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Experiment - 4

Aim - To create an interactive Form using form widget

Theory -

Interactive Form Creation in Flutter

Flutter offers an array of powerful widgets and techniques to build adaptable and user-friendly forms that seamlessly integrate with your app's design and functionality. This guide delves into the key concepts and strategies involved in crafting interactive forms:

Fundamental Widgets:

- Form: The overarching container that encompasses form fields and manages validation. Create a unique GlobalKey<FormState> for global access and validation.
- FormField: A base class for input widgets, providing styling, validation, and error handling. Choose the appropriate concrete widget based on the input type (e.g., TextField, Checkbox, DropdownButton).
- TextInputAction: Set the textInputAction property on TextField to control the on-screen keyboard's behavior (e.g., TextInputAction.next, TextInputAction.done).
- FocusNode: Control keyboard focus navigation between form fields or widgets within a field (e.g., for multi-line text editing). Use FocusNode objects with FocusManager for management.

Dynamic Form Building:

- ListViews: Dynamically render form fields by creating a ListView.builder that builds FormField instances based on data (e.g., from a list or JSON). Customize field types and validation based on data properties.
- State Management: Employ state management solutions like Bloc, Provider, or raw setState to handle form state effectively. Store form data, validation errors, and other state information dynamically.

User Interaction and Validation:

- Input Validation: Implement validation rules within FormField or its descendant widgets using a validator callback. Provide clear error messages for invalid input to guide users.
- Focus Management: Use FocusNode to control keyboard focus flow, enabling a natural form-filling experience. Consider using packages like auto_animated for field auto-focusing when entering the screen.
- Interactive UI: Incorporate widgets like Checkbox, DropdownButton, Radio, and custom interactive elements to offer a variety of input options and enhance user engagement.

Additional Considerations:

- Performance: For large forms, consider techniques like lazy loading or pagination to manage memory and rendering overhead.

- Accessibility: Ensure your forms are accessible to users with disabilities by following WCAG guidelines and using appropriate semantic elements.
- Styling: Customize form aesthetics using Flutter's rich customization options to match your app's design and provide visual feedback (e.g., underline active fields, highlight errors)

Code -
Login page -

```dart
import 'package:flutter/material.dart';
import 'package:lunching/Signuppage.dart';
import 'package:lunching/main.dart';

class Loginpage extends StatelessWidget {
 const Loginpage({Key? key}) : super(key: key);

 static const tmail = "E-mail";
 static const tpassword = "Password";
 static const tforgetpassword = "Forget Password?";
 static const tFormHeight = 50.0;

 @override
 Widget build(BuildContext context) {
  return Scaffold(
    body: SingleChildScrollView(
      child: Container(
        padding: const EdgeInsets.symmetric(vertical: tFormHeight - 10),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.center,
          children: [
            Image.asset(
              'assets/card_image_1.jpeg',
              height: 120.0,
              width: 150.0,
              fit: BoxFit.cover,
            ),
            Text("Lunching", style: Theme.of(context).textTheme.headline2),
            Text("The best of best", style: Theme.of(context).textTheme.headline3),
            Form(
              child: Column(
                crossAxisAlignment: CrossAxisAlignment.center,
                children: [
                  TextFormField(
                    decoration: InputDecoration(
                      prefixIcon: Icon(Icons.person_outline_outlined),
```

```dart
        labelText: tmail,
        hintText: tmail,
        border: OutlineInputBorder(),
      ),
    ),
    const SizedBox(height: 20),
    TextFormField(
      obscureText: true,
      decoration: InputDecoration(
        prefixIcon: Icon(Icons.lock_outline),
        labelText: tpassword,
        hintText: tpassword,
        border: OutlineInputBorder(),
        suffixIcon: IconButton(
          onPressed: () {},
          icon: Icon(Icons.remove_red_eye),
        ),
      ),
    ),
    const SizedBox(height: 20),
    Align(
      alignment: Alignment.centerRight,
      child: TextButton(
        onPressed: () {},
        child: const Text(tforgetpassword),
      ),
    ),
    SizedBox(
      width: double.infinity,
      child: ElevatedButton(
        onPressed: () {
          Navigator.of(context).push(
            MaterialPageRoute(builder: (context) => HomePage()),
          );
        },
        child: Text("LOG IN"),
      ),
    ),
    const SizedBox(height: 20),
    Text("OR"),
    const SizedBox(height: 20),
    TextButton(
      onPressed: () {},
      child: Text.rich(
```

```dart
                    TextSpan(
                      text: "Don't have an account?",
                      style: Theme.of(context).textTheme.bodyText1,
                      children: const [

                        TextSpan(
                          text: "Register",
                          style: TextStyle(color: Colors.blue),
                        ),
                      ],
                    ),
                  ),
                ),
              ),
              const SizedBox(height: 20),
              SizedBox(
                width: double.infinity,
                child: ElevatedButton(
                  onPressed: () {
                    Navigator.of(context).push(
                      MaterialPageRoute(builder: (context) => Signuppage()),
                    );
                  },
                  child: Text("Sign Up"),
                ),
              ),
            ],
          ),
        ),
      ),
    );
  }
}
```

Sign up page -

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

class Signuppage extends StatelessWidget {
  const Signuppage({Key? key}) : super(key: key);
```
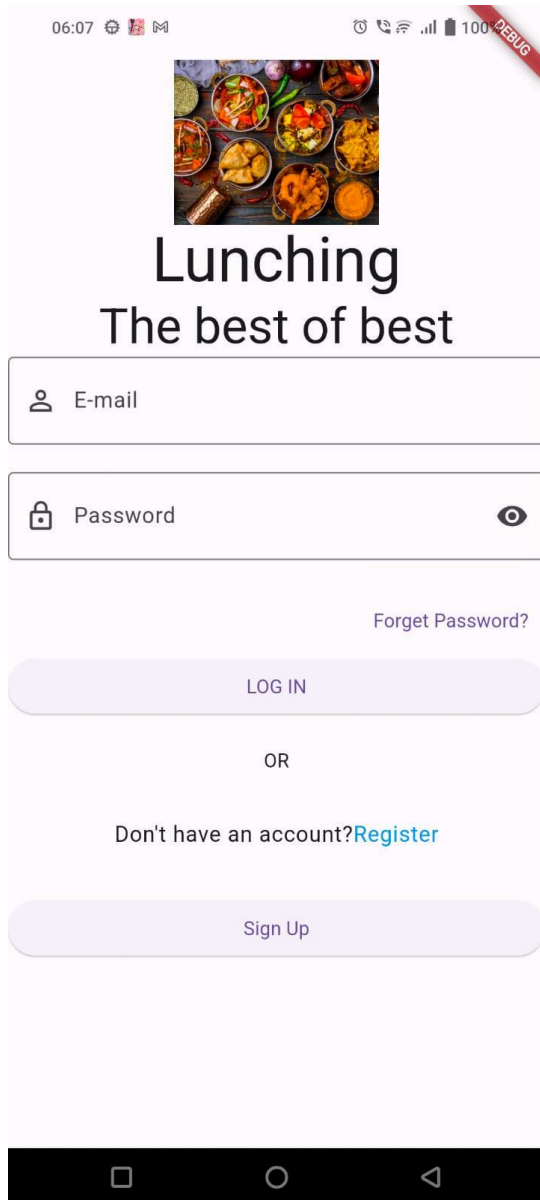
```dart
static const tFullName = "Full Name";
static const tPhoneNumber = "Phone Number";
static const tDateOfBirth = "Date of Birth";

@override
Widget build(BuildContext context) {
  return SafeArea(
    child: Scaffold(
      appBar: AppBar(
        title: Text(
          'Sign Up',
          style: TextStyle(
            fontWeight: FontWeight.bold,
            fontSize: 20,
          ),
        ),
        centerTitle: true,
        backgroundColor: Colors.orange,
      ),
      body: SingleChildScrollView(
        child: Container(
          padding: const EdgeInsets.all(20.0),
          child: Column(
            children: [
              Container(
                padding: const EdgeInsets.symmetric(vertical: 20),
                child: Form(
                  child: Column(
                    crossAxisAlignment: CrossAxisAlignment.start,
                    children: [
                      TextFormField(
                        decoration: _inputDecoration(tFullName),
                      ),
                      const SizedBox(height: 20),
                      TextFormField(
                        decoration: _inputDecoration(tPhoneNumber),
                        keyboardType: TextInputType.phone,
                      ),
                      const SizedBox(height: 20),
                      TextFormField(
                        decoration: _inputDecoration(tDateOfBirth),
                        keyboardType: TextInputType.datetime,
                      ),
                      const SizedBox(height: 40),
```

```dart
              SizedBox(
                width: double.infinity,
                child: ElevatedButton(
                  onPressed: () {
                    Navigator.of(context).push(
                      MaterialPageRoute(builder: (context) => HomePage()),
                    );
                  },
                  child: Text("Register"),
                ),
              ),
            ],
          ),
        ),
      ),
    ),
    TextButton(
      onPressed: () {
        Navigator.of(context).pop(); // Navigate back to the login page
      },
      child: Text(
        "Already have an account? Log in",
        style: TextStyle(color: Colors.blue),
      ),
    ),
      ],
    ),
      ),
      ),
      ),
    );
}

InputDecoration _inputDecoration(String labelText) {
  return InputDecoration(
    labelText: labelText,
    border: OutlineInputBorder(),
    prefixIcon: Icon(
      Icons.person_outline_outlined,
      color: Colors.orange,
    ),
    labelStyle: TextStyle(color: Colors.orange),
    focusedBorder: OutlineInputBorder(
      borderSide: BorderSide(width: 2.0, color: Colors.orange),
    ),
```

```
  );
 }
}
```

Screenshot -

Full Name

Phone Number

Date of Birth

Register

Already have an account? Log in

06:08

← Food Delivery

Delicious Food Delivered to Your Door

Order your favorite meals from the best restaurants in town.

Category List

Select a category: Hot food ▾

Card 1
Description of card 1
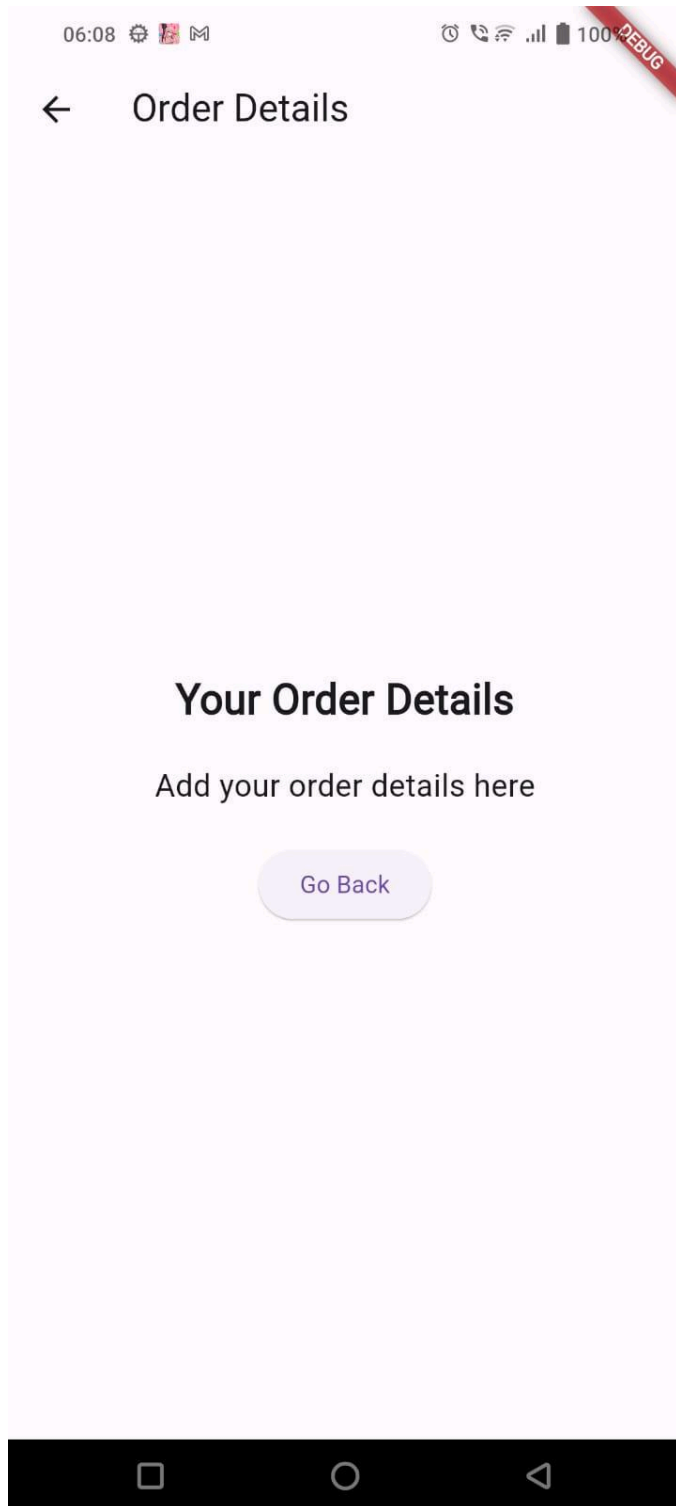
Card 2
Description of card 2

Special Offers On

Select a category: Hot food ▾

← Order Details

Your Order Details

Add your order details here

Go Back

⬜   ⭕   ◁

Conclusion -
Through this experiment we understood how to create interactive form using widgets in flutter
and how to validate data input in the Text fields.We also learned dynamic Form building.