

INSTITUTO TECNOLÓGICO JOSÉ MARIO MOLINA PASQUEL Y
HENRÍQUEZ UNIDAD ACADÉMICA ZAPOTLANEJO



“Manual”

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Desarrollo de Aplicaciones Móviles

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```

32     ],
33     ), // Column
34   ), // Expanded
35   Expanded(
36     flex: 3,
37     child: Row(
38       children: [
39         Image.network(
40           'https://th.bing.com/th/id/OIP.MJwYGgEWTGrCIytPbrrYyWAAAA?w=148&h=150&c=7&r=
41         ), // Image.network
42         Image.network(
43           'https://th.bing.com/th/id/OIP.03B1QG_R4Nfw8Hb3BVtpFgAAAA?w=143&h=150&c=7&r=
44         ), // Image.network
45         Image.network(
46           'https://th.bing.com/th/id/OIP.83LeWPkLuU18j7y_qcCwxgAAAA?w=146&h=150&c=7&r=
47         ), // Image.network
48         Image.network(
49           'https://th.bing.com/th/id/OIP.TeJS0gW5HnKHD1biW4k0lQAAAA?w=124&h=150&c=7&r=
50         ), // Image.network
51       ],
52     ), // Row
53   ), // Expanded
54 ],
55 ), // Column
56 ), // Padding
57 ); // Scaffold
58 }
59 }

```

.....	42
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Programas

Programa 1

```
main.dart 5 ●
lib > main.dart > MyApp
1  import 'package:flutter/material.dart';
2  import 'package:flutter_application_1/widget/Pagina1.dart';
3  import 'package:flutter_application_1/widget/Pagina2.dart';
4  import 'package:flutter_application_1/widget/Pagina3.dart';
5  import 'package:flutter_application_1/widget/Pagina4.dart';
6  import 'package:flutter_application_1/widget/Pagina5.dart';
7  import 'package:flutter_application_1/widget/Pagina6.dart';
8
9  void main() {
10   runApp(const MyApp());
11 }
12
13 class MyApp extends StatelessWidget {
14   const MyApp({super.key});
15   @override
16   Widget build(BuildContext context) {
17     return MaterialApp(home: Pagina5());
18   }
19 }
20
```

```

lib > widget > Pagina1.dart > ...
1  import 'package:flutter/material.dart';
2  import 'package:flutter/widgets.dart';
3
4  class Pagina1 extends StatelessWidget {
5      const Pagina1({super.key});
6
7      @override
8      Widget build(BuildContext context) {
9          //return Text('Hola mundo');
10
11          return Scaffold(
12              appBar: AppBar(
13                  title: Text(
14                      'Practica 1',
15                      style: TextStyle(
16                          color: const Color.fromARGB(255, 255, 255, 255),
17                          fontSize: 24,
18                          fontFamily: 'Times new Roman',
19                      ), // TextStyle
20                  ), // Text
21              backgroundColor: const Color.fromARGB(255, 153, 89, 255),
22          ), // AppBar
23          body: Column(
24              children: [
25                  Text(
26                      'Hola Mundo',
27                      style: TextStyle(
28                          color: Colors.blue,
29                          fontSize: 22,
30                          fontWeight: FontWeight.bold,
31                      ), // TextStyle
32                  ), // Text
33                  SizedBox(height: 20), // Espacio entre el texto y el botón
34                  ElevatedButton(
35                      onPressed: () {
36                          // Aquí va la acción del botón
37                          print('Botón Aceptar presionado');
38                      },
39                      child: Text('Aceptar'),
40                  ), // ElevatedButton
41              ],
42          ), // Column
43      ); // Scaffold
44  }
45  }

```

Pagina 2

```
main.dart 5 • Pagina2.dart X
lib > widget > Pagina2.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Pagina2 extends StatelessWidget {
4    @override
5    Widget build(BuildContext context) {
6      return Scaffold(
7        appBar: AppBar(title: Text('Pagina2'), backgroundColor: Colors.cyan),
8        body: Column(
9          children: [
10           Container(
11             width: double.infinity,
12             color: Colors.cyanAccent,
13             padding: EdgeInsets.all(25),
14             child: Text(
15               'Hola Mundo',
16               textAlign: TextAlign.center,
17               style: TextStyle(fontSize: 30, color: Colors.white),
18             ), // Text
19           ), // Container
20           Container(
21             width: double.infinity,
22             color: Colors.cyanAccent,
23             padding: EdgeInsets.all(25),
24             child: Text(
25               'Hola Mundo',
26               textAlign: TextAlign.center,
27               style: TextStyle(fontSize: 30, color: Colors.white),
28             ), // Text
29           ), // Container
30           Expanded(
31             child: Container(
32               width: double.infinity,
33               color: Colors.cyanAccent,
34               padding: EdgeInsets.all(25),
35               child: Text(
36                 'Notas',
37                 textAlign: TextAlign.center,
38                 style: TextStyle(fontSize: 30, color: Colors.white),
39               ), // Text
40             ), // Container
41           ), // Expanded
42         ],
43       ), // Column
44     ); // Scaffold
45   }
46 }
```

Pagina 3

```
lib > widget > Pagina3.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Pagina3 extends StatelessWidget {
4    @override
5    Widget build(BuildContext context) {
6      return Scaffold(
7        appBar: AppBar(title: Text('Pagina2'), backgroundColor: Colors.cyan),
8        body: Column(
9          children: [
10           Container(
11             width: double.infinity,
12             color: Colors.cyanAccent,
13             padding: EdgeInsets.all(25),
14             child: Text(
15               'Hola Mundo',
16               textAlign: TextAlign.center,
17               style: TextStyle(fontSize: 30, color: Colors.white),
18             ), // Text
19           ), // Container
20           Container(
21             width: double.infinity,
22             color: Colors.cyanAccent,
23             padding: EdgeInsets.all(25),
24             child: Text(
25               'Hola Mundo',
26               textAlign: TextAlign.center,
27               style: TextStyle(fontSize: 30, color: Colors.white),
28             ), // Text
29           ), // Container
30           Expanded(
31             child: Container(
32               width: double.infinity,
33               color: Colors.cyanAccent,
34               padding: EdgeInsets.all(25),
35               child: Text(
36                 'Notas',
37                 textAlign: TextAlign.center,
38                 style: TextStyle(fontSize: 30, color: Colors.white),
39               ), // Text
40             ), // Container
41           ), // Expanded
42         ],
43       ), // Column
44     ); // Scaffold
45   }
46 }
```

Pagina 4

```
lib > widget > Pagina4.dart > Pagina4
1  import 'package:flutter/material.dart';
2
3  class Pagina4 extends StatelessWidget {
4    void acccion() {
5      print('Hola Mundo');
6    }
7
8    @override
9    Widget build(BuildContext context) {
10     return Scaffold(
11       appBar: AppBar(title: Text('Login'), backgroundColor: Colors.blueGrey),
12       body: Column(
13         children: [
14           Expanded(
15             flex: 5,
16             child: Container(
17               width: double.infinity,
18               color: Colors.amberAccent,
19               child: Container(
20                 padding: EdgeInsets.all(25),
21                 child: Column(
22                   mainAxisAlignment: MainAxisAlignment.center,
23                   children: [
24                     TextField(
25                       keyboardType: TextInputType.text,
26                       decoration: InputDecoration(labelText: 'Usuario'),
27                     ), // TextField
28                     TextField(
29                       keyboardType: TextInputType.number,
30                       decoration: InputDecoration(labelText: 'Password'),
31                     ), // TextField
32                     SizedBox(height: 15),
33                   ],
34                 ),
35             ),
36           ],
37         ),
38       ),
39     );
40   }
41 }
```

```
38     Expanded(
39       flex: 1,
40       child: Container(
41         padding: EdgeInsets.only(left: 5, right: 5, top: 25, bottom: 25),
42         width: double.infinity,
43         child: ElevatedButton(onPressed: acccion, child: Text('Aceptar')),
44       ), // Container
45     ), // Expanded
46   ],
47 ), // Column
48 ); // Scaffold
49 }
50 }
```


Página 5

```
lib > widget > Pagina5.dart > ...
1  import 'package:flutter/material.dart';
2  import 'package:flutter_application_1/widget/Pagina6.dart';
3
4  class Pagina5 extends StatefulWidget {
5    @override
6    State<StatefulWidget> createState() {
7      return Disenio();
8    }
9  }
10
11 class Disenio extends State<Pagina5> {
12   String res = "Sin accion";
13   final TextEditingController usuario = TextEditingController();
14   final TextEditingController password = TextEditingController();
15   void accion() {
16     final String us = usuario.text;
17     // final pass = password.text;
18     final int pass = int.tryParse(password.text) ?? 0;
19
20     setState(() {
21       if (us == "admin" && pass == "123") {
22         res = "usuario y password correctos";
23         Navigator.push(
24           context,
25           MaterialPageRoute(builder: (context) => Pagina6(nombre: us)),
26         );
27         // res = "usuario y password incorrectos";
28         showDialog(
29           context: context,
30           builder: (context) {
31             return AlertDialog(
32               title: Text('Error de acceso'),
33               content: Text('Usuario y/o password incorrecto'),
34               actions: [
35                 TextButton(
36                   onPressed: () {
37                     Navigator.pop(context);
38                   },
39                   child: Text('Aceptar'),
40                 ), // TextButton
41               ],
42             ); // AlertDialog
43           },
44         );
45         res = "Otro mensaje";
46       }
47     });
48   }
49 }
```

```

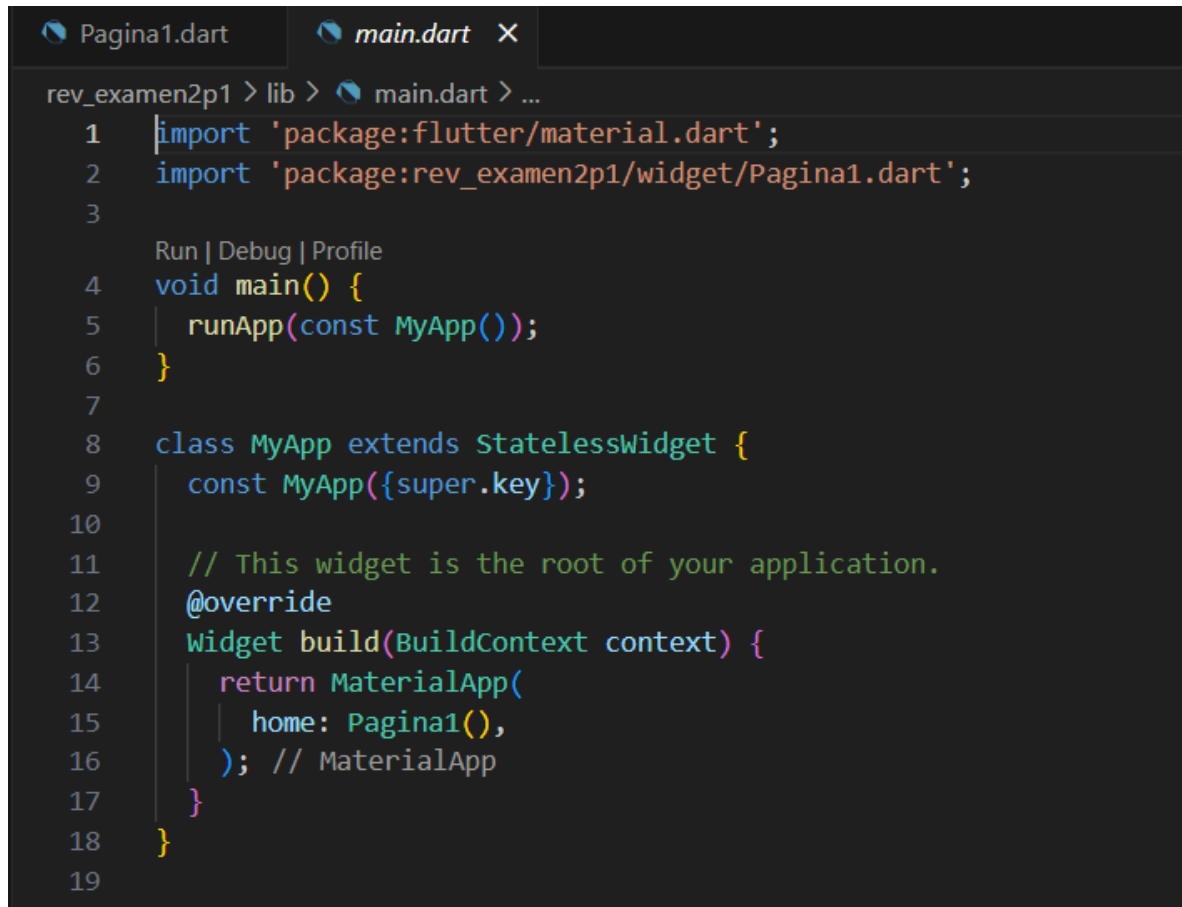
51  @override
52  Widget build(BuildContext context) {
53    return Scaffold(
54      appBar: AppBar(title: Text('Login'), backgroundColor: Colors.blueGrey),
55      body: Column(
56        children: [
57          Expanded(
58            flex: 5,
59            child: Container(
60              width: double.infinity,
61              color: Colors.amberAccent,
62              child: Container(
63                padding: EdgeInsets.all(25),
64                child: Column(
65                  mainAxisAlignment: MainAxisAlignment.center,
66                  children: [
67                    TextField(
68                      controller: usuario,
69                      keyboardType: TextInputType.text,
70                      decoration: InputDecoration(labelText: 'Usuario'),
71                    ), // TextField
72                    TextField(
73                      controller: password,
74                      keyboardType: TextInputType.number,
75                      decoration: InputDecoration(labelText: 'Password'),
76                    ), // TextField
77                    SizedBox(height: 15),
78                    Text('$res'),
79                  ],
80                ), // Column
81              ), // Container
82            ), // Container
83          ), // Expanded
84          Expanded(
85            flex: 1,
86            child: Container(
87              padding: EdgeInsets.only(left: 5, right: 5, top: 25, bottom: 25),
88              width: double.infinity,
89              child: ElevatedButton(onPressed: acccion, child: Text('Aceptar')),
90            ), // Container
91          ), // Expanded
92        ],
93      ), // Column
94    ); // Scaffold
95  }
96  }

```

Pagina 6

```
lib > widget > Pagina6.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Pagina6 extends StatefulWidget {
4    final String nombre;
5    Pagina6({required this.nombre});
6
7    @override
8    State<StatefulWidget> createState() {
9      return Disenio();
10   }
11 }
12
13 class Disenio extends State<Pagina6> {
14   @override
15   Widget build(BuildContext context) {
16     return Scaffold(
17       appBar: AppBar(title: Text('Login'), backgroundColor: Colors.blueGrey),
18       body: Center(child: Text('data')),
19     ); // Scaffold
20   }
21 }
```

Revisión examen



```

Pagina1.dart  main.dart X
rev_examen2p1 > lib > main.dart > ...
1  import 'package:flutter/material.dart';
2  import 'package:rev_examen2p1/widget/Pagina1.dart';
3
   Run | Debug | Profile
4  void main() {
5    runApp(const MyApp());
6  }
7
8  class MyApp extends StatelessWidget {
9    const MyApp({super.key});
10
11    // This widget is the root of your application.
12    @override
13    Widget build(BuildContext context) {
14      return MaterialApp(
15        home: Pagina1(),
16      ); // MaterialApp
17    }
18  }
19
```

Pagina 1

```
Pagina1.dart X main.dart
rev_examen2p1 > lib > widget > Pagina1.dart > Pagina1
1  import 'package:flutter/material.dart';
2  import 'package:rev_examen2p1/widget/Pagina2.dart';
3
4  class Pagina1 extends StatefulWidget {
5    @override
6    State<StatefulWidget> createState() {
7      // TODO: implement createState
8      return Disenio();
9    }
10 }
11
12 class Disenio extends State<Pagina1> {
13   TextEditingController nun1 = TextEditingController();
14   TextEditingController nun2 = TextEditingController();
15   TextEditingController nun3 = TextEditingController();
16   TextEditingController nun4 = TextEditingController();
17
18   void enviar() {
19     final double c1 = double.tryParse(nun1.text) ?? 0; //double permite numeros
20     final double c2 =
21       double.tryParse(nun1.text) ?? 0; //tryparse intenta convertir los datos
22     final double c3 =
23       double.tryParse(nun1.text) ??
24       0; // el parametro "??" permite que si hay un error lo convierta en 0
25     final double c4 =
26       double.tryParse(nun1.text) ??
27       0; // tambien "??" permite que si no se asigna un valor le asigne un 0
28   }
```



```

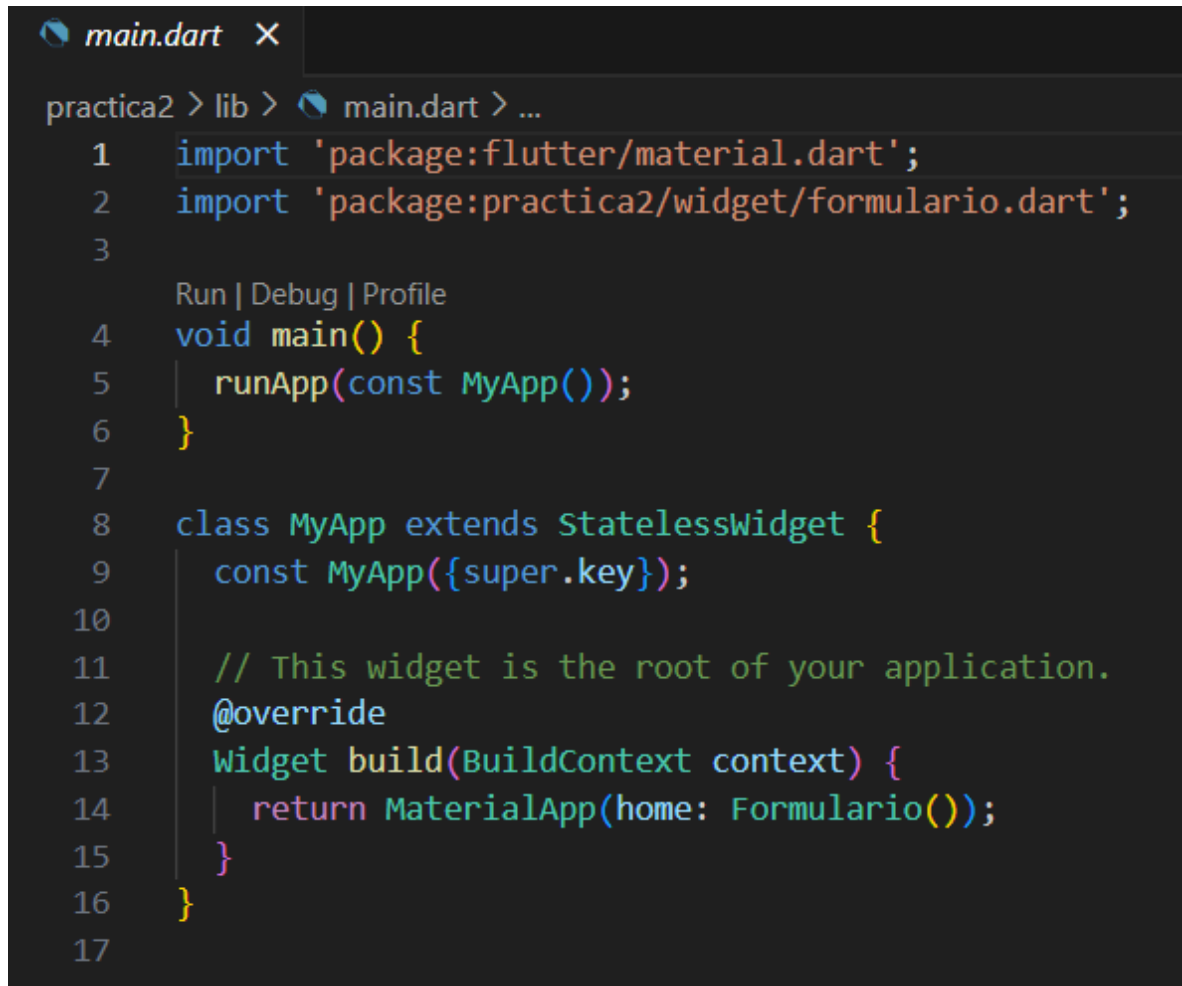
84     ), // TextField
85     TextField(
86       keyboardType: TextInputType.number,
87       controller: nun2,
88       decoration: InputDecoration(
89         labelText: 'Escribe un numero',
90       ), // InputDecoration
91     ), // TextField
92     TextField(
93       controller: nun3,
94       keyboardType: TextInputType.number,
95       decoration: InputDecoration(
96         labelText: 'Escribe un numero',
97       ), // InputDecoration
98     ), // TextField
99     TextField(
100      keyboardType: TextInputType.number,
101      controller: nun4,
102      decoration: InputDecoration(
103        labelText: 'Escribe un numero',
104      ), // InputDecoration
105    ), // TextField
106  ],
107 ), // Column
108 ), // Padding
109 ), // Center
110 ), // Container
111 ), // Expanded
112 ],
113 ), // Column
114 ); // Scaffold
115 }
116 }

```

Pagina 2

```
rev_examen2p1 > lib > widget > Pagina2.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Pagina2 extends StatefulWidget {
4    final double c1;
5    final double c2;
6    final double c3;
7    final double c4;
8
9    const Pagina2({
10     super.key,
11     required this.c1,
12     required this.c2,
13     required this.c3,
14     required this.c4,
15   });
16
17   @override
18   State<StatefulWidget> createState() {
19     // TODO: implement createState
20     return Disenio();
21   }
22 }
23
24 class Disenio extends State<Pagina2> {
25   double promedio = 0.0;
26
27   void initState() {
28     super
29     |   .initState(); //Super hace que se corra primero el constructor y despues este
30     |   calcular(); //se manda a llamar el metodo calcular
31   }
32
33   void calcular() {
34     promedio = (widget.c1 + widget.c2 + widget.c3 + widget.c4) / 4;
35   }
36
37   @override
38   Widget build(BuildContext context) {
39     // TODO: implement build
40     return Scaffold(
41       appBar: AppBar(
42         title: Text('Pagina 2'),
43         backgroundColor: Color.fromARGB(255, 142, 3, 216),
44       ), // AppBar
45       body: Center(child: Text('Promedio: $promedio')),
46     ); // Scaffold
47   }
48 }
```


Programa 2



The image shows a code editor window for a file named `main.dart`. The breadcrumb navigation at the top indicates the file path is `practica2 > lib > main.dart > ...`. The code is written in Dart and defines a Flutter application. It imports the Flutter material package and a custom widget package. The `main` function calls `runApp` with a `MyApp` widget. The `MyApp` class extends `StatelessWidget` and overrides the `build` method to return a `MaterialApp` with a `Formulario` widget as its home.

```
1 import 'package:flutter/material.dart';
2 import 'package:practica2/widget/formulario.dart';
3
4 void main() {
5   runApp(const MyApp());
6 }
7
8 class MyApp extends StatelessWidget {
9   const MyApp({super.key});
10
11   // This widget is the root of your application.
12   @override
13   Widget build(BuildContext context) {
14     return MaterialApp(home: Formulario());
15   }
16 }
17
```

Formulario

```
formulario.dart 1 x
practica2 > lib > widget > formulario.dart > ...
1  import 'dart:ui';
2
3  import 'package:flutter/material.dart';
4  import 'package:flutter/services.dart';
5
6  class Formulario extends StatefulWidget {
7    const Formulario({super.key});
8
9    @override
10   State<StatefulWidget> createState() {
11     // TODO: implement createState
12     return Disenio();
13   }
14 }
15
16 class Disenio extends State<Formulario> {
17   final TextEditingController num1 = TextEditingController();
18   final TextEditingController num2 = TextEditingController();
19   final _formkey = GlobalKey<FormState>(); //Deteta acciones al querer validar
20
21   String? aplicarValidacion(String? valor) {
22     if (valor == null || valor.isEmpty) {
23       return 'Ingresa un dato';
24     }
25     final exp = RegExp(r'^[a-z, A-Z ]*$');
26     if (!exp.hasMatch(valor)) {
27       return 'Ingresa solo letras';
28     }
29     return null;
30   }
31
32   void validarDatos() {
33     if (_formkey.currentState?.validate() ?? false) {
34       ScaffoldMessenger.of(
35         context,
36       ).showSnackBar(SnackBar(content: Text('Dato correcto')));
37     } else {
38       ScaffoldMessenger.of(
39         context,
40       ).showSnackBar(SnackBar(content: Text('Error')));
41     }
42   }
43 }
```

```

44  @override
45  Widget build(BuildContext context) {
46    // TODO: implement build
47    return Scaffold(
48      appBar: AppBar(title: Text('Formulario'), backgroundColor: Colors.amber),
49      body: Padding(
50        padding: EdgeInsets.all(20),
51        child: Form(
52          key: _formkey, //detecta la llave
53          child: Column(
54            mainAxisAlignment: MainAxisAlignment.center,
55            children: [
56              TextField(
57                inputFormatters: [
58                  FilteringTextInputFormatter.allow(RegExp(r'^[a-z, A-Z ]*$')),
59                ], // FilteringTextInputFormatter.allow
60              ],
61              controller: num1,
62              keyboardType: TextInputType.text,
63              decoration: InputDecoration(labelText: 'Escribe un nombre'),
64            ), // TextField
65            TextFormField(
66              controller: num2,
67              keyboardType: TextInputType.text,
68              decoration: InputDecoration(
69                labelText: 'Escribe otro nombre',
70                border: OutlineInputBorder(),
71              ), // InputDecoration
72              validator: aplicarValidacion,
73            ), // TextFormField
74            SizedBox(height: 10),
75            SizedBox(
76              child: ElevatedButton.icon(
77                onPressed: validarDatos,
78                label: Text('Validar'),
79                icon: Icon(Icons.window),
80              ), // ElevatedButton.icon
81            ), // SizedBox
82          ],
83        ), // Column
84      ), // Form
85    ), // Padding
86  ); // Scaffold
87  }
88  }
89

```

Programa 3

```
main.dart ✕
practica_3 > lib > main.dart > ...
1  import 'package:flutter/material.dart';
2  import 'package:practica_3/widget/Pagina.dart';
3
   Run | Debug | Profile
4  void main() {
5      runApp(const MyApp());
6  }
7
8  class MyApp extends StatelessWidget {
9      const MyApp({super.key});
10
11      // This widget is the root of your application.
12      @override
13      Widget build(BuildContext context) {
14          return MaterialApp(home: Pagina());
15      }
16  }
17
```

```
centro.dart ✕
practica_3 > lib > widget > centro.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Centro extends StatefulWidget {
4      const Centro({super.key});
5
6      @override
7      State<StatefulWidget> createState() {
8          // TODO: implement createState
9          return Body();
10     }
11 }
12
13 class Body extends State<Centro> {
14     @override
15     Widget build(BuildContext context) {
16         // TODO: implement build
17         return Center(child: Text('Centro'));
18     }
19 }
20
```

Centro

Derecho

```
derecho.dart X
practica_3 > lib > widget > derecho.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Derecho extends StatefulWidget {
4    const Derecho({super.key});
5
6    @override
7    State<StatefulWidget> createState() {
8      // TODO: implement createState
9      return Body();
10   }
11 }
12
13 class Body extends State<Derecho> {
14   @override
15   Widget build(BuildContext context) {
16     // TODO: implement build
17     return Center(child: Text('Derecho'));
18   }
19 }
```

Izquierdo

```
izquierdo.dart ×
practica_3 > lib > widget > izquierdo.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Izquierdo extends StatefulWidget {
4    const Izquierdo({super.key});
5
6    @override
7    State<StatefulWidget> createState() {
8      // TODO: implement createState
9      return Body();
10   }
11 }
12
13 class Body extends State<Izquierdo> {
14   @override
15   Widget build(BuildContext context) {
16     // TODO: implement build
17     return Center(child: Text('Izquierdo'));
18   }
19 }
```

Pagina

```
Pagina.dart X
practica_3 > lib > widget > Pagina.dart > ...

1 import 'package:flutter/material.dart';
2 import 'package:practica_3/widget/derecho.dart';
3 import 'package:practica_3/widget/izquierdo.dart';
4 import 'package:practica_3/widget/centro.dart';
5
6 class Pagina extends StatefulWidget {
7   const Pagina({super.key});
8
9   @override
10  State<StatefulWidget> createState() {
11    // TODO: implement createState
12    return Disenio();
13  }
14 }
15
16 class Disenio extends State<Pagina> {
17   int _index = 0;
18
19   @override
20   Widget build(BuildContext context) {
21     // TODO: implement build
22     return Scaffold(
23       appBar: AppBar(
24         title: Text(
25           'ButtonNavigationBar',
26           style: TextStyle(color: Colors.white),
27         ), // Text
28         backgroundColor: Colors.blueGrey,
29       ), // AppBar
30
31       body: _index == 0 ? Izquierdo() : (_index == 1 ? Centro() : Derecho()),
32       bottomNavigationBar: BottomNavigationBar(
33         type: BottomNavigationBarType.fixed,
34         backgroundColor: Colors.purpleAccent,
35         items: [
36           BottomNavigationBarItem(
37             icon: Icon(Icons.airlines),
38             label: 'Izquierdo',
39           ), // BottomNavigationBarItem
40           BottomNavigationBarItem(icon: Icon(Icons.add_call), label: 'Centro'),
41           BottomNavigationBarItem(icon: Icon(Icons.zoom_out), label: 'Derecho'),
42         ],
43         currentIndex: _index,
44         selectedItemColor: Colors.deepOrangeAccent,
45         onTap: (index) {
46           setState(() {
47             _index = index;
48           });
49         },
50       ), // BottomNavigationBar
51     ); // Scaffold
52   }
53 }
```

Tarea 1

```
main.dart X
tarea1 > lib > main.dart > ...
1  import 'package:flutter/material.dart';
2  import 'package:tarea1/widget/Pagina.dart';
3
   Run | Debug | Profile
4  void main() {
5    runApp(const MyApp());
6  }
7
8  class MyApp extends StatelessWidget {
9    const MyApp({super.key});
10
11    // This widget is the root of your application.
12    @override
13    Widget build(BuildContext context) {
14      return MaterialApp(home: Pagina());
15    }
16  }
```

Pagina

```
Pagina.dart X
tarea1 > lib > widget > Pagina.dart > ...
1  import 'package:flutter/material.dart';
2  import 'package:tarea1/widget/Division.dart';
3  import 'package:tarea1/widget/Multi.dart';
4  import 'package:tarea1/widget/Suma.dart';
5  import 'package:tarea1/widget/Resta.dart';
6
7  class Pagina extends StatefulWidget {
8    const Pagina({super.key});
9
10    @override
11    State<StatefulWidget> createState() {
12      // TODO: implement createState
13      return Disenio();
14    }
15  }
16
```



```

17 class Disenio extends State<Pagina> {
18   int _index = 0;
19
20   @override
21   Widget build(BuildContext context) {
22     // TODO: implement build
23     return Scaffold(
24       appBar: AppBar(
25         title: Text('Tarea', style: TextStyle(color: Colors.white)),
26         backgroundColor: Color.fromARGB(255, 101, 3, 93),
27       ), // AppBar
28       body: _index == 0
29         ? Suma()
30         : (_index == 1
31           ? Resta()
32           : (_index == 2 ? Multiplicacion() : Division())),
33       bottomNavigationBar: BottomNavigationBar(
34         type: BottomNavigationBarType.fixed,
35         backgroundColor: Colors.blueGrey,
36         items: [
37           BottomNavigationBarItem(icon: Icon(Icons.add_circle), label: "Suma"),
38           BottomNavigationBarItem(icon: Icon(Icons.remove), label: "Resta"),
39           BottomNavigationBarItem(
40             icon: Icon(Icons.snowing),
41             label: "Multiplicacion",
42           ), // BottomNavigationBarItem
43           BottomNavigationBarItem(
44             icon: Icon(Icons.multiply_stop),
45             label: "Division",
46           ), // BottomNavigationBarItem
47         ],
48         currentIndex: _index,
49         selectedItemColor: Colors.lightBlueAccent,
50         onTap: (index) {
51           setState(() {
52             _index = index;
53           });
54         },
55       ), // BottomNavigationBar
56     ); // Scaffold
57   }
58 }

```

Suma

```
Suma.dart X
tarea1 > lib > widget > Suma.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Suma extends StatefulWidget {
4    const Suma({super.key});
5
6    @override
7    State<StatefulWidget> createState() {
8      // TODO: implement createState
9      return Body();
10   }
11 }
12
13 class Body extends State<Suma> {
14   //variables
15   final TextEditingController variable1 = TextEditingController();
16   final TextEditingController variable2 = TextEditingController();
17   double resultado = 0;
18
19   bool validacion(String validar) {
20     return RegExp(r'^-\d+$').hasMatch(validar);
21   }
22
23   //funcion
24   void sumar() {
25     final double num1 = double.tryParse(variable1.text) ?? 0;
26     final double num2 = double.tryParse(variable2.text) ?? 0;
27
28     if (validacion(variable1.text) && validacion(variable2.text)) {
29       sumar();
30     } else {
31       showDialog(
32         context: context,
33         builder: (context) {
34           return AlertDialog(
35             title: Text('Entrada invalida'),
36             content: Text('Ingresa solamente numeros '),
37           ); // AlertDialog
38         },
39       );
40     }
41     setState(() {
42       resultado = num1 + num2;
43     });
44   }
```

```

46 @override
47 widget build(BuildContext context) {
48   // TODO: implement build
49   return Padding(
50     padding: const EdgeInsets.all(10.0),
51     child: Column(
52       mainAxisAlignment: MainAxisAlignment.center,
53       children: [
54         TextField(
55           controller: variable1,
56           keyboardType: TextInputType.number,
57           decoration: InputDecoration(labelText: 'Numero1'),
58         ), // TextField
59         SizedBox(height: 10),
60         TextField(
61           controller: variable2,
62           keyboardType: TextInputType.number,
63           decoration: InputDecoration(labelText: 'Numero2'),
64         ), // TextField
65         SizedBox(height: 20),
66         ElevatedButton(onPressed: sumar, child: Text('Sumar')),
67         SizedBox(height: 20),
68         Text('Resultado: $resultado'),
69       ],
70     ), // Column
71   ); // Padding
72 }
73 }

```

Resta

```
Rest.dart X
tarea1 > lib > widget > Rest.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Resta extends StatefulWidget {
4    const Resta({super.key});
5
6    @override
7    State<StatefulWidget> createState() {
8      // TODO: implement createState
9      return Body();
10   }
11 }
12
13 class Body extends State<Resta> {
14   //variables
15   final TextEditingController variable1 = TextEditingController();
16   final TextEditingController variable2 = TextEditingController();
17   double resultado = 0;
18
19   bool validacion(String validar) {
20     return RegExp(r'^-\d+$').hasMatch(validar);
21   }
22
23   //funcion
24   void restar() {
25     final double num1 = double.tryParse(variable1.text) ?? 0;
26     final double num2 = double.tryParse(variable2.text) ?? 0;
27
28     setState(() {
29       resultado = num1 - num2;
30     });
31   }
32 }
```

```

46 @override
47 widget build(BuildContext context) {
48   // TODO: implement build
49   return Padding(
50     padding: const EdgeInsets.all(10.0),
51     child: Column(
52       mainAxisAlignment: MainAxisAlignment.center,
53       children: [
54         TextField(
55           controller: variable1,
56           keyboardType: TextInputType.number,
57           decoration: InputDecoration(labelText: 'Numero1'),
58         ), // TextField
59         SizedBox(height: 10),
60         TextField(
61           controller: variable2,
62           keyboardType: TextInputType.number,
63           decoration: InputDecoration(labelText: 'Numero2'),
64         ), // TextField
65         SizedBox(height: 20),
66         ElevatedButton(onPressed: restar, child: Text('Restar')),
67         SizedBox(height: 20),
68         Text('Resultado: $resultado'),
69       ],
70     ), // Column
71   ); // Padding
72 }
73 }

```

Multiplicacion

```
Multi.dart x
tarea1 > lib > widget > Multi.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Multiplicacion extends StatefulWidget {
4    const Multiplicacion({super.key});
5
6    @override
7    State<StatefulWidget> createState() {
8      // TODO: implement createState
9      return Body();
10   }
11 }
12
13 class Body extends State<Multiplicacion> {
14   //variables
15   final TextEditingController variable1 = TextEditingController();
16   final TextEditingController variable2 = TextEditingController();
17   double resultado = 0;
18
19   bool validacion(String validar) {
20     return RegExp(r'^-\d+$').hasMatch(validar);
21   }
22
23   //funcion
24   void multi() {
25     final double num1 = double.tryParse(variable1.text) ?? 0;
26     final double num2 = double.tryParse(variable2.text) ?? 0;
27
41     setState(() {
42       resultado = num1 * num2;
43     });
44   }
```

```

46  @override
47  Widget build(BuildContext context) {
48    // TODO: implement build
49    return Padding(
50      padding: const EdgeInsets.all(10.0),
51      child: Column(
52        mainAxisAlignment: MainAxisAlignment.center,
53        children: [
54          TextField(
55            controller: variable1,
56            keyboardType: TextInputType.number,
57            decoration: InputDecoration(labelText: 'Numero1'),
58          ), // TextField
59          SizedBox(height: 10),
60          TextField(
61            controller: variable2,
62            keyboardType: TextInputType.number,
63            decoration: InputDecoration(labelText: 'Numero2'),
64          ), // TextField
65          SizedBox(height: 20),
66          ElevatedButton(onPressed: multi, child: Text('Multiplicar')),
67          SizedBox(height: 20),
68          Text('Resultado: $resultado'),
69        ],
70      ), // Column
71    ); // Padding
72  }
73 }

```

Division

Division.dart X

area1 > lib > widget > Division.dart > ...

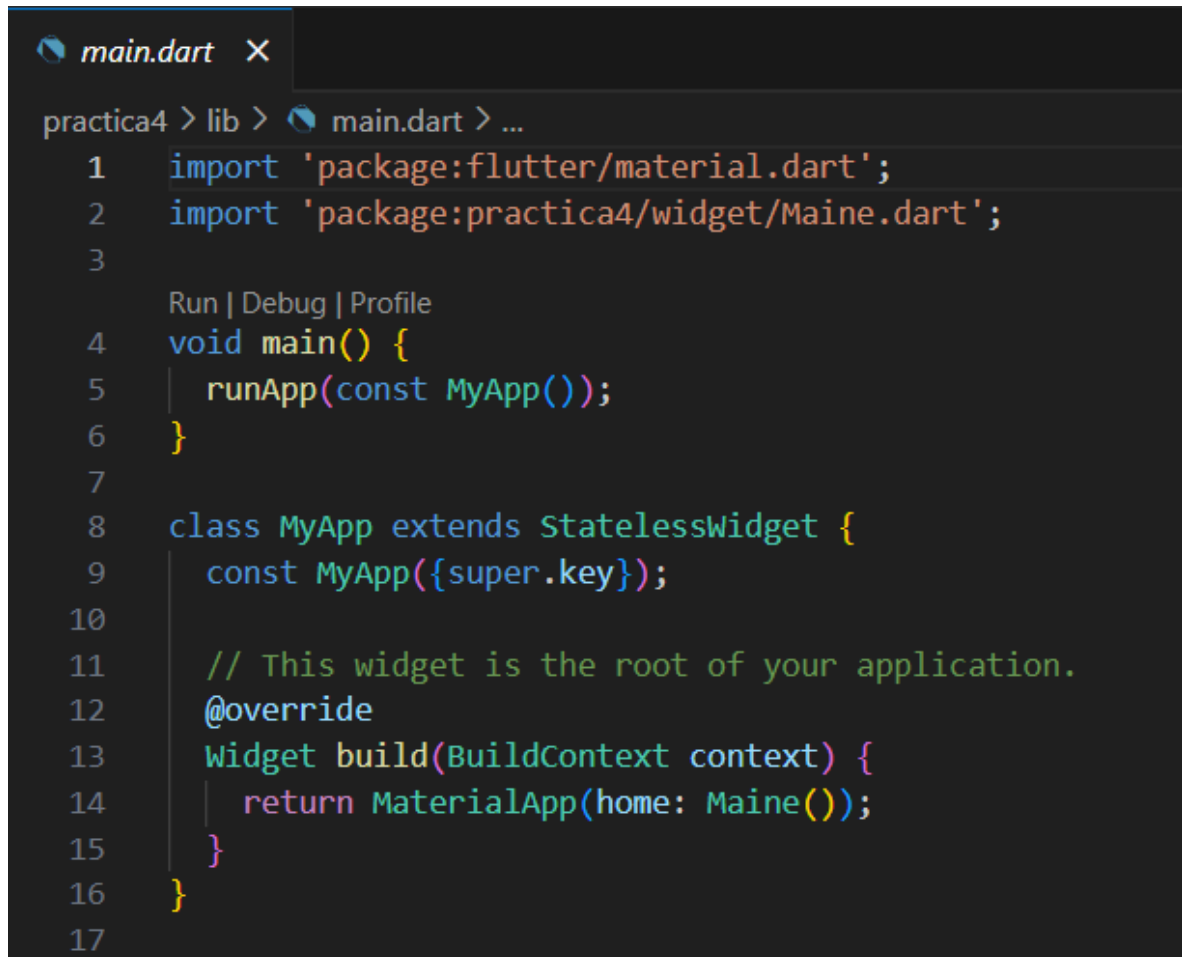
```
1  import 'package:flutter/material.dart';
2
3  class Division extends StatefulWidget {
4    const Division({super.key});
5
6    @override
7    State<StatefulWidget> createState() {
8      // TODO: implement createState
9      return Body();
10   }
11 }
12
13 class Body extends State<Division> {
14   //variables
15   final TextEditingController variable1 = TextEditingController();
16   final TextEditingController variable2 = TextEditingController();
17   double resultado = 0;
18
19   bool validacion(String validar) {
20     return RegExp(r'^-\d+$').hasMatch(validar);
21   }
22
23   //funcion
24   void dividir() {
25     final double num1 = double.tryParse(variable1.text) ?? 0;
26     final double num2 = double.tryParse(variable2.text) ?? 0;
```

```

41     setState(() {
42         resultado = num1 / num2;
43     });
44 }
45
46 @override
47 widget build(BuildContext context) {
48     // TODO: implement build
49     return Padding(
50         padding: const EdgeInsets.all(10.0),
51         child: Column(
52             mainAxisAlignment: MainAxisAlignment.center,
53             children: [
54                 TextField(
55                     controller: variable1,
56                     keyboardType: TextInputType.number,
57                     decoration: InputDecoration(labelText: 'Numero1'),
58                 ), // TextField
59                 SizedBox(height: 10),
60                 TextField(
61                     controller: variable2,
62                     keyboardType: TextInputType.number,
63                     decoration: InputDecoration(labelText: 'Numero2'),
64                 ), // TextField
65                 SizedBox(height: 20),
66                 ElevatedButton(onPressed: dividir, child: Text('Dividir')),
67                 SizedBox(height: 20),
68                 Text('Resultado: $resultado'),
69             ],
70         ), // Column
71     ); // Padding
72 }
73 }

```

Programa 4



The image shows a code editor window with a dark theme. At the top, there is a tab labeled 'main.dart' with a close button. Below the tab, the breadcrumb path 'practica4 > lib > main.dart > ...' is visible. The code is written in Dart and includes imports for Flutter's material package and a local widget package. It defines a 'main' function that calls 'runApp' with a 'MyApp' instance. The 'MyApp' class extends 'StatelessWidget' and overrides the 'build' method to return a 'MaterialApp' with a 'Maine' home screen. Line numbers 1 through 17 are displayed on the left side of the editor.

```
1 import 'package:flutter/material.dart';
2 import 'package:practica4/widget/Maine.dart';
3
4 void main() {
5   runApp(const MyApp());
6 }
7
8 class MyApp extends StatelessWidget {
9   const MyApp({super.key});
10
11   // This widget is the root of your application.
12   @override
13   Widget build(BuildContext context) {
14     return MaterialApp(home: Maine());
15   }
16 }
17
```

Maine

Maine.dart X

practica4 > lib > widget > Maine.dart > ...

```
1  import 'package:flutter/material.dart';
2  import 'package:practica4/paginas/datos.dart';
3  import 'package:practica4/paginas/home.dart';
4  import 'package:practica4/paginas/lista.dart';
5
6  class Maine extends StatefulWidget {
7    const Maine({super.key});
8
9    @override
10   State<StatefulWidget> createState() {
11     // TODO: implement createState
12     return Base();
13   }
14 }
15
16 class Base extends State<Maine> {
17   int _index = 0;
18
19   final List<Widget> _paginas = [Home(), Lista(), Datos()];
20
21   void _clicIndex(int i) {
22     //i representa el parametro a recibir
23     setState(() {
24       _index = i;
25     });
26   }
27 }
```

```

28 @override
29 Widget build(BuildContext context) {
30   // TODO: implement build
31   return Scaffold(
32     appBar: AppBar(
33       title: Text('Navigation Drawer', style: TextStyle(color: Colors.white)),
34       backgroundColor: Colors.amber,
35     ), // AppBar
36     drawer: Drawer(
37       child: ListView(
38         padding: EdgeInsets.all(20),
39         children: [
40           DrawerHeader(
41             decoration: BoxDecoration(color: Colors.amberAccent),
42             child: Row(
43               children: [
44                 CircleAvatar(
45                   radius: 30,
46                   backgroundImage: AssetImage('assets/home.png'),
47

```

```

48           Padding(
49             padding: const EdgeInsets.only(left: 1, right: 20),
50             child: Column(
51               mainAxisAlignment: MainAxisAlignment.center,
52               children: [
53                 Text(
54                   'Aplicacion',
55                   style: TextStyle(
56                     fontSize: 18,
57                     fontFamily: "Times New Roman",
58                     fontStyle: FontStyle.italic,
59                   ), // TextStyle
60                 ), // Text
61                 Text('oli de prueba'),
62                 Text(
63                   'oli de prueba por mi',
64                   style: TextStyle(
65                     fontSize: 12,
66                     fontFamily: "Arial Arrow",
67                     fontStyle: FontStyle.italic,
68                   ), // TextStyle
69                 ), // Text
70               ],

```

```

71         ), // Column
72     ), // Padding
73 ],
74 ), // Row
75 ), // DrawerHeader
76 ListTile(
77     leading: Icon(Icons.snowing),
78     title: Text('ola nevoso home'),
79     onTap: () {
80         _clikIndex(0);
81         Navigator.pop(context);
82     },
83 ), // ListTile
84 ListTile(
85     leading: Icon(Icons.star),
86     title: Text('ola estrelloso lista'),
87     onTap: () {
88         _clikIndex(1);
89         Navigator.pop(context);
90     },
91 ), // ListTile
92 ListTile(
93     leading: Icon(Icons.sunny),
94     title: Text('ola soleado datos'),
95     onTap: () {
96         _clikIndex(2);
97         Navigator.pop(context);
98     },
99 ), // ListTile
100 ],
101 ), // ListView
102 ), // Drawer
103 body:
104     _paginas[_index], //indica que el body cambie segun lo que indique la v
105 ); // Scaffold
106 }
107 }

```

Datos

```
practica4 > lib > paginas > datos.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Datos extends StatefulWidget {
4    const Datos({super.key});
5
6    @override
7    State<StatefulWidget> createState() {
8      // TODO: implement createState
9      return Disenio();
10   }
11 }
12
13 class Disenio extends State<Datos> {
14   @override
15   Widget build(BuildContext context) {
16     // TODO: implement build
17     return Scaffold(body: Center(child: Text('Pagina principal')));
18   }
19 }
```


Home

```
practica4 > lib > paginas > home.dart > ...
1 import 'package:flutter/material.dart';
2
3 class Home extends StatefulWidget {
4   const Home({super.key});
5
6   @override
7   State<StatefulWidget> createState() {
8     // TODO: implement createState
9     return Disenio();
10  }
11 }
12
13 class Disenio extends State<Home> {
14   @override
15   Widget build(BuildContext context) {
16     // TODO: implement build
17     return Scaffold(
18       body: Padding(
19         padding: const EdgeInsets.all(8.0),
20         child: Column(
21           children: [
22             Expanded(flex: 1, child: Center(child: Text('Pagina principal'))),
23             Expanded(
24               flex: 3,
25               child: Column(
26                 mainAxisAlignment: MainAxisAlignment.center,
27                 children: [
28                   Text('Mi novia'),
29                   Image.network(
30                     'https://th.bing.com/th/id/OIP.rw1NFV4mVbTqgFJNKx_iwHaEK?w=310&h=180&c=7&r=
31                   ), // Image.network
```

```

32     ],
33     ), // Column
34   ), // Expanded
35   Expanded(
36     flex: 3,
37     child: Row(
38       children: [
39         Image.network(
40           'https://th.bing.com/th/id/OIP.MJwYGgEWTGrCIytPbrrYyWAAAA?w=148&h=150&c=7&r=
41         ), // Image.network
42         Image.network(
43           'https://th.bing.com/th/id/OIP.03B1QG_R4Nfw8Hb3BVtpFgAAAA?w=143&h=150&c=7&r=
44         ), // Image.network
45         Image.network(
46           'https://th.bing.com/th/id/OIP.83LeWPkLUU18j7y_qcCwxgAAAA?w=146&h=150&c=7&r=
47         ), // Image.network
48         Image.network(
49           'https://th.bing.com/th/id/OIP.TeJS0gW5HnKHD1biW4k0lQAAAA?w=124&h=150&c=7&r=
50         ), // Image.network
51       ],
52     ), // Row
53   ), // Expanded
54 ],
55 ), // Column
56 ), // Padding
57 ); // Scaffold
58 }
59 }

```

Lista

```
Maine.dart  lista.dart X
practica4 > lib > paginas > lista.dart > ...
1  import 'package:flutter/material.dart';
2
3  class Lista extends StatefulWidget {
4      const Lista({super.key});
5
6      @override
7      State<StatefulWidget> createState() {
8          // TODO: implement createState
9          return Disenio();
10     }
11 }
12
13 class Disenio extends State<Lista> {
14     @override
15     Widget build(BuildContext context) {
16         // TODO: implement build
17         return Scaffold(
18             body: Center(
19                 child: ListView(
20                     scrollDirection: Axis.vertical,
21                     children: [
22                         Image.asset('assets/k1.png'),
23                         //Image.asset(name),
24                         //Image.asset(name),
25                         //Image.asset(name),
26                     ],
27                 ), // ListView
28             ), // Center
29         ); // Scaffold
30     }
31 }
```