Aim

To develop a simple shopping application using flutter.

Definitions

Flutter

Flutter is not a programming language. It's a software development kit (SDK) with prewritten code, consisting of ready-to-use and customizable widgets, as well as libraries, tools, and documentation that together serve to build cross-platform apps.

Flutter plugin

A Flutter plugin is a special kind of package that enables Flutter apps to interact with platform-specific APIs (iOS, Android, web, desktop). Plugins can include Dart code, but crucially, they also contain platform-specific implementation code written in Kotlin/Java for Android and Swift/Obj-C for iOS.

Dart plugin

The Dart plugin adds Dart support to IntelliJ Platform-based IDEs developed by JetBrains. These IDEs provide features unique to specific development technologies. The IDEs recommended for Dart and Flutter development include: IntelliJ IDEA which specializes in JVM-based language development.

Flutter SDK

Flutter is Google's free, open-source software development kit (SDK) for cross-platform mobile application development. Using a single platform-agnostic codebase, Flutter helps developers build high-performance, scalable applications with attractive and functional user interfaces for Android or IOS.

Shopping Application

A shopping app is a mobile application that enables users to browse and purchase products or services from a retailer or service provider. It facilitates online shopping by offering a user-friendly interface and features like product listings, search, secure transactions, and order tracking.

Procedure

1. **Open android studio**
2. **Click 'new flutter project'**
3. **Select 'flutter' at the left side of the window**
4. **Add 'flutter sdk' from the desired location**
5. **Click 'next' and specify the project name and select language 'java', check only Android, Web and Windows under platforms then click 'create'**
6. **Create a new dart file under 'lib' folder in the projects window (right click over lib folder - > new -> dart file -> specify the file name as 'shop' -> press 'enter'**
7. **Type the following codes in the shop.dart file**

shop.dart

```
import 'package:flutter/material.dart';
void main() {
  runApp(ShoppingApp());
}
class ShoppingApp extends StatelessWidget {
  @override
  Widget build(BuildContext context) {
    return MaterialApp(
      title: 'Shopping App',
      theme: ThemeData(
        primarySwatch: Colors.blue,
      ),
      home: ProductListScreen(),
    );
  }
}
class Product {
  final String name;

  final double price;
  Product({required this.name, required this.price});
}
class ProductListScreen extends StatefulWidget {
  @override
  _ProductListScreenState createState() => _ProductListScreenState();
}
class _ProductListScreenState extends State<ProductListScreen> {
  final List<Product> products = [
    Product(name: 'Product 1', price: 10.0),
    Product(name: 'Product 2', price: 20.0),
    Product(name: 'Product 3', price: 15.0),
```

```dart
];
final List<Product> cart = [];
@override
Widget build(BuildContext context) {
  return Scaffold(
    appBar: AppBar(
      title: Text('Products'),
      actions: [
        IconButton(
          icon: Icon(Icons.shopping_cart),
          onPressed: () {
            Navigator.push(
              context,
              MaterialPageRoute(builder: (context) => CartScreen(cart: cart)),
            );
          },
        ),
      ],
    ),
    body: ListView.builder(
      itemCount: products.length,
      itemBuilder: (context, index) {
        final product = products[index];
        return ListTile(
          title: Text(product.name),
          subtitle: Text('\$${product.price.toStringAsFixed(2)}'),
          trailing: IconButton(
            icon: Icon(Icons.add_shopping_cart),
            onPressed: () {
              setState(() {
                cart.add(product);
              });
              ScaffoldMessenger.of(context).showSnackBar(
                SnackBar(
                  content: Text('${product.name} added to cart'),
                  duration: Duration(seconds: 1),
                ),
              );
            },
          ),
        );
      },

    ),
  );
}
```

```dart
}
class CartScreen extends StatefulWidget {
  final List<Product> cart;
  CartScreen({required this.cart});
  @override
  _CartScreenState createState() => _CartScreenState();
}
class _CartScreenState extends State<CartScreen> {
  @override
  Widget build(BuildContext context) {
    return Scaffold(
      appBar: AppBar(
        title: Text('Shopping Cart'),
      ),
      body: ListView.builder(
        itemCount: widget.cart.length,
        itemBuilder: (context, index) {
          final product = widget.cart[index];
          return ListTile(
            title: Text(product.name),
            subtitle: Text('\$${product.price.toStringAsFixed(2)}'),
            trailing: IconButton(
              icon: Icon(Icons.remove_shopping_cart),
              onPressed: () {
                setState(() {
                  widget.cart.remove(product);
                });
                ScaffoldMessenger.of(context).showSnackBar(
                  SnackBar(
                    content: Text('${product.name} removed from cart'),
                    duration: Duration(seconds: 1),
                  ),
                );
              },
            ),
          );
        },
      ),
      bottomNavigationBar: BottomAppBar(
        child: Padding(
          padding: EdgeInsets.all(16.0),
          child: Text(
            'Total: \$${calculateTotal().toStringAsFixed(2)}',
            style: TextStyle(fontSize: 18.0, fontWeight: FontWeight.bold),
          ),
        ),
```
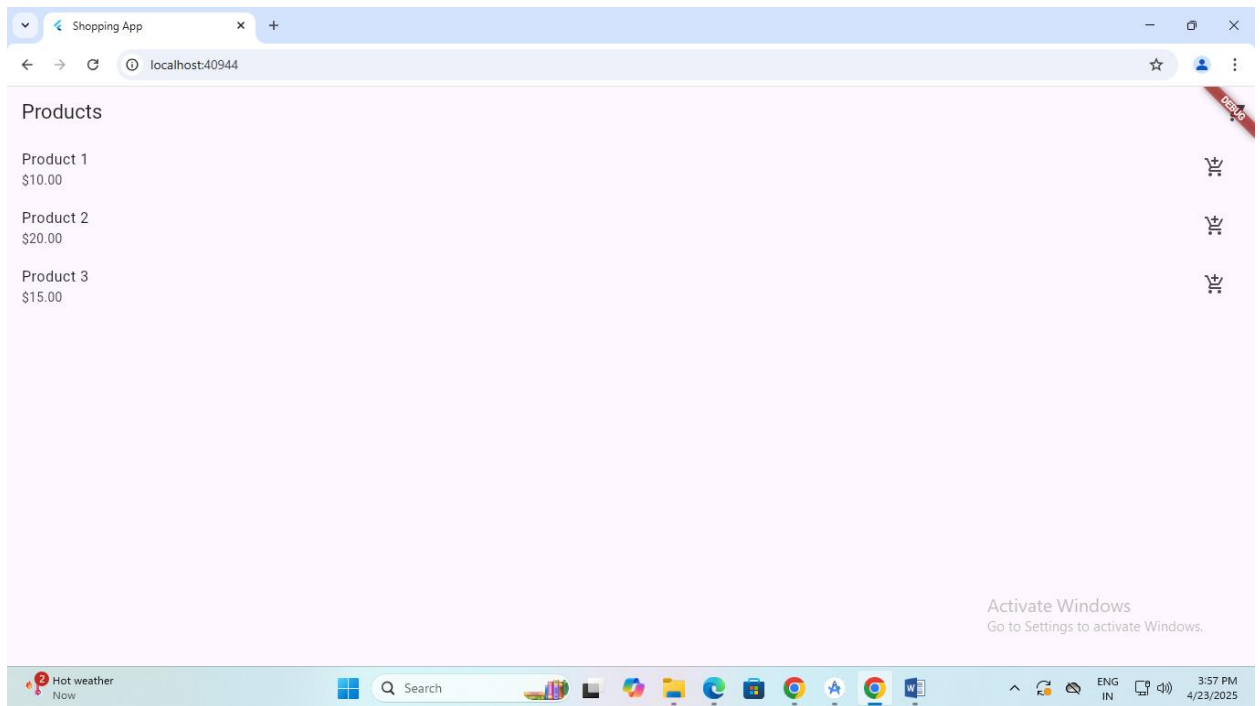
```
    ),
  );
}
 double calculateTotal() {
  double total = 0;
  for (var product in widget.cart) {

   total += product.price;
  }
  return total;
 }
}
```

8. **Save the file shop.dart (click main menu -> saveall)**
9. **Select device as 'chrome(web)'**
10. **Click on run/debug configuration -> edit configurations ->specify dart file name (shop.dart) -> browse and set dart entrypoint as shop.dart -> click ok -> click run**

Output

Result

Thus, a simple shopping application using flutter has been developed.

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