Practical No 1

Aim: Program to demonstrate the features of Dart language.

1) Variable in dart

```
void main()
{
int a=4;
double b=2.3;
String d="hello";
var c="dart";
bool flat=true;
dynamic e="string";
e=12;
var list=[2 ,3, 4];
print(a);
print(e);
print(b);
print(d);
print(c);
print(flat);
print(list);
}
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Connecting to VM Service at ws://127.0.0.1:58697/-8KLKeuh_hY=/ws
4
12
2.3
hello
dart
true
[2, 3, 4]
```

2) Decision Making Statement.

```
void main()
{
  int i=1;
  for (i=1;i<=20;i++)
  {
  if(i%2==0)
  {
  print('$i is even number');
  }
  }
}
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Connecting to VM Service at ws://127.0.0.1:59245/nsydU7dTrmo=/ws
2 is even number
4 is even number
6 is even number
8 is even number
10 is even number
12 is even number
14 is even number
16 is even number
18 is even number
20 is even number

Exited.
```

3) Operators in flutter

Code:

bin > operators.dart > main

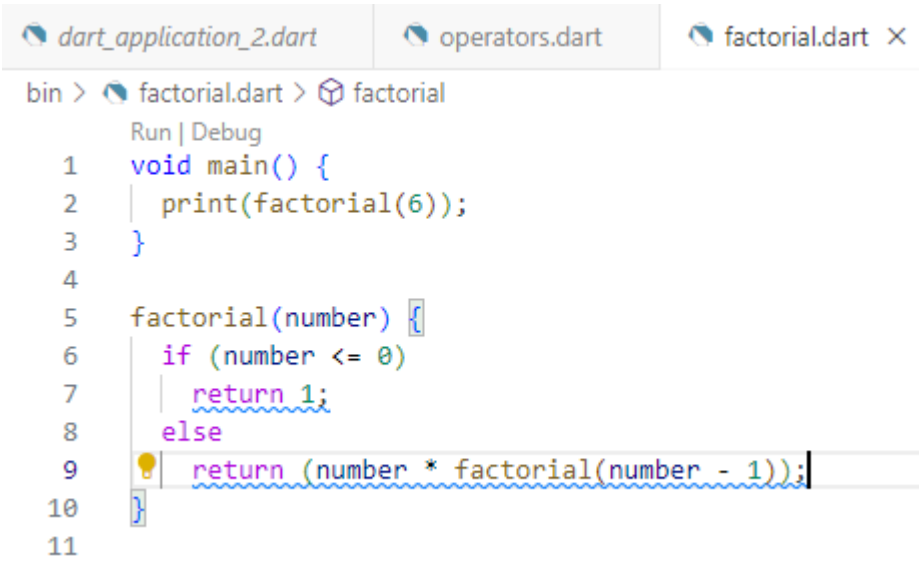
```
Run | Debug
1  void main() {
2    int a = 2, b = 3;
3    var c = a * b;
4    print("multiply of a and b $c");
5    var d = a + b;
6    print("sum of a and b $d");
7    var e = a / b;
8    print("dividsion of a and b $e");
9    var f = a % b;
10   print("remendier of a and b $f");
11   var g = a - b;
12   print("$g");
13   var h = -a;
14   print("$h");
15   var i = a ~/ b;
16   print("$i");
17 }
18
```

Output:

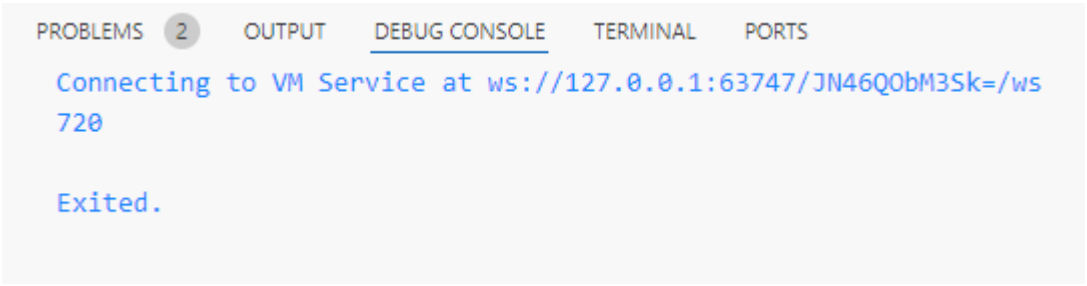
```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS
Connecting to VM Service at ws://127.0.0.1:63708/A740w9GuPGY=/ws
multiply of a and b 6
sum of a and b 5
dividsion of a and b 0.6666666666666666
remendier of a and b 2
-1
-2
0

Exited.
```

4) Factorial

Code:

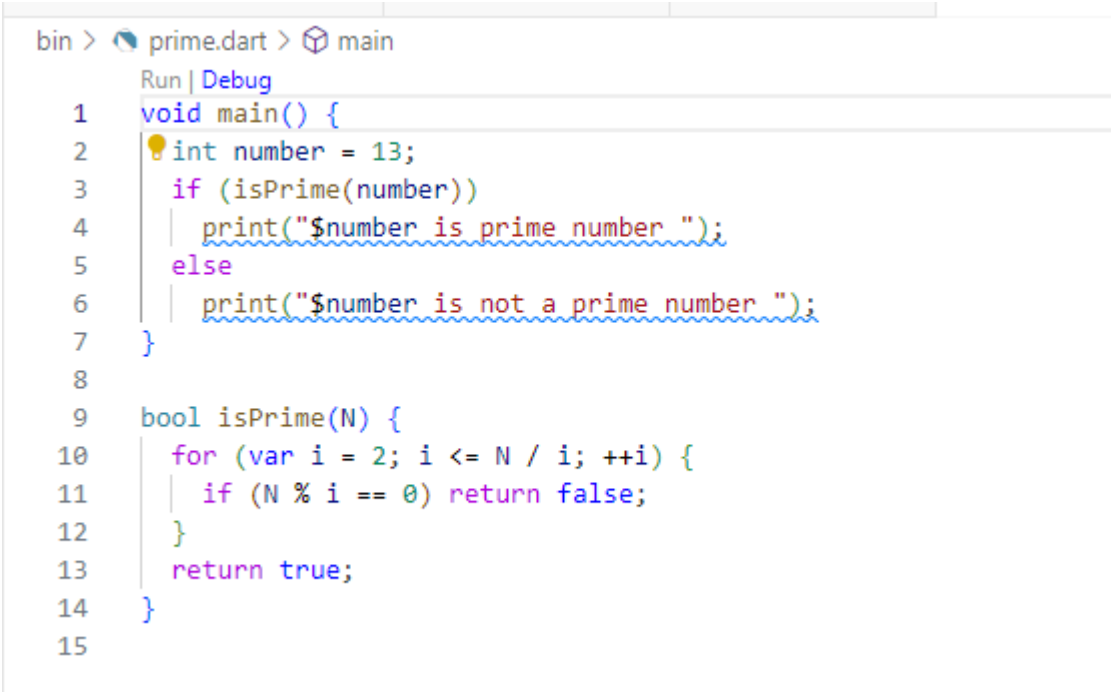


Output:

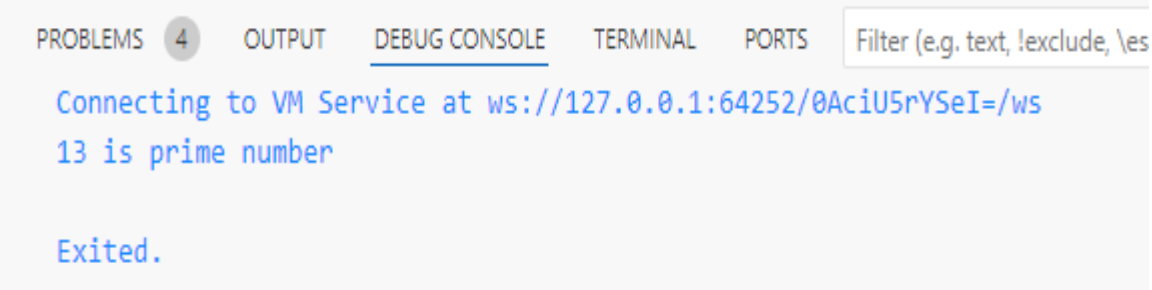


5) Prime or not

Code:



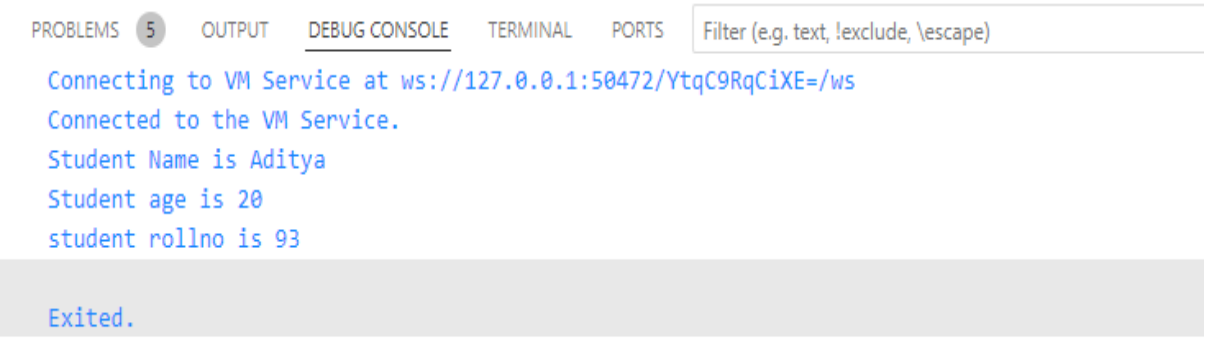
Output:



6) Class and object

```
bin > main.dart > main
1   class student{
2     var stdname;
3     var stdage;
4     var stdroll;
5     showinfo(){
6       print("Student Name is $stdname");
7       print("Student age is $stdage");
8       print("student rollno is $stdroll");
9     }
10  }
11
    Run | Debug
12  void main(){
13    var std=new student();
14    std.stdname="Aditya";
15    std.stdage = 20;
16    std.stdroll = 93;
17    std.showinfo();
18  }
```

Output:



7) Input and output from user:

Code:

bin > dart_application_1.dart > ...

```dart
import 'dart:io';

Run | Debug
void main() {
  print("Enter your Name:");
  String name = stdin.readLineSync()!;
  print('Hello,$name ! welcome to Dart Toutorial');
  print("Enter First Number:");
  int n1 = int.parse(stdin.readLineSync()!);
  print("Enter Second Number :");
  int n2 = int.parse(stdin.readLineSync()!);
  int sum = n1 + n2;
  print("Sum is $sum");
}

```

Output:

```
PS C:\flutter\codes\dart_application_1\dart_application_1\bin> dart dart_application_1.dart
Enter your Name:
Aditya
Hello,Aditya ! welcome to Dart Toutorial
Enter First Number:
12
Enter Second Number :
35
Sum is 47
PS C:\flutter\codes\dart_application_1\dart_application_1\bin>
```

Practical No 2

Aim: Designing the mobile app to implement different widgets.

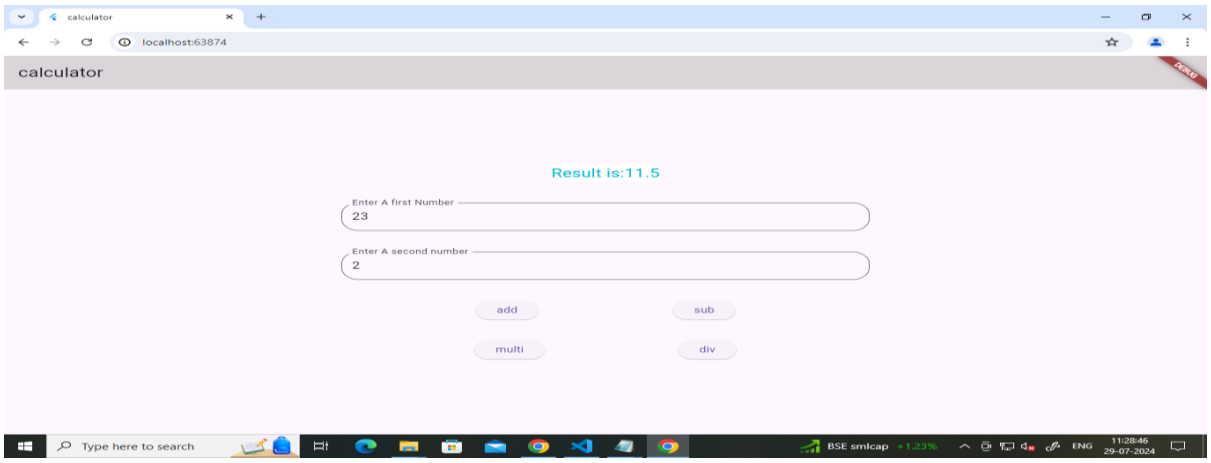
Code:

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

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    // TODO: implement build
    // throw UnimplementedError();
    return MaterialApp(
      title: "calculator",
      home: myhomepage(),
    );
  }
}

class myhomepage extends StatefulWidget {
  @override
  State<myhomepage> createState() => _myhomepageState();
}

class _myhomepageState extends State<myhomepage> {
  TextEditingController controller1 = TextEditingController();
  TextEditingController controller2 = TextEditingController();
  dynamic num1 = 0, num2 = 0, result = 0;
  add() {
    setState(() {
      num1 = int.parse(controller1.text);
      num2 = int.parse(controller2.text);
      result = num1 + num2;
    });
  }

  sub() {
    setState(() {
      num1 = int.parse(controller1.text);
      num2 = int.parse(controller2.text);
      result = num1 - num2;
    });
  }

  multi() {
    setState(() {
      num1 = int.parse(controller1.text);
      num2 = int.parse(controller2.text);
      result = num1 * num2;
    });
  }
```

```
div() {
  setState(() {
    num1 = int.parse(controller1.text);
    num2 = int.parse(controller2.text);
    result = num1 / num2;
  });
}

@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: const Text('calculator'),
      backgroundColor: Color.fromRGBO(173, 169, 169, 0.432),
    ),
    body: Center(
      child: Container(
        height: 400,
        width: 600,
        child: Column(
          mainAxisAlignment: MainAxisAlignment.spaceEvenly,
          children: [
            Text(
              "Result is:$result",
              style: TextStyle(
                fontSize: 20,
                backgroundColor: Colors.white,
                color: Colors.cyan,
              ),
            ),
            TextField(
              controller: controller1,
              decoration: InputDecoration(
                  labelText: 'Enter A first Number',
                  border: OutlineInputBorder(
                      borderRadius: BorderRadius.circular(20))),
            ),
            TextField(
              controller: controller2,
              decoration: InputDecoration(
                  labelText: 'Enter A second number',
                  border: OutlineInputBorder(
                      borderRadius: BorderRadius.circular(20))),
            ),
            Row(
              mainAxisAlignment: MainAxisAlignment.spaceEvenly,
              children: [
                ElevatedButton(
                    onPressed: () {
                      add();
                    },
                    child: Text("add")),
                ElevatedButton(
                    onPressed: () {
                      sub();
```

```
                    },
                    child: Text("sub"))
              ],
            ),
            Row(
              mainAxisAlignment: MainAxisAlignment.spaceEvenly,
              children: [
                ElevatedButton(
                    onPressed: () {
                      multi();
                    },
                    child: Text("multi")),
                ElevatedButton(
                    onPressed: () {
                      div();
                    },
                    child: Text("div"))
              ],
            ),
          ],
        ),
      ),
    );
  }
}
```

Output:



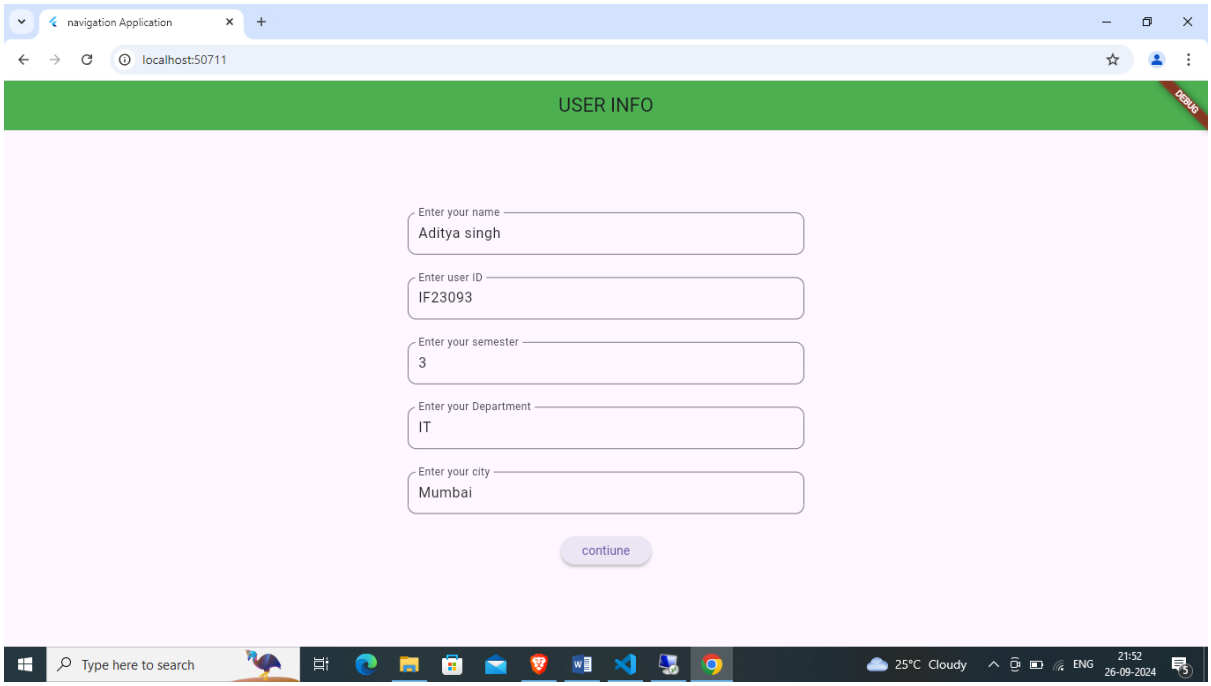
Code

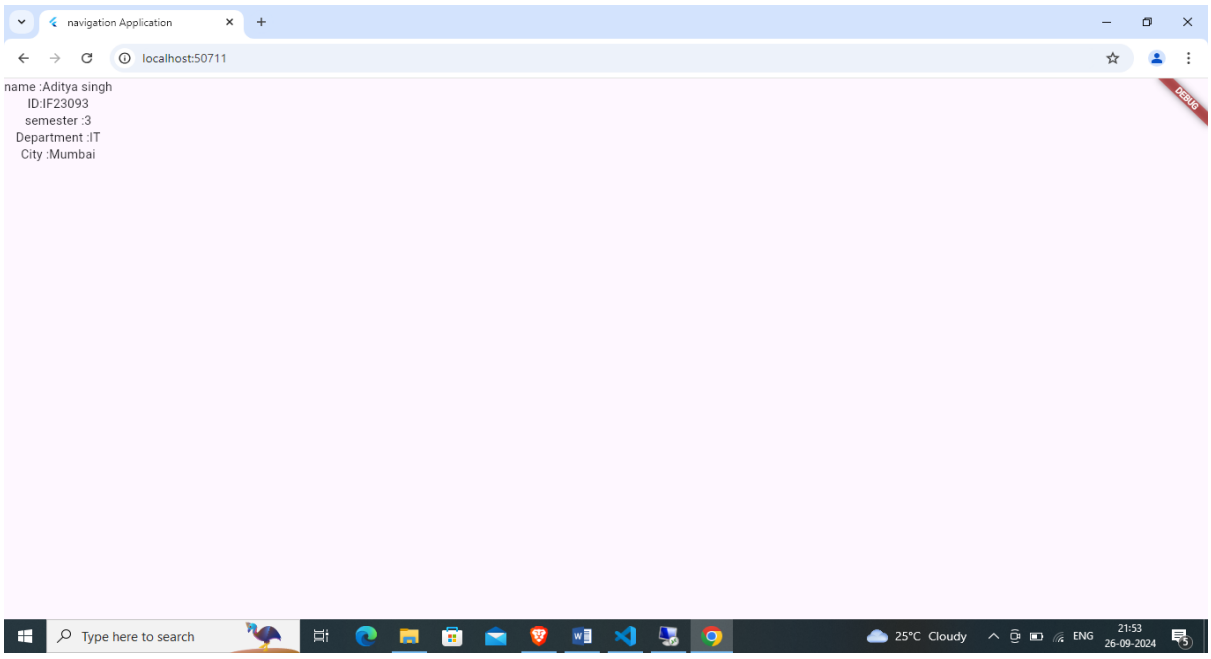
```dart
import 'package:flutter/material.dart';

void main() {
  runApp(MaterialApp(
    title: "navigation Application",
    home: Myapp(),
  ));
}

class Myapp extends StatelessWidget {
  @override
```

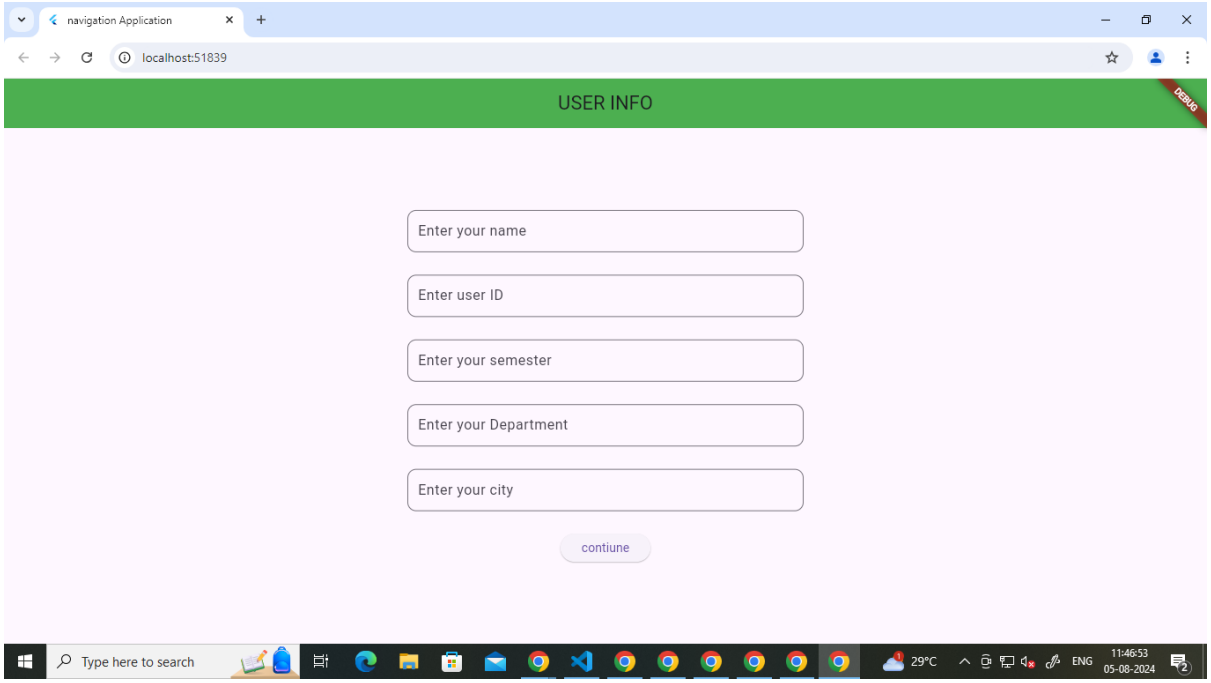
```dart
Widget build(BuildContext context) {
  TextEditingController name = TextEditingController();
  TextEditingController ID = TextEditingController();
  TextEditingController semester = TextEditingController();
  TextEditingController Department = TextEditingController();
  TextEditingController city = TextEditingController();

  return Scaffold(
    appBar: AppBar(
      title: Text("USER INFO"),
      backgroundColor: Colors.green,
      centerTitle: true,
    ),
    body: Center(
      child: Container(
        height: 450,
        width: 450,
        child: Column(
          mainAxisAlignment: MainAxisAlignment.spaceEvenly,
          children: [
            TextField(
              controller: name,
              decoration: InputDecoration(
                  labelText: "Enter your name",
                  border: OutlineInputBorder(
                      borderRadius: BorderRadius.circular(10))),
            ),
            TextField(
              controller: ID,
              decoration: InputDecoration(
                  labelText: "Enter user ID",
                  border: OutlineInputBorder(
                      borderRadius: BorderRadius.circular(10))),
            ),
            TextField(
              controller: semester,
              decoration: InputDecoration(
                  labelText: "Enter your semester",
                  border: OutlineInputBorder(
                      borderRadius: BorderRadius.circular(10))),
            ),
            TextField(
              controller: Department,
              decoration: InputDecoration(
                  labelText: "Enter your Department",
                  border: OutlineInputBorder(
                      borderRadius: BorderRadius.circular(10))),
            ),
            TextField(
              controller: city,
              decoration: InputDecoration(
                  labelText: "Enter your city",
                  border: OutlineInputBorder(
                      borderRadius: BorderRadius.circular(10))),
```

```
              ),
              ElevatedButton(
                onPressed: () {
                  Navigator.push(
                      context,
                      MaterialPageRoute(
                          builder: ((context) => Nextscreen(
                                name: name.text,
                                id: ID.text,
                                semester: semester.text,
                                department: Department.text,
                                city: city.text,
                              ))).whenComplete(() {
                    name.clear();
                    ID.clear();
                    semester.clear();
                    Department.clear();
                    city.clear();
                  });
                },
                child: Text("contiune"),
              )
            ],
          ),
        ),
      ),
    );
  }
}

class Nextscreen extends StatelessWidget {
  String? name, id, semester, department, city;
  Nextscreen({this.name, this.id, this.semester, this.department, this.city});

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: Column(
        children: [
          Text("name :" + name.toString()),
          Text("ID:" + id.toString()),
          Text("semester :" + semester.toString()),
          Text("Department :" + department.toString()),
          Text("City :" + city.toString())
        ],
      ),
    );
  }
}
```

Output:


navigation Application
localhost:50711
USER INFO
DEBUG
Enter your name
Aditya singh
Enter user ID
IF23093
Enter your semester
3
Enter your Department
IT
Enter your city
Mumbai
contiune
Type here to search
25°C Cloudy
ENG
21:52
26-09-2024


navigation Application
localhost:50711
name :Aditya singh
ID:IF23093
semester :3
Department :IT
City :Mumbai
DEBUG
Type here to search
25°C Cloudy
ENG
21:53
26-09-2024


navigation Application
localhost:51839
USER INFO
DEBUG
Enter your name
Enter user ID
Enter your semester
Enter your Department
Enter your city
contiune
Type here to search
29°C
ENG
11:46:53
05-08-2024

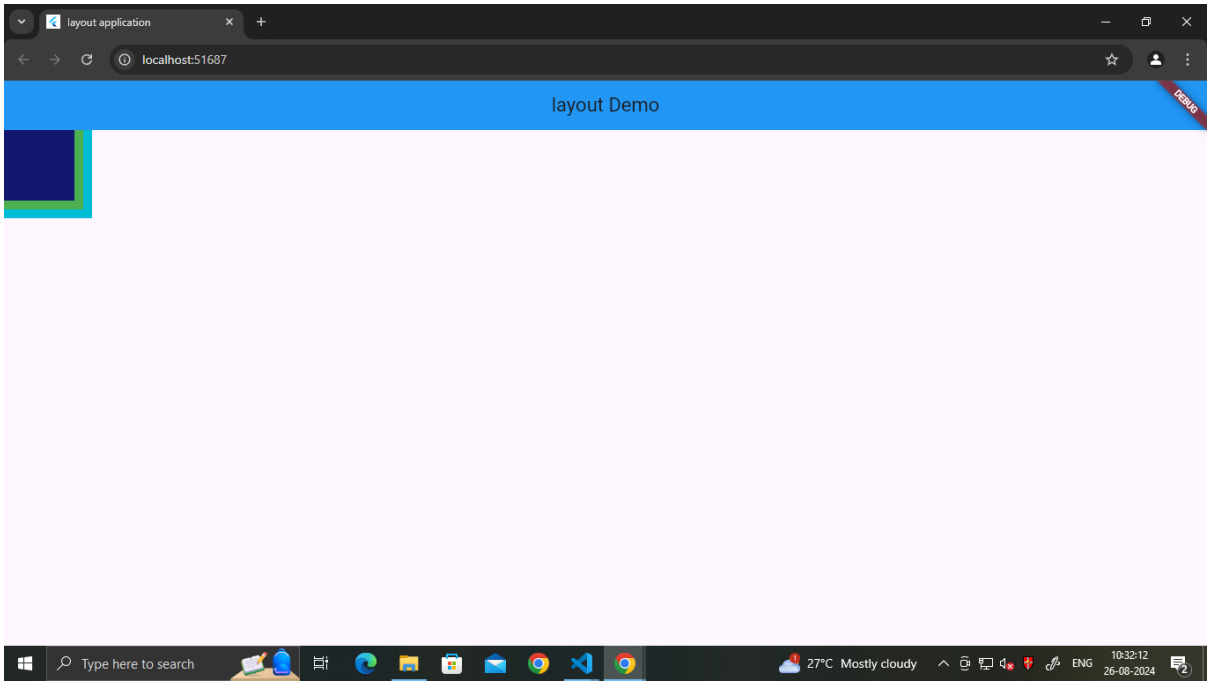
Practical No 3

Aim: Designing the mobile app to implement different Layouts..

Code:

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

void main() {
  runApp(MaterialApp(
    title: "layout application",
    home: MyApp(),
  ));
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("layout Demo"),
        backgroundColor: Colors.blue,
        centerTitle: true,
      ),
      body: Stack(
        children: [
          Container(
            height: 100,
            width: 100,
            color: Colors.cyan,
          ),
          Container(
            height: 90,
            width: 90,
            color: Colors.green,
          ),
          Container(
            height: 80,
            width: 80,
            color: Color.fromARGB(255, 18, 24, 112),
          )
        ],
      ),
    );
  }
}
```

Output:



Aim: list view

Code:

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

void main() {
  runApp(MaterialApp(
    title: "layout application",
    home: MyApp(),
  ));
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text("layout Demo"),
        backgroundColor: Colors.blue,
        centerTitle: true,
      ),
      body: Container(
        height: 400,
        width: 300,
        child: ListView(
          children: [
            Container(
              height: 100,
              width: 100,
              color: Colors.cyan,
              child: const Center(child: Text("hello")),
            ),
            Container(‘‘
```

```
              height: 90,
              width: 90,
      ''',
              child: const Center(child: Text("everyone")),
            ),
            Container(
              height: 80,
              width: 80,
              color: Color.fromARGB(244, 197, 240, 9),
              child: const Center(child: Text("present here")),
            )
          ],
        ),
      ),
    );
  }
}
```

Output:

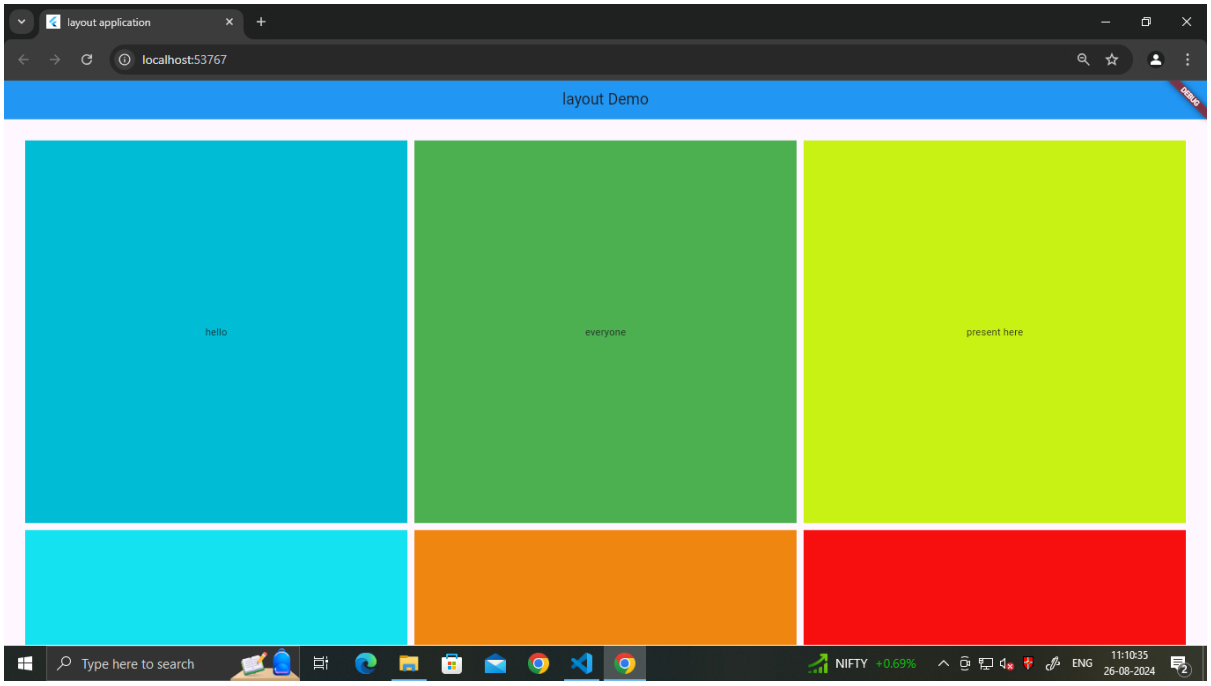
Aim: Grid view

Code:

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

void main() {
  runApp(MaterialApp(
    title: "layout application",
    home: MyApp(),
  ));
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
```

```
    return Scaffold(
      appBar: AppBar(
        title: Text("layout Demo"),
        backgroundColor: Colors.blue,
        centerTitle: true,
      ),
      body: GridView.count(
        padding: EdgeInsets.all(30),
        crossAxisCount: 3,
        mainAxisSpacing: 10,
        crossAxisSpacing: 10,
        children: [
          Container(
            height: 100,
            width: 100,
            color: Colors.cyan,
            child: const Center(child: Text("hello")),
          ),
          Container(
            height: 100,
            width: 100,
            color: Colors.green,
            child: const Center(child: Text("everyone")),
          ),
          Container(
            height: 100,
            width: 100,
            color: Color.fromARGB(244, 197, 240, 9),
            child: const Center(child: Text("present here")),
          ),
          Container(
            height: 100,
            width: 100,
            color: Color.fromARGB(244, 9, 225, 240),
            child: const Center(child: Text("to")),
          ),
          Container(
            height: 100,
            width: 100,
            color: Color.fromARGB(244, 238, 129, 5),
            child: const Center(child: Text("moblie")),
          ),
          Container(
            height: 100,
            width: 100,
            color: Color.fromARGB(244, 247, 3, 3),
            child: const Center(child: Text("programming")),
          )
        ],
      ),
    );
  }
}
```

Output:

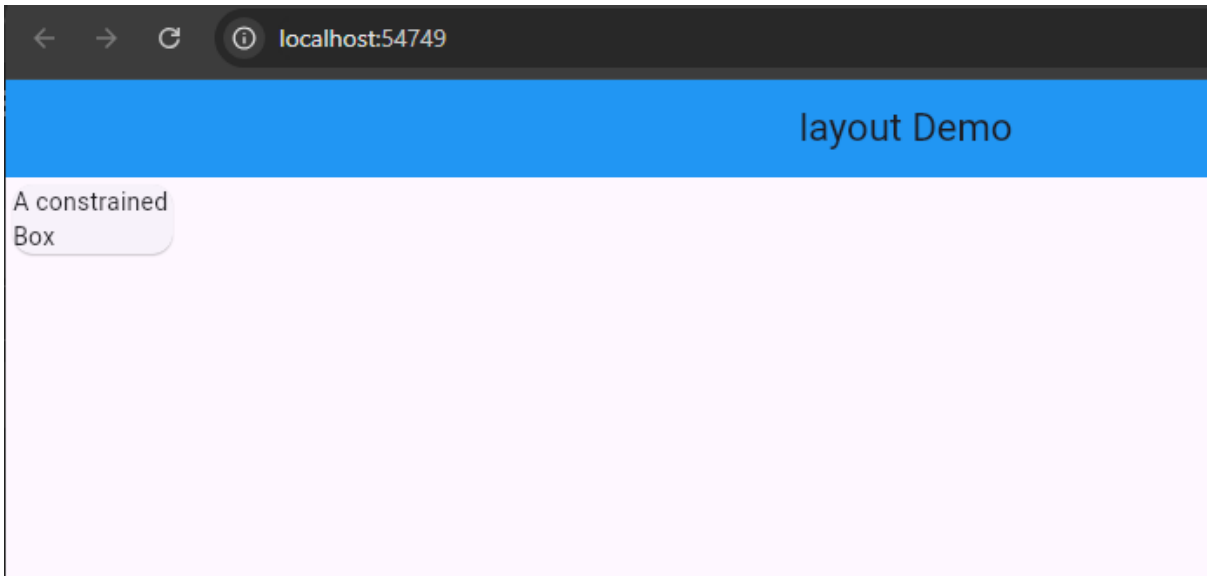


Aim: constrain box

Code:

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

void main() {
  runApp(MaterialApp(
    title: "layout application",
    home: MyApp(),
  ));
}

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
        appBar: AppBar(
          title: Text("layout Demo"),
          backgroundColor: Colors.blue,
          centerTitle: true,
        ),
        body: ConstrainedBox(
            constraints: BoxConstraints(
                maxHeight: 60, minHeight: 10, maxWidth: 100, minWidth: 10),
            child: Card(child: Text("A constrained Box"))));
  }
}
```

Output:



Practical No 4

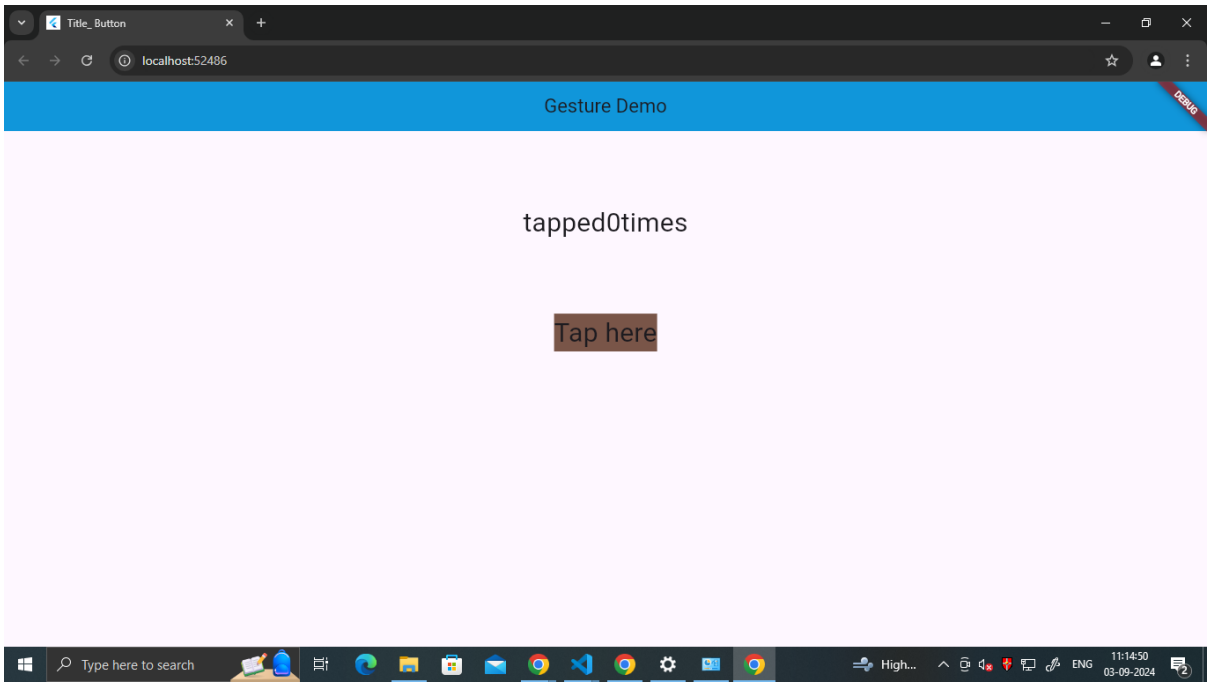
Aim: Designing the mobile app to implement the gesture

Code:

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

void main() {
  runApp(MaterialApp(
    title: "Title_ Button",
    home: MyApp(),
  ));
}

class MyApp extends StatefulWidget {
  @override
  State<MyApp> createState() => _MyAppState();
}

class _MyAppState extends State<MyApp> {
  int counter = 0;
  Widget build(BuildContext context) {
    return Scaffold(
        appBar: AppBar(
          title: Text('Gesture Demo'),
          backgroundColor: Color.fromARGB(255, 16, 150, 218),
          centerTitle: true,
        ),
        body: Padding(
          padding: const EdgeInsets.all(82.0),
          child: Center(
            child: Column(
              children: [
                Text('tapped' + counter.toString() + 'times',
                    style: TextStyle(fontSize: 30)),
                GestureDetector(
                  onLongPress: () {
                    setState(() {
                      counter = counter + 1;
                    });
                  },
                  child: Padding(
                    padding: const EdgeInsets.all(82.0),
                    child: Container(
                      child: Text(
                        'Tap here',
                        style: TextStyle(
                            backgroundColor: Colors.brown, fontSize: 30),
                      ),
                    ),
                  ),
                )
              ],
            ),
          ),
```

```
        ));
  }
}
```

Output:


Title_Button
localhost:52486
Gesture Demo
DEBUG
tapped0times
Tap here
Type here to search
High...
ENG
11:14:50
03-09-2024