

**Name:Mayank Lulla**

**Dlv:D15A**

**Roll.no:33**

## **Experiment 2**

**Aim: Design a flutter ui by including common widget**

**Theory:**

### **App Structure:**

- Scaffold: The Scaffold widget provides a framework for implementing basic material design layout structures, such as app bars, drawers, and floating action buttons.
- AppBar: The AppBar widget is used to create a customizable application bar that typically contains the app's title, actions, and/or navigation elements.

### **Navigation:**

- Navigator: The Navigator widget manages a stack of Route objects and provides methods for pushing and popping routes.
- MaterialPageRoute: A MaterialPageRoute is a route that moves material design widgets into and out of the screen.
- Navigation Drawer: The Drawer widget is used to implement a side navigation menu, which is often used for navigating between different sections or pages of the app.

### **ListViews and ListTile:**

- ListView: The ListView widget is used to create scrollable lists of items.
- ListTile: The ListTile widget is a single fixed-height row that typically contains some text, an optional leading icon, and an optional trailing icon.

**Card:** The Card widget is used to create a material design card that displays content and actions related to a single topic.

### **Gesture Detection:**

- GestureDetector: The GestureDetector widget is used to detect gestures, such as taps, swipes, and drags, on widgets.
- InkWell: The InkWell widget is used to create a rectangular area of ink that responds to touch.

### **State Management:**

- Flutter offers various state management approaches, including setState, Provider, Bloc, Redux, and others, to manage the state of widgets and data flow within the application.

### **Theming:**

- Flutter supports theming to maintain consistent colors, typography, and spacing across an application. Themes can be defined at the application level or at the widget level.

### **Responsive Design:**

- Flutter enables responsive design by allowing widgets to adapt to different screen sizes and orientations using media queries and layout widgets like Row, Column, and Flexible.

**Code:**

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

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

class ECommerceApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      debugShowCheckedModeBanner: false,
      home: Scaffold(
        appBar: AppBar(
          title: Text('E-Commerce App'),
        ),
        body: ProductList(),
      ),
    );
  }
}

class ProductList extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return ListView.builder(
      itemCount: 10,
      itemBuilder: (context, index) {
        return ProductItem(
          productName: 'Product $index',
          price: '\${index * 10}',
        );
      },
    );
  }
}
```

```
}  
}
```

```
class ProductItem extends StatelessWidget {  
  final String productName;  
  final String price;
```

```
  ProductItem({required this.productName, required this.price});
```

```
  @override
```

```
  Widget build(BuildContext context) {
```

```
    return Card(  
      margin: EdgeInsets.all(8.0),  
      child: ListTile(  
        leading: Icon(Icons.shopping_cart),  
        title: Text(productName),  
        subtitle: Text('Price: $price'),  
        trailing: IconButton(  
          icon: Icon(Icons.favorite_border),  
          onPressed: () {  
            // Handle favorite action  
          },  
        ),  
        onTap: () {  
          // Navigate to product details page  
          Navigator.push(  
            context,  
            MaterialPageRoute(  
              builder: (context) => ProductDetailsPage(productName:  
productName, price: price),  
            ),  
          );  
        },  
      ),  
    );  
  }
```

```
}  
}
```

```
class ProductDetailsPage extends StatelessWidget {  
  final String productName;  
  final String price;
```

```
  ProductDetailsPage({required this.productName, required this.price});
```

```
  @override
```

```
  Widget build(BuildContext context) {  
    return Scaffold(  
      appBar: AppBar(  
        title: Text('Product Details'),  
      ),  
      body: Center(  
        child: Column(  
          mainAxisAlignment: MainAxisAlignment.center,  
          children: [  
            Text(  
              productName,  
              style: TextStyle(fontSize: 24.0),  
            ),  
            SizedBox(height: 20.0),  
            Text(  
              'Price: $price',  
              style: TextStyle(fontSize: 18.0),  
            ),  
            SizedBox(height: 20.0),  
            ElevatedButton(  
              onPressed: () {  
                // Add to cart functionality  
              },  
              child: Text('Add to Cart'),  
            ),  
          ],  
        ),  
      ),  
    );  
  }  
}
```

```

    ],
  ),
),
);
}
}

```

Output:

