

# **LAPORAN MATA KULIAH PEMROGRAMAN MOBILE**

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**UTS**



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**JURUSAN TEKNOLOGI INFORMASI**

**POLITEKNIK NEGERI MALANG 2025**

# UJIAN TENGAH SEMESTER (UTS) - PRAKTIKUM

Mata Kuliah: Pemrograman Mobile - Aplikasi OCR

Semester: Ganjil Tahun Akademik: 2025/2026

Komponen	Keterangan
Waktu Ujian	120 menit
Sifat Ujian	Praktikum (Open Book / Open Code)
Proyek Dasar	Aplikasi <b>OCR</b> (dari Jobsheet 7)
Bobot Nilai	100 Poin

## Instruksi Umum

1. Mahasiswa wajib menggunakan proyek Flutter ocr\_sederhana yang telah dibuat sebelumnya.
2. Setiap penyelesaian tugas pada setiap Soal (**Soal 1, Soal 2, dan Soal 3**) harus diikuti dengan perintah Git commit dan push ke repositori GitHub masing-masing.
3. **Pesan Commit Wajib** harus diikuti dengan tepat. Kelalaian dalam melakukan commit dan push akan mengurangi poin penilaian.

## Instruksi Awal (SETUP) - Wajib

1. Pastikan proyek ocr\_sederhana sudah diinisialisasi sebagai repositori Git dan terhubung ke akun GitHub Anda.
2. Lakukan commit awal untuk memastikan *branch* main Anda bersih.

```
git add .  
git commit -m "UTS: Basis awal proyek OCR Sederhana"  
git push origin main
```

Berikut praktikumnya:

```
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git add .  
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git commit -m "UTS: Basis awal proyek OCR Sederhana"  
On branch main  
Your branch is up to date with 'origin/main'.  
  
nothing to commit, working tree clean  
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git push origin main  
Everything up-to-date  
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana>
```

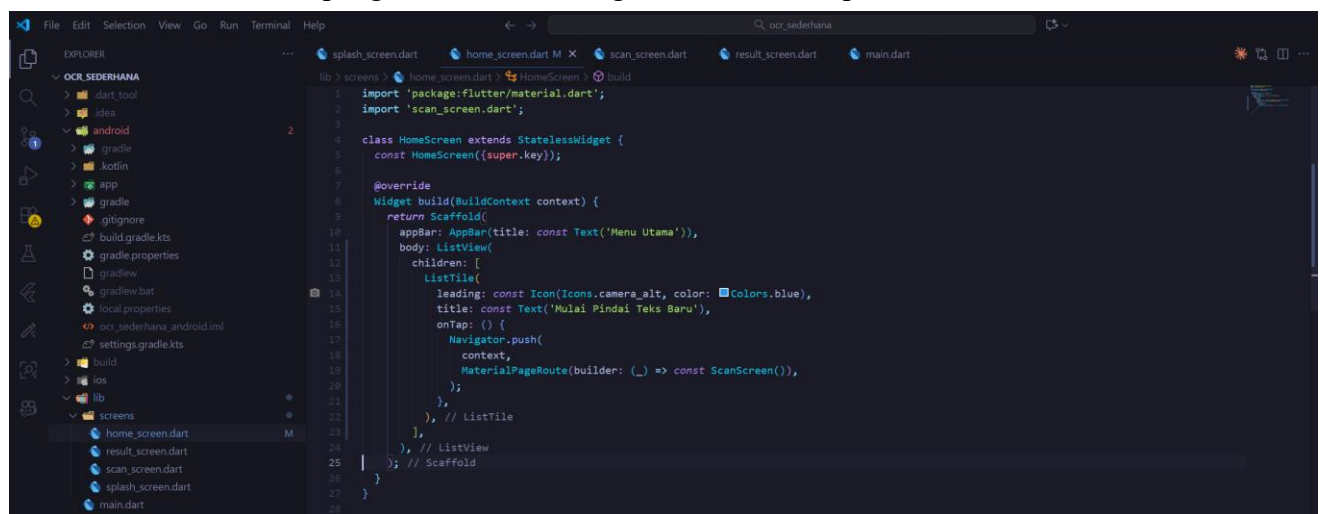
## Soal 1: Modifikasi Struktur Navigasi dan Aliran (30 Poin)

Tujuan: Menyederhanakan alur navigasi dan meningkatkan pengalaman pengguna di HomeScreen.

### 1. Pengubahan Navigasi Home (15 Poin):

- Ubah ElevatedButton di HomeScreen (lib/screens/home\_screen.dart) menjadi `*widget* **ListTile**`.
- Atur ListTile: `leading: Icon(Icons.camera_alt, color: Colors.blue); title: Text('Mulai Pindai Teks Baru')`.
- Fungsi onTap harus menggunakan `Navigator.push()` untuk ke ScanScreen.

**Jawaban:** Berikut hasil pengubahan kode navigasi Home sesuai perintah:

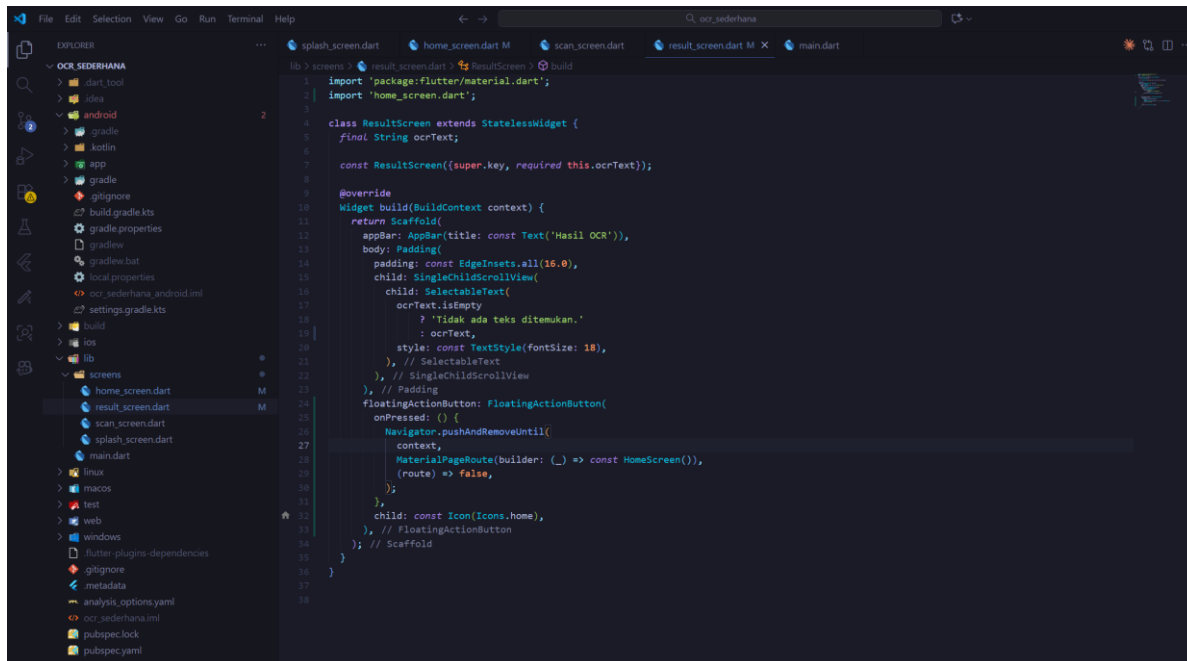


```
1 import 'package:flutter/material.dart';
2 import 'scan_screen.dart';
3
4 class HomeScreen extends StatelessWidget {
5   const HomeScreen({super.key});
6
7   @override
8   Widget build(BuildContext context) {
9     return Scaffold(
10       appBar: AppBar(title: const Text('Menu Utama')),
11       body: ListView(
12         children: [
13           ListTile(
14             leading: const Icon(Icons.camera_alt, color: Colors.blue),
15             title: const Text('Mulai Pindai Teks Baru'),
16             onTap: () {
17               Navigator.push(
18                 context,
19                 MaterialPageRoute(builder: (_) => const ScanScreen()),
20               );
21             },
22           ), // ListTile
23         ], // ListView
24       ), // Scaffold
25     );
26   }
27 }
```

### 2. Teks Utuh dan Navigasi Balik (15 Poin):

- Di ResultScreen (lib/screens/result\_screen.dart), hapus fungsi `ocrText.replaceAll` agar hasil teks ditampilkan dengan baris baru (`\n`) yang utuh.
- Tambahkan `FloatingActionButton` dengan ikon `Icons.home`.
- Ketika tombol ditekan, navigasi harus kembali langsung ke HomeScreen menggunakan `**Navigator.pushAndRemoveUntil()**` (atau metode yang setara) untuk *menghapus semua halaman di atasnya dari stack navigasi*.

**Jawaban:** Berikut hasil pengubahan kode result screen sesuai perintah:



## Perintah Commit Wajib (Soal 1)

Setelah Soal 1 selesai, lakukan commit dan push dengan pesan:

```

git add lib/screens/home_screen.dart lib/screens/result_screen.dart
git commit -m "UTS: Selesai Soal 1 - ListTile dan Navigasi Balik"
git push origin main

```

**Jawaban:** Berikut perintah commit dan push sesuai dengan ketentuan

```

PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git add lib/screens/home_screen.dart lib/screens/result_screen.dart
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git commit -m "UTS: Selesai Soal 1 - ListTile dan Navigasi Balik"
[main 10e2f59] UTS: Selesai Soal 1 - ListTile dan Navigasi Balik
 2 files changed, 25 insertions(+), 11 deletions(-)
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git push origin main
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 20 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 977 bytes | 977.00 KiB/s, done.
Total 6 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
To https://github.com/SuryaRf/OCR-SEDERHANA.git
 eeb2551..10e2f59  main -> main
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana>

```

## Soal 2: Penyesuaian Tampilan dan Penanganan State/Error (40 Poin)

Tujuan: Memperbaiki tampilan \*loading\* dan memberikan \*feedback\* error yang lebih jelas.

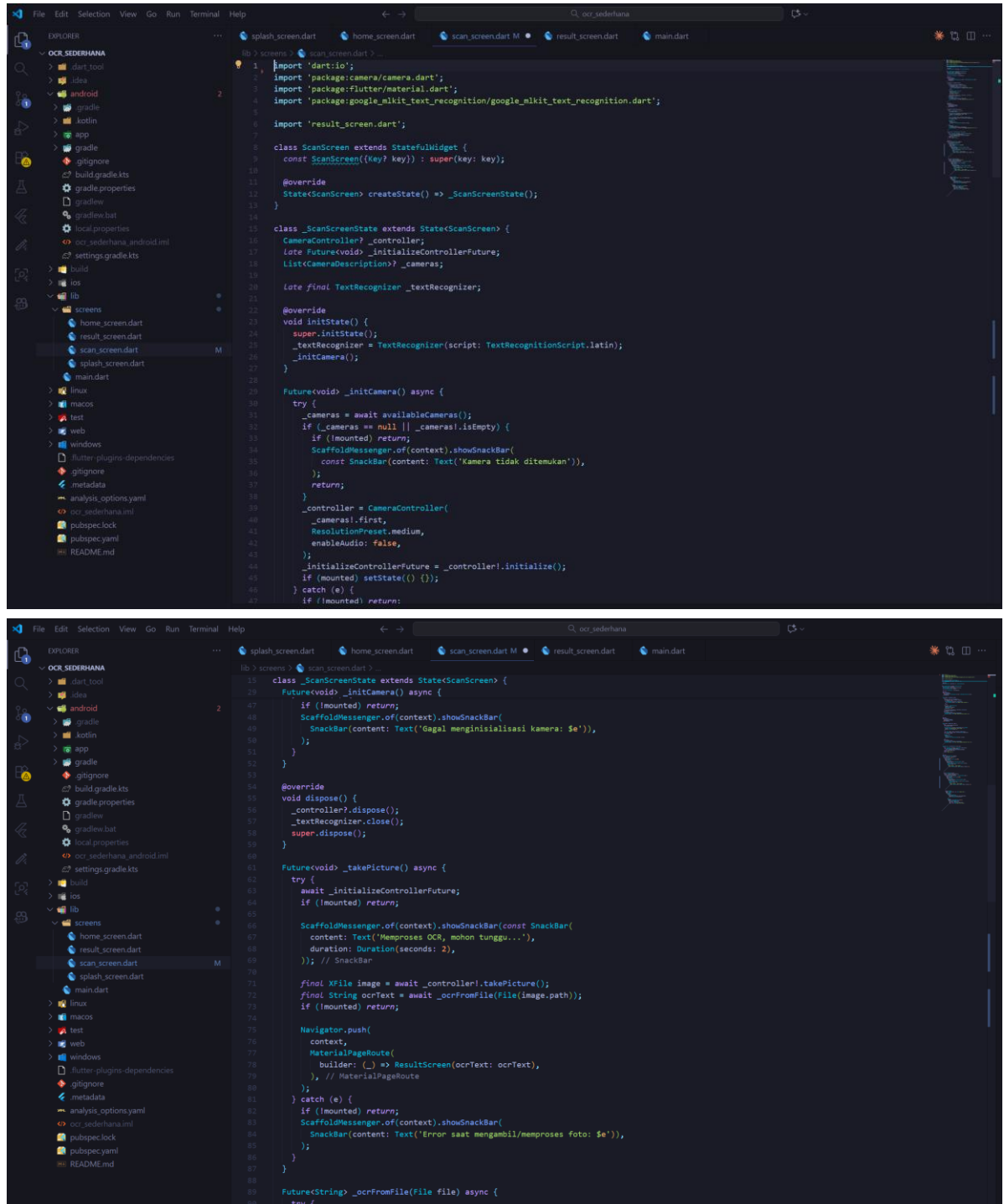
### 1. Custom Loading Screen di ScanScreen (20 Poin):

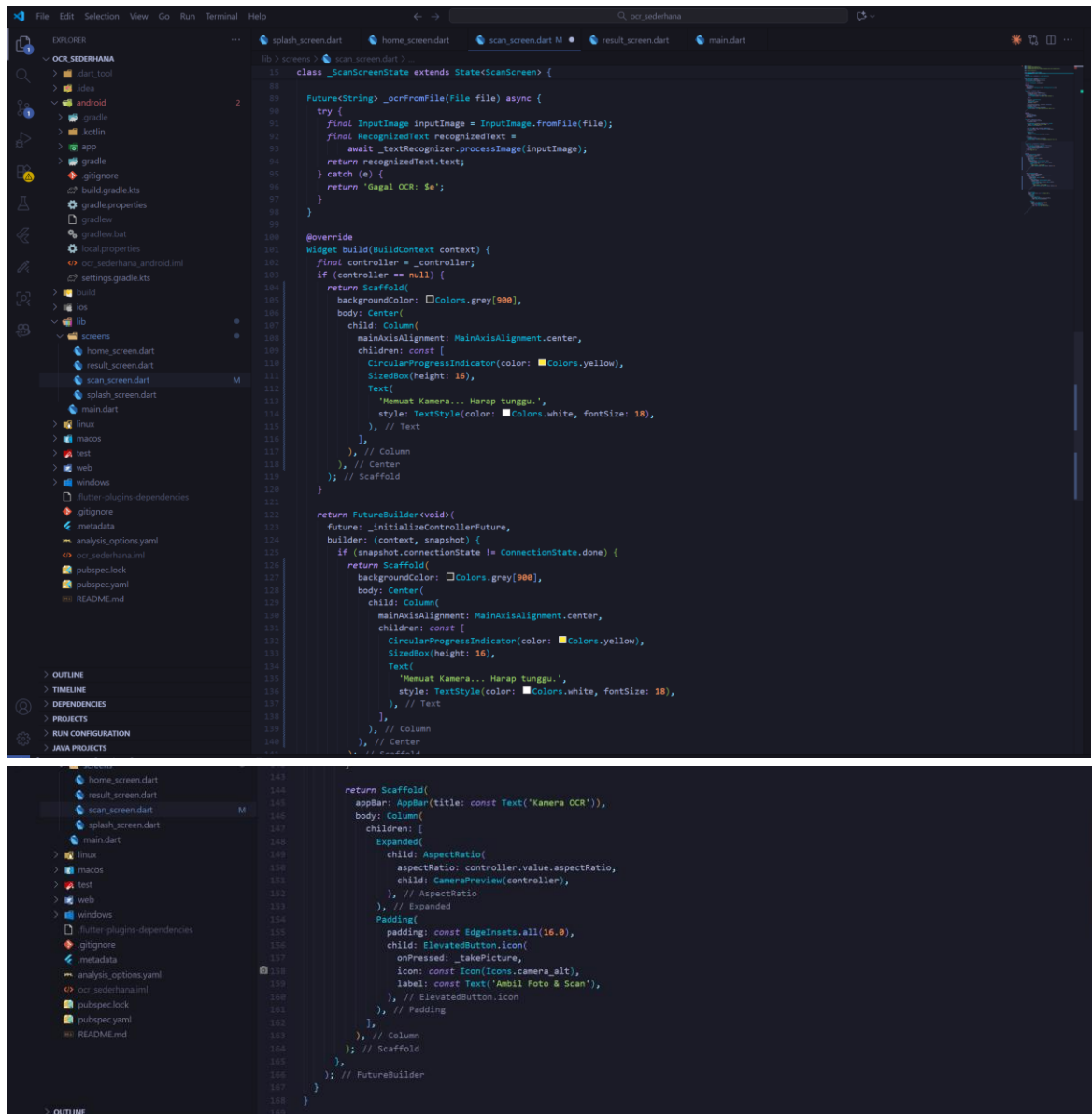
- Di ScanScreen (lib/screens/scan\_screen.dart), modifikasi tampilan \*loading\* yang muncul sebelum kamera siap (if (!controller.value.isInitialized)) :
- Latar Belakang: Scaffold(background-color: Colors.grey[900]).
- Isi: Di dalam Center, tampilkan Column berisi CircularProgressIndicator(col

Colors.yellow)).

- Di bawah indikator, tambahkan Text('Memuat Kamera... Harap tunggu.', style: TextStyle(color: Colors.white, fontSize: 18)).

**Jawaban:** Berikut hasil pengubahan kode Custom Loading Screen di ScanScreen sesuai perintah:





## 2. Spesifikasi Pesan Error (20 Poin):

- Di fungsi `_takePicture()` pada `ScanScreen`, modifikasi blok `catch (e)` untuk mengubah pesan `*error*` pada `SnackBar`.
- Pesan `SnackBar` harus berbunyi: **"Pemindaian Gagal! Periksa Izin Kamera atau coba lagi."** (Hilangkan variabel `*error*` (`$e`)).

**Jawaban:** Berikut hasil pengubahan kode Spesifikasi Pesan Error sesuai perintah:

```

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),
    )); // SnackBar

    final XFile image = await _controller!.takePicture();
    final String ocrText = await _ocrFromFile(File(image.path));
    if (!mounted) return;

    Navigator.push(
      context,
      MaterialPageRoute(
        builder: (_) => ResultScreen(ocrText: ocrText),
      ), // MaterialPageRoute
    );
  } catch (e) {
    if (!mounted) return;
    ScaffoldMessenger.of(context).showSnackBar(
      const SnackBar(content: Text('Pemindaian Gagal! Periksa Izin Kamera atau coba lagi.')),
    );
  }
}

```

## Perintah Commit Wajib (Soal 2)

Setelah Soal 2 selesai, lakukan commit dan push dengan pesan:

```
git add lib/screens/scan_screen.dart
```

```
git commit -m "UTS: Selesai Soal 2 - Tampilan Loading dan Error"
```

```
git push origin main
```

**Jawaban:** Berikut perintah commit dan push sesuai dengan ketentuan

```

PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git add lib/screens/scan_screen.dart
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git commit -m "UTS: Selesai Soal 2 - Tampilan Loading dan Error"
[main 7762ea9] UTS: Selesai Soal 2 - Tampilan Loading dan Error
 1 file changed, 31 insertions(+), 6 deletions(-)
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git push origin main
Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Delta compression using up to 20 threads
Compressing objects: 100% (5/5), done.
Writing objects: 100% (5/5), 851 bytes | 851.00 KiB/s, done.
Total 5 (delta 3), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (3/3), completed with 3 local objects.
To https://github.com/SuryaRf/OCR-SEDERHANA.git
 10e2f59..7762ea9  main -> main
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana>

```

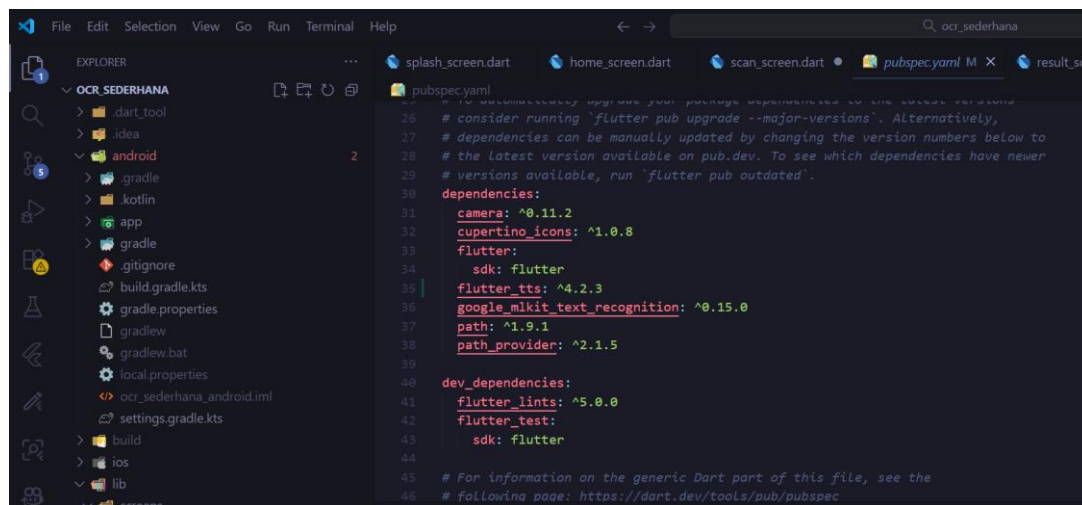
## Soal 3: Implementasi Plugin Text-to-Speech (TTS) (30 Poin)

Tujuan: Mengintegrasikan fitur membaca teks secara lisan menggunakan \*plugin\* flutter\_tts.

### 1. Instalasi Plugin (5 Poin):

- Tambahkan \*plugin\* flutter\_tts ke dalam file pubspec.yaml (gunakan versi terbaru yang kompatibel).
- Jalankan flutter pub get.

**Jawaban:** Berikut hasil dari instalasi plugin flutter\_tts

A screenshot of an IDE window showing the 'pubspec.yaml' file. The file contains dependencies for camera, cupertino\_icons, flutter, flutter\_tts, google\_mlkit\_text\_recognition, path, and path\_provider. Under dev\_dependencies, it lists flutter\_lints and flutter\_test. The flutter\_tts dependency is highlighted in green and set to version ^4.2.3. The IDE interface includes a sidebar with project files and a top menu bar.

```
26 # consider running 'flutter pub upgrade --major-versions'. Alternatively,  
27 # dependencies can be manually updated by changing the version numbers below to  
28 # the latest version available on pub.dev. To see which dependencies have newer  
29 # versions available, run 'flutter pub outdated'.  
30 dependencies:  
31   camera: ^0.11.2  
32   cupertino_icons: ^1.0.8  
33   flutter:  
34     sdk: flutter  
35   flutter_tts: ^4.2.3  
36   google_mlkit_text_recognition: ^0.15.0  
37   path: ^1.9.1  
38   path_provider: ^2.1.5  
39  
40 dev_dependencies:  
41   flutter_lints: ^5.0.0  
42   flutter_test:  
43     sdk: flutter  
44  
45 # For information on the generic Dart part of this file, see the  
46 # following page: https://dart.dev/tools/pub/pubspec
```

### 2. Konversi Widget dan Inisialisasi (10 Poin):

- Ubah ResultScreen dari StatelessWidget menjadi **\*\*StatefulWidget\*\***.
- Di initState(), inisialisasi FlutterTts dan atur bahasa pembacaan menjadi Bahasa Indonesia.
- Implementasikan dispose() untuk menghentikan mesin TTS saat halaman ditutup.

**Jawaban:** Berikut hasil pengubahan kode Konversi Widget dan Inisialisasi sesuai perintah:



```

import 'package:flutter/material.dart';
import 'package:flutter_tts/flutter_tts.dart';
import 'home_screen.dart';

class ResultScreen extends StatefulWidget {
  final String ocrText;

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

  @override
  State<ResultScreen> createState() => _ResultScreenState();
}

class _ResultScreenState extends State<ResultScreen> {
  late FlutterTts _flutterTts;

  @override
  void initState() {
    super.initState();
    _flutterTts = FlutterTts();
    _flutterTts.setLanguage('id-ID');
  }

  @override
  void dispose() {
    _flutterTts.stop();
    super.dispose();
  }

  @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(
            widget.ocrText.isEmpty
              ? 'Tidak ada teks ditemukan.'
              : widget.ocrText,
            style: const TextStyle(fontSize: 18),
          ), // SelectableText
        ), // SingleChildScrollView
      ), // Padding
      floatingActionButton: FloatingActionButton(
        onPressed: () {
          Navigator.pushAndRemoveUntil(
            context,
            MaterialPageRoute(builder: (c) => const HomeScreen()),
            (route) => false,
          );
        },
        child: const Icon(Icons.home),
      ), // FloatingActionButton
    );
  }
}

```

### 3. Fungsionalitas Pembacaan (15 Poin):

- Tambahkan FloatingActionButton kedua di ResultScreen (atau ganti AppBar dengan action button) dengan ikon Icons.volume\_up.
- Ketika tombol ditekan, panggil fungsi speak() pada FlutterTts untuk membacakan seluruh isi ocrText.

**Jawaban:** Berikut hasil pengubahan kode Fungsionalitas Pembacaan sesuai perintah:

```

import 'package:flutter/material.dart';
import 'package:flutter_tts/flutter_tts.dart';
import 'home_screen.dart';

class ResultScreen extends StatefulWidget {
  final String ocrText;

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

  @override
  State<ResultScreen> createState() => _ResultScreenState();
}

class _ResultScreenState extends State<ResultScreen> {
  late FlutterTts _flutterTts;

  @override
  void initState() {
    super.initState();
    _flutterTts = FlutterTts();
    _flutterTts.setLanguage('id-ID');
  }

  @override
  void dispose() {
    _flutterTts.stop();
    super.dispose();
  }

  Future<void> _speak() async {
    if (widget.ocrText.isNotEmpty) {
      await _flutterTts.speak(widget.ocrText);
    }
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text('Hasil OCR'),
        actions: [
          IconButton(
            onPressed: _speak,
            icon: const Icon(Icons.volume_up),
          ), // IconButton
        ],
      ), // AppBar
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: SingleChildScrollView(
          child: SelectableText(
            widget.ocrText.isEmpty
              ? 'Tidak ada teks ditemukan.'
              : widget.ocrText,
          ),
        ),
      ),
    );
  }
}

```



## Perintah Commit Wajib (Soal 3)

Setelah Soal 3 selesai, lakukan commit dan push terakhir dengan pesan:

```
git add pubspec.yaml lib/screens/result_screen.dart
git commit -m "UTS: Selesai Soal 3 - Implementasi Flutter TTS"
git push origin main
```

**Jawaban:** Berikut perintah commit dan push sesuai dengan ketentuan

```
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git add pubspec.yaml lib/screens/result_screen.dart
warning: in the working copy of 'pubspec.yaml', LF will be replaced by CRLF the next time Git touches it
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git commit -m "UTS: Selesai Soal 3 - Implementasi Flutter TTS"
[main eb4c93f] UTS: Selesai Soal 3 - Implementasi Flutter TTS
2 files changed, 40 insertions(+), 4 deletions(-)
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana> git push origin main
Enumerating objects: 11, done.
Counting objects: 100% (11/11), done.
Delta compression using up to 20 threads
Compressing objects: 100% (6/6), done.
Writing objects: 100% (6/6), 928 bytes | 928.00 KiB/s, done.
Total 6 (delta 4), reused 0 (delta 0), pack-reused 0 (from 0)
remote: Resolving deltas: 100% (4/4), completed with 4 local objects.
To https://github.com/SuryaRf/OCR-SEDERHANA.git
7762ea9..eb4c93f main -> main
PS D:\COOLYEAH\PEM MOBILE\js7\ocr_sederhana>
```

LINK GITHUB:

<https://github.com/SuryaRf/OCR-SEDERHANA>