

MAD & PWA Lab

Journal

Experiment No.	02
Experiment Title.	To design Flutter UI by including common widgets.
Roll No.	20
Name	Madhura Jangale
Class	D15A
Subject	MAD & PWA Lab
Lab Outcome	LO2: Design and Develop interactive Flutter App by using widgets, layouts, gestures and animation
Grade:	

Aim: To design Flutter UI by including common widgets.

Theory:

Flutter follows a widget-based approach where everything in the UI is a widget. Widgets can be classified into two main types:

- Stateless Widgets: Do not change their state once built (e.g., Text, Container).
- Stateful Widgets: Can update dynamically based on user interaction (e.g., TextField, Checkbox).

Commonly Used Widgets in Flutter-

(a) Scaffold Widget

The Scaffold widget provides the basic structure for a Flutter app, including an AppBar, Drawer, FloatingActionButton, and BottomNavigationBar. It is a fundamental widget used to create a standard screen layout in Flutter.

(b) Container Widget

A Container is a box model widget that can hold other widgets. It is commonly used for adding padding, margins, borders, and background decorations.

(c) Row and Column Widgets

- Row: Arranges widgets horizontally.
- Column: Arranges widgets vertically.

These two widgets are fundamental for designing layouts in Flutter.

(d) ListView Widget

The ListView widget is used for displaying a scrollable list of items. It is useful for showing large amounts of data dynamically.

(e) Stack Widget

The Stack widget is used to place widgets on top of each other. This is useful for creating overlapping UI elements such as banners, profile images, or layered designs.

(f) ElevatedButton Widget

The ElevatedButton widget is used for clickable buttons with a raised effect. It is a commonly used button in Flutter applications.

(g) TextField Widget

The TextField widget is used to take user input, such as entering a name, email, or password. It is commonly used in forms and authentication screens.

Code:

Home.dart file

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

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

final List<Map<String, String>>
productDetails = [
  {"tagline": "Flat 30% off", "description":
"Puma"},
  {"tagline": "Buy 1 Get 1", "description":
"Marks and Spencer"},
  {"tagline": "New Arrivals", "description":
"Miraggio"},
  {"tagline": "Best Seller", "description":
"Levis"},
  {"tagline": "Special Discount", "description":
"HopScotch"},
  {"tagline": "Hot Deal", "description":
"Nayam"},
];

class MyApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      home: NykaaHomePage(),
    );
  }
}

class NykaaHomePage extends
StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        backgroundColor: Colors.white,
        elevation: 0,
        title:
Image.asset('assets/nykaa_logo.png',
height: 40),
        actions: [
```

```
IconButton(icon:
Icon(Icons.favorite_border, color:
Colors.black), onPressed: () {}),
        IconButton(
          icon: const Icon(Icons.shopping_cart,
color: Colors.black),
          onPressed: () {
            Navigator.push(
              context,
              MaterialPageRoute(builder:
(context) => ShoppingBagScreen()), //
Replace with your target screen
            );
          },
        ),
      ],
    ),
    body: SingleChildScrollView(
      child: Column(
        children: [
          // Search Bar
          Padding(
            padding:
EdgeInsets.symmetric(horizontal: 10),
            child: TextField(
              decoration: InputDecoration(
                prefixIcon: Icon(Icons.search),
                hintText: "Search earrings",
                border:
OutlineInputBorder(borderRadius:
BorderRadius.circular(30)),
                filled: true,
                fillColor: Colors.grey[200],
              ),
            ),
          ),
          SizedBox(height: 10),

          // Category Tabs
          Padding(
            padding:
EdgeInsets.symmetric(horizontal: 10),
            child: Row(
```

```

        mainAxisAlignment:
MainAxisAlignment.spaceEvenly,
        children: ["Women", "Men", "Kids",
"Home"].map((category) {
        return Chip(
            label: Text(category),
            backgroundColor:
Colors.pink.shade100,
        );
    }).toList(),
    ),
    ),
    SizedBox(height: 10),

    // Scrollable Categories
    SizedBox(
        height: 90,
        child: ListView(
            scrollDirection: Axis.horizontal,
            padding:
EdgeInsets.symmetric(horizontal: 10), //
Padding around the entire list
            children: [
                Padding(
                    padding: EdgeInsets.only(right:
10), // Space between the cards
                    child: CategoryCard(category:
"Westernwear", image:
"assets/westernwear.png"),
                ),
                Padding(
                    padding: EdgeInsets.only(right:
10),
                    child: CategoryCard(category:
"Indianwear", image:
"assets/indianwear.png"),
                ),
                Padding(
                    padding: EdgeInsets.only(right:
10),
                    child: CategoryCard(category:
"Footwear", image: "assets/footwear.png"),
                ),
                Padding(
                    padding: EdgeInsets.only(right:
10),
                    child: CategoryCard(category:
"Winterwear", image:
"assets/winterwear.png"),

```

```

        ),
    ],
    ),
    ),
    SizedBox(height: 10),

    // Offer Banner
    Padding(
        padding:
EdgeInsets.symmetric(horizontal: 10),
        child:
Image.asset('assets/offer_banner.png', fit:
BoxFit.cover),
    ),
    SizedBox(height: 10),

    // Sale Banner
    Padding(
        padding:
EdgeInsets.symmetric(horizontal: 10),
        child:
Image.asset('assets/sale_banner.png', fit:
BoxFit.cover),
    ),
    SizedBox(height: 20),

    // Grid Section (2 columns, 3 rows)
    Padding(
        padding:
EdgeInsets.symmetric(horizontal: 10),
        child: GridView.builder(
            shrinkWrap: true,
            physics:
NeverScrollableScrollPhysics(),
            gridDelegate:
SliverGridDelegateWithFixedCrossAxisCou
nt(
                crossAxisCount: 2,
                mainAxisSpacing: 10,
                crossAxisSpacing: 10,
                childAspectRatio: 0.8,
            ),
            itemCount: productDetails.length,
            itemBuilder: (context, index) {
                return ProductCard(
                    image: "assets/product${index +
1}.png",

```

```

        tagline:
productDetails[index]["tagline"]!,
        description:
productDetails[index]["description"]!,
    );
    },
),
),
    SizedBox(height: 20),
],
),
),

// Bottom Navigation Bar
bottomNavigationBar:
BottomNavigationBar(
    currentIndex: 0,
    selectedItemColor: Colors.black, // Set
selected icon color
    unselectedItemColor: Colors.grey, // Set
unselected icon color
    backgroundColor: Colors.white, //
Ensure background is visible
    showUnselectedLabels: true, // Show
labels even when unselected
    type: BottomNavigationBarType.fixed, //
Keeps icons and text aligned
    onTap: (index) {
        if (index == 1) {
            Navigator.push(
                context,
                MaterialPageRoute(builder:
(context) => CategoriesPage()),
            );
        }
    },
    items: [
        BottomNavigationBarItem(icon:
Icon(Icons.home), label: 'Home'),
        BottomNavigationBarItem(icon:
Icon(Icons.category), label: 'Categories'),
        BottomNavigationBarItem(icon:
Icon(Icons.style), label: 'Stay Stylish'),
        BottomNavigationBarItem(icon:
Icon(Icons.account_circle), label: 'Account'),
    ],
),
);
}

```

```

}

// Category Card Widget
class CategoryCard extends
StatelessWidget {
    final String category;
    final String image;

    const CategoryCard({required
this.category, required this.image});

    @override
    Widget build(BuildContext context) {
        return Column(

            children: [

                CircleAvatar(
                    backgroundImage:
AssetImage(image),
                    radius: 30,
                ),
                SizedBox(height: 5),
                Text(category, style: TextStyle(fontSize:
12, fontWeight: FontWeight.bold)),

            ],
        );
    }
}

// Product Card Widget
class ProductCard extends StatelessWidget
{
    final String image;
    final String tagline;
    final String description;

    const ProductCard({required this.image,
required this.tagline, required
this.description});

    @override
    Widget build(BuildContext context) {
        return Card(
            elevation: 5,
            child: Column(
                crossAxisAlignment:
CrossAxisAlignment.start,

```

```

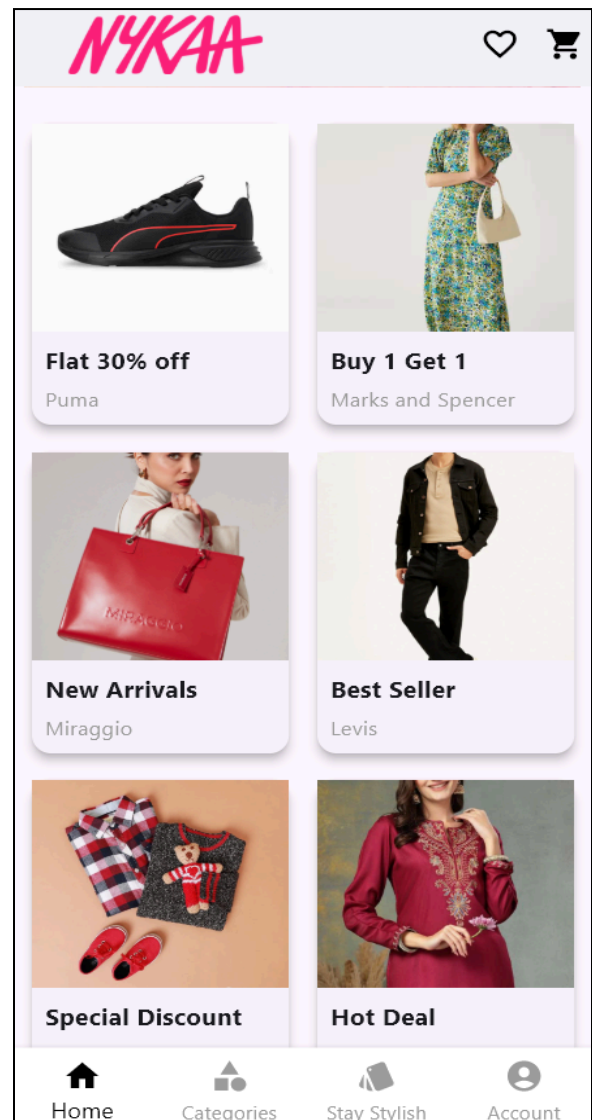
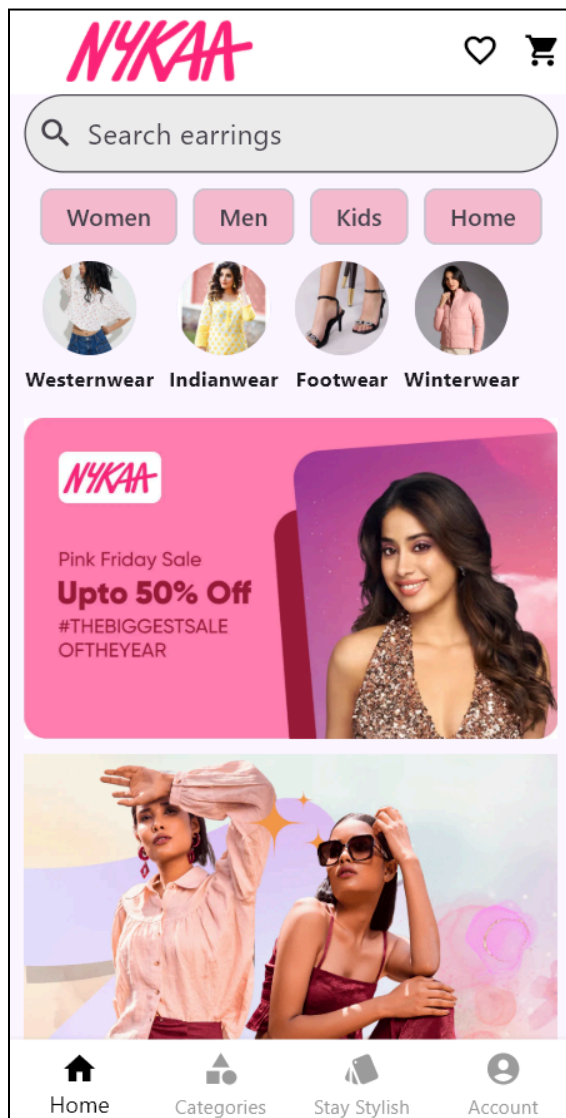
children: [
  Expanded(
    child: Image.asset(image, fit:
BoxFit.cover, width: double.infinity),
  ),
  Padding(
    padding: EdgeInsets.all(8),
    child: Column(
      crossAxisAlignment:
CrossAxisAlignment.start,
      children: [

```

```

Text(tagline, style:
TextStyle(fontWeight: FontWeight.bold,
fontSize: 14)),
    SizedBox(height: 5),
    Text(description, style:
TextStyle(fontSize: 12, color: Colors.grey)),
  ],
),
],
),
);
}
}

```



Category.dart file

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

class CategoriesPage extends
StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return DefaultTabController(
      length: 4,
      child: Scaffold(
        appBar: AppBar(
          title: Text('Categories'),
          actions: [
            IconButton(icon: Icon(Icons.search),
onPressed: () {}),
            IconButton(icon:
Icon(Icons.notifications), onPressed: () {}),
          ],
        bottom: TabBar(
          tabs: [
            Tab(text: 'Women'),
            Tab(text: 'Men'),
            Tab(text: 'Kids'),
            Tab(text: 'Home'),
          ],
        ),
      ),
      body: Column(
        children: [
          SizedBox(height: 20),
          SingleChildScrollView(
            scrollDirection: Axis.horizontal,
            child: Row(
              children: [
                _buildCategoryIcon('Sale 50%
Off', Icons.local_offer),
                _buildCategoryIcon('Trending',
Icons.trending_up),
                _buildCategoryIcon('New
Arrivals', Icons.new_releases),
                _buildCategoryIcon('Exclusive
Brands', Icons.store),
```

```
],
            ),
          ),
          Divider(),
          Expanded(
            child: ListView(
              children: [
                _buildCategoryItem(context,
'Indianwear', 'assets/indianwear.png'),
                _buildCategoryItem(context,
'Westernwear', 'assets/westernwear.png'),
                _buildCategoryItem(context,
'Jewellery', 'assets/jewellery.png'),
                _buildCategoryItem(context,
'Watches', 'assets/watches.png'),
                _buildCategoryItem(context,
'Footwear', 'assets/footwear.png'),
                _buildCategoryItem(context,
'Bags', 'assets/bags.png'),
              ],
            ),
          ),
          bottomNavigationBar:
BottomNavigationBar(
          currentIndex: 1,
          selectedItemColor: Colors.black,
          unselectedItemColor: Colors.grey,
          backgroundColor: Colors.white,
          showUnselectedLabels: true,
          type: BottomNavigationBarType.fixed,
          items: [
            BottomNavigationBarItem(icon:
Icon(Icons.home), label: 'Home'),
            BottomNavigationBarItem(icon:
Icon(Icons.category), label: 'Categories'),
            BottomNavigationBarItem(icon:
Icon(Icons.style), label: 'Stay Stylish'),
            BottomNavigationBarItem(icon:
Icon(Icons.account_circle), label: 'Account'),
          ],
```

```

    ),
  ),
);
}

```

```

Widget _buildCategoryIcon(String label,
IconData icon) {
  return Padding(
    padding: const
EdgeInsets.symmetric(horizontal: 10),
    child: Column(
      children: [
        CircleAvatar(
          backgroundColor:
Colors.grey.shade200,
          child: Icon(icon, color: Colors.black),
        ),
        SizedBox(height: 5),
        Text(label, textAlign: TextAlign.center,
style: TextStyle(fontSize: 12)),
      ],
    ),
  ),
)

```

```

    );
  }

```

```

Widget _buildCategoryItem(BuildContext
context, String label, String imagePath) {
  return ListTile(
    contentPadding:
EdgeInsets.symmetric(vertical: 10,
horizontal: 20),
    leading: Image.asset(imagePath, width:
70, height: 70),
    title: Text(
      label,
      style: TextStyle(fontSize: 15),
    ),
    trailing: Icon(Icons.arrow_forward_ios,
size: 20),
  ),
);
}
}

```