



Bharatiya Vidya Bhavan's
SARDAR PATEL INSTITUTE OF TECHNOLOGY
(Autonomous Institute Affiliated to University of Mumbai)
Munshi Nagar, Andheri (W), Mumbai – 400 058.
Department of Computer Science and Engineering

Experiment	3
Aim	Create an E-Commerce app using Bottom Navigation
Objective	<ul style="list-style-type: none">• To Create E-Commerce App• To Develop Bottom Navigation• To Use 60-30-10 rule
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Class	FY-MCA
Batch	A
Date of Submission	09-02-2025

Technology used	Framework- Flutter, Tool used - Android Studio Programming- Dart
Task	Develop an e-commerce app with Bottom Navigation Bar with 4 tabs: Home, Browse list of Products (Atleast 5 products) and see product details (image, name, price, and description), Profile and Cart.
Code with proper label	<pre>main.dart : import 'package:flutter/material.dart'; import 'pages/home_page.dart'; import 'pages/browse_page.dart'; import 'pages/profile_page.dart'; import 'pages/cart_page.dart'; void main() { runApp(MyApp()); } class MyApp extends StatelessWidget { const MyApp({super.key}); @override Widget build(BuildContext context) { return MaterialApp(title: 'Abhijeet Store', theme: ThemeData(primarySwatch: Colors.blue, // Primary color for the app appBarTheme: const AppBarTheme(backgroundColor: Colors.blue, // AppBar background color</pre>



```
foregroundColor: Colors.white, // AppBar text
and icon color
    ),
    ),
    home: const MainScreen(),
  );
}

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

  @override
  _MainScreenState createState() => _MainScreenState();
}

class _MainScreenState extends State<MainScreen> {
  int _currentIndex = 0;

  final List<Widget> _pages = [
    const HomePage(),
    BrowsePage(),
    const CartPage(),
    const ProfilePage(),
  ];

  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: const Text('Abhijeet Store'),
        actions: [
          IconButton(
            icon: const Icon(Icons.search),
            onPressed: () {
              // Add search functionality
            },
          ),
          IconButton(
            icon: const Icon(Icons.shopping_cart),
            onPressed: () {
              // Add cart functionality
            },
          ),
        ],
      ),
    );
  }
}
```



```
    ),  
    ],  
  ),  
  body: _pages[_currentIndex],  
  bottomNavigationBar: BottomNavigationBar(  
    currentIndex: _currentIndex,  
    onTap: (index) {  
      setState(() {  
        _currentIndex = index;  
      });  
    },  
    selectedItemColor: Colors.blue, // Color for  
selected item  
    unselectedItemColor: Colors.grey, // Color for  
unselected items  
    showUnselectedLabels: true, // Show labels for  
unselected items  
    items: const [  
      BottomNavigationBarItem(icon: Icon(Icons.home),  
label: 'Home'),  
      BottomNavigationBarItem(icon:  
Icon(Icons.search), label: 'Browse'),  
      BottomNavigationBarItem(icon:  
Icon(Icons.shopping_cart), label: 'Cart'),  
      BottomNavigationBarItem(icon:  
Icon(Icons.person), label: 'Profile'),  
    ],  
  ),  
);  
}
```

browse_page.dart :

```
import 'package:flutter/material.dart';  
import '../models/product.dart';  
import '../widgets/product_item.dart';  
  
class BrowsePage extends StatelessWidget {  
  static const double exchangeRate = 83.0; // USD to INR  
conversion rate  
  
  final List<Product> products = [  
    Product(  

```



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```
id: '1',
name: 'Valentine Floral Perfume',
description: 'Serenade yourself with the ethereal
sensuality...',
price: 3.32, // Price in USD
imageUrl:
'https://rukminim2.flixcart.com/image/416/416/xif0q/perfu
me/5/t/s/30-valentine-floral-perfume-long-lasting-fragran
ce-upto-12-hours-original-imah4b9uzgxgyajn.jpeg?q=70&crop
=false',
),
Product(
id: '2',
name: 'FERRERO ROCHER Collection',
description: 'It is pertinent to note that...',
price: 18.05, // Price in USD
imageUrl:
'https://rukminim2.flixcart.com/image/416/416/khavrm80-0/
chocolate/5/1/a/269-collection-assorted-chocolates-24-pie
ces-ferrero-rocher-original-imafxcaxeefygez.x.jpeg?q=70&cr
op=false',
),
Product(
id: '3',
name: 'Full HD VA Panel 3-Side Near Edgeless',
description: 'The Lenovo 60.45 cm (23.8) Full HD VA
Panel...',
price: 72.15, // Price in USD
imageUrl:
'https://rukminim2.flixcart.com/image/416/416/ko8xtow0/mo
nitor/t/a/y/d24-20-66aekac1in-lenovo-original-imag2qwzazc
dmqtb.jpeg?q=70&crop=false',
),
Product(
id: '4',
name: 'Apple AirPods Pro',
description: '2nd generation with USB-C deliver up
to 2x more...',
price: 228.91, // Price in USD
imageUrl:
'https://rukminim2.flixcart.com/image/416/416/xif0q/headp
hone/e/a/f/-original-imagtc44nk4b3hfg.jpeg?q=70&crop=fals
e',
```



```
),  
Product(  
  id: '5',  
  name: 'Titan BANDHAN Analog Watch',  
  description: 'The brand Titan is celebrated for its  
close connect...',  
  price: 96.38, // Price in USD  
  imageUrl:  
'https://rukminim2.flixcart.com/image/832/832/ju79hu80/wa  
tch/z/f/b/nh19552955bm01-titan-original-imaaffdr6u2mhcf6.  
jpeg?q=70&crop=false',  
),  
Product(  
  id: '6',  
  name: 'TEDDY BEAR',  
  description: 'Soft and smooth, this adorable and  
bright teddy...',  
  price: 4.2, // Price in USD  
  imageUrl:  
'https://rukminim2.flixcart.com/image/416/416/jolseq80/st  
uffed-toy/t/x/a/cap-teddy-bear-50-giftee-original-imafaaq  
udazjrh7q.jpeg?q=70&crop=false',  
),  
];  
  
BrowsePage({super.key});  
  
@override  
Widget build(BuildContext context) {  
  return Scaffold(  
    appBar: AppBar(  
      title: const Text('Browse Products'),  
    ),  
    body: ListView.builder(  
      itemCount: products.length,  
      itemBuilder: (ctx, index) {  
        return ProductItem(  
          product: products[index],  
          exchangeRate: exchangeRate, // Pass exchange  
rate for INR conversion  
        );  
      },  
    ),  
  );  
}
```



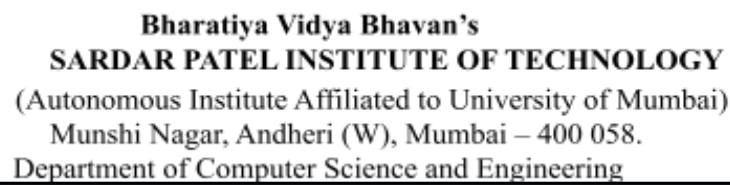
```
);  
}  
}
```

cart_page.dart :

```
import 'package:flutter/material.dart';  
  
class CartPage extends StatelessWidget {  
  const CartPage({super.key});  
  
  @override  
  Widget build(BuildContext context) {  
    // Sample list of products in the cart  
    final List<Map<String, dynamic>> cartItems = [  
      {  
        'image':  
'https://rukminim2.flixcart.com/image/416/416/khavrm80-0/  
chocolate/5/1/a/269-collection-assorted-chocolates-24-pie  
ces-ferrero-rocher-original-imafxcaxeefygezj.jpeg?q=70&cro  
p=false',  
        'name': 'FERRERO ROCHER Collection',  
        'price': 18.05, // Price in USD  
        'quantity': 2,  
      },  
      {  
        'image':  
'https://rukminim2.flixcart.com/image/416/416/ko8xtow0/mo  
nitor/t/a/y/d24-20-66aekaclin-lenovo-original-imag2qwezze  
dmqtb.jpeg?q=70&crop=false',  
        'name': 'Full HD VA Panel 3-Side Near Edgeless',  
        'price': 72.15, // Price in USD  
        'quantity': 1,  
      },  
      {  
        'image':  
'https://rukminim2.flixcart.com/image/416/416/xif0q/perfu  
me/5/t/s/30-valentine-floral-perfume-long-lasting-fragan  
ce-upto-12-hours-original-imah4b9uzgxgyajn.jpeg?q=70&crop  
=false',  
        'name': 'Valentine Floral Perfume',  
        'price': 3.32, // Price in USD  
        'quantity': 3,  
      },  
    ];  
  }  
}
```



```
    },  
  ],  
];  
  
    const double exchangeRate = 83.0; // USD to INR  
conversion rate  
  
    // Calculate total price in USD and INR  
    double totalPriceUSD = cartItems.fold(0, (sum, item)  
=> sum + (item['price'] * item['quantity']));  
    double totalPriceINR = totalPriceUSD * exchangeRate;  
    // Convert to INR  
  
    return Scaffold(  
      appBar: AppBar(  
        title: const Text('Cart'),  
        backgroundColor: Colors.blue,  
        foregroundColor: Colors.white,  
      ),  
      body: Column(  
        children: [  
          // List of Cart Items  
          Expanded(  
            child: ListView.builder(  
              itemCount: cartItems.length,  
              itemBuilder: (context, index) {  
                final item = cartItems[index];  
                return _buildCartItem(item,  
exchangeRate);  
              },  
            ),  
          ),  
          // Total Price and Checkout Button  
          Container(  
            padding: const EdgeInsets.all(16),  
            decoration: BoxDecoration(  
              color: Colors.white,  
              boxShadow: [  
                BoxShadow(  
                  color: Colors.grey.withOpacity(0.5),  
                  spreadRadius: 2,  
                  blurRadius: 5,  
                  offset: const Offset(0, -2),  
                ),  
              ],  
            ),  
          ),  
        ],  
      ),  
    );  
  }  
}
```

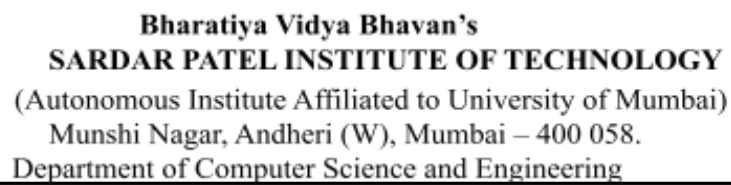


```

    ),
    ],
  ),
  child: Column(
    children: [
      // Total Price in INR
      Row(
        mainAxisAlignment:
MainAxisAlignment.spaceBetween,
        children: [
          const Text(
            'Total Price:',
            style: TextStyle(
              fontSize: 18,
              fontWeight: FontWeight.bold,
            ),
          ),
          Text(
            '₹${totalPriceINR.toStringAsFixed(2)}', // Show in INR
            style: const TextStyle(
              fontSize: 18,
              fontWeight: FontWeight.bold,
              color: Colors.green,
            ),
          ),
        ],
      ),
      const SizedBox(height: 16),

      // Checkout Button
      SizedBox(
        width: double.infinity,
        child: ElevatedButton(
          onPressed: () {
ScaffoldMessenger.of(context).showSnackBar(
          const SnackBar(
            content: Text('Proceeding to
checkout...'),
          ),
        );
      },
    ],
  ),

```

```

        style: ElevatedButton.styleFrom(
          backgroundColor: Colors.blue,
          foregroundColor: Colors.white,
          padding: const
EdgeInsets.symmetric(vertical: 16),
        ),
        child: const Text('Checkout'),
      ),
    ),
  ],
),
],
),
);
}

// Cart Item Widget with INR Conversion
Widget _buildCartItem(Map<String, dynamic> item, double
exchangeRate) {
  double priceInINR = item['price'] * exchangeRate; //
Convert to INR

  return Card(
    margin: const EdgeInsets.symmetric(horizontal: 16,
vertical: 8),
    child: ListTile(
      leading: ClipRRect(
        borderRadius: BorderRadius.circular(8),
        child: Image.network(
          item['image'],
          width: 60,
          height: 60,
          fit: BoxFit.cover,
        ),
      ),
      title: Text(
        item['name'],
        style: const TextStyle(
          fontSize: 16,
          fontWeight: FontWeight.bold,
        ),
      ),
    ),
  ),
);
}

```



```
subtitle: Text(  
  '₹${priceInINR.toStringAsFixed(2)}', // Show  
price in INR  
  
  style: const TextStyle(  
    fontSize: 14,  
    color: Colors.grey,  
  ),  
,  
trailing: Row(  
  mainAxisAlignment: MainAxisAlignment.min,  
  children: [  
    IconButton(  
      icon: const Icon(Icons.remove),  
      onPressed: () {},  
    ),  
    Text(  
      item['quantity'].toString(),  
      style: const TextStyle(fontSize: 16),  
    ),  
    IconButton(  
      icon: const Icon(Icons.add),  
      onPressed: () {},  
    ),  
    IconButton(  
      icon: const Icon(Icons.delete, color:  
Colors.red),  
      onPressed: () {},  
    ),  
  ],  
,  
,  
,  
);  
}
```

profile_page.dart :

```
import 'package:flutter/material.dart';  
  
class ProfilePage extends StatelessWidget {  
  const ProfilePage({super.key});
```



```
@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: const Text('Profile'),
      backgroundColor: Colors.blue, // AppBar color
      foregroundColor: Colors.white, // AppBar text and
icon color
    ),
    body: SingleChildScrollView(
      child: Column(
        children: [
          // Profile Header Section
          _buildProfileHeader(),

          // User Information Section
          _buildUserInfoSection(),

          // Options List Section
          _buildOptionsList(),

          // Logout Button
          _buildLogoutButton(context),
        ],
      ),
    ),
  );
}

// Profile Header Section
Widget _buildProfileHeader() {
  return Container(
    padding: const EdgeInsets.all(20),
    decoration: BoxDecoration(
      color: Colors.blue.withOpacity(0.1),
      borderRadius: const BorderRadius.only(
        bottomLeft: Radius.circular(30),
        bottomRight: Radius.circular(30),
      ),
    ),
    child: Row(
      mainAxisAlignment:
MainAxisAlignment.spaceBetween,
```



```
children: [  
  // Left Side: Profile Picture and Name  
  Row(  
    children: [  
      // Profile Picture  
      const CircleAvatar(  
        radius: 40,  
        backgroundImage: NetworkImage(  
  
'https://media.licdn.com/dms/image/v2/D5603AQQJdDe1e4VZEQ  
/profile-displayphoto-shrink_200_200/profile-displayphoto  
-shrink_200_200/0/1683207134549?e=2147483647&v=beta&t=d4w  
2SP0vn0XXZj9xMlrNaUSJjTyxeiaOHKXoQAq5XLM', // Replace  
with actual image URL  
        ),  
      ),  
      const SizedBox(width: 16),  
  
      // User Name  
      const Column(  
        crossAxisAlignment:  
CrossAxisAlignment.start,  
        children: [  
          Text(  
            'Abhijeet Jadhav',  
            style: TextStyle(  
              fontSize: 20,  
              fontWeight: FontWeight.bold,  
            ),  
          ),  
          SizedBox(height: 4),  
          Text(  
            'Premium Member',  
            style: TextStyle(  
              fontSize: 14,  
              color: Colors.grey,  
            ),  
          ),  
        ],  
      ),  
    ],  
  ),  
],  
)
```



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```
// Right Side: Email and Phone
Column(
  crossAxisAlignment: CrossAxisAlignment.end,
  children: [
    const Text(
      'abhi@gmail.com',
      style: TextStyle(
        fontSize: 14,
        color: Colors.grey,
      ),
    ),
    const SizedBox(height: 4),
    const Text(
      '+91 8110255374',
      style: TextStyle(
        fontSize: 14,
        color: Colors.grey,
      ),
    ),
    const SizedBox(height: 8),
    ElevatedButton(
      onPressed: () {
        // Add edit profile functionality
      },
      style: ElevatedButton.styleFrom(
        backgroundColor: Colors.blue,
        foregroundColor: Colors.white,
        padding: const
EdgeInsets.symmetric(horizontal: 16, vertical: 8),
      ),
      child: const Text('Edit Profile'),
    ),
  ],
),
],
);
}

// User Information Section
Widget _buildUserInfoSection() {
  return Container(
    padding: const EdgeInsets.all(20),
  );
}
```



```
child: Column(  
  crossAxisAlignment: CrossAxisAlignment.start,  
  children: [  
    const Text(  
      'User Information',  
      style: TextStyle(  
        fontSize: 20,  
        fontWeight: FontWeight.bold,  
      ),  
    ),  
    const SizedBox(height: 16),  
  
    // Address  
    _buildInfoRow(Icons.location_on, 'Address',  
    'Sardar Patel Institute of Technology, Andheri '),  
  ],  
)  
);  
}  
  
// Info Row Widget  
Widget _buildInfoRow(IconData icon, String label,  
String value) {  
  return Row(  
    children: [  
      Icon(icon, color: Colors.blue),  
      const SizedBox(width: 12),  
      Column(  
        crossAxisAlignment: CrossAxisAlignment.start,  
        children: [  
          Text(  
            label,  
            style: const TextStyle(  
              fontSize: 16,  
              fontWeight: FontWeight.bold,  
            ),  
          ),  
          Text(  
            value,  
            style: const TextStyle(  
              fontSize: 14,  
              color: Colors.grey,  
            ),  
          ),  
        ],  
      ),  
    ],  
  );  
}
```



```
        ),  
        ],  
    ),  
    ],  
);  
}  
  
// Options List Section  
Widget _buildOptionsList() {  
    return Container(  
        padding: const EdgeInsets.all(20),  
        child: Column(  
            children: [  
                _buildOptionItem(Icons.settings, 'Settings'),  
                const Divider(),  
                _buildOptionItem(Icons.shopping_bag, 'Orders'),  
                const Divider(),  
                _buildOptionItem(Icons.favorite, 'Wishlist'),  
                const Divider(),  
                _buildOptionItem(Icons.help, 'Help & Support'),  
            ],  
        ),  
    );  
}  
  
// Option Item Widget  
Widget _buildOptionItem(IconData icon, String title) {  
    return ListTile(  
        leading: Icon(icon, color: Colors.blue),  
        title: Text(  
            title,  
            style: const TextStyle(  
                fontSize: 16,  
                fontWeight: FontWeight.bold,  
            ),  
        ),  
        trailing: const Icon(Icons.arrow_forward_ios, size:  
16),  
        onTap: () {  
            // Add functionality for each option  
        },  
    );  
}
```



```
// Logout Button
Widget _buildLogoutButton(BuildContext context) {
  return Container(
    padding: const EdgeInsets.all(20),
    width: double.infinity,
    child: ElevatedButton(
      onPressed: () {
        // Add logout functionality
        ScaffoldMessenger.of(context).showSnackBar(
          const SnackBar(
            content: Text('Logged out successfully!'),
          ),
        );
      },
      style: ElevatedButton.styleFrom(
        backgroundColor: Colors.red,
        foregroundColor: Colors.white,
        padding: const EdgeInsets.symmetric(vertical:
16),
      ),
      child: const Text('Logout'),
    ),
  );
}
```

product_items.dart :

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

class ProductItem extends StatelessWidget {
  final Product product;
  final double exchangeRate;

  const ProductItem({
    super.key,
    required this.product,
    required this.exchangeRate,
  });

  @override
```

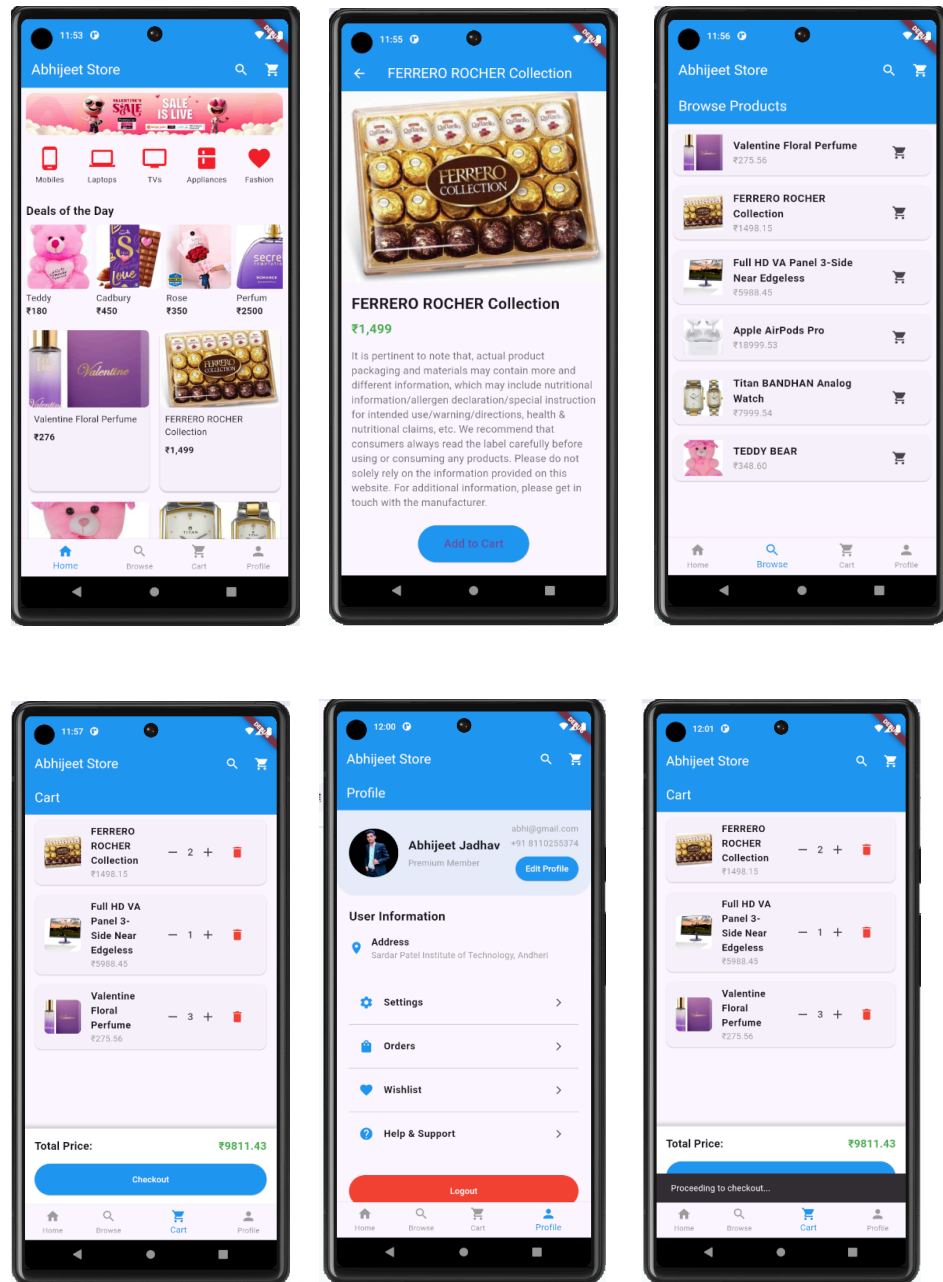



```
Widget build(BuildContext context) {  
    double priceInINR = product.price * exchangeRate; //  
    Convert price to INR  
  
    return Card(  
        margin: const EdgeInsets.all(8),  
        child: ListTile(  
            leading: Image.network(  
                product.imageUrl,  
                width: 60,  
                height: 60,  
                fit: BoxFit.cover,  
            ),  
            title: Text(  
                product.name,  
                style: const TextStyle(fontSize: 16,  
fontWeight: FontWeight.bold),  
            ),  
            subtitle: Text(  
                '₹${priceInINR.toStringAsFixed(2)}', // Show  
price in INR  
                style: const TextStyle(fontSize: 14, color:  
Colors.grey),  
            ),  
            trailing: IconButton(  
                icon: const Icon(Icons.shopping_cart),  
                onPressed: () {  
                    ScaffoldMessenger.of(context).showSnackBar(  
                        SnackBar(content: Text('${product.name}  
added to cart!')),  
                    );  
                },  
            ),  
        ),  
    );  
}
```



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Screenshots



Question and Answers

Answer the following Questions:
1. How to create Bottom Navigation?

Ans : To create a Bottom Navigation, use the BottomNavigationBar widget inside a Scaffold. Manage the selected tab using a StatefulWidget with an _selectedIndex variable and update it using the onTap callback. Each tab can display different content by changing the body of the Scaffold.

2. How did you use 60-30-10 rule in your application?

Ans : The 60-30-10 rule in Flutter UI design is used for maintaining a balanced color scheme:



	<ul style="list-style-type: none">● 60% (Primary Color) – The dominant color used for the background or large sections.● 30% (Secondary Color) – Used for UI elements like buttons, cards, and panels.● 10% (Accent Color) – Used for highlights, such as icons, action buttons, and text highlights. <p>3. Which new elements did you use for creating UI components?</p> <p>Ans : For modern UI components in Flutter, I used Material 3 widgets (e.g., NavigationBar, FilledButton), custom shapes (ClipPath, CustomPaint), and animated elements (AnimatedContainer, Hero). Additionally, I implemented Glassmorphism, Neumorphism, and Slivers for dynamic scrolling effects.</p>
Conclusion	From these session I learned Developing an e-commerce app with a Bottom Navigation Bar and four tabs (Home, Products, Profile, and Cart) helped in understanding UI structuring, state management, and navigation in Flutter. Key learnings include implementing dynamic lists, handling product details, and managing user interactions efficiently. Additionally, working with bottom navigation improved knowledge of multi-page apps, while designing the product catalog enhanced skills in layout design, API integration (if used), and responsive UI development.