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Expt 4- Creating a form in flutter with validations

Theory:

Form validation is a crucial aspect of building interactive user interfaces in mobile and web applications. It ensures that user input meets certain criteria or constraints before it is processed or submitted. This helps maintain data integrity, improve user experience, and prevent errors or unexpected behavior.

In the provided code, form validation is implemented using the Form widget along with various validator functions assigned to each form field. Let's discuss the validators used in the code and their purposes:

GlobalKey<FormState>: A GlobalKey is used to uniquely identify a widget in the widget tree. In this case, it is used to identify and manage the state of the Form widget.

TextFormField: This widget is used to create text input fields within the form. Each TextFormField has a validator property, which takes a function that returns an error message if the entered value is invalid, or null if the value is valid.

Validator Functions:

Name Validator: Validates the name field to ensure that it is not empty.
Age Validator: Ensures that the age field is not empty and contains a valid age (a positive integer less than or equal to 30).
Email Validator: Checks if the email field is not empty and follows a valid email format using a regular expression (regex).
Mobile Validator: Validates the mobile number field to ensure that it is not empty. Additional validation logic can be added here as needed.
Feedback Validator: Ensures that the feedback field is not empty.
Radio Button for Gender Selection: Although not strictly a validator, the radio button group allows the user to select their gender, providing another aspect of user input validation.

Form Submission: When the submit button is pressed, the _submitFeedback() function is called. Before processing the form data, currentState!.validate() is used to trigger the validation of all form fields. If any of the fields fail validation, the submission is prevented, and error messages are displayed. If all fields pass validation, the feedback is processed accordingly.

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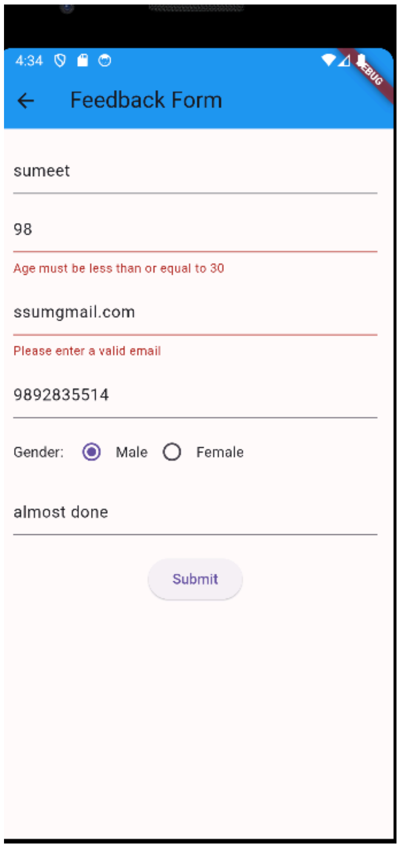
CODE:

```
class FeedbackPage extends StatefulWidget {
  @override
  _FeedbackPageState createState() => _FeedbackPageState();
}

class _FeedbackPageState extends State<FeedbackPage> {
  final TextEditingController _nameController = TextEditingController();
  final TextEditingController _ageController = TextEditingController();
  final TextEditingController _emailController = TextEditingController();
  final TextEditingController _mobileController = TextEditingController();
  final TextEditingController _feedbackController = TextEditingController();
  final _formKey = GlobalKey<FormState>(); // Add a global key for the form
  String? _gender; // Variable to store selected gender

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Feedback Form'),
        backgroundColor: Colors.blue,
      ),
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: Form(
          key: _formKey,
          child: Column(
            children: [
              TextFormField(
                controller: _nameController,
                decoration: InputDecoration(
                  hintText: 'Enter your name',
                ),
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return 'Please enter your name';
                  }
                  return null;
                },
              ),
              SizedBox(height: 10),
              TextFormField(
                controller: _ageController,
                keyboardType: TextInputType.number,
                decoration: InputDecoration(
                  hintText: 'Enter your age',
                ),
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return 'Please enter your age';
                  }
                  int? age = int.tryParse(value);
                  if (age == null || age <= 0) {
                    return 'Please enter a valid age';
                  } else if (age > 30) {
                    return 'Age must be less than or equal to 30';
                  }
                  return null;
                },
              ),
              SizedBox(height: 10),
              TextFormField(
                controller: _emailController,
                keyboardType: TextInputType.emailAddress,
                decoration: InputDecoration(
                  hintText: 'Enter your email',
                ),
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return 'Please enter your email';
                  }
                  String pattern = r'^[\w-\.]+@([\w-]+\.)+[\w-]{2,4}$';
                  RegExp regex = RegExp(pattern);
                  if (!regex.hasMatch(value)) {
                    return 'Please enter a valid email';
                  }
                  return null;
                },
              ),
              SizedBox(height: 10),
              TextFormField(
                controller: _mobileController,
                keyboardType: TextInputType.phone,
                decoration: InputDecoration(
                  hintText: 'Enter your mobile number',
                ),
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return 'Please enter your mobile number';
                  }
                  return null;
                },
              ),
              SizedBox(height: 10),
              Row(
                children: [
                  Text('Gender: '),
                  Radio<String>(
                    value: 'Male',
                    groupValue: _gender,
                    onChanged: (value) {
                      setState(() {
                        _gender = value;
                      });
                    },
                  ),
                  Text('Male'),
                  Radio<String>(
                    value: 'Female',
                    groupValue: _gender,
                    onChanged: (value) {
                      setState(() {
                        _gender = value;
                      });
                    },
                  ),
                  Text('Female'),
                ],
              ),
              SizedBox(height: 10),
              TextFormField(
                controller: _feedbackController,
                decoration: InputDecoration(
                  hintText: 'Enter your feedback',
                ),
                maxLines: null,
                validator: (value) {
                  if (value == null || value.isEmpty) {
                    return 'Please enter your feedback';
                  }
                  return null;
```

```
          },
        ),
        SizedBox(height: 20),
        ElevatedButton(
          onPressed: () {
            if (_formKey.currentState!.validate()) {
              _submitFeedback();
            }
          },
          child: Text('Submit'),
        ),
      ],
    ),
   ),
  ),
 );
}

void _submitFeedback() {
  String name = _nameController.text.trim();
  String age = _ageController.text.trim();
  String email = _emailController.text.trim();
  String mobile = _mobileController.text.trim();
  String feedback = _feedbackController.text.trim();

  // Handle submission logic here, e.g., sending feedback to server

  // Display a thank you message
  showDialog(
    context: context,
    builder: (BuildContext context) {
      return AlertDialog(
        title: Text('Thank You!'),
        content: Text('Thank you, $name, for submitting your feedback.'),
        actions: [
          TextButton(
            onPressed: () {
              Navigator.of(context).pop();
            },
            child: Text('OK'),
          ),
        ],
      );
    },
    );
  }
}
```



sumeet

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Age must be less than or equal to 30

ssumgmail.com

Please enter a valid email

9892835514

Gender: [✓ Male] Female

almost done

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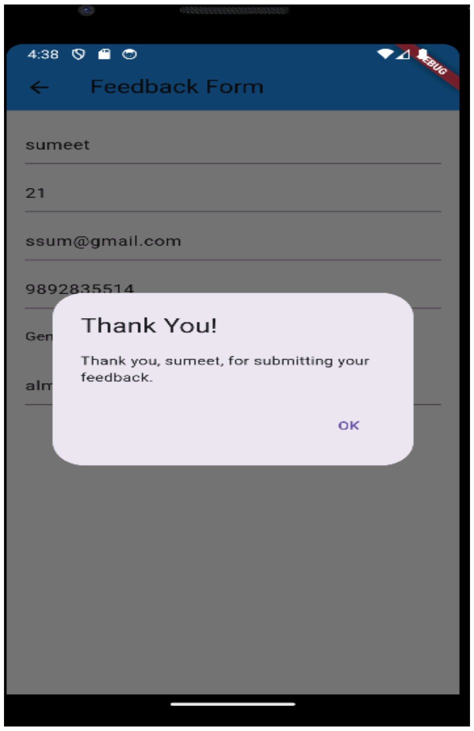

Thank You!

Thank you, sumeet, for submitting your feedback.

OK

Conclusion: From the above experiment i have came to know about importance of validators which are necessary to check whether a user is filling the form correctly , also i came to know about how to add these validators to our form for the same.