

EXPERIMENT NO: 04

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Aim: To create an interactive Form using form widget

Theory:

Flutter provides a Form widget that enables developers to create interactive forms for collecting user input. Forms are an essential part of many applications, such as registration screens, login pages, feedback forms, and data entry modules. They allow structured input gathering, validation, and submission, enhancing user interaction and data integrity.

Flutter's Form widget works in combination with various input fields, validation techniques, and state management to ensure a seamless user experience.

Importance of Forms in App Development

1. Efficient User Input Handling – Forms streamline the process of collecting user data.
2. Validation Mechanism – Ensures only correct and meaningful data is submitted.
3. State Management – Helps in tracking and modifying input fields dynamically.
4. Improved User Experience – Provides structured input fields for better accessibility and usability.

Key Components of Forms in Flutter

1. Form Widget (Form)

The Form widget acts as a container that manages multiple input fields. It provides an easy way to validate and track changes in form fields.

Key Properties:

- **key** – A `GlobalKey<FormState>` to track form state and validation.
- **child** – Contains form fields like `TextFormField`, `DropdownButtonFormField`, etc.

- `autovalidateMode` – Determines when validation messages should appear (disabled, always, onUserInteraction).

2. Input Fields (Form Fields)

a) TextFormField

- A fundamental widget for text input in Flutter.
- Supports validation, formatting, and user interaction.
- Properties:
 - `controller` – Controls and retrieves the text entered by the user.
 - `keyboardType` – Defines the type of input (text, number, email, etc.).
 - `decoration` – Customizes the appearance (label, hint text, icon).
 - `validator` – Implements validation logic.

b) DropdownButtonFormField

- Provides a dropdown list for selecting predefined options.
- Properties:
 - `items` – Defines the list of selectable options.
 - `value` – Holds the currently selected item.
 - `onChanged` – Executes when the user selects a different item.

c) CheckboxListTile

- Displays a checkbox with a title and subtitle.
- Properties:
 - `value` – Represents whether the checkbox is selected.
 - `onChanged` – Detects changes in the selection state.
 - `title` – Describes the purpose of the checkbox.

d) RadioListTile

- Provides a list of radio buttons where only one can be selected.
- Properties:
 - `value` – The value assigned to each radio button.
 - `groupValue` – The currently selected value within the group.
 - `onChanged` – Updates the selection when a new option is chosen.

e) SwitchListTile

- Allows users to toggle between on/off states.
- Properties:

- value – Represents the current state (true/false).
- onChanged – Detects when the switch is toggled.
- title – Displays the label for the switch.

3. Managing Form State

a) GlobalKey<FormState>

- A unique key used to track the form's state.
- Helps in validation and resetting form fields.

b) FormState Methods

- validate() – Checks if all fields meet the validation rules.
- save() – Saves the form data when validation is successful.
- reset() – Clears all fields in the form.

Form Validation and Submission Process

1. The user enters data into form fields.
2. On submission, FormState.validate() ensures all inputs are correct.
3. If valid, the save() function processes and stores the data.
4. If invalid, appropriate error messages are displayed.

Code Snippets: initial_screen.dart

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

//Constants

```
const Color scaffoldColor = Color(0xFFFFFC00);
const Color loginButtonColor = Colors.white;
const Color signupButtonColor = Color(0xFF0EAEFE);
```

```
class InitialScreen extends StatefulWidget {
  @override
  _InitialScreenState createState() => _InitialScreenState();
}
```

```
class _InitialScreenState extends State<InitialScreen> {
  @override
  Widget build(BuildContext context) {
```

```

return Scaffold(
  backgroundColor: scaffoldColor,
  body: Stack(
    children: [
      Column(
        mainAxisAlignment: MainAxisAlignment.center,
        children: [
          Container(
            height: 180,
            decoration: BoxDecoration(
              image: DecorationImage(
                image: AssetImage("assets/images/icon.png"),
              ),
            ),
          ),
        ],
      ),
      Center(
        child: Padding(
          padding: const EdgeInsets.symmetric(vertical: 30),
          child: Column(
            mainAxisAlignment: MainAxisAlignment.end,
            children: [
              Row(
                mainAxisAlignment: MainAxisAlignment.center,
                children: [
                  GestureDetector(
                    onTap: () {
                      Navigator.pushNamed(context, '/login_screen');
                    },
                    child: ReusableButton(
                      btnHeight: 60.0,
                      btnWidth: 130.0,
                      btnColour: loginButtonColor,
                      btnCircularRadius: 80.0,
                      btnChild: Text(
                        "Log in",
                        style: TextStyle(
                          fontSize: 25,
                          fontWeight: FontWeight.bold,
                          color: Colors.black,
                        ),
                      ),
                    ),
                  ),
                ],
              ),
              SizedBox(width: 15),
              GestureDetector(
                onTap: () {
                  Navigator.pushNamed(context, '/signup_screen');
                },
                child: ReusableButton(

```



```

        eyeStatus = eye;
    } else {
        eyeStatus = hiddenEye;
    }
  });
}

```

@override

```

Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      leading: GestureDetector(
        onTap: () {
          Navigator.pop(context);
        },
        child: Icon(Icons.arrow_back_ios, color: Colors.grey),
      ),
      elevation: 0,
      backgroundColor: Colors.white,
    ),
    body: Center(
      child: SingleChildScrollView(
        child: Center(
          child: Column(
            mainAxisAlignment: MainAxisAlignment.spaceEvenly,
            children: [
              Text(
                "Log in",
                style: TextStyle(fontSize: 40, color: Colors.black),
              ),
              SizedBox(height: 20),
              CustomSnapTextField(
                label: "USERNAME OR EMAIL",
                isPasswordField: false,
                autoFocus: true,
              ),
              SizedBox(height: 20),
              Column(
                children: [
                  Container(
                    alignment: Alignment.centerLeft,
                    margin: EdgeInsets.symmetric(horizontal: 50),
                    child: Text(
                      "PASSWORD",
                      style: TextStyle(
                        fontSize: 18,
                        fontWeight: FontWeight.bold,
                        color: Color(0xFF51B5E5),
                      ),
                    ),
                  ),
                ],
              ),
            ],
          ),
        ),
      ),
    ),
  );
}

```

```

    Padding(
      padding: const EdgeInsets.symmetric(horizontal: 50),
      child: TextField(
        obscureText: _obscureText,
        autofocus: false,
        cursorHeight: 33,
        cursorWidth: 2,
        decoration: InputDecoration(
          suffixIcon: GestureDetector(
            onTap: () {
              _toggle();
            },
            child: eyeStatus,
          ),
          floatingLabelBehavior: FloatingLabelBehavior.never,
          contentPadding: EdgeInsets.all(6),
        ),
        cursorColor: Color(0xFF69B77D),
      ),
    ),
  ],
),
  SizedBox(height: 60),
  //Forgot your password
  GestureDetector(
    onTap: () {
      //forgot your password
    },
    child: Text(
      "Forgot your password?",
      style: TextStyle(
        fontSize: 17,
        fontWeight: FontWeight.bold,
        color: Color(0xFF51B5E5),
      ),
    ),
  ),
),
  SizedBox(height: 90),

//Login button
  Padding(
    padding: const EdgeInsets.symmetric(horizontal: 80),
    child: GestureDetector(
      onTap: () {
        Navigator.pushNamed(context, '/home_screen');
      },
      child: Container(
        margin: EdgeInsets.only(top: 20),
        child: Text(
          "Log in",
          style: TextStyle(

```

```

        fontSize: 25,
        color: Colors.white,
        fontWeight: FontWeight.bold,
      ),
    ),
    alignment: Alignment.center,
    height: 55,
    width: double.infinity,
    decoration: BoxDecoration(
      color: Color(0xFFADB6BD),
      borderRadius: BorderRadius.circular(80),
    ),
  ),
),
),
),
),
),
),
),
),
),
),
);
}
}

```

- Code for `signup_screen.dart`

```

import 'package:flutter/material.dart';
import 'package:snapchat_clone_ui/custom_widgets/custom_widgets.dart';

class SignupScreen extends StatefulWidget {
  @override
  _SignupScreenState createState() => _SignupScreenState();
}

class _SignupScreenState extends State<SignupScreen> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        leading: GestureDetector(
          onTap: () {
            Navigator.pop(context);
          },
        ),
        child: Icon(Icons.arrow_back_ios, color: Colors.grey),
      ),
      elevation: 0,
      backgroundColor: Colors.white,
    ),
  ),
}

```



```

body: Center(
  child: SingleChildScrollView(
    child: Center(
      child: Column(
        mainAxisAlignment: MainAxisAlignment.spaceEvenly,
        children: [
          Text(
            "What's your name?",
            style: TextStyle(fontSize: 32, color: Colors.black),
          ),
          SizedBox(height: 20),
          CustomSnapTextField(
            label: "FIRST NAME",
            isPasswordField: false,
            autoFocus: true,
          ),
          SizedBox(height: 20),
          CustomSnapTextField(
            label: "LAST NAME",
            isPasswordField: false,
            autoFocus: true,
          ),
          SizedBox(height: 20),

          Padding(
            padding: const EdgeInsets.symmetric(horizontal: 55),
            child: RichText(
              text: TextSpan(
                text:
                  "By tapping Sign up & Accept, you acknowledge that you have
read the ",
                style: TextStyle(color: Color(0xFFB3B7B8), fontSize: 17),
                children: <TextSpan>[
                  TextSpan(
                    text: 'Privacy Policy ',
                    style: TextStyle(color: Color(0xFF51B5E5)),
                  ),
                  TextSpan(
                    text: 'and agree to the ',
                    style: TextStyle(color: Color(0xFFB3B7B8)),
                  ),
                  TextSpan(
                    text: 'Terms of service.',
                    style: TextStyle(color: Color(0xFF51B5E5)),
                  ),
                ],
              ),
            ),
          ),
          SizedBox(height: 90),

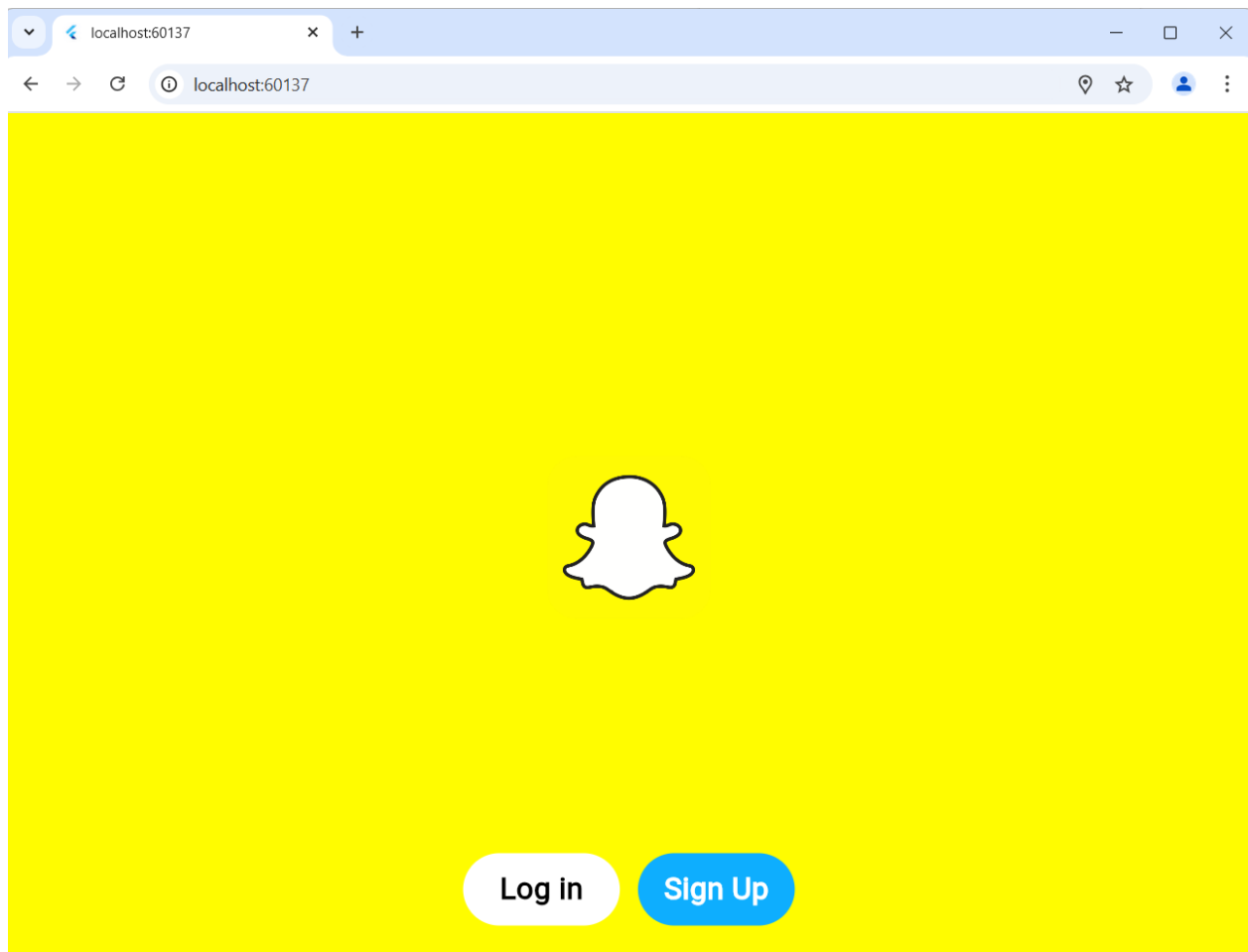
```

```

//Signup button
Padding(
  padding: const EdgeInsets.symmetric(horizontal: 80),
  child: GestureDetector(
    onTap: () {
      Navigator.pushNamed(context, '/home_screen');
    },
    child: Container(
      margin: EdgeInsets.only(top: 20),
      child: Text(
        "Sign up & Accept",
        style: TextStyle(
          fontSize: 25,
          color: Colors.white,
          fontWeight: FontWeight.bold,
        ),
      ),
    ),
    alignment: Alignment.center,
    height: 55,
    width: double.infinity,
    decoration: BoxDecoration(
      color: Color(0xFFADB6BD),
      borderRadius: BorderRadius.circular(80),
    ),
  ),
),
),
),
),
),
),
),
),
),
),
),
);
}
}

```

Screenshots:



localhost60137

localhost:60137/#/login_screen

<


Log in

USERNAME OR EMAIL

example@gmail.com

PASSWORD

.....



[Forgot your password?](#)

Log In

localhost60137

localhost:60137/#/signup_screen

<

What's your name?

FIRST NAME

Devansh

LAST NAME

Wadhwani

By tapping Sign up & Accept, you acknowledge that you have read the [Privacy Policy](#) and agree to the [Terms of service](#).

Sign up & Accept