1. **Create an app using Flutter for User Authentication**

import 'package:flutter/material.dart';

void main() {

runApp(LoginApp());

}

class LoginApp extends StatelessWidget {

@override

Widget build(BuildContext context) {

return MaterialApp(

title: 'Flutter Login',

theme: ThemeData(

primarySwatch: Colors.blue,

),

// Define the initial route for the application

initialRoute: '/',

// Define the routes for the application

routes: {

'/': (context) => LoginPage(),

'/home': (context) => HomePage(),

},

);

}

}

class LoginPage extends StatefulWidget {

@override

\_LoginPageState createState() => \_LoginPageState();

}

class \_LoginPageState extends State<LoginPage> {

final \_formKey = GlobalKey<FormState>();

String \_email = '';

String \_password = '';

void \_submit() {

final form = \_formKey.currentState;

if (form!.validate()) {

form.save();

// Perform login logic here

// For simplicity, just navigate to the home page

Navigator.pushReplacementNamed(context, '/home');

}

}

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Login Page'),

),

body: Padding(

padding: EdgeInsets.all(16.0),

child: Form(

key: \_formKey,

child: Column(

mainAxisAlignment: MainAxisAlignment.center,

children: <Widget>[

TextFormField(

decoration: InputDecoration(labelText: 'Email'),

validator: (value) {

if (value!.isEmpty) {

return 'Please enter your email';

}

return null;

},

onSaved: (value) => \_email = value!,

),

TextFormField(

decoration: InputDecoration(labelText: 'Password'),

obscureText: true,

validator: (value) {

if (value!.isEmpty) {

return 'Please enter your password';

}

return null;

},

onSaved: (value) => \_password = value!,

),

SizedBox(height: 20),

ElevatedButton(

onPressed: \_submit,

child: Text('Login'),

),

],

),

),

),

);

}

}

class HomePage extends StatelessWidget {

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Home Page'),

),

body: Center(

child: Text('Welcome to the Home Page!'),

),

);

}

}

1. **Create an app using Flutter to implement an Image Gallery**

import 'package:flutter/material.dart';

void main() {

runApp(MyApp());

}

class MyApp extends StatelessWidget {

@override

Widget build(BuildContext context) {

return MaterialApp(

title: 'Image Gallery App',

theme: ThemeData(

primarySwatch: Colors.blue,

),

home: MyHomePage(),

);

}

}

class MyHomePage extends StatelessWidget {

final List<String> imageUrls = [

'https://example.com/image1.jpg',

'https://example.com/image2.jpg',

'https://example.com/image3.jpg',

// Add more image URLs as needed

];

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Image Gallery'),

),

body: GridView.builder(

gridDelegate: SliverGridDelegateWithFixedCrossAxisCount(

crossAxisCount: 2,

crossAxisSpacing: 8.0,

mainAxisSpacing: 8.0,

),

itemCount: imageUrls.length,

itemBuilder: (context, index) {

return GestureDetector(

onTap: () {

// Handle image tap

// You can navigate to a detailed view or perform any action here

print('Image tapped: ${imageUrls[index]}');

},

child: Image.network(

imageUrls[index],

fit: BoxFit.cover,

),

);

},

),

);

}

}

1. **Create an app using Flutter to demonstrate the use of different layouts**

import 'package:flutter/material.dart';

void main() {

runApp(MyApp());

}

class MyApp extends StatelessWidget {

@override

Widget build(BuildContext context) {

return MaterialApp(

title: 'Layout Demo App',

theme: ThemeData(

primarySwatch: Colors.blue,

),

home: MyHomePage(),

);

}

}

class MyHomePage extends StatelessWidget {

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Layout Demo'),

),

body: SingleChildScrollView(

padding: EdgeInsets.all(16.0),

child: Column(

crossAxisAlignment: CrossAxisAlignment.stretch,

children: [

Text(

'Column Example',

style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold),

),

Container(

color: Colors.blue,

height: 100,

child: Center(

child: Text(

'Item 1',

style: TextStyle(color: Colors.white),

),

),

),

Container(

color: Colors.green,

height: 100,

child: Center(

child: Text(

'Item 2',

style: TextStyle(color: Colors.white),

),

),

),

SizedBox(height: 16),

Text(

'Row Example',

style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold),

),

Row(

mainAxisAlignment: MainAxisAlignment.spaceEvenly,

children: [

Container(

color: Colors.orange,

width: 100,

height: 100,

child: Center(

child: Text(

'Item 1',

style: TextStyle(color: Colors.white),

),

),

),

Container(

color: Colors.purple,

width: 100,

height: 100,

child: Center(

child: Text(

'Item 2',

style: TextStyle(color: Colors.white),

),

),

),

],

),

SizedBox(height: 16),

Text(

'Stack Example',

style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold),

),

Stack(

alignment: Alignment.center,

children: [

Container(

color: Colors.yellow,

width: 200,

height: 200,

),

Text(

'Stacked Item',

style: TextStyle(color: Colors.black, fontSize: 18),

),

],

),

SizedBox(height: 16),

Text(

'ListView Example',

style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold),

),

ListView.builder(

shrinkWrap: true,

itemCount: 5,

itemBuilder: (context, index) {

return ListTile(

title: Text('List Item $index'),

);

},

),

],

),

),

);

}

}

1. **Create an app using Flutter to demonstrate navigation in an App**

import 'package:flutter/material.dart';

void main() {

runApp(MyApp());

}

class MyApp extends StatelessWidget {

@override

Widget build(BuildContext context) {

return MaterialApp(

title: 'Navigation Demo App',

theme: ThemeData(

primarySwatch: Colors.blue,

),

home: HomeScreen(),

);

}

}

class HomeScreen extends StatelessWidget {

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Home Screen'),

),

body: Center(

child: ElevatedButton(

onPressed: () {

// Navigate to the details screen

Navigator.push(

context,

MaterialPageRoute(builder: (context) => DetailsScreen()),

);

},

child: Text('Go to Details Screen'),

),

),

);

}

}

class DetailsScreen extends StatelessWidget {

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('Details Screen'),

),

body: Center(

child: ElevatedButton(

onPressed: () {

// Navigate back to the home screen

Navigator.pop(context);

},

child: Text('Go back to Home Screen'),

),

),

);

}

}