KEMENTERIAN PENDIDIKAN, KEBUDAYAAN, RISET, DAN TEKNOLOGI
POLITEKNIK NEGERI MALANG
JURUSAN TEKNOLOGI INFORMASI
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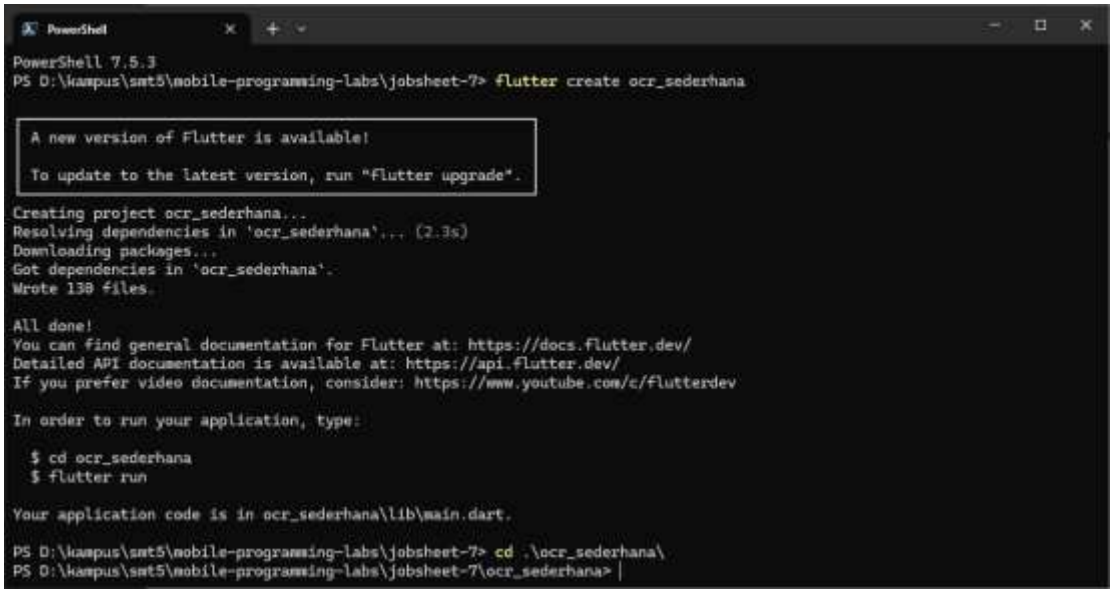
Mata Kuliah	:	Pemograman Mobile
Program Studi	:	D4 – Sistem Informasi Bisnis
Semester	:	5

Kelas	:	SIB
NIM	:	2341760056
Nama	:	Revani Nanda Putri
Jobsheet Ke-	:	7 (Aplikasi OCR Sederhana dengan Flutter)
Link Github	:	https://github.com/revaniputeri/mobile-programming-labs/tree/main/jobsheet-7

Laporan Jobsheet

Praktikum Ke-1 (Membangun Layout di Flutter)

Langkah	Jawaban/Deskripsi
1	Membuat project Flutter baru 
2	Buka file pubspec.yaml, lalu tambahkan dependensi berikut di bawah bagian dependencies:


```
dependencies:
  flutter:
    sdk: flutter
  google_mlkit_text_recognition: ^0.10.0
  camera: ^0.10.5+5
  path_provider: ^2.1.2
```

```
  path: ^1.8.3
```

3 Simpan file, lalu jalankan:

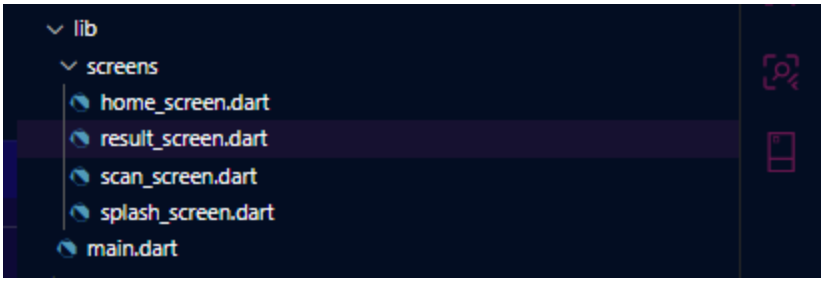
```
PROBLEMS 2   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   QUERY RESULTS

PS D:\kampus\smt5\mobile-programming-labs\jobsheet-7\ocr_sederhana> flutter pub get
Resolving dependencies...
Downloading packages...
  camera 0.10.6 (0.11.2 available)
  characters 1.4.0 (1.4.1 available)
  flutter_lints 5.0.0 (6.0.0 available)
  google_mlkit_commons 0.5.0 (0.11.0 available)
  google_mlkit_text_recognition 0.10.0 (0.15.0 available)
  lints 5.1.1 (6.0.0 available)
  material_color_utilities 0.11.1 (0.13.0 available)
  meta 1.16.0 (1.17.0 available)
  test_api 0.7.6 (0.7.7 available)
Got dependencies!
9 packages have newer versions incompatible with dependency constraints.
Try `flutter pub outdated` for more information.
PS D:\kampus\smt5\mobile-programming-labs\jobsheet-7\ocr_sederhana>
```

4 Buka file: android/app/src/main/AndroidManifest.xml

Tambahkan baris berikut di dalam tag <manifest>, sebelum <application>:

```
<uses-permission android:name ="android.permission.CAMERA" />
```

5 Di dalam folder lib/, buat struktur berikut:



6 Kode program:

lib/main.dart

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

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

class MyApp extends StatelessWidget {
  const MyApp({super.key});

  @override
```

```
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'OCR Sederhana',
      theme: ThemeData(primarySwatch: Colors.blue),
      home: const SplashScreen(),
      debugShowCheckedModeBanner: false,
    );
  }
}
```

File: lib/screens/splash screen.dart

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

class SplashScreen extends StatefulWidget {
  const SplashScreen({super.key});

  @override
  State<SplashScreen> createState() => _SplashScreenState();
}

class _SplashScreenState extends State<SplashScreen> {
  @override
  void initState() {
    super.initState();
    Timer(const Duration(seconds: 2), () {
      Navigator.pushReplacement(
        context,
        MaterialPageRoute(builder: (_) => const HomeScreen()),
      );
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      backgroundColor: Colors.blue,
      body: Center(
        child: Column(
          mainAxisAlignment: MainAxisAlignment.center,
          children: const [
            CircularProgressIndicator(color: Colors.white),
            SizedBox(height: 20),
            Text('OCR Scanner',
              style: TextStyle(color: Colors.white, fontSize: 24)),
          ],
        ),
      ),
    );
  }
}
```

File: lib/screens/home_screen.dart

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

```dart
import 'scan_screen.dart';

class HomeScreen extends StatelessWidget {
  const HomeScreen({super.key});

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(title: const Text('Menu Utama')),
      body: Center(
        child: ElevatedButton(
          onPressed: () {
            Navigator.push(
              context,
              MaterialPageRoute(builder: (_) => const ScanScreen()),
            );
          },
          child: const Text('Mulai Scan Teks'),
        ),
      ),
    );
  }
}
```

File: lib/screens/scan_screen.dart

```dart
import 'dart:io';
import 'package:flutter/material.dart';
import 'package:camera/camera.dart';
import 'package:google_mlkit_text_recognition/google_mlkit_text_recognition.dart';
import 'package:path/path.dart' as path;
import 'package:path_provider/path_provider.dart';
import 'result_screen.dart';

late List<CameraDescription> cameras;

class ScanScreen extends StatefulWidget {
  const ScanScreen({super.key});

  @override
  State<ScanScreen> createState() => _ScanScreenState();
}

class _ScanScreenState extends State<ScanScreen> {
  late CameraController _controller;
  late Future<void> _initializeControllerFuture;

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

  void _initCamera() async {
    cameras = await availableCameras();
    _controller = CameraController(cameras[0], ResolutionPreset.medium);
    _initializeControllerFuture = _controller.initialize();
    if (mounted) {
      setState(() {});
```

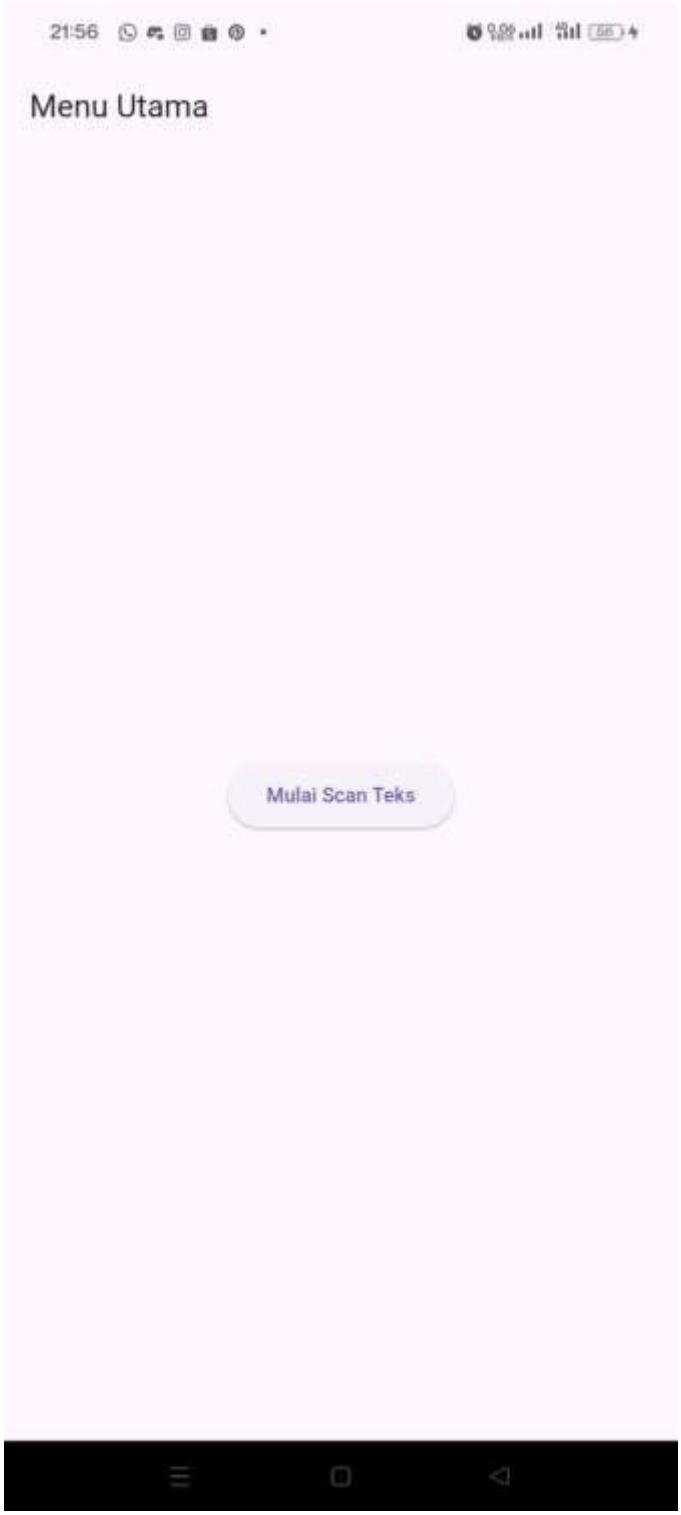
```
    }
  }

  @override
  void dispose() {
    _controller.dispose();
    super.dispose();
  }

  Future<String> _ocrFromFile(File imageFile) async {
    final inputImage = InputImage.fromFile(imageFile);
    final textRecognizer = TextRecognizer(script: TextRecognitionScript.latin);
    final RecognizedText recognizedText = await
textRecognizer.processImage(inputImage);
    textRecognizer.close();
    return recognizedText.text;
  }

  Future<void> _takePicture() async {
    try {
      await _initializeControllerFuture;

      if (!mounted) return;
      ScaffoldMessenger.of(context).showSnackBar(
        const SnackBar(content: Text('Memproses OCR, mohon tunggu...'), duration:
Duration(seconds: 2)));

      final XFile image = await _controller.takePicture();

      final ocrText = await _ocrFromFile(File(image.path));

      if (!mounted) return;
      Navigator.push(
        context,
        MaterialPageRoute(builder: (_) => ResultScreen(ocrText: ocrText)),
      );
    } catch (e) {
      if (!mounted) return;
      ScaffoldMessenger.of(context).showSnackBar(SnackBar(content: Text('Error saat
mengambil/memproses foto: $e')));
    }
  }

  @override
  Widget build(BuildContext context) {
    if (!_controller.value.isInitialized) {
      return const Scaffold(body: Center(child: CircularProgressIndicator()));
    }

    return Scaffold(
      appBar: AppBar(title: const Text('Kamera OCR')),
      body: Column(
        children: [
          Expanded(
            child: AspectRatio(
              aspectRatio: _controller.value.aspectRatio,
              child: CameraPreview(_controller),
            ),
          ),
          Padding(
            padding: const EdgeInsets.all(16.0),
```

```
            child: ElevatedButton.icon(
              onPressed: _takePicture,
              icon: const Icon(Icons.camera),
              label: const Text('Ambil Foto & Scan'),
            ),
          ),
        ],
      ),
    );
  }
}
```

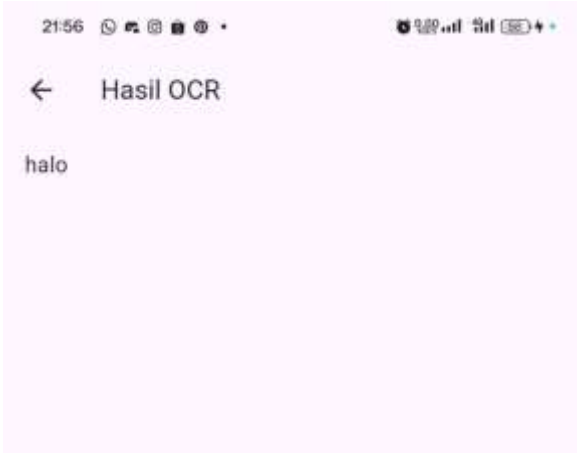
File: lib/screens/result_screen.dart

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

class ResultScreen extends StatelessWidget {
  final String ocrText;

  const ResultScreen({super.key, required this.ocrText});

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(title: const Text('Hasil OCR')),
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: SingleChildScrollView(
          child: SelectableText(
            ocrText.isEmpty
                ? 'Tidak ada teks ditemukan.'
                : ocrText.replaceAll('\n', ' '),
            style: const TextStyle(fontSize: 18),
          ),
        ),
      ),
    );
  }
}
```

Tugas Praktikum

Langkah	Jawaban/Deskripsi
1	Jalankan aplikasi di emulator atau HP. 

2	Lakukan scan terhadap teks cetak (misal: buku, koran, atau layar HP). 

3	Amati hasil OCR yang muncul. 
4	Jawab pertanyaan berikut: a. Apakah semua teks terbaca dengan akurat? Mengapa? Jawab: Tidak semua teks selalu terbaca dengan akurat. Contoh di atas hasilnya terbaca "halo" dengan benar karena pencahayaan cukup, hurufnya jelas, dan kontras tinggi antara teks dan background. Tapi kalau posisi miring, cahaya terlalu gelap/terang, atau font-nya aneh, hasil OCR bisa jadi salah baca. b. Apa kegunaan fitur OCR dalam kehidupan sehari-hari? Jawab: untuk mengubah gambar atau dokumen cetak menjadi teks digital yang bisa diedit, disalin, atau dicari. Misalnya buat memindai nota, kartu identitas, buku, atau formulir. c. Sebutkan 2 contoh aplikasi nyata yang menggunakan OCR! Jawab: 1) Google Lens bisa menyalin teks dari foto langsung ke clipboard 2) Microsoft OneNote / Adobe Scan buat memindai dokumen dan mengubahnya jadi teks yang bisa diedit.