Experiment 4: Creating an Interactive Form Using Form Widget in Flutter

Guidelines:

Introduction:

Flutter is a UI toolkit that enables the development of natively compiled applications for mobile, web, and desktop from a single codebase. To create an interactive form using a form widget in Flutter, we can utilize the `Form` widget along with various form-related widgets provided by Flutter.

Guidelines for Creating an Interactive Form:

1. Import Flutter Packages:
   Start by importing the necessary Flutter packages. The `flutter/material.dart` package is essential for building the user interface.

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

2. Create a StatefulWidget:
   Use the `StatefulWidget` to create a stateful widget that will contain the form and handle its state changes.

```dart
class InteractiveForm extends StatefulWidget {
  @override
  _InteractiveFormState createState() => _InteractiveFormState();
}
```

3. Create State Class:
   Inside the state class, define the variables and controllers for form elements.

```dart
class _InteractiveFormState extends State<InteractiveForm> {
  final _nameController = TextEditingController();
  final _emailController = TextEditingController();
  // Add more controllers for other form elements
}
```

4. Build Form Widget:
Use the `Form` widget to wrap the form elements. Utilize various form-related widgets like `TextFormField`, `Checkbox`, `Radio`, `DropdownButton`, etc.

```dart
@override
Widget build(BuildContext context) {
  return Form(
    child: Column(
      children: [
        TextFormField(
          controller: _nameController,
          decoration: InputDecoration(labelText: 'Name'),
        ),
        TextFormField(
          controller: _emailController,
          decoration: InputDecoration(labelText: 'Email'),
        ),
        // Add more form elements
        ElevatedButton(
          onPressed: () {
            // Handle form submission
          },
          child: Text('Submit'),
        ),
      ],
    ),
  );
}
```

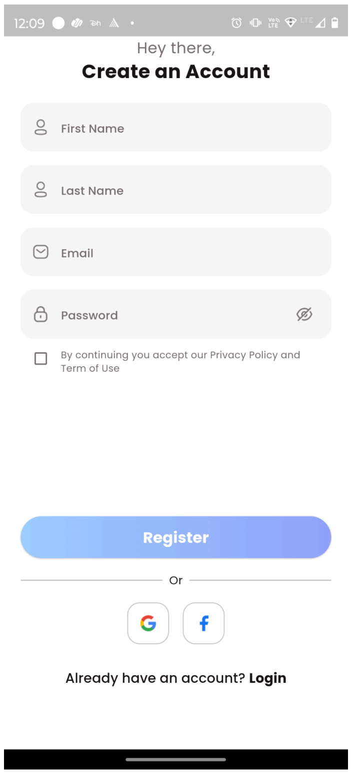
5. Form Validation:
Implement validation logic using the `validator` property of the `TextFormField` widget or custom validation functions.

```dart
TextFormField(
  controller: _emailController,
  decoration: InputDecoration(labelText: 'Email'),
  validator: (value) {
    if (value.isEmpty || !value.contains('@')) {
      return 'Invalid email format';
    }
    return null;
  },
),
```

6. Handle Form Submission:
   Add a callback function to handle the form submission when the submit button is pressed.

```dart
ElevatedButton(
  onPressed: () {
    if (Form.of(context).validate()) {
      // Form is valid, handle submission
      // Access form field values using controllers (e.g., _nameController.text)
    }
  },
  child: Text('Submit'),
),
```

Screenshot:



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Conclusion:

Creating an interactive form using the form widget in Flutter involves utilizing various form-related widgets, handling form validation, and implementing a submission mechanism. This experiment provides a practical guide to building interactive forms in Flutter, facilitating user input and enhancing the user experience in Flutter applications.