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Lab 04

Aim: To create an interactive Form using form widget

Theory

Form validation is an essential feature in mobile applications to ensure the correctness of user inputs before processing them. In Flutter, `Form` and `TextFormField` widgets are used to create forms with built-in validation capabilities.

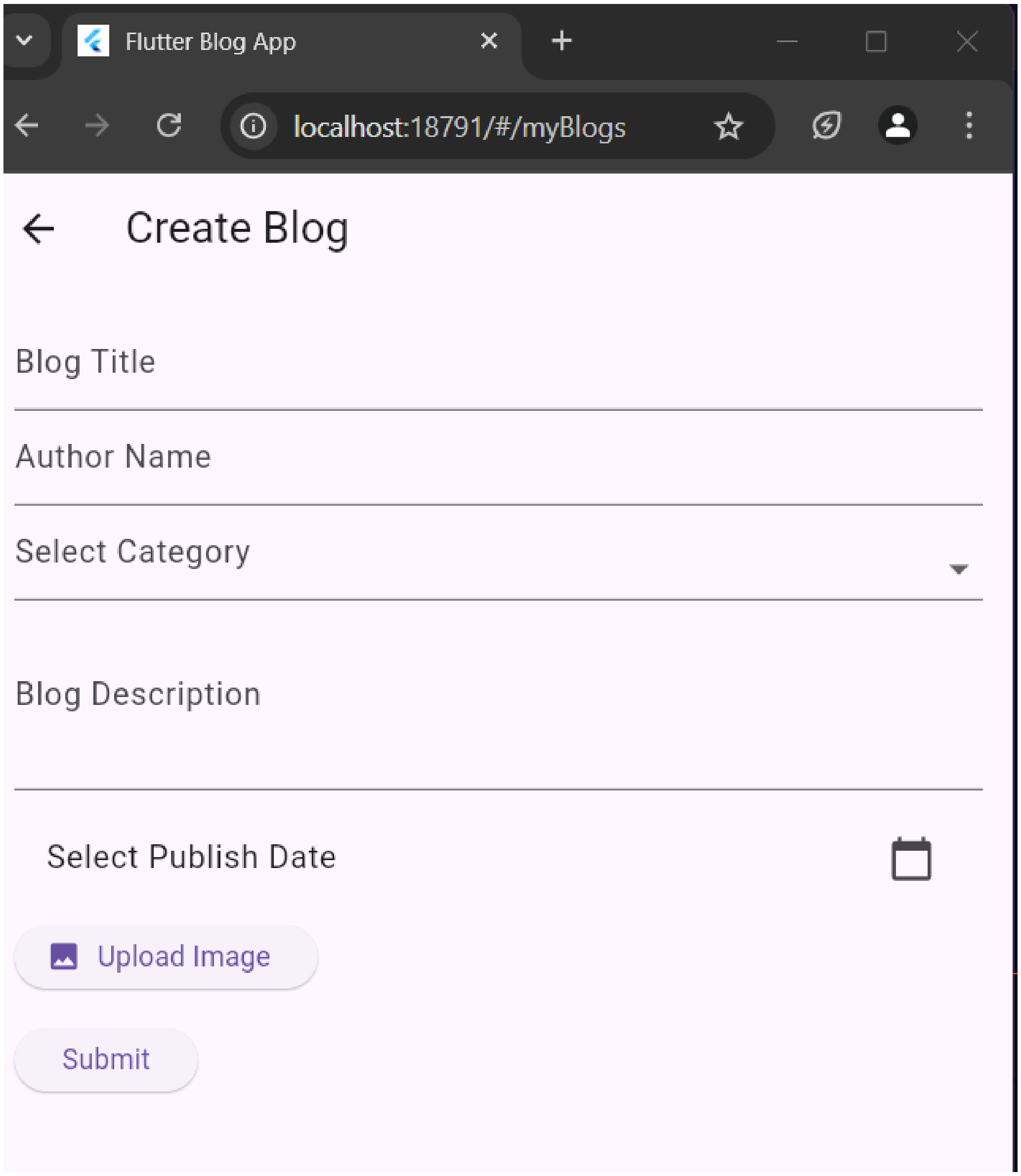
Key Concepts:
1. GlobalKey: Used to uniquely identify the form and manage its state.
2. TextFormField: A widget that allows users to enter input and supports validation.
3. Validation Logic: Defines conditions to verify the correctness of input.
4. Submit Button: Triggers form validation and processes the input if valid.

Code Implementation

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

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      home: FormScreen(),
    );
  }
```

```
}

class FormScreen extends StatefulWidget {
  @override
  _FormScreenState createState() => _FormScreenState();
}

class _FormScreenState extends State<FormScreen> {
  final _formKey = GlobalKey<FormState>();
  final TextEditingController _nameController = 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('Form Validation Demo')),
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: Form(
          key: _formKey,
          child: Column(
            children: [
              TextFormField(
                controller: _nameController,
                decoration: InputDecoration(labelText: 'Enter your name'),
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return 'Name cannot be empty';
                  }
                  return null;
                },
              ),
              SizedBox(height: 20),
              ElevatedButton(
                onPressed: _submitForm,
                child: Text('Submit'),
              ),
            ],
          ),
        ),
      ),
    );
  }
}
```

Output



Conclusion

Form validation in Flutter can be efficiently managed using the `GlobalKey`, `TextFormField`, and validation functions. This ensures user inputs are validated before processing, improving app reliability.