Experiment 4:

Aim:- To create an interactive Form using form widget

Theory:-

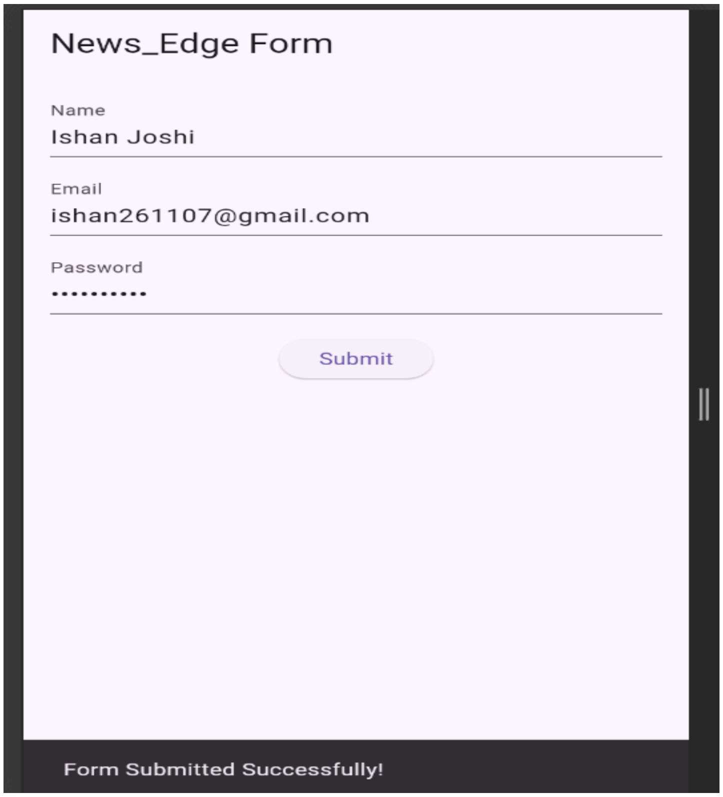
In Flutter, the Form widget is a powerful tool used to build and manage interactive forms efficiently. It allows developers to group multiple input fields such as TextFormField, checkboxes, and dropdowns into a single form structure. The Form widget works together with a GlobalKey to validate and save user input easily. It provides built-in methods like validate() and save() to manage form state and ensure proper data entry. Input validation can be customized to enforce rules such as required fields or specific formats. This makes it ideal for creating user-friendly forms for login, registration, feedback, and more. Using the Form widget improves code organization and ensures a consistent user experience.

Code:-

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

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

class MyApp extends StatelessWidget {
  const MyApp({super.key});

  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'News_Edge Form ',
      theme: ThemeData(primarySwatch: Colors.blue),
      home: MyForm(),
    );
  }
}

class MyForm extends StatefulWidget {
  const MyForm({super.key});

  @override
  _MyFormState createState() => _MyFormState();
}

class _MyFormState extends State<MyForm> {
  final _formKey = GlobalKey<FormState>();
  final TextEditingController _nameController = TextEditingController();
  final TextEditingController _emailController = TextEditingController();
  final TextEditingController _passwordController = TextEditingController();

  void _submitForm() {
    if (_formKey.currentState!.validate()) {
      ScaffoldMessenger.of(context).showSnackBar(
        SnackBar(content: Text("Form Submitted Successfully!")),
      );
    }
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(title: Text("News_Edge Form")),
      body: Padding(
        padding: EdgeInsets.all(16.0),
        child: Form(
          key: _formKey,
          child: Column(
            children: [
              TextFormField(
                controller: _nameController,
                decoration: InputDecoration(labelText: "Name"),
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return "Name is required";
                  }
                  return null;
                },
              ),
              SizedBox(height: 16),
              TextFormField(
                controller: _emailController,
                decoration: InputDecoration(labelText: "Email"),
                keyboardType: TextInputType.emailAddress,
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return "Email is required";
                  } else if (!RegExp(r'^[^@]+@[^@]+\.[^@]+').hasMatch(value)) {
                    return "Enter a valid email";
                  }
                  return null;
                },
              ),
              SizedBox(height: 16),
              TextFormField(
                controller: _passwordController,
                decoration: InputDecoration(labelText: "Password"),
                obscureText: true,
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return "Password is required";
                  } else if (value.length < 6) {
                    return "Password must be at least 6 characters";
                  }
                  return null;
                },
              ),
              SizedBox(height: 20),
              ElevatedButton(
                onPressed: _submitForm,
                child: Text("Submit"),
              ),
            ],
          ),
        ),
                ),
              );
            }
        }
```

Github Link:- https://github.com/Ishan2611/Flutter_form

Output:



News_Edge Form

Name
Ishan Joshi

Email
ishan261107@gmail.com

Password
••••••••••

Form Submitted Successfully!

The image shows a simple Flutter-based form UI titled "News_Edge Form", designed to collect basic user details. It includes three input fields: Name, Email, and Password. The name field has been filled with “Ishan Joshi”, the email field shows “ishan261107@gmail.com”, and the password field is obscured for security, displaying dots instead of actual characters.Below the input fields, there is a "Submit" button centered on the screen. After clicking submit, a message appears at the bottom that says “Form Submitted Successfully!”, indicating that the form data has been accepted and possibly processed. The layout is clean and minimal, making it user-friendly and ideal for simple form submissions in a Flutter app.

Conclusion:-In this experiment, we successfully created an interactive form using Flutter's Form widget. It allowed us to manage multiple input fields in a structured and efficient manner. By using TextFormField and the GlobalKey, we were able to validate user input and handle form submission effectively. The validate() and save() methods proved useful in managing form state and ensuring that the data entered is correct and complete. This approach is essential for building reliable user interfaces such as login, registration, and feedback forms. Overall, the experiment enhanced our understanding of form handling and improved our ability to create responsive, user-friendly applications in Flutter.