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D15A 47

Experiment 4

AIM: To create interactive form using form widget.

Theory: In Flutter, a "Form" is a widget that represents a container for a collection of form fields.

It helps manage the state of the form and facilitates the validation and submission of user input.

Here are some key concepts and theories about forms in Flutter:

1. Widget Hierarchy:

Forms in Flutter are composed of the `Form` widget, which contains a list of `FormField`

widgets. Each `FormField` represents an individual input field like text fields, checkboxes, or

dropdowns.

2. Form State:

The `Form` widget maintains the state of the form, including the current values of the form

fields and their validation statuses. The form state is automatically managed by Flutter.

3. Validation:

Forms provide built-in validation through the `validator` property of each `FormField`.

Validators are functions that determine whether the input is valid. The form's overall validity is

determined by the validity of all its fields.

4. Form Submission:

Form submission is typically triggered by a button press. The `onPressed` callback of the

button can call the `FormState.save()` method, which invokes the `onSaved` callback for each

form field and then calls the `onFormSaved` callback.

5. GlobalKey<FormState>:

To interact with the form state, a `GlobalKey<FormState>` is commonly used. This key allows

access to the form state and is used to validate and save the form.

6. Auto-validation:

Flutter provides automatic validation by calling the `validator` function whenever the user input

changes. This allows for real-time feedback to the user about the validity of their input.

7. Form Submission Lifecycle:

The form submission process involves validation, saving, and then handling the saved data.

Developers can customize this process by providing their own logic within the `onSaved` and

`onFormSaved` callbacks.

8.FocusManagement:

Formshandlethefocusof input fields,makingiteasytonavigatethroughtheformusing

keyboardinputorprogrammaticallysettingfocusonspecificfields.

9.FormKeyandGlobalKey:

Usinga`GlobalKey<FormState>`allowsformorecontrolovertheform,suchastriggering

formvalidationorresettingtheform. It isusuallydefinedasaglobalkeyinthewidget tree.

10.FormPersistence:

Formdatacanbepersistedacrossdifferentscreensorappsessionsbypassingthedata

downthewidget treeorusingstatemanagementsolutionslikeProviderorRiverpod.

Formsplayacrucial roleinuserinteraction,datacollection,andvalidationinFlutter

applications,providingastructuredandefficientwaytohandleuserinput.

**Code**:

**Login**

// import 'package:firebase\_auth/firebase\_auth.dart';

import 'package:firebase\_auth/firebase\_auth.dart';

import 'package:flutter/material.dart';

import 'package:food\_panda/pages/bottomnav.dart';

import 'package:food\_panda/pages/forgotpassword.dart';

import 'package:food\_panda/pages/signup.dart';

import 'package:food\_panda/widget/widget\_support.dart';

// import 'package:sample\_flutter/pages/bottomnav.dart';

// import 'package:sample\_flutter/pages/forgotpassword.dart';

class LogIn extends StatefulWidget {

const LogIn({super.key});

@override

State<LogIn> createState() => \_LogInState();

}

class \_LogInState extends State<LogIn> {

String email = "", password = "";

final \_formkey = GlobalKey<FormState>();

TextEditingController useremailcontroller = new TextEditingController();

TextEditingController userpasswordcontroller = new TextEditingController();

userLogin() async {

try {

await FirebaseAuth.instance

.signInWithEmailAndPassword(email: email, password: password);

Navigator.push(

context, MaterialPageRoute(builder: (context) => BottomNav()));

} on FirebaseAuthException catch (e) {

if (e.code == 'user-not-found') {

ScaffoldMessenger.of(context).showSnackBar(SnackBar(

content: Text(

"No User Found for that Email",

style: TextStyle(fontSize: 18.0, color: Colors.black),

)));

} else if (e.code == 'wrong-password') {

ScaffoldMessenger.of(context).showSnackBar(SnackBar(

content: Text(

"Wrong Password Provided by User",

style: TextStyle(fontSize: 18.0, color: Colors.black),

)));

}

}

}

@override

Widget build(BuildContext context) {

return Scaffold(

body: Container(

child: Stack(

children: [

Container(

width: MediaQuery.of(context).size.width,

height: MediaQuery.of(context).size.height / 2.5,

decoration: BoxDecoration(

gradient: LinearGradient(

begin: Alignment.topLeft,

end: Alignment.bottomRight,

colors: [

Color(0xFFff5c30),

Color(0xFFe74b1a),

])),

),

Container(

margin:

EdgeInsets.only(top: MediaQuery.of(context).size.height / 3),

height: MediaQuery.of(context).size.height / 2,

width: MediaQuery.of(context).size.width,

decoration: BoxDecoration(

color: Colors.white,

borderRadius: BorderRadius.only(

topLeft: Radius.circular(40),

topRight: Radius.circular(40))),

child: Text(""),

),

Container(

margin: EdgeInsets.only(top: 60.0, left: 20.0, right: 20.0),

child: Column(

children: [

Center(

child: Image.asset(

"images/logo.png",

width: MediaQuery.of(context).size.width / 1.5,

fit: BoxFit.cover,

)),

SizedBox(

height: 50.0,

),

Material(

elevation: 5.0,

borderRadius: BorderRadius.circular(20),

child: Container(

padding: EdgeInsets.only(left: 20.0, right: 20.0),

width: MediaQuery.of(context).size.width,

height: MediaQuery.of(context).size.height / 2,

decoration: BoxDecoration(

color: Colors.white,

borderRadius: BorderRadius.circular(20)),

child: Form(

key: \_formkey,

child: Column(

children: [

SizedBox(

height: 30.0,

),

Text(

"Login",

style: AppWidget.HeadlineTextFieldStyle(),

),

SizedBox(

height: 30.0,

),

TextFormField(

controller: useremailcontroller,

validator: (value) {

if (value == null || value.isEmpty) {

return 'Please Enter Email';

}

return null;

},

decoration: InputDecoration(

hintText: 'Email',

hintStyle: AppWidget.semiBoldTextFieldStyle(),

prefixIcon: Icon(Icons.email\_outlined)),

),

SizedBox(

height: 30.0,

),

TextFormField(

controller: userpasswordcontroller,

validator: (value) {

if (value == null || value.isEmpty) {

return 'Please Enter Password';

}

return null;

},

obscureText: true,

decoration: InputDecoration(

hintText: 'Password',

hintStyle: AppWidget.semiBoldTextFieldStyle(),

prefixIcon: Icon(Icons.password\_outlined)),

),

SizedBox(

height: 20.0,

),

GestureDetector(

onTap: () {

Navigator.push(

context,

MaterialPageRoute(

builder: (context) =>

ForgotPassword()));

},

child: Container(

alignment: Alignment.topRight,

child: Text(

"Forgot Password?",

style: AppWidget.semiBoldTextFieldStyle(),

)),

),

SizedBox(

height: 80.0,

),

GestureDetector(

onTap: () {

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

setState(() {

email = useremailcontroller.text;

password = userpasswordcontroller.text;

});

}

userLogin();

},

child: Material(

elevation: 5.0,

borderRadius: BorderRadius.circular(20),

child: Container(

padding: EdgeInsets.symmetric(vertical: 8.0),

width: 200,

decoration: BoxDecoration(

color: Color(0Xffff5722),

borderRadius: BorderRadius.circular(20)),

child: Center(

child: Text(

"LOGIN",

style: TextStyle(

color: Colors.white,

fontSize: 18.0,

fontFamily: 'Poppins1',

fontWeight: FontWeight.bold),

)),

),

),

),

],

),

),

),

),

SizedBox(

height: 70.0,

),

GestureDetector(

onTap: () {

Navigator.push(context,

MaterialPageRoute(builder: (context) => SignUp()));

},

child: Text(

"Don't have an account? Sign up",

style: AppWidget.semiBoldTextFieldStyle(),

))

],

),

)

],

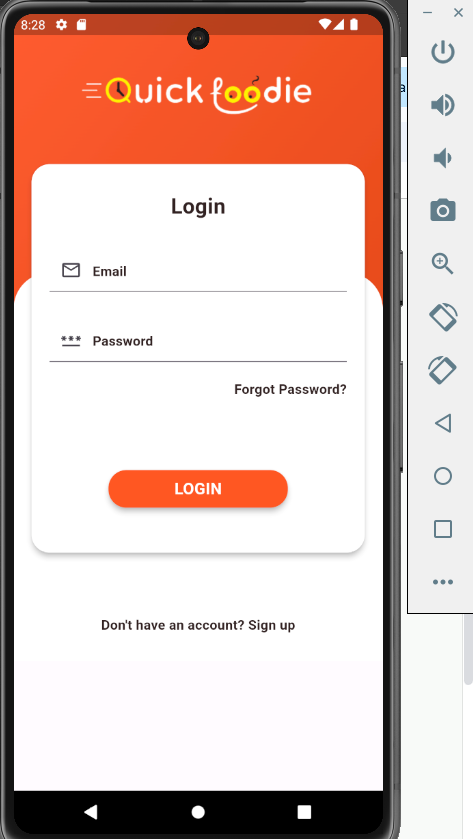
),

),

);

}

}



**Signup:**

**Code:**

// import 'package:firebase\_auth/firebase\_auth.dart';

import 'package:firebase\_auth/firebase\_auth.dart';

import 'package:flutter/material.dart';

import 'package:food\_panda/pages/bottomnav.dart';

import 'package:food\_panda/pages/login.dart';

import 'package:food\_panda/service/database.dart';

import 'package:food\_panda/service/shared\_pref.dart';

import 'package:food\_panda/widget/widget\_support.dart';

import 'package:random\_string/random\_string.dart';

// import 'package:sample\_flutter/pages/bottomnav.dart';

class SignUp extends StatefulWidget {

const SignUp({super.key});

@override

State<SignUp> createState() => \_SignUpState();

}

class \_SignUpState extends State<SignUp> {

String email = "", password = "", name = "";

TextEditingController namecontroller = new TextEditingController();

TextEditingController passwordcontroller = new TextEditingController();

TextEditingController mailcontroller = new TextEditingController();

final \_formkey = GlobalKey<FormState>();

registration() async {

if (password != null) {

try {

UserCredential userCredential = await FirebaseAuth.instance

.createUserWithEmailAndPassword(email: email, password: password);

ScaffoldMessenger.of(context).showSnackBar((SnackBar(

backgroundColor: Colors.redAccent,

content: Text(

"Registered Successfully",

style: TextStyle(fontSize: 20.0),

))));

String Id = randomAlphaNumeric(10);

Map<String, dynamic> addUserInfo = {

"Name": namecontroller.text,

"Email": mailcontroller.text,

"Wallet": "0",

"Id": Id,

};

await DatabaseMethods().addUserDetail(addUserInfo, Id);

await SharedPreferenceHelper().saveUserName(namecontroller.text);

await SharedPreferenceHelper().saveUserEmail(mailcontroller.text);

await SharedPreferenceHelper().saveUserWallet('0');

await SharedPreferenceHelper().saveUserId(Id);

// ignore: use\_build\_context\_synchronously

Navigator.pushReplacement(

context, MaterialPageRoute(builder: (context) => BottomNav()));

} on FirebaseException catch (e) {

if (e.code == 'weak-password') {

ScaffoldMessenger.of(context).showSnackBar(SnackBar(

backgroundColor: Colors.orangeAccent,

content: Text(

"Password Provided is too Weak",

style: TextStyle(fontSize: 18.0),

)));

} else if (e.code == "email-already-in-use") {

ScaffoldMessenger.of(context).showSnackBar(SnackBar(

backgroundColor: Colors.orangeAccent,

content: Text(

"Account Already exsists",

style: TextStyle(fontSize: 18.0),

)));

}

}

}

}

@override

Widget build(BuildContext context) {

return Scaffold(

body: Container(

child: Stack(

children: [

Container(

width: MediaQuery.of(context).size.width,

height: MediaQuery.of(context).size.height / 2.5,

decoration: BoxDecoration(

gradient: LinearGradient(

begin: Alignment.topLeft,

end: Alignment.bottomRight,

colors: [

Color(0xFFff5c30),

Color(0xFFe74b1a),

])),

),

Container(

margin:

EdgeInsets.only(top: MediaQuery.of(context).size.height / 3),

height: MediaQuery.of(context).size.height / 2,

width: MediaQuery.of(context).size.width,

decoration: BoxDecoration(

color: Colors.white,

borderRadius: BorderRadius.only(

topLeft: Radius.circular(40),

topRight: Radius.circular(40))),

child: Text(""),

),

Container(

margin: EdgeInsets.only(top: 60.0, left: 20.0, right: 20.0),

child: Column(

children: [

Center(

child: Image.asset(

"images/logo.png",

width: MediaQuery.of(context).size.width / 1.5,

fit: BoxFit.cover,

)),

SizedBox(

height: 50.0,

),

Material(

elevation: 5.0,

borderRadius: BorderRadius.circular(20),

child: Container(

padding: EdgeInsets.only(left: 20.0, right: 20.0),

width: MediaQuery.of(context).size.width,

height: MediaQuery.of(context).size.height / 1.8,

decoration: BoxDecoration(

color: Colors.white,

borderRadius: BorderRadius.circular(20)),

child: Form(

key: \_formkey,

child: Column(

children: [

SizedBox(

height: 30.0,

),

Text(

"Sign up",

style: AppWidget.HeadlineTextFieldStyle(),

),

SizedBox(

height: 30.0,

),

TextFormField(

controller: namecontroller,

validator: (value) {

if (value == null || value.isEmpty) {

return 'Please Enter Name';

}

return null;

},

decoration: InputDecoration(

hintText: 'Name',

hintStyle: AppWidget.semiBoldTextFieldStyle(),

prefixIcon: Icon(Icons.person\_outlined)),

),

SizedBox(

height: 30.0,

),

TextFormField(

controller: mailcontroller,

validator: (value) {

if (value == null || value.isEmpty) {

return 'Please Enter E-mail';

}

return null;

},

decoration: InputDecoration(

hintText: 'Email',

hintStyle: AppWidget.semiBoldTextFieldStyle(),

prefixIcon: Icon(Icons.email\_outlined)),

),

SizedBox(

height: 30.0,

),

TextFormField(

controller: passwordcontroller,

validator: (value) {

if (value == null || value.isEmpty) {

return 'Please Enter Password';

}

return null;

},

obscureText: true,

decoration: InputDecoration(

hintText: 'Password',

hintStyle: AppWidget.semiBoldTextFieldStyle(),

prefixIcon: Icon(Icons.password\_outlined)),

),

SizedBox(

height: 80.0,

),

GestureDetector(

onTap: () async {

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

setState(() {

email = mailcontroller.text;

name = namecontroller.text;

password = passwordcontroller.text;

});

}

registration();

},

child: Material(

elevation: 5.0,

borderRadius: BorderRadius.circular(20),

child: Container(

padding: EdgeInsets.symmetric(vertical: 8.0),

width: 200,

decoration: BoxDecoration(

color: Color(0Xffff5722),

borderRadius: BorderRadius.circular(20)),

child: Center(

child: Text(

"SIGN UP",

style: TextStyle(

color: Colors.white,

fontSize: 18.0,

fontFamily: 'Poppins1',

fontWeight: FontWeight.bold),

)),

),

),

),

],

),

),

),

),

SizedBox(

height: 70.0,

),

GestureDetector(

onTap: () {

Navigator.push(context,

MaterialPageRoute(builder: (context) => LogIn()));

},

child: Text(

"Already have an account? Login",

style: AppWidget.semiBoldTextFieldStyle(),

))

],

),

)

],

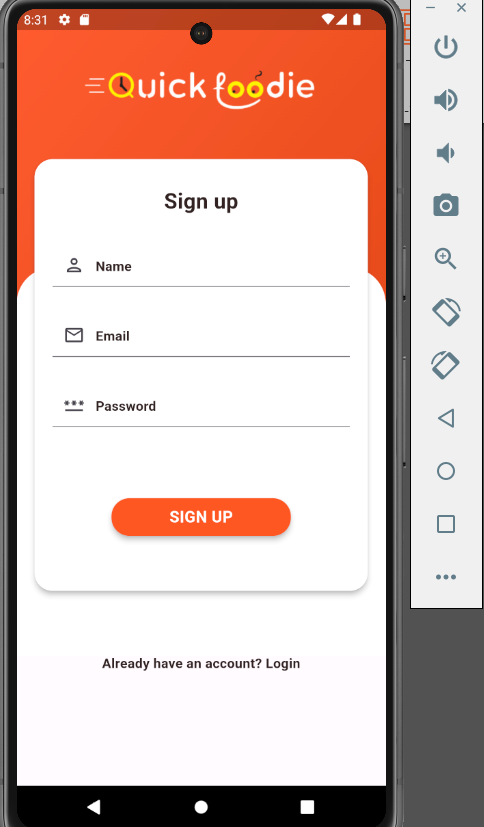
),

),

);

}

}



**AddItem**

**Code:-**

import 'dart:io';

import 'package:firebase\_storage/firebase\_storage.dart';

import 'package:flutter/material.dart';

import 'package:food\_panda/service/database.dart';

import 'package:food\_panda/widget/widget\_support.dart';

import 'package:image\_picker/image\_picker.dart';

import 'package:random\_string/random\_string.dart';

// import 'package:sample\_flutter/widget/widget\_support.dart';

class AddFood extends StatefulWidget {

const AddFood({super.key});

@override

State<AddFood> createState() => \_AddFoodState();

}

class \_AddFoodState extends State<AddFood> {

final List<String> fooditems = ['Ice-cream', 'Burger', 'Salad', 'Pizza'];

String? value;

TextEditingController namecontroller = new TextEditingController();

TextEditingController pricecontroller = new TextEditingController();

TextEditingController detailcontroller = new TextEditingController();

final ImagePicker \_picker = ImagePicker();

File? selectedImage;

Future getImage() async {

var image = await \_picker.pickImage(source: ImageSource.gallery);

selectedImage = File(image!.path);

setState(() {});

}

uploadItem() async {

if (selectedImage != null &&

namecontroller.text != "" &&

pricecontroller.text != "" &&

detailcontroller.text != "") {

String addId = randomAlphaNumeric(10);

Reference firebaseStorageRef =

FirebaseStorage.instance.ref().child("blogImages").child(addId);

final UploadTask task = firebaseStorageRef.putFile(selectedImage!);

var downloadUrl = await (await task).ref.getDownloadURL();

Map<String, dynamic> addItem = {

"Image": downloadUrl,

"Name": namecontroller.text,

"Price": pricecontroller.text,

"Detail": detailcontroller.text

};

await DatabaseMethods().addFoodItem(addItem, value!).then((value) {

ScaffoldMessenger.of(context).showSnackBar((SnackBar(

backgroundColor: Colors.redAccent,

content: Text(

"Food item added successfully",

style: TextStyle(fontSize: 20.0),

))));

});

}

}

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

leading: GestureDetector(

onTap: () {

Navigator.pop(context);

},

child: Icon(

Icons.arrow\_back\_ios\_new\_outlined,

color: Color(0xFF373866),

)),

centerTitle: true,

title: Text(

"Add Item",

style: AppWidget.HeadlineTextFieldStyle(),

),

),

body: SingleChildScrollView(

child: Container(

margin:

EdgeInsets.only(left: 20.0, right: 20.0, top: 20.0, bottom: 50.0),

child: Column(

crossAxisAlignment: CrossAxisAlignment.start,

children: [

Text(

"Upload the Item Picture",

style: AppWidget.semiBoldTextFieldStyle(),

),

SizedBox(

height: 20.0,

),

selectedImage == null

? GestureDetector(

onTap: () {

getImage();

},

child: Center(

child: Material(

elevation: 4.0,

borderRadius: BorderRadius.circular(20),

child: Container(

width: 150,

height: 150,

decoration: BoxDecoration(

border:

Border.all(color: Colors.black, width: 1.5),

borderRadius: BorderRadius.circular(20),

),

child: Icon(

Icons.camera\_alt\_outlined,

color: Colors.black,

),

),

),

),

)

: Center(

child: Material(

elevation: 4.0,

borderRadius: BorderRadius.circular(20),

child: Container(

width: 150,

height: 150,

decoration: BoxDecoration(

border: Border.all(color: Colors.black, width: 1.5),

borderRadius: BorderRadius.circular(20),

),

child: Image.file(

selectedImage!,

fit: BoxFit.cover,

),

),

),

),

SizedBox(

height: 30.0,

),

Text(

"Item Name",

style: AppWidget.semiBoldTextFieldStyle(),

),

SizedBox(

height: 10.0,

),

Container(

padding: EdgeInsets.symmetric(horizontal: 20.0),

width: MediaQuery.of(context).size.width,

decoration: BoxDecoration(

color: Color(0xFFececf8),

borderRadius: BorderRadius.circular(10)),

child: TextField(

controller: namecontroller,

decoration: InputDecoration(

border: InputBorder.none,

hintText: "Enter Item Name",

hintStyle: AppWidget.LightTextFieldStyle()),

),

),

SizedBox(

height: 30.0,

),

Text(

"Item Price",

style: AppWidget.semiBoldTextFieldStyle(),

),

SizedBox(

height: 10.0,

),

Container(

padding: EdgeInsets.symmetric(horizontal: 20.0),

width: MediaQuery.of(context).size.width,

decoration: BoxDecoration(

color: Color(0xFFececf8),

borderRadius: BorderRadius.circular(10)),

child: TextField(

controller: pricecontroller,

decoration: InputDecoration(

border: InputBorder.none,

hintText: "Enter Item Price",

hintStyle: AppWidget.LightTextFieldStyle()),

),

),

SizedBox(

height: 30.0,

),

Text(

"Item Detail",

style: AppWidget.semiBoldTextFieldStyle(),

),

SizedBox(

height: 10.0,

),

Container(

padding: EdgeInsets.symmetric(horizontal: 20.0),

width: MediaQuery.of(context).size.width,

decoration: BoxDecoration(

color: Color(0xFFececf8),

borderRadius: BorderRadius.circular(10)),

child: TextField(

maxLines: 6,

controller: detailcontroller,

decoration: InputDecoration(

border: InputBorder.none,

hintText: "Enter Item Detail",

hintStyle: AppWidget.LightTextFieldStyle()),

),

),

SizedBox(

height: 20.0,

),

Text(

"Select Category",

style: AppWidget.semiBoldTextFieldStyle(),

),

SizedBox(

height: 20.0,

),

Container(

padding: EdgeInsets.symmetric(horizontal: 10.0),

width: MediaQuery.of(context).size.width,

decoration: BoxDecoration(

color: Color(0xFFececf8),

borderRadius: BorderRadius.circular(10)),

child: DropdownButtonHideUnderline(

child: DropdownButton<String>(

items: fooditems

.map((item) => DropdownMenuItem<String>(

value: item,

child: Text(

item,

style:

TextStyle(fontSize: 18.0, color: Colors.black),

)))

.toList(),

onChanged: ((value) => setState(() {

this.value = value;

})),

dropdownColor: Colors.white,

hint: Text("Select Category"),

iconSize: 36,

icon: Icon(

Icons.arrow\_drop\_down,

color: Colors.black,

),

value: value,

)),

),

SizedBox(

height: 30.0,

),

GestureDetector(

onTap: () {

uploadItem();

},

child: Center(

child: Material(

elevation: 5.0,

borderRadius: BorderRadius.circular(10),

child: Container(

padding: EdgeInsets.symmetric(vertical: 5.0),

width: 150,

decoration: BoxDecoration(

color: Colors.black,

borderRadius: BorderRadius.circular(10)),

child: Center(

child: Text(

"Add",

style: TextStyle(

color: Colors.white,

fontSize: 22.0,

fontWeight: FontWeight.bold),

),

),

),

),

),

)

],

),

),

),

);

}

}

A screenshot of a phone

Description automatically generated

Conclusion :Thus I learnt to create interactive form widgets