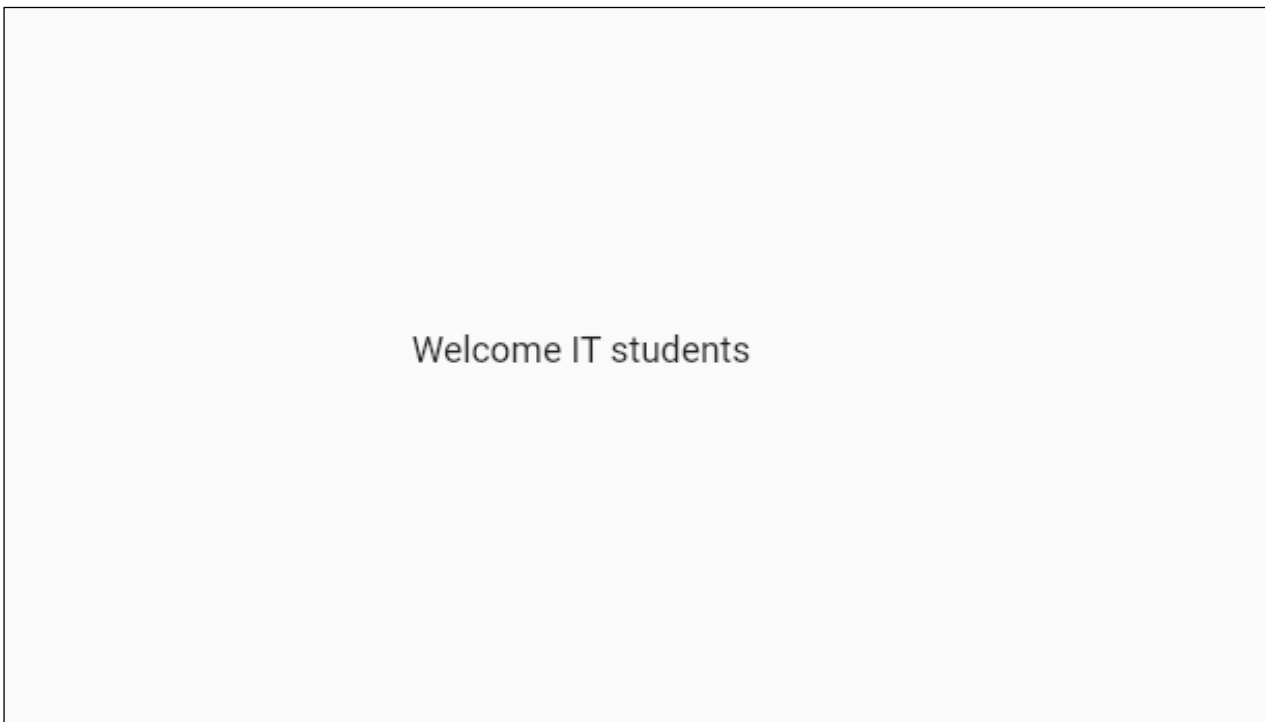
SecondScreen.dart :

```
import 'package:flutter/material.dart';  
  
class SecondScreen extends StatelessWidget {  
  var name;  
  SecondScreen(this.name);  
  @override  
  Widget build(BuildContext context) {  
    return Scaffold(  
      body: Center(  
        child: Text('Welcome $name'),  
      ),  
    );  
  }  
}
```

Output:



Type some text in the text field and click on the button.  
After clicked on the button, following screen will appear.



## Practical 7

**Aim : Create BottomNavigationBar, TabBar and Navigation Drawer in flutter.**

**BottomNavigationBar :**

Code:

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

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

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

  // This widget is the root of your application.
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Flutter Demo',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatefulWidget {
  @override
  State<StatefulWidget> createState() {
    // TODO: implement createState
    return BottomNavigation();
  }
}

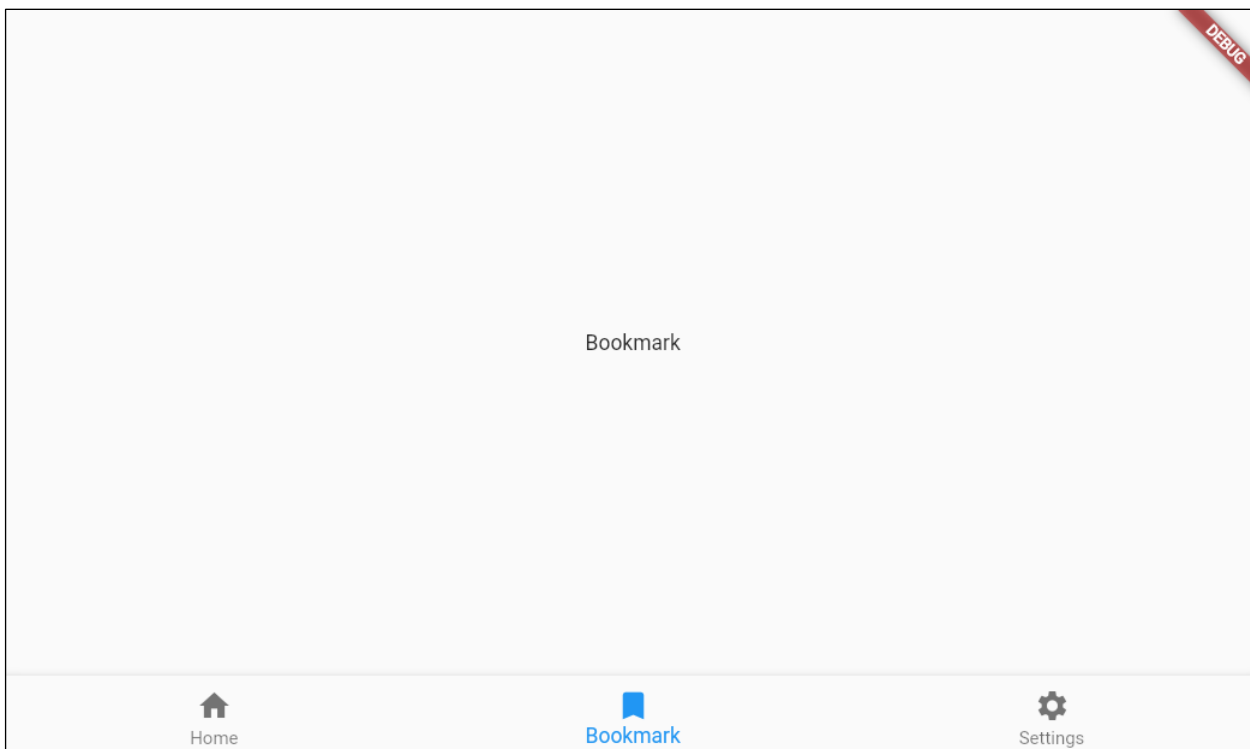
class BottomNavigation extends State<MyHomePage> {
  var selectedItem = 0;

  List itemList = [Text('Home'), Text('Bookmark'), Text('Settings')];

  void updateItem(int value) {
    setState(() {
      selectedItem = value;
    });
  }
}
```

```
@override
Widget build(BuildContext context) {
  // TODO: implement build
  return Scaffold(
    bottomNavigationBar: BottomNavigationBar(
      items: [
        BottomNavigationBarItem(icon: Icon(Icons.home), label: 'Home'),
        BottomNavigationBarItem(
          icon: Icon(Icons.bookmark), label: 'Bookmark'),
        BottomNavigationBarItem(
          icon: Icon(Icons.settings), label: 'Settings'),
      ],
      currentIndex: selectedItem,
      onTap: updateItem,
    ),
    body: Center(child: itemList[selectedItem]),
  );
}
```

Output :



## TabBar:

Code :

Main.dart

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

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

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

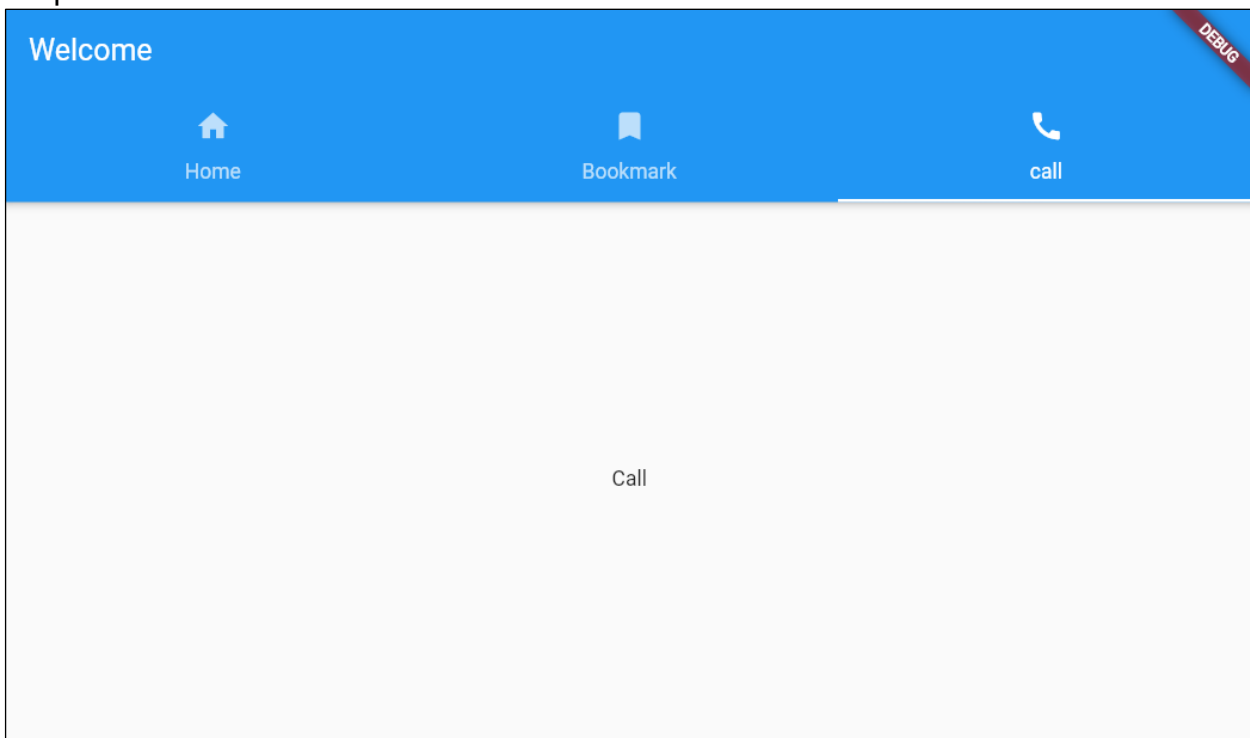
  // This widget is the root of your application.
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Flutter Demo',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatefulWidget {
  @override
  State<StatefulWidget> createState() {
    // TODO: implement createState
    return BottomNavigation();
  }
}

class BottomNavigation extends State<MyHomePage> {
  @override
  Widget build(BuildContext context) {
    // TODO: implement build
    return DefaultTabController(
      length: 3,
      child: Scaffold(
        appBar: AppBar(
          title: Text('Welcome'),
          bottom: TabBar(
            tabs: [
              Tab(
                icon: Icon(Icons.home),
                text: 'Home',
              ),
              Tab(
```

```
        icon: Icon(Icons.bookmark),
        text: 'Bookmark',
      ),
      Tab(
        icon: Icon(Icons.call),
        text: 'call',
      ),
    ],
  ),
),
body: TabBarView(children: [
  Center(child: Text('Home')),
  Center(child: Text('Bookmark')),
  Center(child: Text('Call')),
]),
));
}
```

Output :



## Navigation drawer :

Code :

### MyHeaderDrawer.dart

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

class MyHeaderDrawer extends StatefulWidget {
  @override
  State<StatefulWidget> createState() {
    // TODO: implement createState
    return _MyHeaderDrawer();
  }
}

class _MyHeaderDrawer extends State<MyHeaderDrawer> {
  @override
  Widget build(BuildContext context) {
    // TODO: implement build
    return Container(
      margin: EdgeInsets.all(4),
      child: Center(
        child: Column(children: [
          Image.network(
            'https://image.shutterstock.com/image-photo/stock-photo-head-
            shot-portrait-close-up-smiling-confident-businessman-wearing-glasses-looking-at-
            camera-250nw-1714666150.jpg'),
          Text('user name'),
          Text('user@gmail.com')
        ]),
      ));
  }
}
```

### Main.dart:

```
import 'dart:async';
import 'dart:html';

import 'package:abcd/MyHeaderDrawer.dart';
import 'package:flutter/material.dart';

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

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

  @override
  Widget build(BuildContext context) {
```



```

return MaterialApp(
  title: 'Flutter Demo',
  theme: ThemeData(
    primarySwatch: Colors.blue,
  ),
  home: MyHomePage(),
);
}
}

class MyHomePage extends StatefulWidget {
  @override
  State<StatefulWidget> createState() {
    // TODO: implement createState
    return _HomePage();
  }
}

class _HomePage extends State<MyHomePage> {
  var currentPage = DrawerSection.home;
  @override
  Widget build(BuildContext context) {
    // TODO: implement build
    return Scaffold(
      appBar: AppBar(
        title: Text('welcome'),
      ),
      body: Center(
        child: Text('hello'),
      ),
      drawer: Drawer(
        child: SingleChildScrollView(
          child: Column(children: [MyHeaderDrawer(), MyDrawerList()]),
        ),
      ),
    );
  }

  Widget MyDrawerList() {
    return Container(
      child: Column(children: [
        menuItem(1, "home", Icons.home,
          currentPage == DrawerSection.home ? true : false),
        menuItem(2, "contacts", Icons.contact_page,
          currentPage == DrawerSection.contacts ? true : false),
        menuItem(3, "notifications", Icons.notifications,
          currentPage == DrawerSection.notifications ? true : false),
        menuItem(4, "settings", Icons.settings,
          currentPage == DrawerSection.settings ? true : false),
      ]),
    );
  }
}

```

```

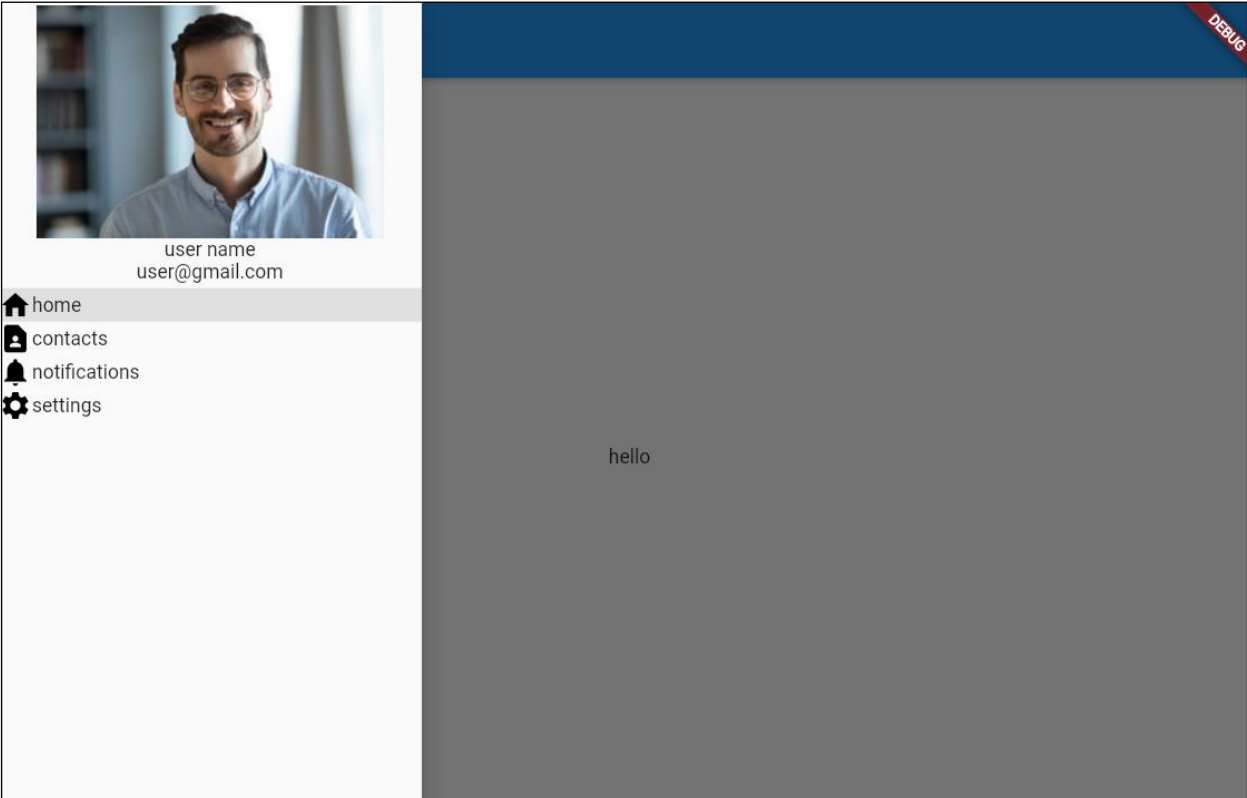
}

Widget menuItem(int id, String title, IconData icon, bool selected) {
  return Material(
    color: selected ? Colors.grey[300] : Colors.transparent,
    child: InkWell(
      onTap: () {
        Navigator.pop(context);
        setState(() {
          if (id == 1) {
            currentPage = DrawerSection.home;
          } else if (id == 2) {
            currentPage = DrawerSection.contacts;
          } else if (id == 3) {
            currentPage = DrawerSection.notifications;
          } else if (id == 4) {
            currentPage = DrawerSection.settings;
          }
        });
      },
      child: Row(children: [
        Icon(
          icon,
          color: Colors.black,
        ),
        Text(title),
      ]),
    ),
  );
}

enum DrawerSection {
  home,
  contacts,
  notifications,
  settings,
}

```

Output :



## Practical 8

**Aim : Create Pop up menu/ DropDown menu and AlertDialog in flutter**

**Pop up menu/ DropDown menu**

Code :

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

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

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

  // This widget is the root of your application.
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Flutter Demo',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatefulWidget {
  @override
  State<StatefulWidget> createState() {
    // TODO: implement createState
    return PopUpMenu();
  }
}

class PopUpMenu extends State<MyHomePage> {
  @override
  Widget build(BuildContext context) {
    // TODO: implement build
    return Scaffold(
      appBar: AppBar(actions: [
        PopupMenuButton(
          itemBuilder: (context) => [
            PopupMenuItem(
              child: Row(
                children: [
```

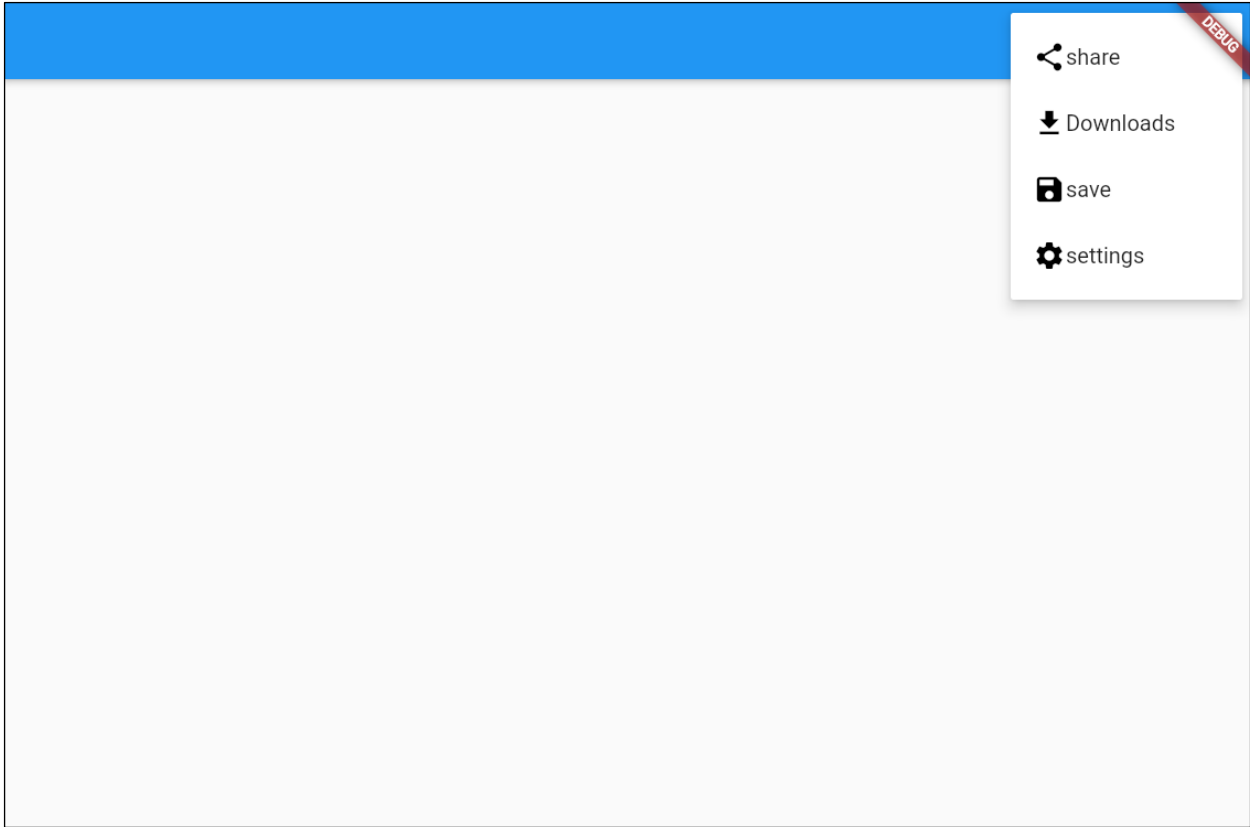
```

        Icon(
          Icons.share,
          color: Colors.black,
        ),
        Text('share')
      ],
    )),
    PopupMenuItem(
      child: Row(
        children: [
          Icon(
            Icons.download,
            color: Colors.black,
          ),
          Text('Downloads')
        ],
      ),
    ),
    PopupMenuItem(
      child: Row(
        children: [
          Icon(
            Icons.save,
            color: Colors.black,
          ),
          Text('save')
        ],
      ),
    ),
    PopupMenuItem(
      child: Row(
        children: [
          Icon(
            Icons.settings,
            color: Colors.black,
          ),
          Text('settings')
        ],
      ),
    ),
  ],
  child: Icon(Icons.more_vert),
)
]),
);
}
}

```

Output :

- click on 'more' icon at right side of appbar, then popup menu items will appear.



share

Downloads

save

settings

DEBUG

## AlertDialog:

Code:

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

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

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

  // This widget is the root of your application.
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'Flutter Demo',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: MyHomePage(),
    );
  }
}

class MyHomePage extends StatefulWidget {
  @override
  State<StatefulWidget> createState() {
    // TO DO: implement createState
    return _MyHomePage();
  }
}

class _MyHomePage extends State<MyHomePage> {
  @override
  Widget build(BuildContext context) {
    // TODO: implement build
    return Scaffold(
      appBar: AppBar(
        title: Text('hello TYIT'),
      ),
      body: Center(
        child: ElevatedButton(
          onPressed: () {
            showDialog(
              context: context,
              builder: (context) {
                return Container(
```

```
child: AlertDialog(actions: [
  Title(color: Colors.red, child: Text('Email sent')),
  TextButton(
    onPressed: () {
      Navigator.pop(context);
    },
    child: Text('ok'))
  ]),
);
});
},
child: Text('send email'),
),
),
);
}
}
```

Output :

