**1,2,3:** Main.dart:

import 'dart:ui';

import 'package:flutter/material.dart';

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {

@override

Widget build(BuildContext context) {

return MaterialApp(

home: MobileHomePage(),

debugShowCheckedModeBanner: false,

);

}

}

class MobileHomePage extends StatelessWidget {

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text("Mobile store"),

centerTitle: true,

),

body: Padding(

padding: const EdgeInsets.all(8.0),

child: Image(

image: NetworkImage('https://encrypted-tbn0.gstatic.com/images?q=tbn:ANd9GcROLSUMEtDN8iiEs78KcPGyT1GsGlglK1bBfQ&usqp=CAU'),

fit: BoxFit.fill,

width: window.physicalSize.width,

height: window.physicalSize.height,),

),

floatingActionButton: FloatingActionButton(

child: Icon(Icons.send\_to\_mobile\_outlined),

onPressed: (){Navigator.of(context).push(MaterialPageRoute(builder: (\_)=> MenuPage()));}

),

);

}

}

class MobileItem {

final String name;

final double price;

final String imageUrl;

MobileItem({required this.name, required this.price, required this.imageUrl});

}

class MenuPage extends StatelessWidget {

MenuPage({Key? key}) : super(key: key);

final List<MobileItem> mobileItems = [

MobileItem(

name: 'iPhone 13 Pro',

price: 999,

imageUrl:

'https://m.media-amazon.com/images/I/51f4A6Tr8zL.\_SX522\_.jpg'),

MobileItem(

name: 'Samsung Galaxy S21 Ultra',

price: 1099,

imageUrl:

'https://m.media-amazon.com/images/I/51f4A6Tr8zL.\_SX522\_.jpg'),

MobileItem(

name: 'OnePlus 9 Pro',

price: 899,

imageUrl:

'https://m.media-amazon.com/images/I/51f4A6Tr8zL.\_SX522\_.jpg'),

MobileItem(

name: 'Google Pixel 6 Pro',

price: 899,

imageUrl:

'https://m.media-amazon.com/images/I/51f4A6Tr8zL.\_SX522\_.jpg'),

MobileItem(

name: 'Xiaomi Mi 11 Ultra',

price: 1199,

imageUrl:

'https://m.media-amazon.com/images/I/51f4A6Tr8zL.\_SX522\_.jpg'),

MobileItem(

name: 'Sony Xperia 1 III',

price: 1299,

imageUrl:

'https://m.media-amazon.com/images/I/51f4A6Tr8zL.\_SX522\_.jpg'),

MobileItem(

name: 'LG Velvet',

price: 699,

imageUrl:

'https://m.media-amazon.com/images/I/51f4A6Tr8zL.\_SX522\_.jpg'),

];

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Mobiles'),

),

body: ListView.builder(

itemCount: mobileItems.length,

itemBuilder: (context, index) {

final mobileItem = mobileItems[index];

return Padding(

padding: const EdgeInsets.all(8.0),

child: Row(

children: [

Image.network(

mobileItem.imageUrl,

height: 80,

width: 80,

),

SizedBox(width: 10),

Column(

crossAxisAlignment: CrossAxisAlignment.start,

children: [

Text(

mobileItem.name,

style: TextStyle(

fontWeight: FontWeight.bold,

fontSize: 18,

),

),

SizedBox(height: 5),

Text(

'\$ ${mobileItem.price}',

style: TextStyle(

fontWeight: FontWeight.bold,

fontSize: 16,

color: Colors.grey[600],

),

),

],

),

],

),

);

},

),

);

}

}

**4: Main.dart:**

import 'package:flutter/material.dart';

import 'package:tescalculator/calculator.dart';

void main(){

runApp(MaterialApp(

home: Calculator(),

));

}

Calculator.dart:

import 'package:flutter/material.dart';

class Calculator extends StatefulWidget {

const Calculator({Key? key}) : super(key: key);

@override

State<Calculator> createState() => \_CalculatorState();

}

class \_CalculatorState extends State<Calculator> {

Widget numButton(String btnText) {

return ElevatedButton(

onPressed: () {

calculate(btnText);

},

child: Text(

btnText,

style: TextStyle(

fontSize: 25,

),

),

);

}

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text("Calculator"),

centerTitle: true,

),

body: Column(

mainAxisAlignment: MainAxisAlignment.end,

children: [

Container(

child: Text(

text,

textAlign: TextAlign.right,

style: TextStyle(color: Colors.black, fontSize: 60,

),

),

),

SizedBox(height: 10,),

Row(

mainAxisAlignment: MainAxisAlignment.spaceEvenly,

children: [

numButton("7"),

numButton("8"),

numButton("9"),

numButton("x"),

],

),

SizedBox(height: 10),

Row(

mainAxisAlignment: MainAxisAlignment.spaceEvenly,

children: [

numButton("4"),

numButton("5"),

numButton("6"),

numButton("-"),

],

),

SizedBox(height: 10),

Row(

mainAxisAlignment: MainAxisAlignment.spaceEvenly,

children: [

numButton("1"),

numButton("2"),

numButton("3",),

numButton("+"),

],

),

SizedBox(height: 10),

Row(

mainAxisAlignment: MainAxisAlignment.spaceEvenly,

children: [

numButton("C"),

numButton("0"),

numButton("/"),

numButton("="),

],

),

SizedBox(height: 10),

],

),

);

}

// Logic

int firstNumber = 0;

int secondNumber = 0;

String result = "";

String text = "";

String operation = "";

void calculate(String btnText) {

if (btnText == "C") {

result = "";

text = "";

firstNumber = 0;

secondNumber = 0;

} else if (btnText == "+" ||

btnText == "-" ||

btnText == "x" ||

btnText == "/") {

firstNumber = int.parse(text);

result = "" ;

operation = btnText;

} else if (btnText == "=") {

secondNumber = int.parse(text);

if (operation == "+") {

result = (firstNumber + secondNumber).toString();

}

if (operation == "-") {

result = (firstNumber - secondNumber).toString();

}

if (operation == "x") {

result = (firstNumber \* secondNumber).toString();

}

if (operation == "/") {

result = (firstNumber ~/ secondNumber).toString();

}

} else {

result = int.parse(text + btnText).toString();

}

setState(() {

text = result;

});

}

}

**7.**

**8**. Main.dart: To run terminal: flutter test test/logintest.dart

import 'package:flutter/material.dart';

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {

const MyApp({super.key});

@override

Widget build(BuildContext context) {

return MaterialApp(

title: 'Registration Form',

home: LoginForm(),

);

}

}

class registrationForm extends StatefulWidget {

const registrationForm({super.key});

\_registrationFormState createState() => \_registrationFormState();

}

class \_registrationFormState extends State<registrationForm> {

final \_formKey = GlobalKey<FormState>();

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(title: const Text('Registration Form')),

body: Form(

key: \_formKey,

child: Column(children: <Widget>[

TextFormField(

decoration: const InputDecoration(

icon: Icon(Icons.person, color: Colors.blue),

labelText: 'Name',

hintText: 'Enter your name'),

validator: (value) {

if (value!.isEmpty) {

return 'Mandatory field';

}

return null;

}),

TextFormField(

decoration: const InputDecoration(

icon: Icon(Icons.email\_rounded, color: Colors.blue),

labelText: 'Email',

hintText: 'Enter your email'),

validator: (value) {

if (value!.isEmpty) {

return 'Mandatory field';

}

if(!value.contains('@')){

return "Invalid email";

}

return null;

},),

TextFormField(

decoration: const InputDecoration(

icon: Icon(Icons.phone, color: Colors.blue),

labelText: 'Phone',

hintText: 'Enter you phone no.'),

validator: (value) {

if (value!.isEmpty) {

return 'Mandatory field';

} else if (value.length != 10) {

return 'Invalid phone number';

} else if (!RegExp(r'^[0-9]+$').hasMatch(value)) {

return 'Invalid phone number';

}

return null;

}),

Container(

alignment: Alignment.center,

child: ElevatedButton(

child: const Text('Submit'),

onPressed: () {

if (\_formKey.currentState!.validate()) {

ScaffoldMessenger.of(context).showSnackBar(

SnackBar(content: Text('Registered successfully')));

Navigator.of(context).push(MaterialPageRoute(builder: (\_)=>LoginForm()));

}

},

))

])));

}

}

class LoginForm extends StatefulWidget {

const LoginForm({Key? key}) : super(key: key);

@override

State<LoginForm> createState() => \_LoginFormState();

}

class \_LoginFormState extends State<LoginForm> {

final formkey = GlobalKey<FormState>();

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text("Login form"),

centerTitle: true,

),

body: Form(

key: formkey,

child: Column(

children: <Widget>[

SizedBox(height: 10,),

TextFormField(

decoration: InputDecoration(

labelText: "Name",

hintText: "Enter your name",

border: OutlineInputBorder(),

icon: Icon(Icons.person),

),

validator: (value){

if(value!.isEmpty){

return "Please enter your name";

}

return null;

},

),

SizedBox(height: 10,),

TextFormField(

decoration: InputDecoration(

labelText: "Password",

hintText: "Enter your password",

border: OutlineInputBorder(),

icon: Icon(Icons.password),

),

),

SizedBox(height: 10,),

ElevatedButton(onPressed: (){

if(formkey.currentState!.validate()){

ScaffoldMessenger.of(context).showSnackBar(SnackBar(content: Text("Login successful")));

};

},

child: Text("Login"),)

],

),

),

);

}

}

**test/logintest.dart:**

import 'package:flutter/material.dart';

import 'package:flutter\_test/flutter\_test.dart';

import 'package:testcases/main.dart';

void main() {

group('Form tests', () {

testWidgets('Test for input', (WidgetTester tester) async{

await tester.pumpWidget(const MyApp());

final namefield = find.widgetWithText(TextFormField, "Name");

expect(namefield, findsOneWidget);

await tester.tap(namefield);

await tester.enterText(namefield, "Some name");

final passfield = find.widgetWithText(TextFormField, "Password");

expect(passfield, findsOneWidget);

await tester.tap(passfield);

await tester.enterText(passfield, "some password");

final loginButton = find.widgetWithText(ElevatedButton, "Login");

expect(loginButton, findsOneWidget);

await tester.tap(loginButton);

await tester.pump();

expect(find.text("Login successful"), findsOneWidget);

});

testWidgets('Test for navigation', (WidgetTester tester) async{

await tester.pumpWidget(MyApp());

final namefield = find.widgetWithText(TextFormField, "Name");

expect(namefield, findsOneWidget);

await tester.tap(namefield);

await tester.enterText(namefield, "");

final logiButton = find.widgetWithText(ElevatedButton, "Login");

expect(logiButton, findsOneWidget);

await tester.tap(logiButton);

await tester.pump();

expect(find.text("Please enter your name"), findsOneWidget);

});

});

}

**8.** Main.dart: To run terminal: flutter test test/logintest.dart

import 'package:flutter/material.dart';

void main() => runApp(MyApp());

class MyApp extends StatelessWidget {

const MyApp({super.key});

@override

Widget build(BuildContext context) {

return MaterialApp(

title: 'Registration Form',

home: LoginForm(),

);

}

}

class registrationForm extends StatefulWidget {

const registrationForm({super.key});

\_registrationFormState createState() => \_registrationFormState();

}

class \_registrationFormState extends State<registrationForm> {

final \_formKey = GlobalKey<FormState>();

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(title: const Text('Registration Form')),

body: Form(

key: \_formKey,

child: Column(children: <Widget>[

TextFormField(

decoration: const InputDecoration(

icon: Icon(Icons.person, color: Colors.blue),

labelText: 'Name',

hintText: 'Enter your name'),

validator: (value) {

if (value!.isEmpty) {

return 'Mandatory field';

}

return null;

}),

TextFormField(

decoration: const InputDecoration(

icon: Icon(Icons.email\_rounded, color: Colors.blue),

labelText: 'Email',

hintText: 'Enter your email'),

validator: (value) {

if (value!.isEmpty) {

return 'Mandatory field';

}

if(!value.contains('@')){

return "Invalid email";

}

return null;

},),

TextFormField(

decoration: const InputDecoration(

icon: Icon(Icons.phone, color: Colors.blue),

labelText: 'Phone',

hintText: 'Enter you phone no.'),

validator: (value) {

if (value!.isEmpty) {

return 'Mandatory field';

} else if (value.length != 10) {

return 'Invalid phone number';

} else if (!RegExp(r'^[0-9]+$').hasMatch(value)) {

return 'Invalid phone number';

}

return null;

}),

Container(

alignment: Alignment.center,

child: ElevatedButton(

child: const Text('Submit'),

onPressed: () {

if (\_formKey.currentState!.validate()) {

ScaffoldMessenger.of(context).showSnackBar(

SnackBar(content: Text('Registered successfully')));

Navigator.of(context).push(MaterialPageRoute(builder: (\_)=>LoginForm()));

}

},

))

])));

}

}

class LoginForm extends StatefulWidget {

const LoginForm({Key? key}) : super(key: key);

@override

State<LoginForm> createState() => \_LoginFormState();

}

class \_LoginFormState extends State<LoginForm> {

final formkey = GlobalKey<FormState>();

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text("Login form"),

centerTitle: true,

),

body: Form(

key: formkey,

child: Column(

children: <Widget>[

SizedBox(height: 10,),

TextFormField(

decoration: InputDecoration(

labelText: "Name",

hintText: "Enter your name",

border: OutlineInputBorder(),

icon: Icon(Icons.person),

),

validator: (value){

if(value!.isEmpty){

return "Please enter your name";

}

return null;

},

),

SizedBox(height: 10,),

TextFormField(

decoration: InputDecoration(

labelText: "Password",

hintText: "Enter your password",

border: OutlineInputBorder(),

icon: Icon(Icons.password),

),

),

SizedBox(height: 10,),

ElevatedButton(onPressed: (){

if(formkey.currentState!.validate()){

ScaffoldMessenger.of(context).showSnackBar(SnackBar(content: Text("Login successful")));

};

},

child: Text("Login"),)

],

),

),

);

}

}

test/logintest.dart:

import 'package:flutter/material.dart';

import 'package:flutter\_test/flutter\_test.dart';

import 'package:testcases/main.dart';

void main() {

group('Form tests', () {

testWidgets('Test for input', (WidgetTester tester) async{

await tester.pumpWidget(const MyApp());

final namefield = find.widgetWithText(TextFormField, "Name");

expect(namefield, findsOneWidget);

await tester.tap(namefield);

await tester.enterText(namefield, "Some name");

final passfield = find.widgetWithText(TextFormField, "Password");

expect(passfield, findsOneWidget);

await tester.tap(passfield);

await tester.enterText(passfield, "some password");

final loginButton = find.widgetWithText(ElevatedButton, "Login");

expect(loginButton, findsOneWidget);

await tester.tap(loginButton);

await tester.pump();

expect(find.text("Login successful"), findsOneWidget);

});

testWidgets('Test for validation', (WidgetTester tester) async{

await tester.pumpWidget(MyApp());

final namefield = find.widgetWithText(TextFormField, "Name");

expect(namefield, findsOneWidget);

await tester.tap(namefield);

await tester.enterText(namefield, "");

final logiButton = find.widgetWithText(ElevatedButton, "Login");

expect(logiButton, findsOneWidget);

await tester.tap(logiButton);

await tester.pump();

expect(find.text("Please enter your name"), findsOneWidget);

});

});

}