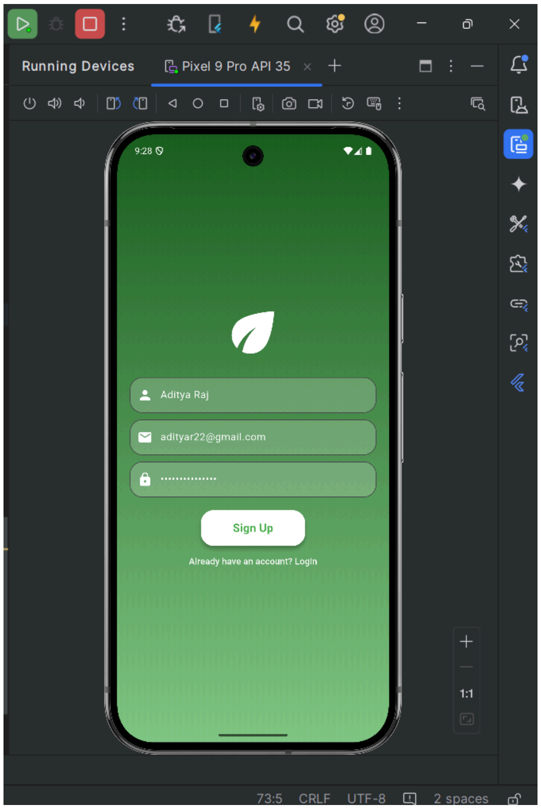
Aim : To create an interactive Form using form widget

Signup_screen.dart

```
import 'package:flutter/material.dart';
import 'login_screen.dart';
import 'home_screen.dart';
import '../widgets/custom_button.dart';

class SignupScreen extends StatelessWidget {
  final _formKey = GlobalKey<FormState>();
  final TextEditingController emailController = TextEditingController();
  final TextEditingController passwordController = TextEditingController();
  final TextEditingController nameController = TextEditingController();

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: Container(
        padding: EdgeInsets.all(20),
        decoration: BoxDecoration(
          gradient: LinearGradient(
            colors: [Colors.green.shade900, Colors.green.shade300],
            begin: Alignment.topCenter,
            end: Alignment.bottomCenter,
          ),
        ),
        child: Center(
          child: SingleChildScrollView(
            child: Form(
              key: _formKey,
              child: Column(
                mainAxisSize: MainAxisSize.min,
                children: [
                  Icon(Icons.eco, size: 100, color: Colors.white),
                  SizedBox(height: 20),
                  _buildTextField(nameController, "Full Name", Icons.person, validator: _validateName),
                  SizedBox(height: 10),
                  _buildTextField(emailController, "Email", Icons.email, validator: _validateEmail),
                  SizedBox(height: 10),
                  _buildTextField(passwordController, "Password", Icons.lock, obscureText: true, validator:
_validatePassword),
                  SizedBox(height: 20),
                  CustomButton(
                    text: "Sign Up",
                    onPressed: () {
                      if (_formKey.currentState!.validate()) {
                        Navigator.pushReplacement(context, MaterialPageRoute(builder: (context) =>
HomeScreen()));
                      }
                    },
                  ),
                  TextButton(
                    onPressed: () {
                      Navigator.pop(context);
                    },
                    child: Text("Already have an account? Login", style: TextStyle(color: Colors.white)),
                  ),
                ],
              ),
            ),
          ),
        ),
      ),
    );
  }

  Widget _buildTextField(TextEditingController controller, String hint, IconData icon, {bool obscureText = false, String? Function(String?)? validator}) {
    return TextFormField(
      controller: controller,
      obscureText: obscureText,
      validator: validator,
      decoration: InputDecoration(
        hintText: hint,
        prefixIcon: Icon(icon, color: Colors.white),
        filled: true,
        fillColor: Colors.white.withOpacity(0.2),
        border: OutlineInputBorder(borderRadius: BorderRadius.circular(20)),
      ),
      style: TextStyle(color: Colors.white),
    );
  }

  String? _validateName(String? value) {
    if (value == null || value.trim().isEmpty) {
      return "Full Name is required";
    }
    return null;
  }

  String? _validateEmail(String? value) {
    if (value == null || value.trim().isEmpty) {
      return "Email is required";
    }
    final emailRegex = RegExp(r'^[^@]+@[^@]+\.[^@]+$');
    if (!emailRegex.hasMatch(value)) {
      return "Enter a valid email";
    }
    return null;
  }

  String? _validatePassword(String? value) {
    if (value == null || value.trim().isEmpty) {
      return "Password is required";
    }
    return null;
  }
}
```



Aditya Raj

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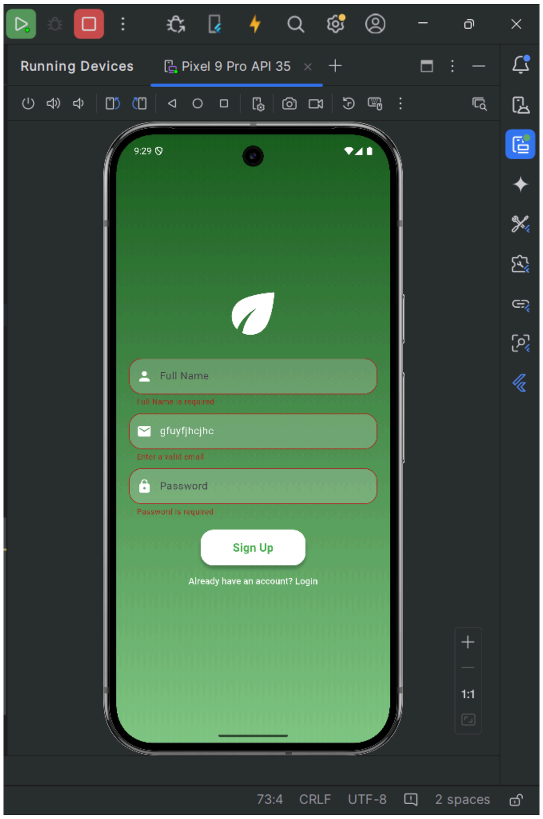


Full Name

Full Name is required

gfuyfjhcjhc

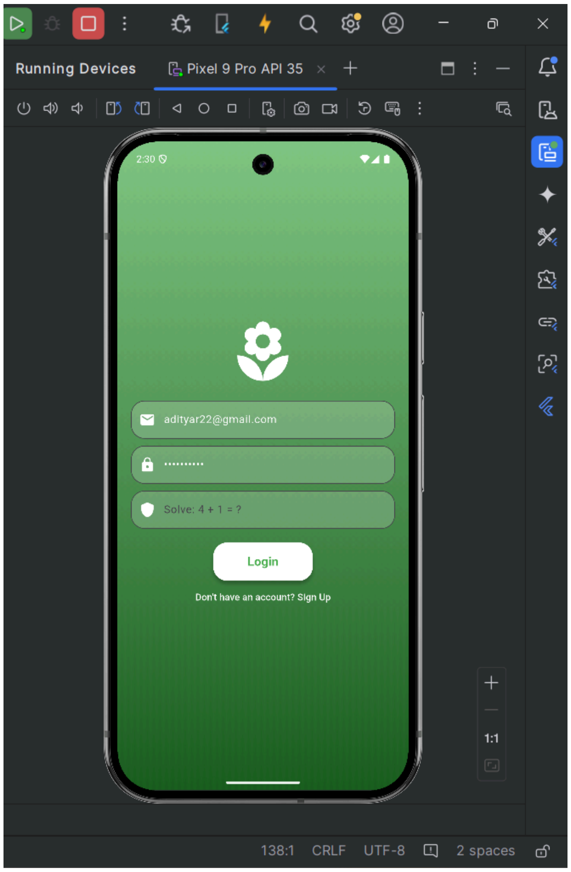
Enter a valid email

Password

Password is required

Login_screen.dart

```
import 'package:flutter/material.dart';
import 'dart:math'; // Used for generating random numbers
import 'signup_screen.dart';
import 'home_screen.dart';
import '../widgets/custom_button.dart';

class LoginScreen extends StatefulWidget {
 @override
 _LoginScreenState createState() => _LoginScreenState();
}

class _LoginScreenState extends State<LoginScreen> {
 final _formKey = GlobalKey<FormState>();
 final TextEditingController emailController = TextEditingController();
 final TextEditingController passwordController = TextEditingController();
 final TextEditingController captchaController = TextEditingController();

 int _num1 = 0;
 int _num2 = 0;
 int _captchaAnswer = 0;

 @override
 void initState() {
  super.initState();
  _generateCaptcha();
 }

 void _generateCaptcha() {
  final Random random = Random();
  _num1 = random.nextInt(9) + 1; // Random number between 1-9
  _num2 = random.nextInt(9) + 1; // Random number between 1-9
  _captchaAnswer = _num1 + _num2; // Expected answer
  setState(() {}); // Refresh UI with new CAPTCHA
 }

 @override
 Widget build(BuildContext context) {
  return Scaffold(
   body: Container(
    padding: EdgeInsets.all(20),
    decoration: BoxDecoration(
     gradient: LinearGradient(
      colors: [Colors.green.shade300, Colors.green.shade900],
      begin: Alignment.topCenter,
      end: Alignment.bottomCenter,
     ),
    ),
    child: Center(
     child: SingleChildScrollView(
      child: Form(
       key: _formKey,
              child: Column(
                mainAxisSize: MainAxisSize.min,
                children: [
                  Icon(Icons.local_florist, size: 100, color: Colors.white),
                  SizedBox(height: 20),
                  _buildTextField(emailController, "Email", Icons.email, validator: _validateEmail),
                  SizedBox(height: 10),
                  _buildTextField(passwordController, "Password", Icons.lock, obscureText: true, validator:
_validatePassword),
                  SizedBox(height: 10),

                  // CAPTCHA Field
                  _buildTextField(
                    captchaController,
                    "Solve: $_num1 + $_num2 = ?",
                    Icons.shield,
                    validator: _validateCaptcha,
                  ),

                  SizedBox(height: 20),
                  CustomButton(
                    text: "Login",
                    onPressed: () {
                      if (_formKey.currentState!.validate()) {
                        Navigator.pushReplacement(context, MaterialPageRoute(builder: (context) =>
HomeScreen()));
                      }
                    },
                  ),
                  TextButton(
                    onPressed: () {
                      Navigator.push(context, MaterialPageRoute(builder: (context) => SignupScreen()));
                    },
                    child: Text("Don't have an account? Sign Up", style: TextStyle(color: Colors.white)),
                  ),
                ],
              ),
            ),
          ),
        ),
      ),
    );
  }

  Widget _buildTextField(TextEditingController controller, String hint, IconData icon, {bool obscureText =
false, String? Function(String?)? validator}) {
    return TextFormField(
      controller: controller,
      obscureText: obscureText,
      validator: validator,
      decoration: InputDecoration(
        hintText: hint,
        prefixIcon: Icon(icon, color: Colors.white),
        filled: true,
        fillColor: Colors.white.withOpacity(0.2),
        border: OutlineInputBorder(borderRadius: BorderRadius.circular(20)),
      ),
      style: TextStyle(color: Colors.white),
    );
  }

  String? _validateEmail(String? value) {
    if (value == null || value.trim().isEmpty) {
      return "Email is required";
    }
    final emailRegex = RegExp(r'^[^@]+@[^@]+\.[^@]+$');
    if (!emailRegex.hasMatch(value)) {
      return "Enter a valid email";
    }
    return null;
  }

  String? _validatePassword(String? value) {
    if (value == null || value.trim().isEmpty) {
      return "Password is required";
    }
    return null;
  }

  String? _validateCaptcha(String? value) {
    if (value == null || value.trim().isEmpty) {
      return "CAPTCHA is required";
    }
    if (int.tryParse(value) != _captchaAnswer) {
      return "Incorrect CAPTCHA, try again!";
    }
    return null;
  }
}
```



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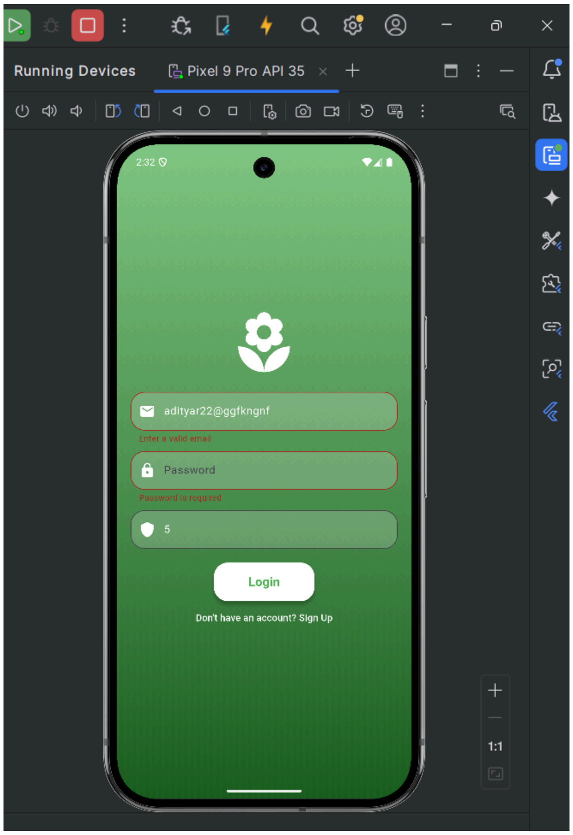
Solve: 4 + 1 = ?



adityar22@ggfkngnf

Enter a valid email

Password

Password is required

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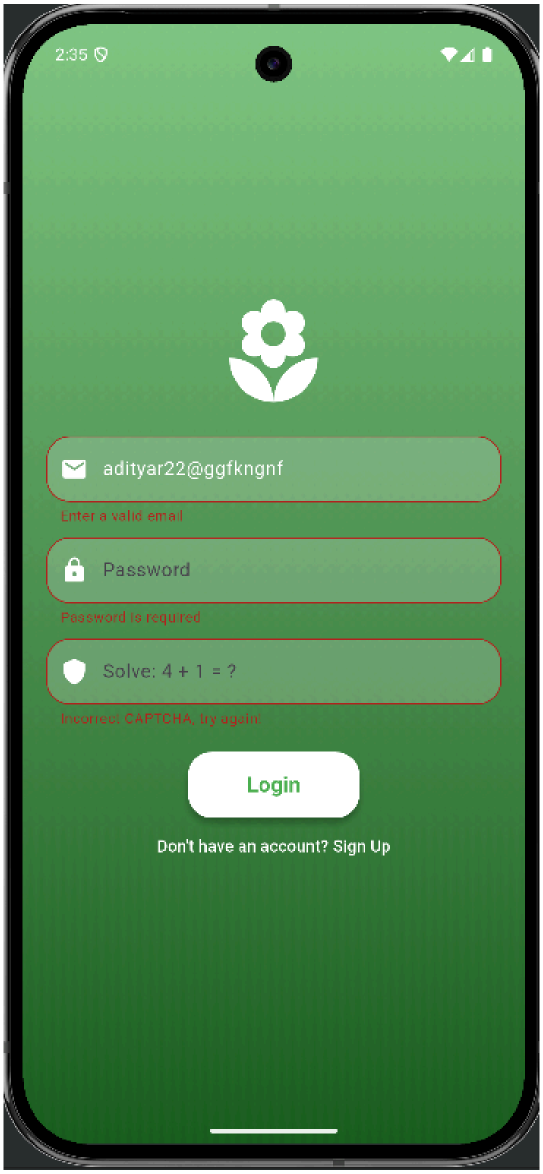

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Enter a valid email

Password

Password is required

Solve: 4 + 1 = ?

Incorrect CAPTCHA, try again!