

# Validation:

## Regex validation:

In Flutter, **Regex validation** is the process of using **regular expressions** (patterns) to validate user input in text fields. It checks if the input matches a specific format, such as:

- **Email validation:** `RegExp(r'^[a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}$')`
- **Phone number validation:** `RegExp(r'^\d{10}$')`
- **Name validation:** `RegExp(r'^[a-zA-Z\s]+$')`

### Example:

```
String? validatePhoneNumber(String phone) {  
  
  if (!RegExp(r'^\d{10}$').hasMatch(phone)) {  
  
    return 'Phone number must be 10 digits';  
  
  }  
  
  return null;  
  
}
```

### How it works:

- The `RegExp` class checks if the input matches the pattern.
- Use `hasMatch` to test the input and return an error message if invalid.

### 1.Login page without Validation:

```

1  import 'package:flutter/material.dart';
2
3  class text10 extends StatelessWidget {
4    const text10({super.key});
5
6    @override
7    Widget build(BuildContext context) {
8      return Scaffold(
9        appBar: AppBar(
10         title: Text("Login Page"),
11         centerTitle: true,
12         backgroundColor: Colors.red,
13       ), // AppBar
14       body: Center(
15         child: Column(
16           mainAxisAlignment: MainAxisAlignment.center,
17           children: [
18             Padding(padding: const EdgeInsets.symmetric(horizontal: 20.0),
19               child: TextField(
20                 decoration: InputDecoration(
21                   labelText: 'Username',
22                   border: OutlineInputBorder(
23                     borderRadius: BorderRadius.circular(20.0),
24                   ), // OutlineInputBorder
25                 ), // InputDecoration
26               ), // TextField
27             ), // Padding
28             SizedBox(height: 20.0),
29             Padding(padding: const EdgeInsets.symmetric(horizontal: 20.0),
30               child: TextField(
31                 obscureText: true,
32                 decoration: InputDecoration(
33                   labelText: 'Password',
34                   border: OutlineInputBorder(

```

```

35                 border: OutlineInputBorder(
36                   borderRadius: BorderRadius.circular(20.0),
37                 ), // OutlineInputBorder
38               ), // InputDecoration
39             ), // TextField
40             ), // Padding
41           ],
42         ), // Column
43       ), // Center
44     ); // Scaffold
45   }
46 }

```

Output:

4:35

Login Page

Username

Password

2: Login page with validation:

```

1  import 'package:flutter/material.dart';
2
3  class text109 extends StatefulWidget {
4    const text109({super.key});
5
6    @override
7    State<text109> createState() => _text109State();
8  }
9
10 class _text109State extends State<text109> {
11   final TextEditingController usernameController = TextEditingController();
12   final TextEditingController passwordController = TextEditingController();
13
14   String? usernameError;
15   String? passwordError;
16
17   // Validation methods
18   String? validateUsername(String username) {
19     if (RegExp(r'[@#<>":_`~;[\]\\\|=+)(*%0-9-]').hasMatch(username)) {
20       return 'Username must not contain special characters or numbers';
21     }
22     if (username.isEmpty) {
23       return 'Username cannot be empty';
24     }
25     return null;
26   }
27
28   String? validatePassword(String password) {
29     if (password.length < 6) {
30       return 'Password must be at least 6 characters long';
31     }
32     if (!RegExp(r'[A-Z]').hasMatch(password)) {
33       return 'Password must contain at least one uppercase letter';
34     }
35     if (!RegExp(r'[0-9]').hasMatch(password)) {

```

```

36       return 'Password must contain at least one number';
37     }
38     return null;
39   }
40
41   @override
42   Widget build(BuildContext context) {
43     return Scaffold(
44       appBar: AppBar(
45         title: Text("Login Page"),
46         centerTitle: true,
47         backgroundColor: Colors.red,
48       ), // AppBar
49       body: Center(
50         child: Column(
51           mainAxisAlignment: MainAxisAlignment.center,
52           children: [
53             Padding(
54               padding: const EdgeInsets.symmetric(horizontal: 20.0),
55               child: TextField(
56                 controller: usernameController,
57                 decoration: InputDecoration(
58                   labelText: 'Username',
59                   errorText: usernameError,
60                   border: OutlineInputBorder(
61                     borderRadius: BorderRadius.circular(20.0),
62                   ), // OutlineInputBorder
63                 ), // InputDecoration
64                 onChanged: (value) {
65                   setState(() {
66                     usernameError = validateUsername(value);

```

```

66         usernameError = validateUsername(value);
67     });
68     },
69     ), // TextField
70 ), // Padding
71 SizedBox(height: 20.0),
72 Padding(
73   padding: const EdgeInsets.symmetric(horizontal: 20.0),
74   child: TextField(
75     controller: passwordController,
76     obscureText: true,
77     decoration: InputDecoration(
78       labelText: 'Password',
79       errorText: passwordError,
80       border: OutlineInputBorder(
81         borderRadius: BorderRadius.circular(20.0),
82       ), // OutlineInputBorder
83     ), // InputDecoration
84     onChanged: (value) {
85       setState(() {
86         passwordError = validatePassword(value);
87       });
88     },
89   ), // TextField
90 ), // Padding
91 SizedBox(height: 20.0),
92 ElevatedButton(
93   onPressed: () {
94     setState(() {
95       usernameError = validateUsername(usernameController.text);
96       passwordError = validatePassword(passwordController.text);
97     });

```

```

95       usernameError = validateUsername(usernameController.text);
96       passwordError = validatePassword(passwordController.text);
97     });
98     if (usernameError == null && passwordError == null) {
99       ScaffoldMessenger.of(context).showSnackBar(
100         SnackBar(content: Text('Login Successful!')),
101       );
102     }
103   },
104   child: Text('Login'),
105 ), // ElevatedButton
106 ],
107 ), // Column
108 ), // Center
109 ); // Scaffold
110 }
111 }
112

```

Output:

4:45

Login Page

Username

Username cannot be empty

Password

Password must be at least 6 characters long

Login

### 3.Phone number validation:

```

1  import 'package:flutter/material.dart';
2
3  class text101 extends StatefulWidget {
4    const text101({super.key});
5
6    @override
7    State<text101> createState() => _text101State();
8  }
9
10 class _text101State extends State<text101> {
11   final TextEditingController phoneNumberController = TextEditingController();
12
13   String? phoneNumberError;
14
15   // Validation method for phone number
16   String? validatePhoneNumber(String phoneNumber) {
17     if (!RegExp(r'^\d{10}$').hasMatch(phoneNumber)) {
18       return 'Phone number must be exactly 10 digits';
19     }
20     return null;
21   }
22
23   @override
24   Widget build(BuildContext context) {
25     return Scaffold(
26       appBar: AppBar(
27         title: Text("Login Page"),
28         centerTitle: true,
29         backgroundColor: Colors.red,
30       ), // AppBar
31       body: Center(
32         child: Column(
33           mainAxisAlignment: MainAxisAlignment.center,
34           children: [
35             Padding(

```

```

35             Padding(
36               padding: const EdgeInsets.symmetric(horizontal: 20.0),
37               child: TextField(
38                 controller: phoneNumberController,
39                 keyboardType: TextInputType.number,
40                 maxLength: 10, // Limits input to 10 digits
41                 decoration: InputDecoration(
42                   labelText: 'Phone Number',
43                   errorText: phoneNumberError,
44                   border: OutlineInputBorder(
45                     borderRadius: BorderRadius.circular(20.0),
46                   ), // OutlineInputBorder
47                 ), // InputDecoration
48                 onChanged: (value) {
49                   setState(() {
50                     phoneNumberError = validatePhoneNumber(value);
51                   });
52                 },
53               ), // TextField
54             ), // Padding
55             ElevatedButton(
56               onPressed: () {
57                 setState(() {
58                   phoneNumberError =
59                     validatePhoneNumber(phoneNumberController.text);
60                 });
61
62                 if (phoneNumberError == null) {
63                   ScaffoldMessenger.of(context).showSnackBar(
64                     SnackBar(content: Text('Submission Successful!')),
65                   );

```

```

64         SnackBar(content: Text('Submission Successful!')),
65     );
66   }
67 },
68   child: Text('Submit'),
69 ), // ElevatedButton
70 1,
71 ), // Column
72 ), // Center
73 ); // Scaffold
74 }
75 }
76

```

Output:

10:50

## Login Page

Phone Number

Phone number must be exactly 10 digits 0/10

Submit