

## **Experiment No: 4**

<b>Experiment No 4</b> <b>4: Exploring Flutter Widgets.</b>	
<b>ROLL NO</b>	<b>03</b>
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## **Experiment 4**

**Aim:** To create an interactive form for the KhataBook app using the Form widget in Flutter.

### **Theory:**

The Form widget in Flutter is used to manage a group of form fields and perform validation on them. It provides methods to validate, save, and reset form fields.

#### **Properties of Form Widget:**

key: A GlobalKey that uniquely identifies the Form.

child: The widget that contains the form fields.

autovalidateMode: An enum that specifies when the form should automatically validate its fields.

Methods of Form Widget:

validate(): Triggers the validation of all form fields.

save(): Saves the current values of all form fields.

reset(): Resets the form to its initial state.

Stateful Widgets in Flutter:

- Flutter uses a reactive programming model where the UI is rebuilt in response to events.
- Stateful widgets maintain state that might change during the lifetime of the widget.
- The StatefulWidget class is used for widgets that need to maintain state.

Form Validation in Flutter:

- Form validation is the process of ensuring that user input meets certain requirements before it's processed.
- Flutter provides the Form widget along with TextFormField widgets for easy form creation and validation.
- Validation logic is typically provided through the validator property of TextFormField.

GlobalKey in Flutter:

- GlobalKey is a special type of key that allows Flutter widgets to be uniquely identified across the widget tree.
- It is commonly used with Form widgets to access form-specific functions such as validation and saving.
- Using GlobalKey ensures that the state of the form can be manipulated from anywhere within the widget tree.

**Code:**

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

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

class KhataBookApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'KhataBook',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: SignUpScreen(),
    );
  }
}

class SignUpScreen extends StatefulWidget {
  @override
  _SignUpScreenState createState() => _SignUpScreenState();
}

class _SignUpScreenState extends State<SignUpScreen> {
  final _formKey = GlobalKey<FormState>(); // GlobalKey for the Form widget
  TextEditingController _nameController = TextEditingController();
  TextEditingController _phoneNumberController = TextEditingController();
  TextEditingController _addressController = TextEditingController();

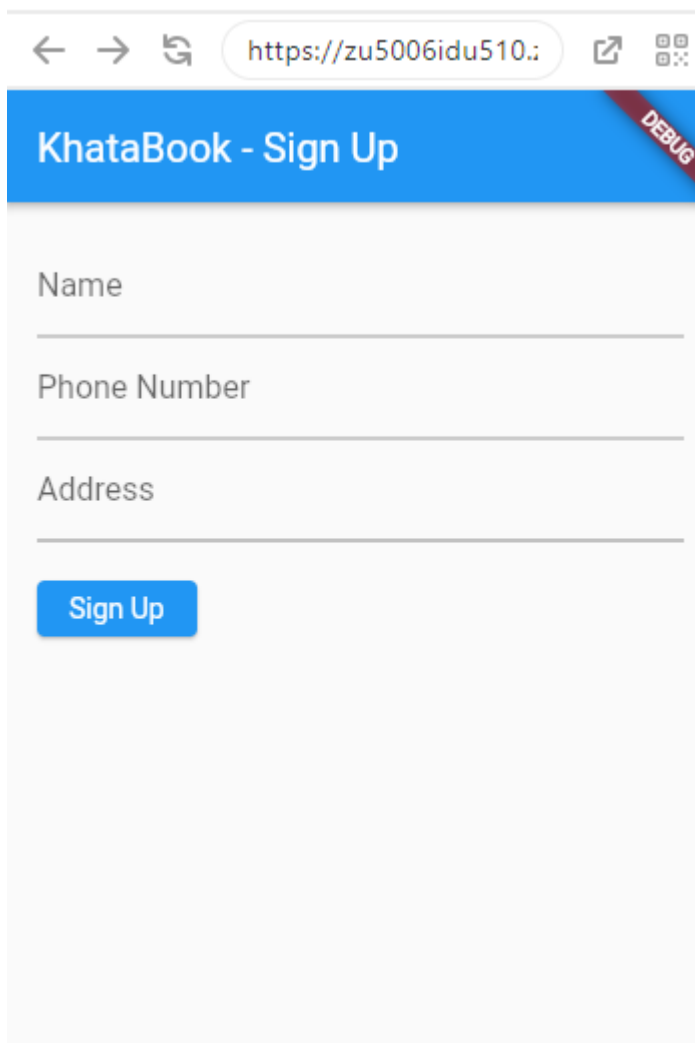
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('KhataBook - Sign Up'),
      ),
      body: Padding(
        padding: EdgeInsets.all(16.0),
        child: Form(
          key: _formKey,
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: <Widget>[
```

```
TextFormField(
  controller: _nameController,
  decoration: InputDecoration(labelText: 'Name'),
  validator: (value) {
    if (value == null || value.isEmpty) {
      return 'Please enter your name';
    }
    return null;
  },
),
TextFormField(
  controller: _phoneNumberController,
  decoration: InputDecoration(labelText: 'Phone Number'),
  keyboardType: TextInputType.phone,
  validator: (value) {
    if (value == null || value.isEmpty) {
      return 'Please enter your phone number';
    }
    return null;
  },
),
TextFormField(
  controller: _addressController,
  decoration: InputDecoration(labelText: 'Address'),
  validator: (value) {
    if (value == null || value.isEmpty) {
      return 'Please enter your address';
    }
    return null;
  },
),
),
SizedBox(height: 20.0),
ElevatedButton(
  onPressed: () {
    if (_formKey.currentState!.validate()) {
      // Form is valid, save the data
      String name = _nameController.text;
      String phoneNumber = _phoneNumberController.text;
      String address = _addressController.text;

      // Perform signup logic here
      print('Name: $name');
      print('Phone Number: $phoneNumber');
      print('Address: $address');
    }
  },
),
```

```
child: Text('Sign Up'),  
),  
],  
,  
,  
,  
,  
);  
}  
}
```

### **Output:**



The screenshot shows a mobile browser interface with a blue header bar containing the text "KhataBook - Sign Up" and a red "DEBUG" banner. Below the header, there is a form with three input fields labeled "Name", "Phone Number", and "Address". At the bottom of the form is a blue button labeled "Sign Up". The browser's address bar shows the URL "https://zu5006idu510.:".

### **Conclusion:**

In this experiment, we successfully created an interactive form for the KhataBook app using the Form widget in Flutter. The form allows users to sign up by entering their name, phone number, and address, with validation ensuring that the entered data is correct before submission.