

**TUGAS PENDAHULUAN / TUGAS UNGUIDED
PEMROGRAMAN PERANGKAT BERGERAK**

**MODUL X
DATA STORAGE (BAGIAN I)**



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**PROGRAM STUDI S1 SOFTWARE ENGINEERING
FAKULTAS INFORMATIKA
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TUGAS PENDAHULUAN / TUGAS UNGUIDED

A. SOAL

B. JAWABAN

Sql_helper.dart

```
import 'package:sqflite/sqflite.dart';
import 'package:path/path.dart';

class SQLHelper {
    static Future<Database> db() async {
        return openDatabase(
            join(await getDatabasesPath(), 'mahasiswa.db'),
            version: 1,
            onCreate: (Database database, int version) async {
                await database.execute("""
                    CREATE TABLE mahasiswa(
                        id INTEGER PRIMARY KEY AUTOINCREMENT,
                        nama TEXT,
                        nim TEXT,
                        alamat TEXT,
                        hobi TEXT
                    )
                """);
            },
        );
    }

    // CREATE
    static Future<int> createData(String nama, String nim, String alamat,
String hobi) async {
        final db = await SQLHelper.db();

        final data = {
            'nama': nama,
            'nim': nim,
            'alamat': alamat,
            'hobi': hobi,
        };

        return db.insert('mahasiswa', data,
            conflictAlgorithm: ConflictAlgorithm.replace);
    }

    // READ
    static Future<List<Map<String, dynamic>>> getData() async {
        final db = await SQLHelper.db();
        return db.query('mahasiswa', orderBy: "id DESC");
    }
}
```

Tambah_mahasiswa.dart

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

class TambahMahasiswa extends StatefulWidget {
    @override
    _TambahMahasiswaState createState() => _TambahMahasiswaState();
}

class _TambahMahasiswaState extends State<TambahMahasiswa> {
    final namaController = TextEditingController();
    final nimController = TextEditingController();
    final alamatController = TextEditingController();
    final hobiController = TextEditingController();

    void simpan() async {
        await SQLHelper.createData(
            namaController.text,
            nimController.text,
            alamatController.text,
            hobiController.text,
        );

        Navigator.pop(context);
    }

    @override
    Widget build(BuildContext context) {
        return Scaffold(
            appBar: AppBar(
                title: const Text("Tambah Biodata Mahasiswa"),
                backgroundColor: Colors.lightBlueAccent,
            ),
            body: Padding(
                padding: const EdgeInsets.all(20.0),
                child: Column(
                    children: [
                        TextField(
                            controller: namaController,
                            decoration: InputDecoration(labelText: "Nama"),
                        ),
                        TextField(
                            controller: nimController,
                            decoration: InputDecoration(labelText: "NIM"),
                        ),
                        TextField(
                            controller: alamatController,
                            decoration: InputDecoration(labelText: "Alamat"),
                        ),
                        TextField(
                            controller: hobiController,
                            decoration: InputDecoration(labelText: "Hobi"),
                        ),
                        const SizedBox(height: 20),
                    ],
                ),
            ),
        );
    }
}
```

```
        ElevatedButton(
            onPressed: simpan,
            style: ElevatedButton.styleFrom(
                backgroundColor: Colors.lightBlueAccent,
            ),
            child: const Text("Simpan"),
        )
    ],
),
),
);
}
}
]
```

Main.dart

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

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

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

    @override
    Widget build(BuildContext context) {
        return MaterialApp(
            debugShowCheckedModeBanner: false,
            home: HomePage(),
        );
    }
}

class HomePage extends StatefulWidget {
    @override
    _HomePageState createState() => _HomePageState();
}

class _HomePageState extends State<HomePage> {
    List<Map<String, dynamic>> mahasiswa = [];

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

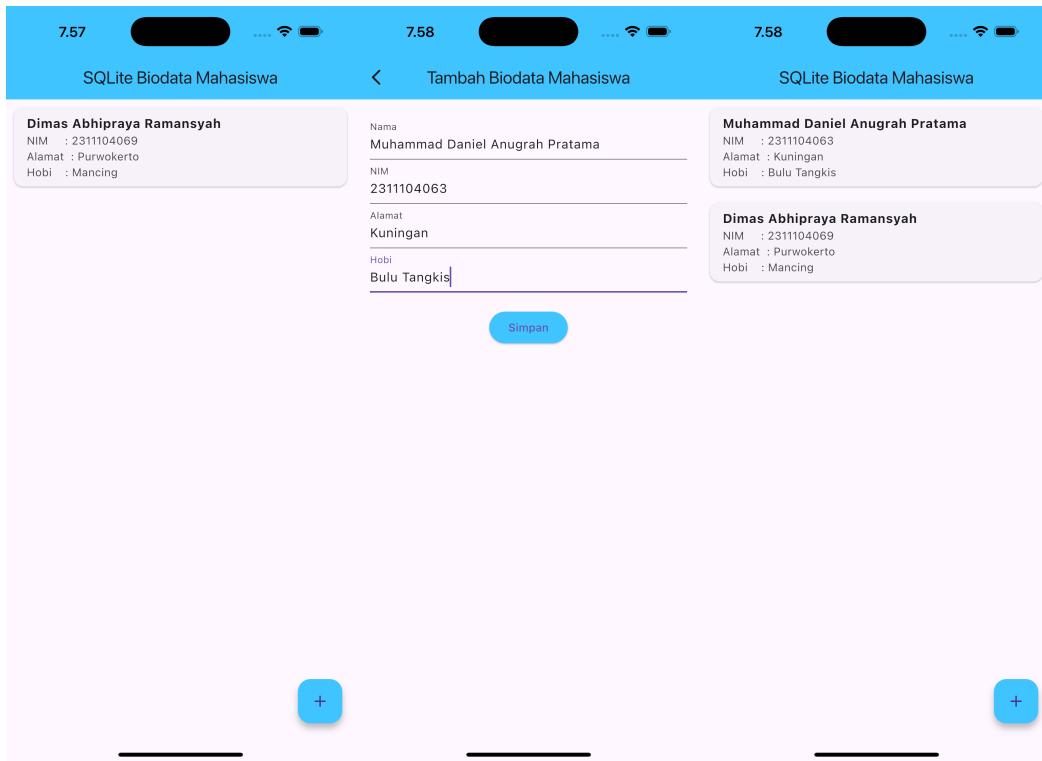
    void loadMahasiswa() async {
        final data = await SQLHelper.getData();
        setState(() {

```

```
        mahasiswa = data;
    });
}

@Override
Widget build(BuildContext context) {
    return Scaffold(
        appBar: AppBar(
            title: const Text("SQLite Biodata Mahasiswa"),
            backgroundColor: Colors.lightBlueAccent,
        ),
        body: ListView.builder(
            itemCount: mahasiswa.length,
            itemBuilder: (context, index) {
                return Card(
                    margin: const EdgeInsets.all(10),
                    child: ListTile(
                        title: Text(mahasiswa[index]['nama'],
                            style: const TextStyle(fontWeight: FontWeight.bold)),
                        subtitle: Column(
                            crossAxisAlignment: CrossAxisAlignment.start,
                            children: [
                                Text("NIM      : ${mahasiswa[index]['nim']}"),
                                Text("Alamat   : ${mahasiswa[index]['alamat']}"),
                                Text("Hobi     : ${mahasiswa[index]['hobi']}"),
                            ],
                        ),
                    );
                );
            },
            floatingActionButton: FloatingActionButton(
                backgroundColor: Colors.lightBlueAccent,
                child: const Icon(Icons.add),
                onPressed: () async {
                    await Navigator.push(
                        context,
                        MaterialPageRoute(builder: (context) => TambahMahasiswa()),
                    );
                    loadMahasiswa();
                },
            ),
        );
    }
}
```

Screenshot Output



Deskripsi Program

Program ini adalah **aplikasi Flutter berbasis SQLite** yang digunakan untuk menyimpan dan menampilkan **biodata mahasiswa**. Aplikasi menyediakan **form input** untuk memasukkan data mahasiswa yang terdiri dari **nama, NIM, alamat, dan hobi**. Data yang sudah dimasukkan akan disimpan ke dalam database lokal SQLite, lalu langsung ditampilkan dalam bentuk **daftar pada halaman utama**.