

**LAPORAN PRAKTIKUM
PEMROGRAMAN PERANGKAT BERGERAK**

**MODUL VII
NAVIGASI DAN NOTIFIKASI**



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PROGRAM STUDI S1 SOFTWARE ENGINEERING

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BAB I

PENDAHULUAN

A. DASAR TEORI

- Flutter dan Dart: Flutter adalah framework untuk pengembangan aplikasi mobile, web, dan desktop menggunakan bahasa Dart.
- Model: Bagian yang mengelola data dan logika bisnis aplikasi, sering dihubungkan dengan state management.
- Navigasi: Proses perpindahan antar halaman menggunakan `Navigator` dan `Route` di Flutter, mendukung navigasi berbasis stack dan deklaratif.
- Notifikasi: Fitur untuk memberikan informasi ke pengguna, baik melalui notifikasi lokal maupun push notification, menggunakan plugin seperti `flutter_local_notifications`.

B. MAKSUD DAN TUJUAN

- Maksud: Memberikan pemahaman tentang implementasi model, navigasi, dan notifikasi di aplikasi mobile dengan Flutter.
- Tujuan:
 1. Mengimplementasikan model untuk manajemen data.
 2. Menerapkan navigasi antar halaman.
 3. Mengaktifkan notifikasi untuk interaksi pengguna.
 4. Melatih penggunaan library di Flutter.

BAB II IMPLEMENTASI

A. GUIDED

1. MODEL

Code lib/models/product.dart :

```
class Product {  
  final int id;  
  final String nama;  
  final double harga;  
  final String gambarUrl;  
  final String deskripsi;  
  
  // Constructor  
  Product({  
    required this.id,  
    required this.nama,  
    required this.harga,  
    required this.gambarUrl,  
    required this.deskripsi,  
  });  
}
```

Ini mendeklarasikan kelas `Product` adalah model data untuk merepresentasikan produk dengan lima atribut:

- `id`: ID unik (`int`).
- `nama`: Nama produk (`String`).
- `harga`: Harga produk (`double`).
- `gambarUrl`: URL gambar produk (`String`).
- `deskripsi`: Deskripsi produk (`String`).

Konstruktor memerlukan semua atribut ini saat membuat objek `Product`.

Kemudian dari deklarasi yang sudah dibuat di `models/product.dart`, akan diisi oleh data produk dengan memasukan data kedalam `List` dengan nama `List<Product>` dan kemudian diberikan code untuk menampilkan product seperti contoh code berikut

Code lib/pages/mypage.dart :

```

import 'package:flutter/material.dart';
import 'package:praktikum_2/lalu2/models/product.dart';
import 'package:praktikum_2/lalu2/pages/detailpage.dart';

class MyPage extends StatelessWidget {
  MyPage({super.key});

  final List<Product> products = [
    Product(
      id: 1,
      nama: 'Mouse Gaming',
      harga: 300000.00,
      gambarUrl:
        'https://resource.logitechg.com/w_386,ar_1.0,c_limit,f_auto,q_auto,dpr_2.0/d_transparent.gif/content/dam/gaming/en/products/g502x-plus/gallery/g502x-plus-gallery-1-black.png?v=1',
      deskripsi: 'Mouse gaming kualitas lumayan'),
    Product(
      id: 2,
      nama: 'Keyboard Kantor',
      harga: 150000.00,
      gambarUrl:
        'https://resource.logitech.com/w_1600,c_limit,q_auto,f_auto,dpr_1.0/d_transparent.gif/content/dam/logitech/en/products/keyboards/mx-mechanical/gallery/mx-mechanical-keyboard-top-view-graphite-us.png?v=1&quot%27',
      deskripsi: 'Untuk kebutuhan profesional dengan harga terjangkau'),
    Product(
      id: 3,
      nama: 'Headset Gaming',
      harga: 249000.00,
      gambarUrl:
        'https://m.media-amazon.com/images/I/61CGHv6kmWL.AC_UF894,1000_QL80.jpg',
      deskripsi: 'Sensasi nyaman dengan suara jernih'),
    Product(
      id: 4,
      nama: 'Flashdisk 64GB',
      harga: 140000.00,
      gambarUrl:
        'https://www.bhphotovideo.com/cdn-cgi/image/fit=scale-down,width=500,quality=95/https://www.bhphotovideo.com/images/images500x500/sandisk_sdcz73_064g_a46_64gb_ultra_flair_usb_1448799616_1203371.jpg',
      deskripsi: 'Penyimpanan besar dengan harga terjangkau'),
    Product(
      id: 5,
      nama: 'TWS M10',
      harga: 45000.00,
      gambarUrl:
        'https://res.cloudinary.com/pusatroxymas/image/upload/w_1024/v1696922978/prod_products/chxx390574_/2023/fpb_231010_ba4d08af-06a4-435c-aelb-d0f58089857f.jpg.jpg',
      deskripsi: 'Hf tws M10 bluetooth'),
  ];

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Class Model'),
        centerTitle: true,
        backgroundColor: Color(0xFF952491), // Warna header
      ),
      body: ListView.builder(
        itemCount: products.length,
        itemBuilder: (context, index) {
          final product = products[index];
          return Container(
            margin:
              EdgeInsets.symmetric(vertical: 5.0), // Margin antar ListTile
            child: ListTile(
              tileColor: Color(0xFF632B30),
              leading: Container(
                color: Color(0xFFFEF250), // Background foto produk
                child: Image.network(
                  product.gambarUrl,
                  width: 70,
                  height: 70,
                ),
              ),
              title: Text(
                product.nama,
                style: TextStyle(color: Color(0xFFE6AF2E)), // Teks judul produk
              ),
              subtitle: Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  Text(
                    'Rp${product.harga}',
                    style: TextStyle(color: Color(0xFFFEF250)), // Teks harga
                  ),
                ],
              ),
            ),
          );
        },
      ),
    );
  }
}

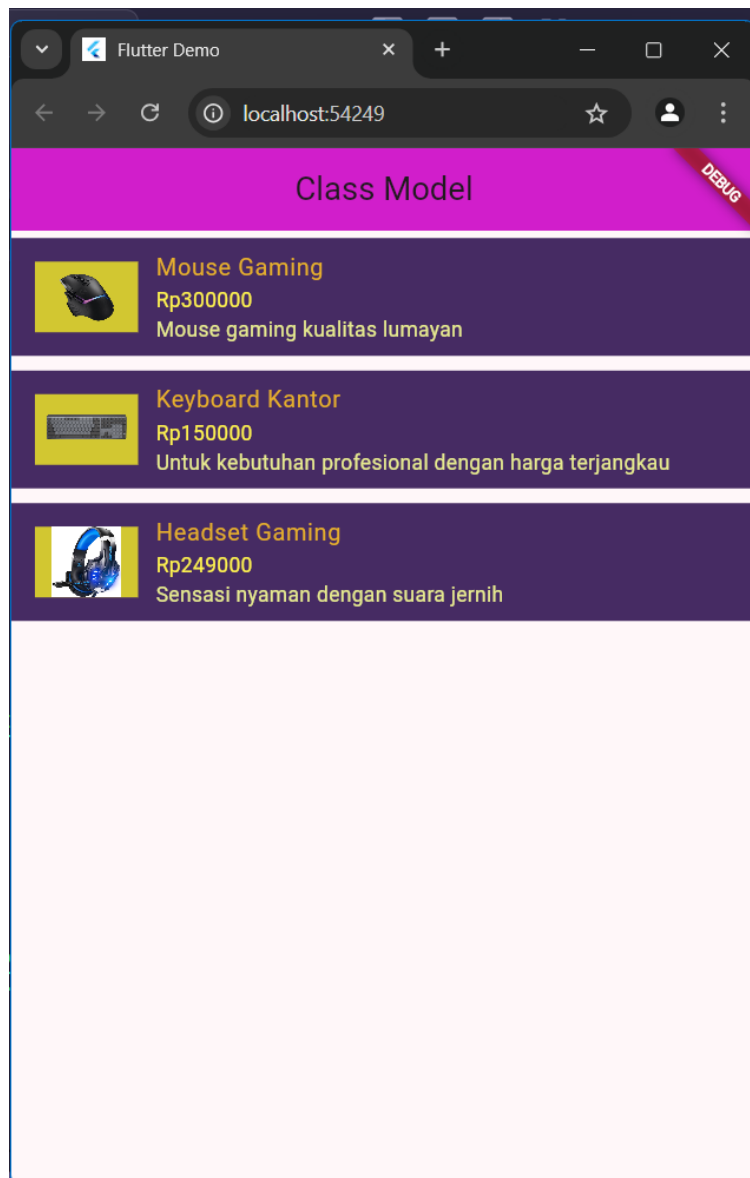
```

```

        Text(
            product.deskripsi,
            style: TextStyle(
                color: Color(0xFFE7EB90)), // Teks deskripsi produk
        ),
    ),
    onTap: () {
        Navigator.push(
            context,
            MaterialPageRoute(
                builder: (_) => DetailPage(product: product),
            ),
        );
    },
),
);
},
),
);
}
}
}

```

Screenshoot :



Deskripsi :

Kelas `MyPage` adalah widget stateless dalam Flutter yang menampilkan daftar produk menggunakan `ListView`. Berikut adalah deskripsi singkatnya:

- **Atribut:**
 - `products`: Daftar objek `Product` yang berisi informasi seperti ID, nama, harga, gambar, dan deskripsi untuk setiap produk.
- **Metode:**
 - `build`: Membangun antarmuka pengguna dengan `Scaffold` yang memiliki `AppBar` dan `ListView.builder`.
 - Setiap item dalam daftar menampilkan gambar produk, nama, harga, dan deskripsi dalam sebuah `ListTile`.
 - Ketika pengguna mengetuk item, aplikasi akan navigasi ke `DetailPage`, yang menampilkan informasi lebih lanjut tentang produk yang dipilih.

2. NAVIGATION

Untuk melakukan navigasi ke halaman lain pada Flutter, dapat gunakan code seperti di bawah ini:

```
Navigator.push(  
  
    Context, MaterialPageRoute(builder: (context) => SecondRoute()),  
  
);
```

Untuk melakukan navigasi kembali ke halaman sebelumnya, dapat gunakan code seperti di bawah ini:

```
Navigator.pop(context);
```

Navigation Mengirim Data Untuk dapat melakukan navigasi dengan mengirimkan data ke halaman lain, perlu disiapkan 2 hal, yakni:

1. Halaman baru memiliki parameter data yang diminta.
2. Halaman awal mengirim data melalui parameter

1. halaman baru yang memiliki data yang diminta

Code `lib/pages/detailpage.dart` :

```
import 'package:flutter/material.dart';  
import 'package:praktikum_2/lalu2/models/product.dart';  
import 'package:praktikum_2/lalu2/systems/local_notifications.dart';  
  
class DetailPage extends StatelessWidget {  
    const DetailPage({super.key, required this.product});  
  
    final Product product;  
  
    @override  
    Widget build(BuildContext context) {  
        return Scaffold(  
            appBar: AppBar(  
                title: Text('Detail Page'),  
                centerTitle: true,  
                backgroundColor: Color(0xFF952491), // Warna header  
            ),  
            body: Center(  
                child: Column(  
                    mainAxisAlignment: MainAxisAlignment.center,  
                    children: [  

```

```

Card(
  margin: EdgeInsets.all(16.0),
  elevation: 4,
  color: Color(0xFF650000), // Background Card
  shape: RoundedRectangleBorder(
    borderRadius: BorderRadius.circular(10), // Sudut tumpul
  ),
  child: Padding(
    padding: const EdgeInsets.all(16.0),
    child: Column(
      mainAxisAlignment: MainAxisAlignment.min,
      children: [
        Stack(
          alignment: Alignment.center,
          children: [
            Container(
              width: double.infinity,
              height: 150, // Sesuaikan tinggi
              color: Color(0xFFFEF250), // Background untuk gambar
            ),
            Image.network(
              product.gambarUrl,
              width: 150, // Sesuaikan ukuran
              height: 150, // Sesuaikan ukuran
              fit: BoxFit.cover, // Untuk menjaga proporsi gambar
            ),
          ],
        ),
        SizedBox(height: 10),
        Text(
          product.nama,
          style: TextStyle(
            fontSize: 24,
            color: Color(0xFFE6AF2E)), // Teks judul produk
          textAlign: TextAlign.center,
        ),
        Text(
          'Rp${product.harga}',
          style: TextStyle(
            fontSize: 20, color: Color(0xFFFEF250)), // Teks harga
        ),
        Padding(
          padding: const EdgeInsets.all(8.0),
          child: Text(
            product.deskripsi,
            style: TextStyle(
              color: Color(0xFFE7EB90)), // Teks deskripsi produk
          ),
        ),
      ],
    ),
  ),
  child: ElevatedButton(
    onPressed: () {
      LocalNotifications.showSimpleNotification(
        title: product.nama,
        body: 'Harga: Rp${product.harga}\n${product.deskripsi}',
        payload: 'Detail untuk ${product.nama}',
      );
    },
    style: ElevatedButton.styleFrom(
      backgroundColor: Color(0xFF2274A5), // Background tombol
    ),
    child: Text(
      'Tampilkan Notifikasi',
      style: TextStyle(color: Color(0xFFFADF63)), // Teks pada tombol
    ),
  ),
),
);
}

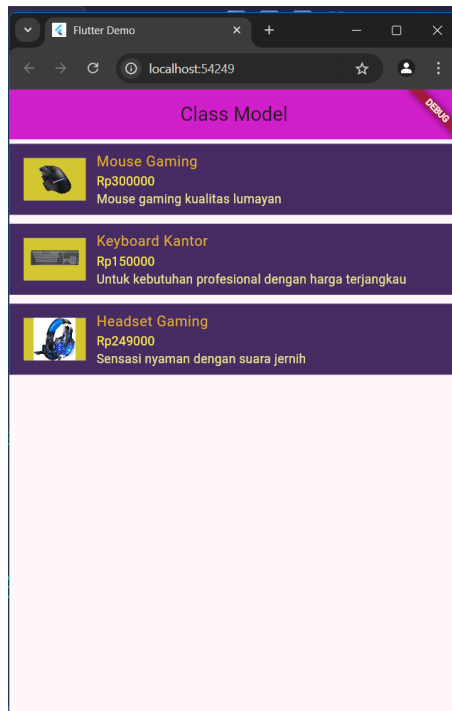
```

2. halaman awal mengirim data melalui parameter

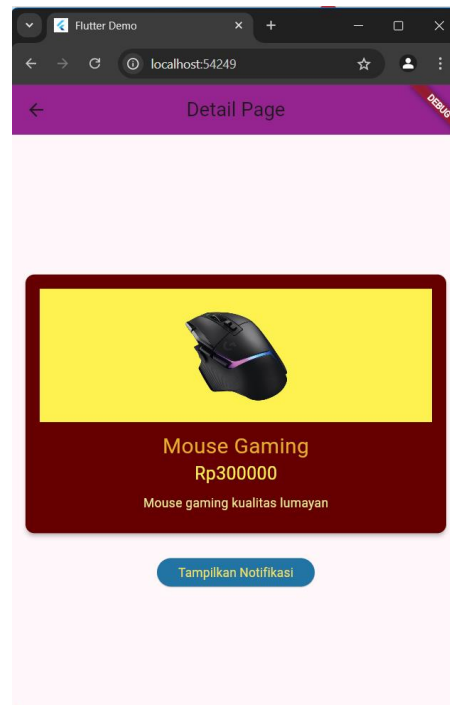
Code halaman awal pengirim data lib/pages/mypage.dart :

```
onTap: () {  
  Navigator.push(  
    context,  
    MaterialPageRoute(  
      builder: (_) => DetailPage(product: product),  
    ),  
  );  
},
```

Screenshoot :



(Halaman Utama)



(saat mengklik product)

Deskripsi :

Kelas `DetailPage` adalah widget stateless dalam Flutter yang menampilkan rincian produk yang dipilih dari `MyPage`. Berikut adalah deskripsi singkatnya:

- **Atribut:**
 - `product`: Objek `Product` yang berisi informasi tentang produk yang ditampilkan.
- **Metode:**
 - `build`: Membangun antarmuka pengguna dengan `Scaffold` yang memiliki `AppBar` dan konten utama.
 - Konten utama terdiri dari `Card` yang berisi gambar produk, nama, harga, dan deskripsi. Gambar ditampilkan di dalam `Stack` untuk penataan yang lebih baik.
- **Fitur Tambahan:**
 - Tombol "Tampilkan Notifikasi" yang, ketika ditekan, memicu notifikasi lokal menggunakan `LocalNotifications` dengan detail produk.

3. NOTIFICATION

tambahkan pada android/app/build.gradle (di dalam compileOption)

```
compileOptions {  
    coreLibraryDesugaringEnabled true  
}
```

tambahkan pada android/app/build.gradle (sejajar dengan ndkVersion)

```
defaultConfig{  
    multiDexEnabled true  
}
```

tambahkan pada android/app/build.gradle(di paling bawah setelah flutter)

```
dependencies {  
    coreLibraryDesugaring 'com.android.tools:desugar_jdk_libs:1.2.2'  
}
```

tambahkan pada android/app/src/main/AndroidManifest.xml

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

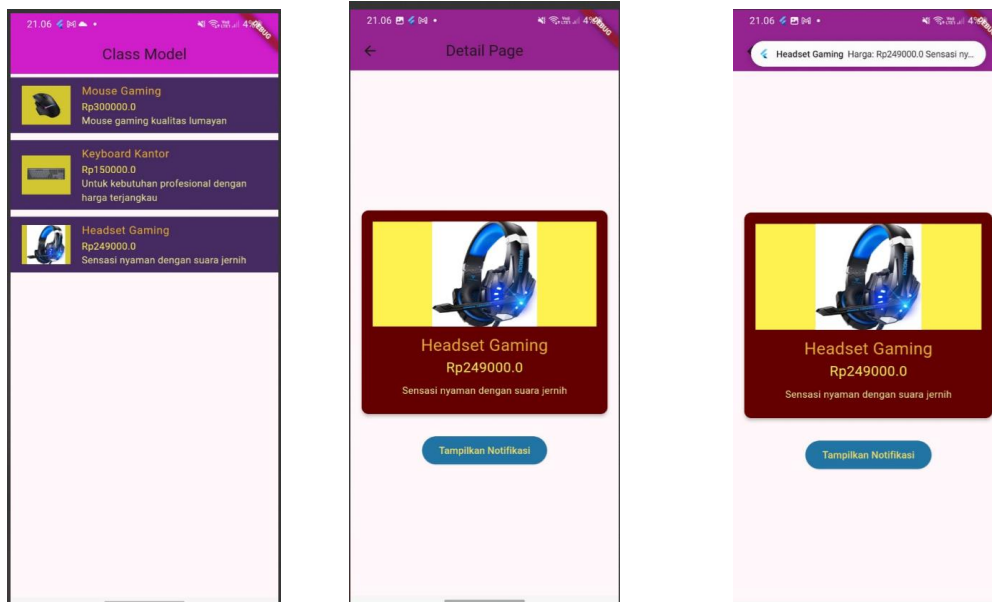
system/local_notifications.dart

```
import 'package:flutter_local_notifications/flutter_local_notifications.dart';  
  
class LocalNotifications {  
    static final FlutterLocalNotificationsPlugin  
        _flutterLocalNotificationsPlugin = FlutterLocalNotificationsPlugin();  
  
    // Inisialisasi Notifikasi Lokal  
    static Future init() async {  
        AndroidInitializationSettings initializationSettingsAndroid =  
            AndroidInitializationSettings('@mipmap/ic_launcher');  
        final DarwinInitializationSettings initializationSettingsDarwin =  
            DarwinInitializationSettings(  
                onDidReceiveLocalNotification: (id, title, body, payload) => null,  
            );  
        final LinuxInitializationSettings initializationSettingsLinux =  
            LinuxInitializationSettings(defaultActionName: 'Open notification');  
        final InitializationSettings initializationSettings =  
            InitializationSettings(  
                android: initializationSettingsAndroid,  
                iOS: initializationSettingsDarwin,  
                linux: initializationSettingsLinux);  
        _flutterLocalNotificationsPlugin.initialize(  
            initializationSettings,  
            onDidReceiveNotificationResponse: (details) => null,  
        );  
    }  
  
    // Menampilkan notifikasi sederhana  
    static Future showSimpleNotification({  
        required String title,  
        required String body,  
        required String payload,  
    }) async {  
        AndroidNotificationDetails androidNotificationDetails =  
            AndroidNotificationDetails(  
                'your_channel_id', // Ganti dengan ID channel Anda  
                'your_channel_name', // Ganti dengan nama channel Anda  
                channelDescription: 'your_channel_description', // Deskripsi channel  
                importance: Importance.max,  
                priority: Priority.high,  
                ticker: 'ticker',  
                styleInformation: BigTextStyleInformation(  
                    body, // Teks yang ditampilkan saat diperluas  
                    contentType: title, // Judul notifikasi  
                    summaryText: 'Tap to see more', // Teks ringkasan  
                ),  
            );  
        NotificationDetails notificationDetails =  
            NotificationDetails(android: androidNotificationDetails);  
  
        await _flutterLocalNotificationsPlugin.show(  
            0,  
            title,  
            body,  
            notificationDetails,  
            payload: payload,  
        );  
    }  
}
```

Pemanggilan notif

```
ElevatedButton(  
  onPressed: () {  
    LocalNotifications.showSimpleNotification(  
      title: product.nama,  
      body: 'Harga: Rp${product.harga}\n${product.deskripsi}',  
      payload: 'Detail untuk ${product.nama}',  
    );  
  },  
  style: ElevatedButton.styleFrom(  
    backgroundColor: Color(0xFF2274A5), // Background tombol  
  ),  
  child: Text(  
    'Tampilkan Notifikasi',  
    style: TextStyle(color: Color(0xFFFFADF63)), // Teks pada tombol  
  ),  
),
```

Screenshoot :



Deskripsi :

Kode ini mengimplementasikan notifikasi lokal di Flutter:

1. **Inisialisasi Notifikasi:** Metode `LocalNotifications.init` mengonfigurasi pengaturan notifikasi untuk Android, iOS, dan Linux.
2. **Menampilkan Notifikasi:** Metode `showSimpleNotification` memunculkan notifikasi sederhana dengan judul, isi, dan payload yang ditentukan.
3. **Tombol untuk Menampilkan Notifikasi:** Tombol `ElevatedButton` memicu notifikasi, menampilkan informasi produk (nama, harga, dan deskripsi) saat ditekan.

Kode ini mempermudah pemberitahuan pengguna dengan notifikasi interaktif dalam aplikasi.

B. UNGUIDED

Buatlah satu project untuk menampilkan beberapa produk dan halaman e-commerce dengan menerapkan class model serta navigasi halaman.

main.dart:

```
// lib/main.dart
import 'package:flutter/material.dart';
import 'pages/home_page.dart';
import 'pages/product_list_page.dart';
import 'pages/profile_page.dart';

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'E-Commerce App',
      theme: ThemeData(
        textTheme: TextTheme(
          bodyLarge: TextStyle(color: Colors.grey[800], fontSize: 16),
          titleLarge:
            TextStyle(color: Colors.deepPurple, fontWeight: FontWeight.bold),
        ),
        colorScheme: ColorScheme.fromSwatch(primarySwatch: Colors.deepPurple)
          .copyWith(secondary: Colors.amber),
      ),
      home: MainScreen(),
    );
  }
}

class MainScreen extends StatefulWidget {
  @override
  _MainScreenState createState() => _MainScreenState();
}

class _MainScreenState extends State<MainScreen> {
  int _currentIndex = 0;
  final List<Widget> _pages = [
    HomePage(),
    ProductListPage(),
    ProfilePage(),
  ];

  void onTabTapped(int index) {
    setState(() {
      _currentIndex = index;
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: _pages[_currentIndex],
      bottomNavigationBar: BottomNavigationBar(
        backgroundColor: const Color.fromARGB(255, 236, 236, 236),
        currentIndex: _currentIndex,
        onTap: onTabTapped,
        selectedItemColor: Colors.deepPurple,
        unselectedItemColor: Colors.grey,
        items: [
          BottomNavigationBarItem(
            icon: Icon(Icons.home),
            label: 'Home',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.shopping_bag),
            label: 'Products',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.person),
            label: 'Profile',
          ),
        ],
      ),
    );
  }
}
```

```

// lib/main.dart
import 'package:flutter/material.dart';
import 'pages/home_page.dart';
import 'pages/product_list_page.dart';
import 'pages/profile_page.dart';

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

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      title: 'E-Commerce App',
      theme: ThemeData(
        textTheme: TextTheme(
          bodyLarge: TextStyle(color: Colors.grey[800], fontSize: 16),
          titleLarge:
            TextStyle(color: Colors.deepPurple, fontWeight: FontWeight.bold),
        ),
        colorScheme: ColorScheme.fromSwatch(primarySwatch: Colors.deepPurple)
          .copyWith(secondary: Colors.amber),
      ),
      home: MainScreen(),
    );
  }
}

class MainScreen extends StatefulWidget {
  @override
  _MainScreenState createState() => _MainScreenState();
}

class _MainScreenState extends State<MainScreen> {
  int _currentIndex = 0;
  final List<Widget> _pages = [
    HomePage(),
    ProductListPage(),
    ProfilePage(),
  ];

  void onTabTapped(int index) {
    setState(() {
      _currentIndex = index;
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      body: _pages[_currentIndex],
      bottomNavigationBar: BottomNavigationBar(
        backgroundColor: const Color.fromARGB(255, 236, 236, 236),
        currentIndex: _currentIndex,
        onTap: onTabTapped,
        selectedItemColor: Colors.deepPurple,
        unselectedItemColor: Colors.grey,
        items: [
          BottomNavigationBarItem(
            icon: Icon(Icons.home),
            label: 'Home',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.shopping_bag),
            label: 'Products',
          ),
          BottomNavigationBarItem(
            icon: Icon(Icons.person),
            label: 'Profile',
          ),
        ],
      ),
    );
  }
}

```

pages/home_page.dart :

```
import 'package:flutter/material.dart';
import 'package:carousel_slider/carousel_slider.dart';
import '../data/product_data.dart'; // Import the product data
import 'promo_detail_page.dart'; // Import the promo detail page

class HomePage extends StatelessWidget {
  final List<String> carouselImages = [
    "https://media.istockphoto.com/id/1201024669/id/foto/pria-tampan-dengan-pakaian-
    kasual.jpg?s=612x612&w=0&k=20&c=WCCadhGime0gFul6FkMBdykJWT-8BoNiv02VuYEcfUw=",
    "https://media.istockphoto.com/id/660629502/id/foto/satu.jpg?s=2048x2048&w=is&k=20&c=XSn2H
    IO5CA5-A2PUzkZf6l_VtrNNooUzuxGmEcdBDv0=",
    "https://media.istockphoto.com/id/1447021254/id/foto/model-pria-kulit-hitam-bergaya-di-
    teluk.jpg?s=2048x2048&w=is&k=20&c=jhb002FgWz_kUA2QkkmzZkSz-r9CjSP5YhIcvJcfpho=",
  ];

  final List<Map<String, String>> promotions = [
    {
      "title": "50% Off Select Items",
      "description": "Limited time offer on selected products!",
      "buttonText": "Shop Now",
    },
    {
      "title": "Buy One Get One Free",
      "description": "On all T-shirts this weekend!",
      "buttonText": "Grab Yours",
    },
    {
      "title": "Free Shipping on Orders Over \$50",
      "description": "Shop more and save on shipping!",
      "buttonText": "Start Shopping",
    },
    {
      "title": "New Arrivals: 20% Off",
      "description": "Discover our latest collections!",
      "buttonText": "View Now",
    },
  ];

  void _navigateToPromoDetail(
    BuildContext context, String title, String description) {
    Navigator.push(
      context,
      MaterialPageRoute(
        builder: (context) =>
          PromoDetailPage(title: title, description: description),
      ),
    );
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Home', style: TextStyle(color: Colors.white)),
        backgroundColor: Colors.deepPurple,
      ),
      body: SingleChildScrollView(
        child: Padding(
          padding: const EdgeInsets.all(16.0),
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              // Stylish Search Bar
              Container(
                decoration: BoxDecoration(
                  borderRadius: BorderRadius.circular(30),
                  color: Colors.white,
                  boxShadow: [
                    BoxShadow(
                      color: Colors.black26,
                      blurRadius: 10,
                      offset: Offset(0, 4), // changes position of shadow
                    ),
                  ],
                ),
                child: TextField(
                  decoration: InputDecoration(
                    hintText: 'Search Products...',
                    hintStyle: TextStyle(color: Colors.grey),
                    prefixIcon: Icon(Icons.search, color: Colors.deepPurple),
                    border: InputBorder.none, // Remove the default border
                    contentPadding:
                      EdgeInsets.symmetric(vertical: 15, horizontal: 20),
                  ),
                ),
              ],
            ),
          ),
        ),
      ),
    );
  }
}
```

```

        onChanged: (value) {
          // You can implement the search logic here
        },
      ),
    ),
    SizedBox(height: 20),

    // Carousel Slider for Promotional Banners
    CarouselSlider(
      options: CarouselOptions(
        height: 200,
        autoPlay: true,
        enlargeCenterPage: true,
        aspectRatio: 16 / 9,
      ),
      items: carouselImages.map((imageUrl) {
        return ClipRRect(
          borderRadius: BorderRadius.circular(10),
          child: Image.network(
            imageUrl,
            fit: BoxFit.cover,
            width: double.infinity,
          ),
        );
      }).toList(),
    ),
    SizedBox(height: 20),

    // Welcome Text
    Text(
      "Welcome to Our Store!",
      style: TextStyle(fontSize: 24, fontWeight: FontWeight.bold),
    ),
    SizedBox(height: 10),
    Text(
      "Discover our latest products and exclusive deals.",
      style: TextStyle(fontSize: 16, color: Colors.grey[600]),
    ),
    SizedBox(height: 20),

    // Horizontal Promo of the Day Section
    Text(
      "Promotions",
      style: TextStyle(fontSize: 18, fontWeight: FontWeight.bold),
    ),
    SizedBox(height: 10),
    Container(
      height: 150, // Set a fixed height for the promo cards
      child: ListView.builder(
        scrollDirection: Axis.horizontal,
        itemCount: promotions.length,
        itemBuilder: (context, index) {
          final promo = promotions[index];
          return Container(
            width: 250, // Set a width for each promo card
            margin:
              EdgeInsets.only(right: 10), // Spacing between cards
            decoration: BoxDecoration(
              gradient: LinearGradient(
                colors: [Colors.deepPurple, Colors.purpleAccent],
                begin: Alignment.topLeft,
                end: Alignment.bottomRight,
              ),
              borderRadius: BorderRadius.circular(10),
            ),
            child: Padding(
              padding: const EdgeInsets.all(16.0),
              child: Column(
                crossAxisAlignment: CrossAxisAlignment.start,
                children: [
                  Text(
                    promo["title"]!,
                    style: TextStyle(
                      fontSize: 18,
                      fontWeight: FontWeight.bold,
                      color: Colors.white,
                    ),
                  ),
                  SizedBox(height: 10),
                  Text(
                    promo["description"]!,
                    style: TextStyle(
                      fontSize: 14, color: Colors.white70,
                    ),
                  ),
                ],
              ),
            ),
          );
        },
      ),
    ),
  ),
),
SizedBox(height: 20),

```

[illegible]

```
        style: ElevatedButton.styleFrom(
            backgroundColor: Colors.amber,
            shape: RoundedRectangleBorder(
                borderRadius: BorderRadius.circular(20),
            ),
        ),
        child: Text("Add to Cart"),
    ),
),
),
),
),
),
),
),
),
),
),
);
}
}
```

pages/product_list_page.dart :

```

import 'package:flutter/material.dart';
import '../data/product_data.dart';
import 'product_detail_page.dart';

class ProductListPage extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text(
          "Products",
          style: TextStyle(color: Colors.white),
        ),
        backgroundColor: Colors.deepPurple,
      ),
      body: Padding(
        padding: const EdgeInsets.all(8.0),
        child: GridView.builder(
          gridDelegate: SliverGridDelegateWithFixedCrossAxisCount(
            crossAxisCount: 2,
            crossAxisSpacing: 10,
            mainAxisSpacing: 10,
            childAspectRatio: 0.85, // Adjusted for less zoomed appearance
          ),
          itemCount: products.length,
          itemBuilder: (context, index) {
            final product = products[index];
            return GestureDetector(
              onTap: () {
                Navigator.push(
                  context,
                  MaterialPageRoute(
                    builder: (context) => ProductDetailPage(product: product),
                  ),
                );
              },
            child: AnimatedContainer(
              duration: Duration(milliseconds: 300),
              curve: Curves.easeInOut,
              decoration: BoxDecoration(
                gradient: LinearGradient(
                  colors: [
                    Color.fromARGB(255, 239, 236, 239),
                    Color.fromARGB(255, 246, 244, 249)
                  ],
                  begin: Alignment.topLeft,
                  end: Alignment.bottomRight,
                ),
                borderRadius: BorderRadius.circular(20),
                boxShadow: [
                  BoxShadow(
                    color: Colors.grey.withOpacity(0.4),
                    spreadRadius: 2,
                    blurRadius: 6,
                    offset: Offset(0, 4),
                  ),
                ],
              ),
            ),
          ],
        ),
      ),
    );
  }
}

```



```

child: Stack(
  children: [
    // Product image
    Positioned.fill(
      child: ClipRRect(
        borderRadius: BorderRadius.circular(20),
        child: FadeInImage.assetNetwork(
          placeholder: 'assets/images/placeholder.png',
          image: product.imageUrl,
          fit: BoxFit.contain, // Ensures no cropping
          width: double.infinity,
        ),
      ),
    ),
    // Icons on top of the image
    Positioned(
      top: 8,
      right: 8,
      child: Row(
        children: [
          _buildIconButton(Icons.favorite_border,
            Colors.white.withOpacity(0.9)),
          SizedBox(width: 8),
          _buildIconButton(Icons.bookmark_border,
            Colors.white.withOpacity(0.9)),
          SizedBox(width: 8),
          _buildIconButton(Icons.shopping_cart_outlined,
            Colors.white.withOpacity(0.9)),
        ],
      ),
    ),
    // Product details (name and price)
    Positioned(
      bottom: 0,
      left: 0,
      right: 0,
      child: Container(
        padding: const EdgeInsets.symmetric(
          horizontal: 12.0, vertical: 8.0),
        decoration: BoxDecoration(
          color: Colors.black.withOpacity(0.5),
          borderRadius: BorderRadius.vertical(
            bottom: Radius.circular(20)),
        ),
      ),
      child: Column(
        crossAxisAlignment: CrossAxisAlignment.start,
        children: [
          Text(
            product.name,
            style: TextStyle(
              fontSize: 18,
              fontWeight: FontWeight.bold,
              color: Colors.white,
              shadows: [
                Shadow(
                  blurRadius: 4.0,
                  color: Colors.black45,
                  offset: Offset(1.0, 1.0),
                ),
              ],
            ),
          ),
          SizedBox(height: 4),
          Text(
            "\${product.price}",
            style: TextStyle(
              fontSize: 16,
              color: Colors.amberAccent,
              fontWeight: FontWeight.w600,
            ),
          ),
        ],
      ),
    ),
  ],
);

```

```

// Method to create IconButton with a circular background
Widget _buildIconButton(IconData icon, Color color) {
  return GestureDetector(
    onTap: () {
      // Add functionality for each icon
    },
    child: Container(
      padding: EdgeInsets.all(6),
      decoration: BoxDecoration(
        shape: BoxShape.circle,
        color: Colors.black
          .withOpacity(0.5), // Dark background to contrast with white icon
        boxShadow: [
          BoxShadow(
            color: Colors.grey.withOpacity(0.3),
            spreadRadius: 1,
            blurRadius: 4,
            offset: Offset(0, 2),
          ),
        ],
      ),
      child: Icon(
        icon,
        color: color,
        size: 20,
      ),
    ),
  );
}

```

Pages/product_detail_page.dart :

```

import 'package:flutter/material.dart';
import '../models/product.dart';

class ProductDetailPage extends StatelessWidget {
  final Product product;

  ProductDetailPage({required this.product});

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      extendBodyBehindAppBar: true,
      appBar: AppBar(
        backgroundColor: Colors.transparent,
        elevation: 0,
        iconTheme: IconThemeData(color: Colors.white),
        title: Text(
          product.name,
          style: TextStyle(color: Colors.white),
        ),
      ),
      body: Stack(
        children: [
          // Background image with gradient overlay
          Positioned.fill(
            child: Container(
              decoration: BoxDecoration(
                gradient: LinearGradient(
                  begin: Alignment.topCenter,
                  end: Alignment.bottomCenter,
                  colors: [
                    Colors.black.withOpacity(0.3),
                    Colors.black.withOpacity(0.8),
                  ],
                ),
            ),
          ),
          // Product details
          SingleChildScrollView(
            padding: EdgeInsets.only(top: kToolbarHeight + 20),
            child: Column(
              crossAxisAlignment: CrossAxisAlignment.start,
              children: [

```

```

        // Product image with aspect ratio to prevent cropping
        Center(
          child: Container(
            width: double.infinity,
            child: AspectRatio(
              aspectRatio: 4 / 3, // Adjust aspect ratio as needed
              child: ClipRRect(
                borderRadius: BorderRadius.circular(20),
                child: Image.network(
                  product.imageUrl,
                  fit: BoxFit
                    .contain, // Ensures the whole image is visible
                ),
              ),
            ),
          ),
        ),
        // Product name and price
        Padding(
          padding: const EdgeInsets.all(16.0),
          child: Column(
            crossAxisAlignment: CrossAxisAlignment.start,
            children: [
              Text(
                product.name,
                style: TextStyle(
                  fontSize: 28,
                  fontWeight: FontWeight.bold,
                  color: Colors.white,
                  shadows: [
                    Shadow(
                      color: Colors.black45,
                      blurRadius: 10,
                    ),
                  ],
                ),
              ),
              SizedBox(height: 10),
              Text(
                "\${product.price}",
                style: TextStyle(
                  fontSize: 22,
                  color: Colors.amberAccent,
                  fontWeight: FontWeight.w600,
                ),
              ),
              SizedBox(height: 20),
              Text(
                product.description,
                style: TextStyle(
                  fontSize: 16,
                  color: Colors.white70,
                  height: 1.5,
                ),
              ),
              SizedBox(height: 20),
              Center(
                child: ElevatedButton.icon(
                  onPressed: () {
                    // Tambah ke keranjang atau checkout
                  },
                  icon: Icon(Icons.shopping_cart_outlined),
                  label: Text("Add to Cart"),
                  style: ElevatedButton.styleFrom(
                    padding: EdgeInsets.symmetric(
                      horizontal: 50, vertical: 15),
                    backgroundColor: Colors.deepPurpleAccent,
                    shape: RoundedRectangleBorder(
                      borderRadius: BorderRadius.circular(30),
                    ),
                    shadowColor: Colors.black54,
                    elevation: 5,
                  ),
                ),
              ),
            ],
          ),
        ),
      ),
    ),
  );
}

```

pages/profile_page.dart :

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

class ProfilePage extends StatefulWidget {
  @override
  _ProfilePageState createState() => _ProfilePageState();
}

class _ProfilePageState extends State<ProfilePage> {
  // Variables for holding user information
  String name = "zivana Afra Y";
  String email = "zivaa@blablabla.com";
  bool isEditing = false;

  final TextEditingController _nameController = TextEditingController();
  final TextEditingController _emailController = TextEditingController();

  @override
  void initState() {
    super.initState();
    _nameController.text = name; // Initialize with current name
    _emailController.text = email; // Initialize with current email
  }

  void _saveChanges() {
    setState(() {
      name = _nameController.text;
      email = _emailController.text;
      isEditing = false; // Exit edit mode
    });
  }

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Profile', style: TextStyle(color: Colors.white)),
        backgroundColor: Colors.deepPurple,
      ),
      body: SingleChildScrollView(
        child: Padding(
          padding: const EdgeInsets.all(16.0),
          child: Column(
            children: [
              // Edit or Save Button
              ElevatedButton(
                onPressed: () {
                  setState(() {
                    isEditing = !isEditing; // Toggle editing mode
                    if (!isEditing) {
                      _saveChanges(); // Save changes if exiting edit mode
                    }
                  });
                },
                style: ElevatedButton.styleFrom(
                  backgroundColor: Colors.deepPurple, // Background color
                  padding: EdgeInsets.symmetric(horizontal: 50, vertical: 15),
                  shape: RoundedRectangleBorder(
                    borderRadius: BorderRadius.circular(30),
                  ),
                ),
                child: Text(
                  isEditing ? 'Save' : 'Edit Profile', // Button text
                  style: TextStyle(
                    color: Colors.white, fontSize: 16), // Text color
                ),
              ),
              SizedBox(height: 20),

              // Profile Picture
              CircleAvatar(
                radius: 50,
                backgroundImage: NetworkImage(
                  "https://pbs.twimg.com/media/FfNpMfkWAAApJO~?format=jpg&name=small"),
              ),
              SizedBox(height: 20),

              // Editable Name Field
              isEditing
                ? TextFormField(
                    controller: _nameController,
                    decoration: InputDecoration(
                      labelText: "Name",
                      border: OutlineInputBorder(),
                    ),
                  ),
                )
            ],
          ),
        ),
      ),
    );
  }
}
```

```

        : Text(
          name,
          style:
            TextStyle(fontSize: 22, fontWeight: FontWeight.bold),
        ),
        SizedBox(height: 10),
        // Editable Email Field
        isEditing
          ? TextFormField(
              controller: _emailController,
              decoration: InputDecoration(
                labelText: "Email",
                border: OutlineInputBorder(),
              ),
            )
          : Text(
              email,
              style: TextStyle(fontSize: 16, color: Colors.grey),
            ),
        SizedBox(height: 20),
        Divider(),

        // Account Options
        ListTile(
          leading: Icon(Icons.history, color: Colors.deepPurple),
          title: Text('Order History'),
          onTap: () {
            // Navigate to Order History Page
          },
        ),
        ListTile(
          leading: Icon(Icons.favorite, color: Colors.deepPurple),
          title: Text('Wish List'),
          onTap: () {
            // Navigate to Wish List Page
          },
        ),
        ListTile(
          leading: Icon(Icons.settings, color: Colors.deepPurple),
          title: Text('Account Settings'),
          onTap: () {
            // Navigate to Account Settings Page
          },
        ),
        ListTile(
          leading: Icon(Icons.help, color: Colors.deepPurple),
          title: Text('Help Center'),
          onTap: () {
            // Navigate to Help Center Page
          },
        ),
        Divider(),

        // User Reviews Section
        Padding(
          padding: const EdgeInsets.symmetric(vertical: 10),
          child: Text(
            "Your Reviews",
            style: TextStyle(fontSize: 20, fontWeight: FontWeight.bold),
          ),
        ),
        ListTile(
          title: Text('Great Product!'),
          subtitle: Text('I loved this product! Highly recommend.'),
          trailing: Icon(Icons.star, color: Colors.amber),
          onTap: () {
            // View Review Details
          },
        ),
        ListTile(
          title: Text('Average Experience'),
          subtitle: Text('The product was okay, nothing special.'),
          trailing: Icon(Icons.star_half, color: Colors.amber),
          onTap: () {
            // View Review Details
          },
        ),
        ListTile(
          title: Text('Terrible Quality'),
          subtitle: Text('Did not meet my expectations.'),
          trailing: Icon(Icons.star_border, color: Colors.amber),
          onTap: () {
            // View Review Details
          },
        ),

```

```

        Divider(),

        // Logout Button
        SizedBox(height: 20),
        ElevatedButton(
          onPressed: () {
            // Handle logout
          },
          style: ElevatedButton.styleFrom(
            backgroundColor: Colors.red, // Background color
            padding: EdgeInsets.symmetric(horizontal: 50, vertical: 15),
            shape: RoundedRectangleBorder(
              borderRadius: BorderRadius.circular(30),
            ),
          ),
          child: Text(
            'Logout',
            style: TextStyle(
              fontSize: 16, color: Colors.white), // Text color
          ),
        ),
      ],
    ),
  ),
);
}
}

```

Pages/promo_detail_page.dart :

```

import 'package:flutter/material.dart';

class PromoDetailPage extends StatelessWidget {
  final String title;
  final String description;

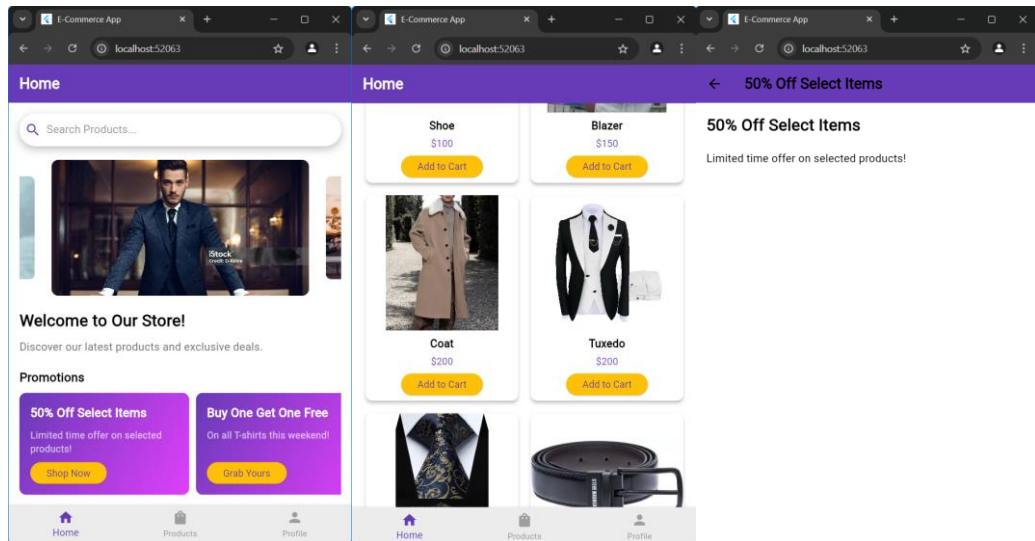
  PromoDetailPage({required this.title, required this.description});

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text(title),
        backgroundColor: Colors.deepPurple,
      ),
      body: Padding(
        padding: const EdgeInsets.all(16.0),
        child: Column(
          crossAxisAlignment: CrossAxisAlignment.start,
          children: [
            Text(
              title,
              style: TextStyle(fontSize: 24, fontWeight: FontWeight.bold),
            ),
            SizedBox(height: 20),
            Text(
              description,
              style: TextStyle(fontSize: 16),
            ),
            // Additional content can be added here
          ],
        ),
      ),
    );
  }
}

```

Screenshoot Output

1. Home Page

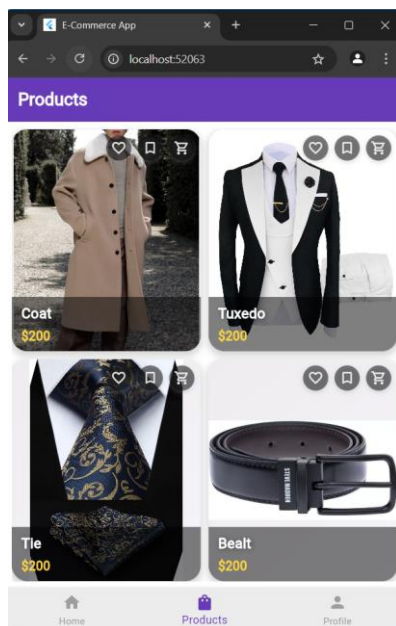


(home page awal)

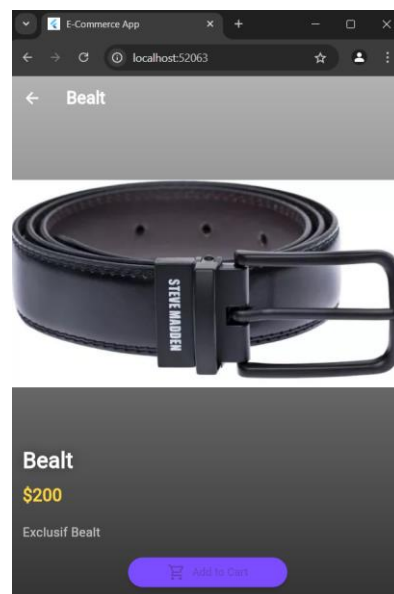
(bagian bawah)

(detail promotions)

2. Product

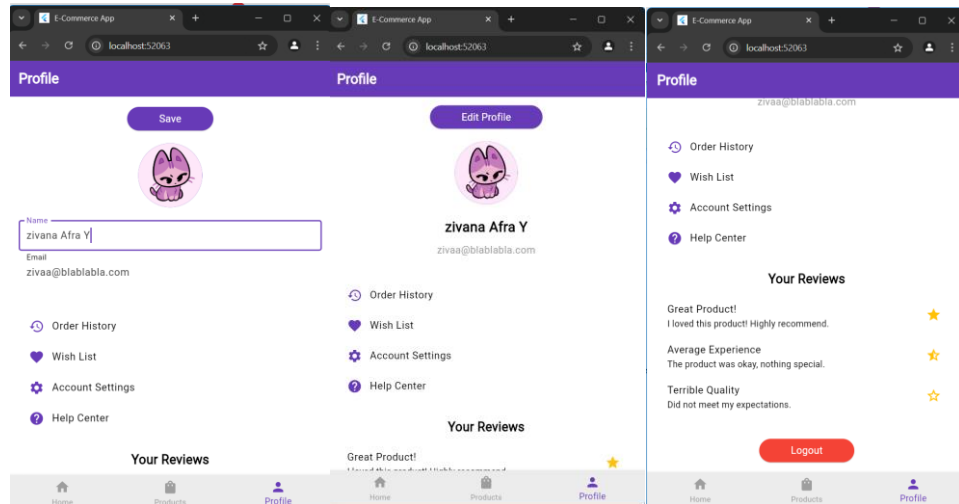


(menampilkan product)



(detail produk saat di klik)

3. Profile



(edit name & email) (bagian atas profile) (bagian bawah profile)

Deskripsi Program

Aplikasi ini adalah E-Commerce App sederhana berbasis Flutter dengan beberapa fitur utama:

1. Home Page: Menampilkan daftar produk dengan harga dan tombol "Add to Cart". Terdapat promosi khusus dengan detail yang bisa diakses pengguna.
2. Product Page: Menampilkan detail produk seperti nama, harga, dan gambar produk. Pengguna bisa melihat lebih rinci tentang produk tertentu.
3. Profile Page: Pengguna bisa mengedit nama dan email, mengakses riwayat pesanan, wishlist, pengaturan akun, serta ulasan produk.

Aplikasi ini dirancang untuk memberikan pengalaman belanja online yang mudah, menampilkan informasi produk secara ringkas, dan memungkinkan pengguna mengelola profil mereka.

BAB III

KESIMPULAN

A. KESIMPULAN

Melalui praktikum ini, mahasiswa memahami penerapan model, navigasi, dan notifikasi pada Flutter. Pada sesi Guided, mahasiswa dipandu dalam mengimplementasi dasar-dasar fitur tersebut. Sesi Unguided memungkinkan mahasiswa mengembangkan aplikasi dengan navigasi dan notifikasi secara mandiri, memperkuat pemahaman praktis. Praktikum ini memberikan dasar yang baik untuk mengembangkan aplikasi interaktif di Flutter.