



## LAB 1

### XÂY DỰNG ỨNG DỤNG MYSHOP - PHẦN 1

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Nhóm học phần: 02

#### Bước 0: Chuẩn bị môi trường làm việc

Cài đặt Flutter và các môi trường làm việc:

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows

PS C:\flutter> flutter doctor
Doctor summary (to see all details, run flutter doctor -v):
[✓] Flutter (Channel stable, 3.13.1, on Microsoft Windows [Version 10.0.22621.2134], locale en-US)
[✓] Windows Version (Installed version of Windows is version 10 or higher)
[✓] Android toolchain - develop for Android devices (Android SDK version 33.0.2)
[✓] Chrome - develop for the web
[✓] Visual Studio - develop Windows apps (Visual Studio Community 2022 17.7.3)
[✓] Android Studio (version 2022.3)
[✓] VS Code (version 1.81.1)
[✓] Connected device (4 available)
[✓] Network resources

• No issues found!
PS C:\flutter> |
```

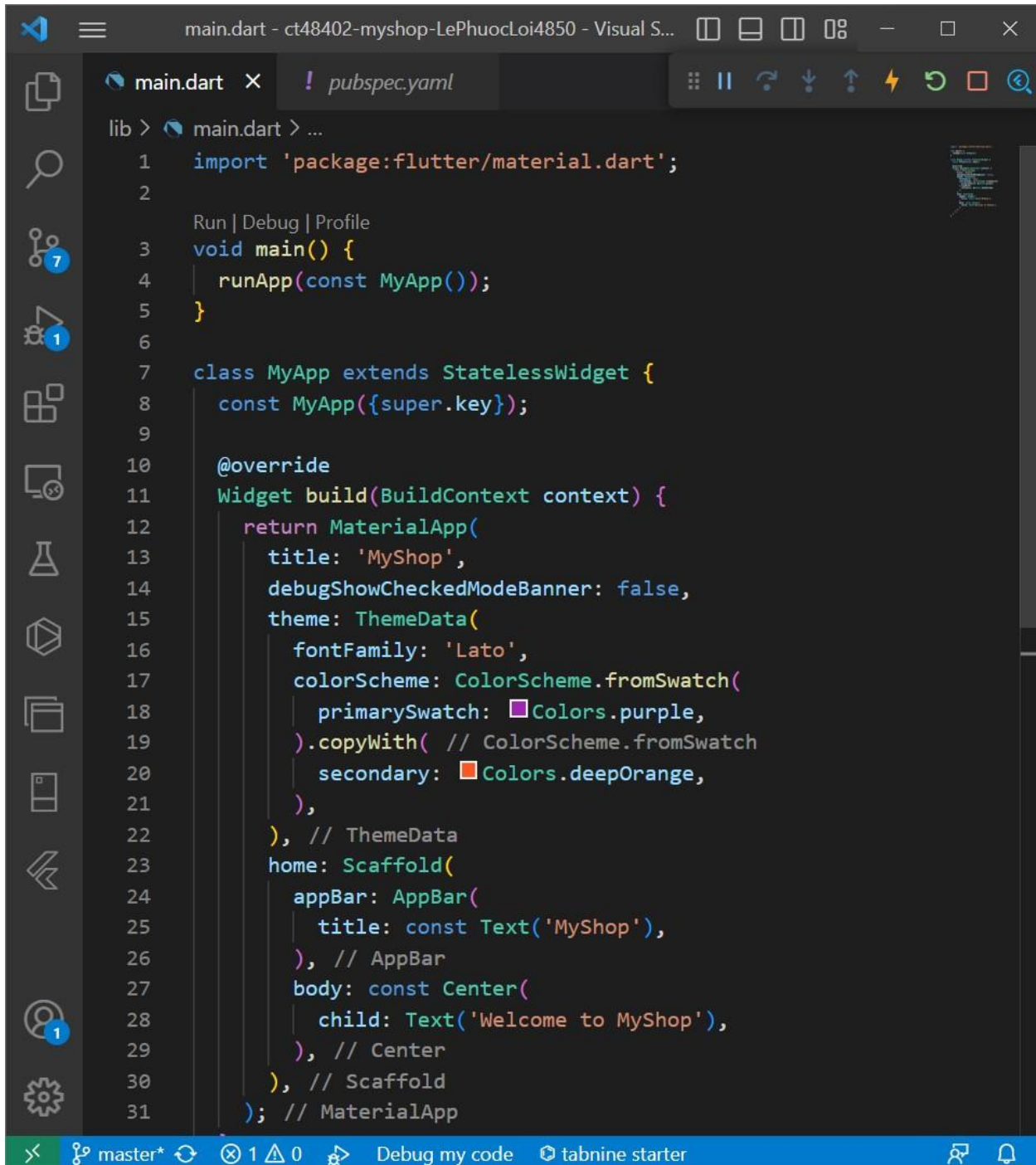
Cài đặt Git:

```
Windows PowerShell
PS C:\> git --version
git version 2.42.0.windows.2
PS C:\> |
```



## Bước 1: Khởi tạo dự án

Dùng VS Code mở thư mục dự án, hiệu chỉnh nội dung tập tin lib/main.dart:



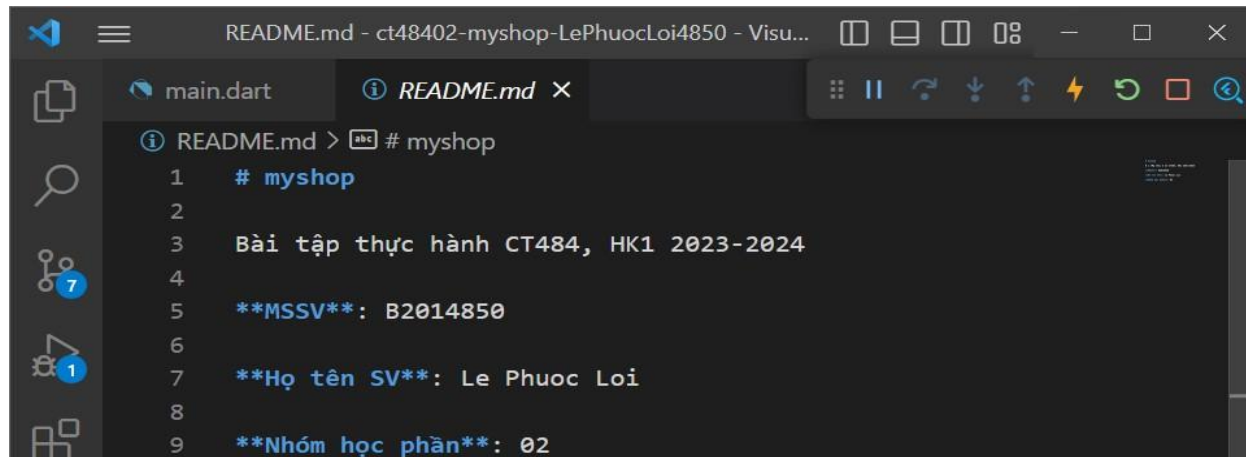
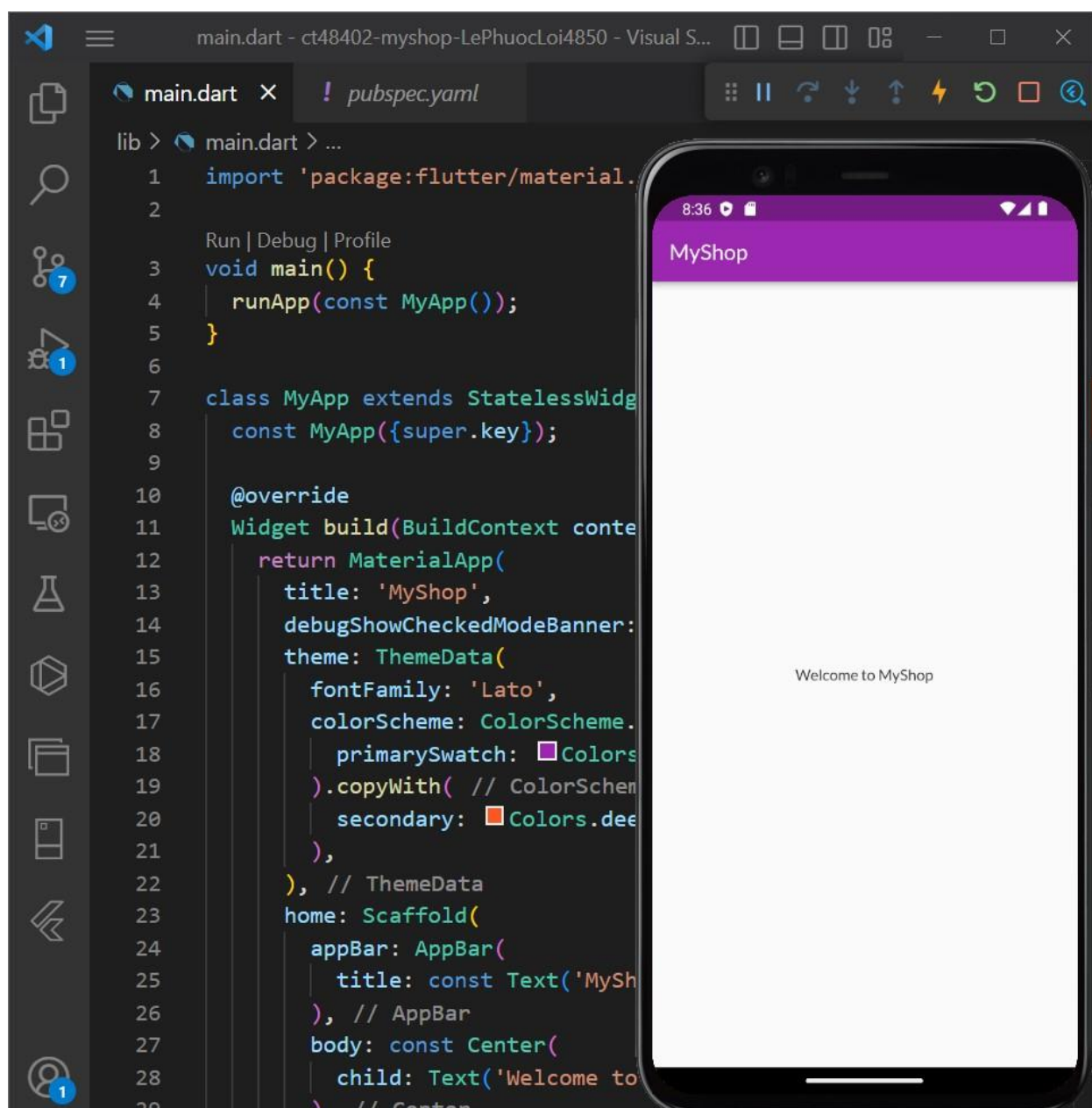
```
lib > main.dart > ...
1  import 'package:flutter/material.dart';
2
3  Run | Debug | Profile
4  void main() {
5    runApp(const MyApp());
6  }
7
8  class MyApp extends StatelessWidget {
9    const MyApp({super.key});
10
11   @override
12   Widget build(BuildContext context) {
13     return MaterialApp(
14       title: 'MyShop',
15       debugShowCheckedModeBanner: false,
16       theme: ThemeData(
17         fontFamily: 'Lato',
18         colorScheme: ColorScheme.fromSwatch(
19           primarySwatch: Colors.purple,
20         ).copyWith( // ColorScheme.fromSwatch
21           secondary: Colors.deepOrange,
22         ),
23       ), // ThemeData
24       home: Scaffold(
25         appBar: AppBar(
26           title: const Text('MyShop'),
27         ), // AppBar
28         body: const Center(
29           child: Text('Welcome to MyShop'),
30         ), // Center
31       ), // Scaffold
32     ); // MaterialApp
```



Hiệu chỉnh tập tin pubspec.yaml, khai báo sử dụng các font trong thư mục assets:

```
! pubspec.yaml > {} dev_dependencies
pubspec.yaml - Schema for pubspecs, the format used by Dart's dependency manager (
1  name: myshop
2  description: A new Flutter project.
3
4  publish_to: 'none'
5
6  version: 1.0.0+1
7
8  environment:
9    sdk: '>=2.19.1 <3.0.0'
10
11  dependencies:
12    flutter:
13      sdk: flutter
14    cupertino_icons: ^1.0.6
15
16  dev_dependencies:
17    flutter_test:
18      sdk: flutter
19    flutter_lints: ^2.0.3
20
21  flutter:
22    uses-material-design: true
23    fonts:
24      - family: Lato
25        fonts:
26          - asset: assets/fonts/Lato-Regular.ttf
27          - asset: assets/fonts/Lato-Bold.ttf
28          weight: 700
29      - family: Anton
30        fonts:
31          - asset: assets/fonts/Anton-Regular.ttf
```

Thực thi:

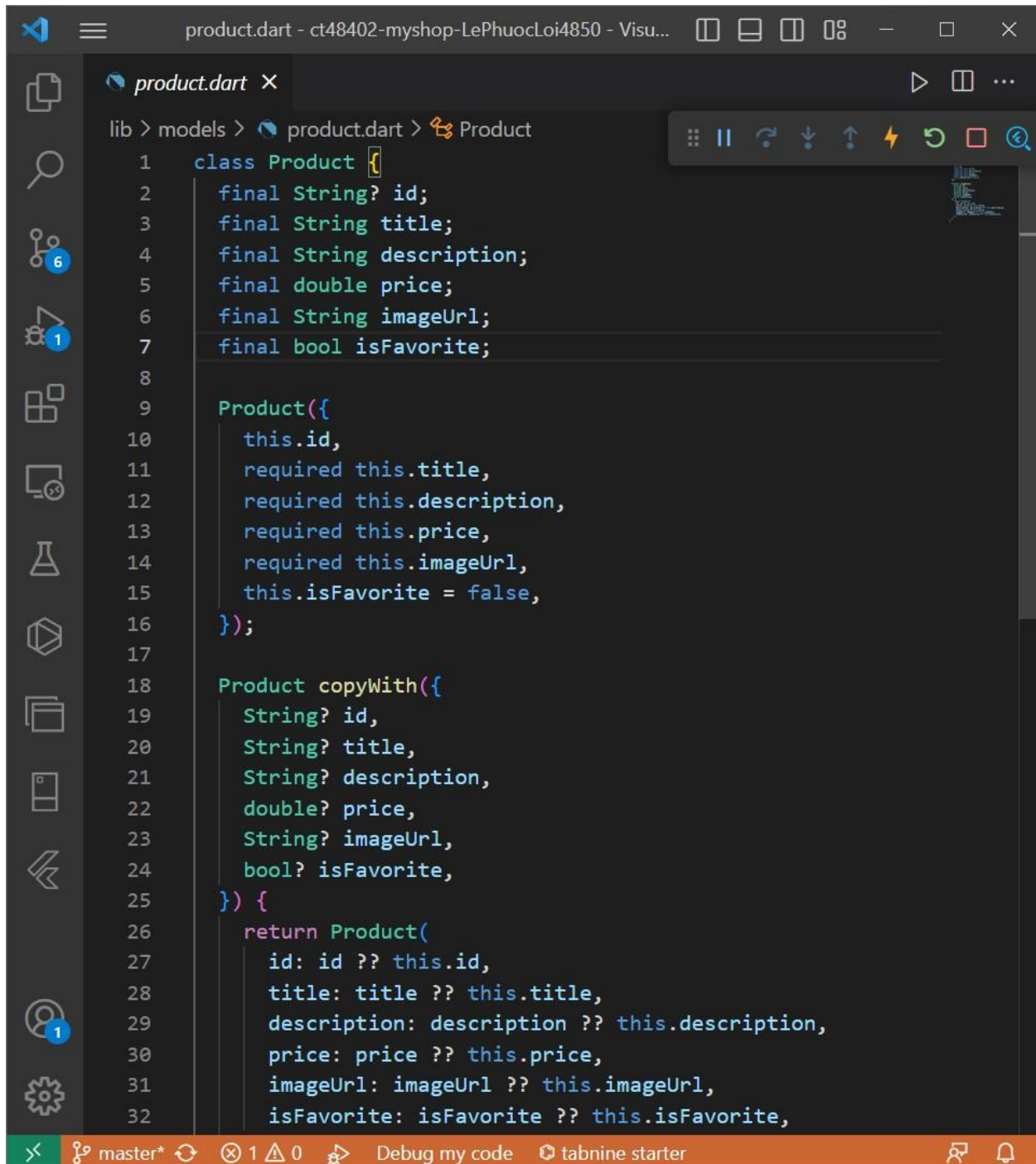






## Bước 2: Xây dựng trang hiển thị thông tin chi tiết sản phẩm

Định nghĩa lớp Product



```
product.dart - ct48402-mysshop-LePhuocLoi4850 - Visu...
lib > models > product.dart > Product

1 class Product {
2   final String? id;
3   final String title;
4   final String description;
5   final double price;
6   final String imageUrl;
7   final bool isFavorite;
8
9   Product({
10    this.id,
11    required this.title,
12    required this.description,
13    required this.price,
14    required this.imageUrl,
15    this.isFavorite = false,
16  });
17
18   Product copyWith({
19     String? id,
20     String? title,
21     String? description,
22     double? price,
23     String? imageUrl,
24     bool? isFavorite,
25   }) {
26     return Product(
27       id: id ?? this.id,
28       title: title ?? this.title,
29       description: description ?? this.description,
30       price: price ?? this.price,
31       imageUrl: imageUrl ?? this.imageUrl,
32       isFavorite: isFavorite ?? this.isFavorite,
```

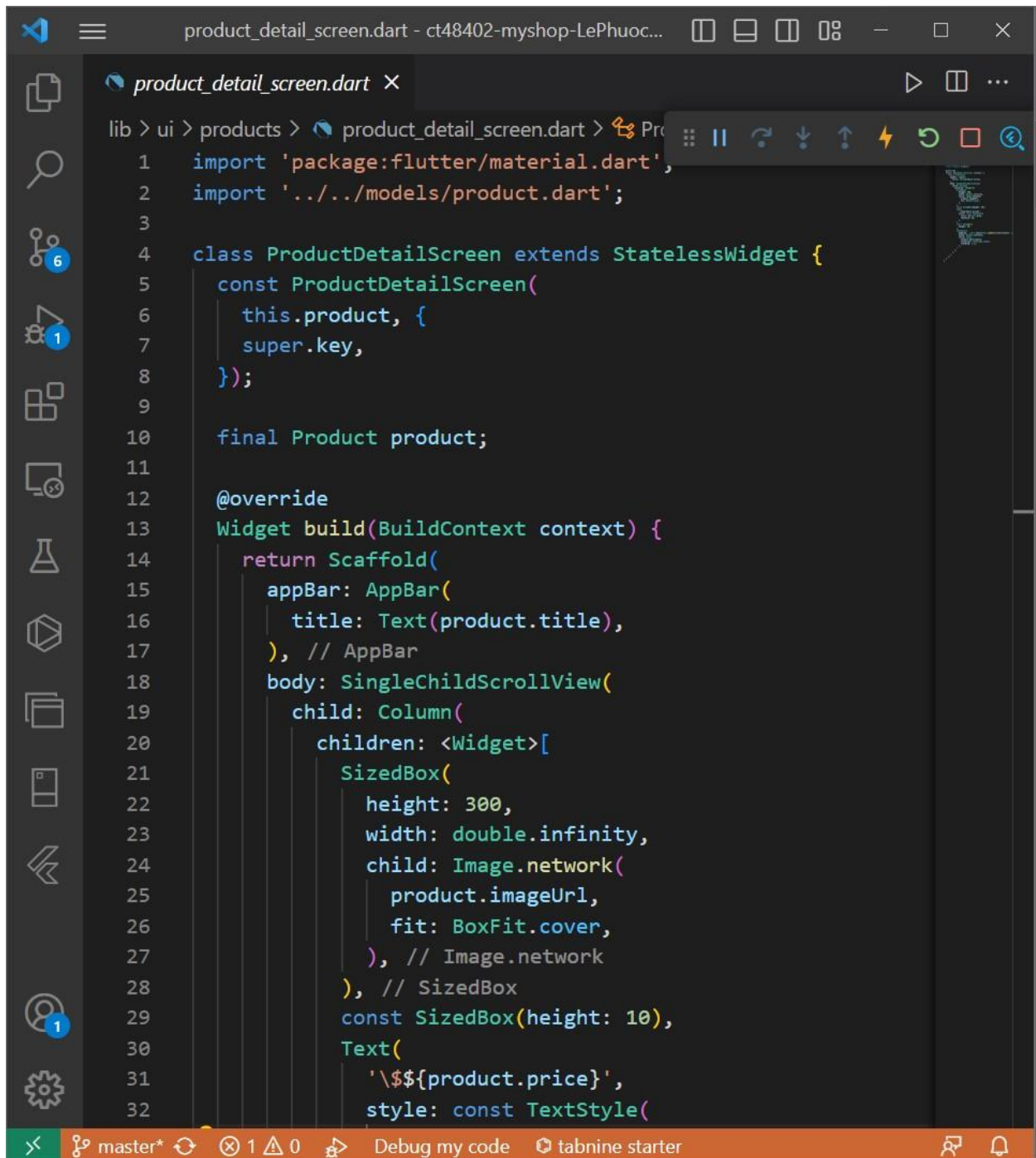


## Định nghĩa lớp ProductsManager quản lý các sản phẩm

```
products_manager.dart - ct48402-myshop-LePhuocLoi...  
lib > ui > products > products_manager.dart > ...  
1 import '../models/product.dart';  
2  
3 class ProductsManager {  
4   final List<Product> _items = [  
5     Product(...  
14    Product(...  
22    Product(...  
30    Product(...  
39   ];  
40  
41   int get itemCount {  
42     return _items.length;  
43   }  
44  
45   List<Product> get items {  
46     return [..._items];  
47   }  
48  
49   List<Product> get favoritesItems {  
50     return _items.where((item) => item.isFavorite).toList();  
51   }  
52 }  
53
```

The screenshot shows an IDE window titled 'products\_manager.dart - ct48402-myshop-LePhuocLoi...'. The code defines a class 'ProductsManager' with a private final list '\_items' containing four 'Product' objects. It includes three getters: 'itemCount' returning the list length, 'items' returning a copy of the list, and 'favoritesItems' returning a filtered list of favorite items. The IDE interface includes a sidebar with icons for Explorer, Search, Run and Debug, Source Control, Extensions, Testing, Remote Explorer, and Settings. The bottom status bar shows 'master\*' with 1 commit and 0 errors, and buttons for 'Debug my code' and 'tabnine starter'.

Định nghĩa trang thông tin chi tiết sản phẩm:



```
lib > ui > products > product_detail_screen.dart > ProductDetailScreen

1  import 'package:flutter/material.dart';
2  import '../models/product.dart';
3
4  class ProductDetailScreen extends StatelessWidget {
5    const ProductDetailScreen(
6      this.product, {
7      super.key,
8    });
9
10   final Product product;
11
12   @override
13   Widget build(BuildContext context) {
14     return Scaffold(
15       appBar: AppBar(
16         title: Text(product.title),
17       ), // AppBar
18       body: SingleChildScrollView(
19         child: Column(
20           children: <Widget>[
21             SizedBox(
22               height: 300,
23               width: double.infinity,
24               child: Image.network(
25                 product.imageUrl,
26                 fit: BoxFit.cover,
27               ), // Image.network
28             ), // SizedBox
29             const SizedBox(height: 10),
30             Text(
31               '\${product.price}',
32               style: const TextStyle(
```

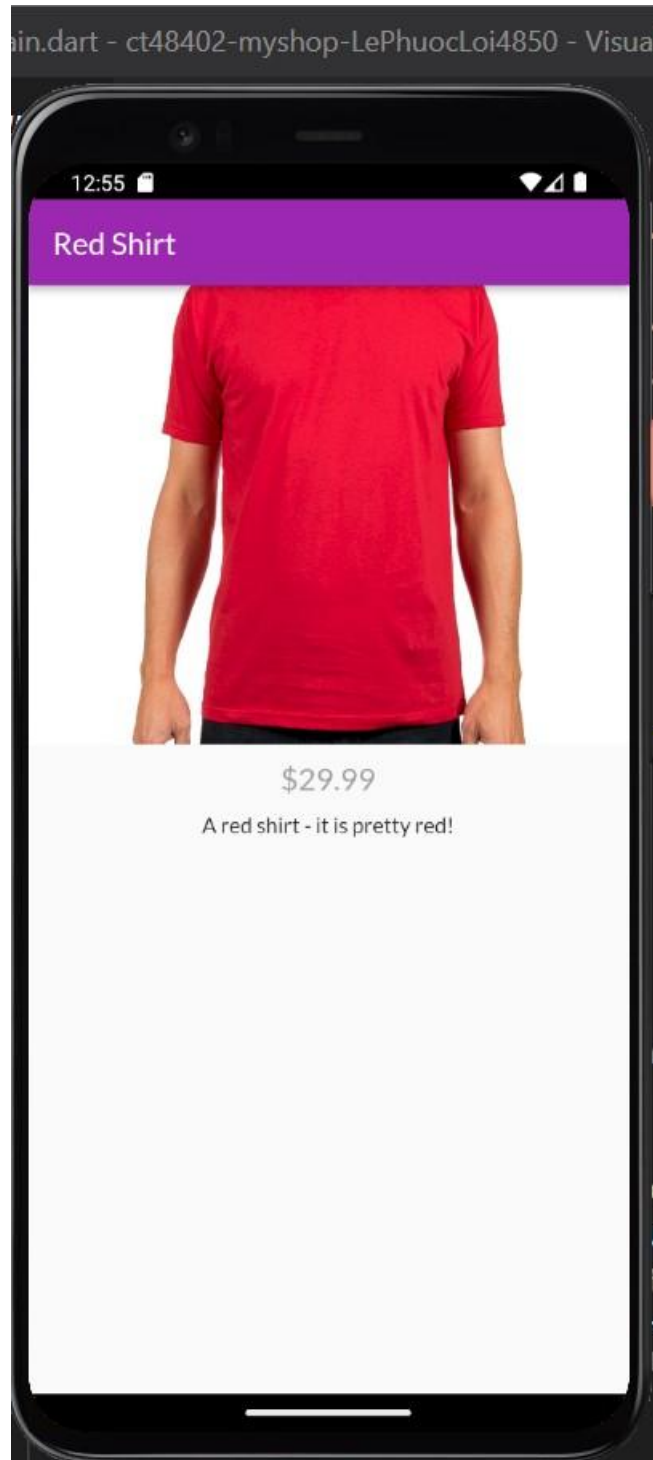


Hiệu chỉnh lib/main.dart để kiểm tra trang hiển thị thông tin chi tiết sản phẩm:

```
lib > main.dart > MyApp > build
1  import 'package:flutter/material.dart';
2
3  import 'ui/products/products_manager.dart';
4  import 'ui/products/product_detail_screen.dart';
5
6
7  void main() {
8    runApp(const MyApp());
9  }
10
11 class MyApp extends StatelessWidget {
12   const MyApp({super.key});
13
14   @override
15   Widget build(BuildContext context) {
16     return MaterialApp(
17       title: 'MyShop',
18       debugShowCheckedModeBanner: false,
19       theme: ThemeData(
20         fontFamily: 'Lato',
21         colorScheme: ColorScheme.fromSwatch(
22           primarySwatch: Colors.purple,
23         ).copyWith( // ColorScheme.fromSwatch
24           secondary: Colors.deepOrange,
25         ),
26       ), // ThemeData
27       home: SafeArea(
28         child: ProductDetailScreen(
29           ProductsManager().items[0],
30         ), // ProductDetailScreen
31       ), // SafeArea
32     );
33   }
34 }
```

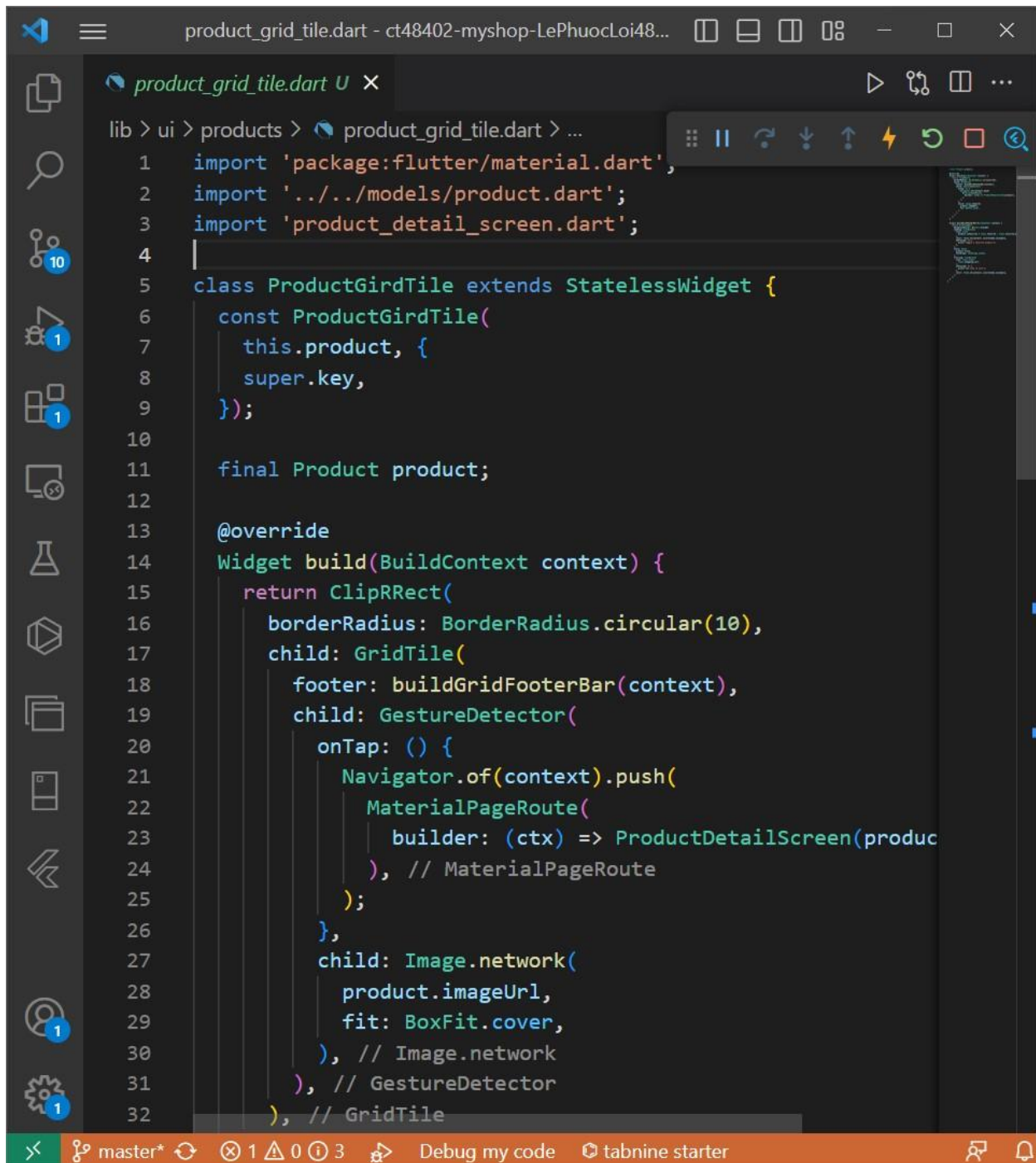


Kết quả sau khi thực thi:



### Bước 3: Xây dựng trang tổng quan các sản phẩm

Định nghĩa widget ProductGridTile:



```
lib > ui > products > product_grid_tile.dart > ...
1  import 'package:flutter/material.dart';
2  import '../models/product.dart';
3  import 'product_detail_screen.dart';
4
5  class ProductGirdTile extends StatelessWidget {
6    const ProductGirdTile(
7      this.product, {
8      super.key,
9    });
10
11    final Product product;
12
13    @override
14    Widget build(BuildContext context) {
15      return ClipRRect(
16        borderRadius: BorderRadius.circular(10),
17        child: GridTile(
18          footer: buildGridFooterBar(context),
19          child: GestureDetector(
20            onTap: () {
21              Navigator.of(context).push(
22                MaterialPageRoute(
23                  builder: (ctx) => ProductDetailScreen(product), // MaterialPageRoute
24                ),
25              );
26            },
27            child: Image.network(
28              product.imageUrl,
29              fit: BoxFit.cover,
30            ), // Image.network
31          ), // GestureDetector
32        ), // GridTile
```



## Định nghĩa widget ProductsGrid:

```
products_grid.dart - ct48402-mysshop-LePhuocLoi4850 ...  
  
lib > ui > products > products_grid.dart > ProductsG  
1 import 'package:flutter/material.dart';  
2  
3 import 'product_grid_tile.dart';  
4 import 'products_manager.dart';  
5  
6  
7 class ProductsGrid extends StatelessWidget {  
8   final bool showFavorites;  
9  
10  const ProductsGrid(this.showFavorites, {super.key});  
11  
12  @override  
13  Widget build(BuildContext context) {  
14    final productsManager = ProductsManager();  
15    final products =  
16      showFavorites ? productsManager.favoritesItems : pro  
17    return GridView.builder(  
18      padding: const EdgeInsets.all(10.0),  
19      itemCount: products.length,  
20      itemBuilder: (ctx, i) => ProductGirdTile(products[i]),  
21      gridDelegate: const SliverGridDelegateWithFixedCrossAx  
22        crossAxisCount: 2,  
23        childAspectRatio: 3 / 2,  
24        crossAxisSpacing: 10,  
25        mainAxisSpacing: 10,  
26      ), // SliverGridDelegateWithFixedCrossAxisCount  
27    ); // GridView.builder  
28  }  
29 }  
30
```



Định nghĩa trang tổng quan các sản phẩm:

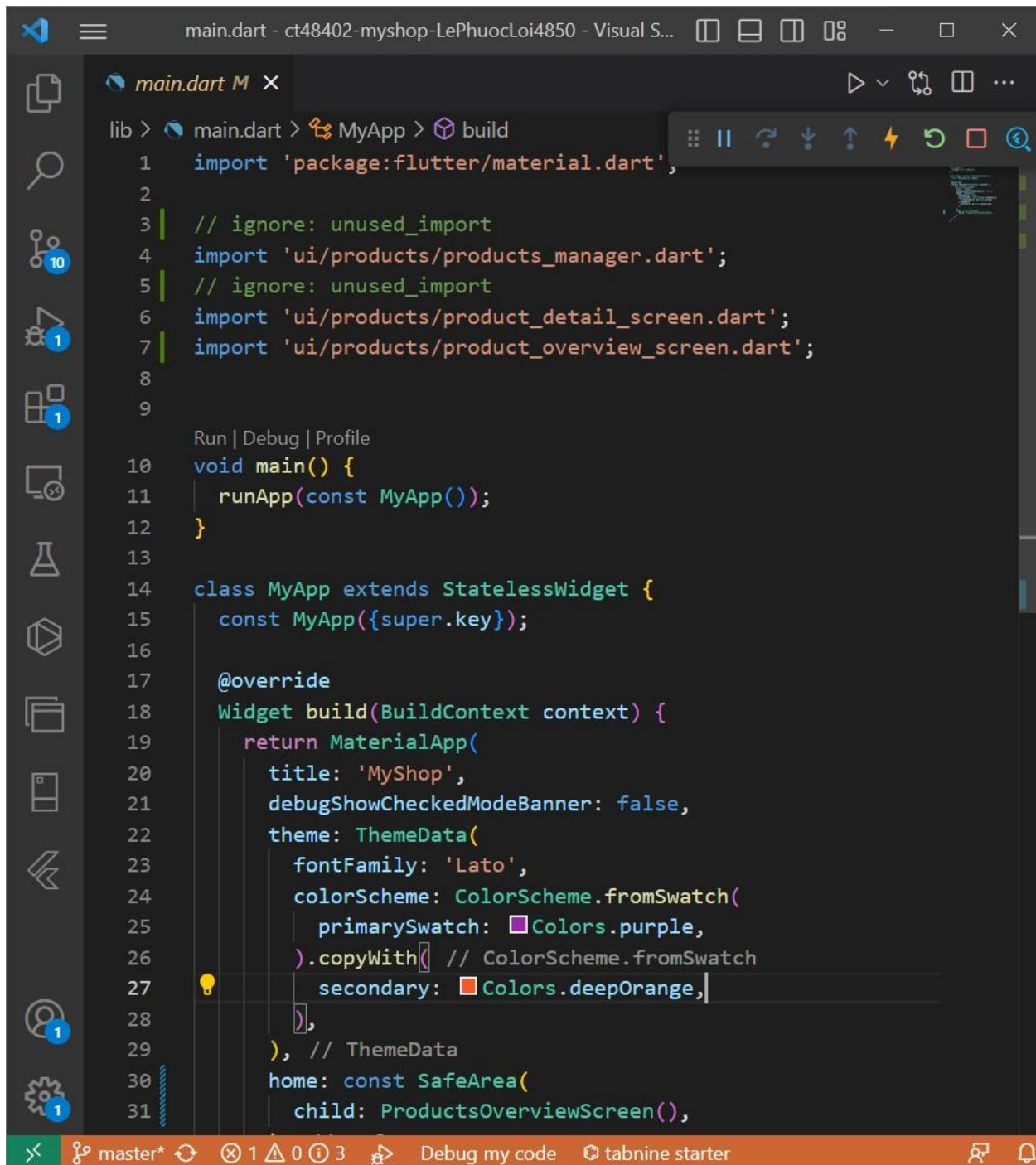
```
lib > ui > products > product_overview_screen.dart >  
1 import 'package:flutter/material.dart';  
2  
3 import 'products_grid.dart';  
4  
5 enum FilterOptions { favorites, all }  
6  
7 class ProductsOverviewScreen extends StatefulWidget {  
8   const ProductsOverviewScreen({super.key});  
9  
10  @override  
11  State<ProductsOverviewScreen> createState() => _ProductsOv  
12 }  
13  
14 class _ProductsOverviewScreenState extends State<ProductsOve  
15   var _showOnlyFavorites = false;  
16  
17   @override  
18   Widget build(BuildContext context) {  
19     return Scaffold(  
20       appBar: AppBar(  
21         title: const Text('MyShop'),  
22         actions: <Widget>[  
23           buildProductFilterMenu(),  
24           buildShoppingCartIcon(),  
25         ], // <Widget>[]  
26       ), // AppBar  
27       body: ProductsGrid(_showOnlyFavorites),  
28     ); // Scaffold  
29   }  
30  
31   Widget buildShoppingCartIcon() {  
32     return IconButton(  

```

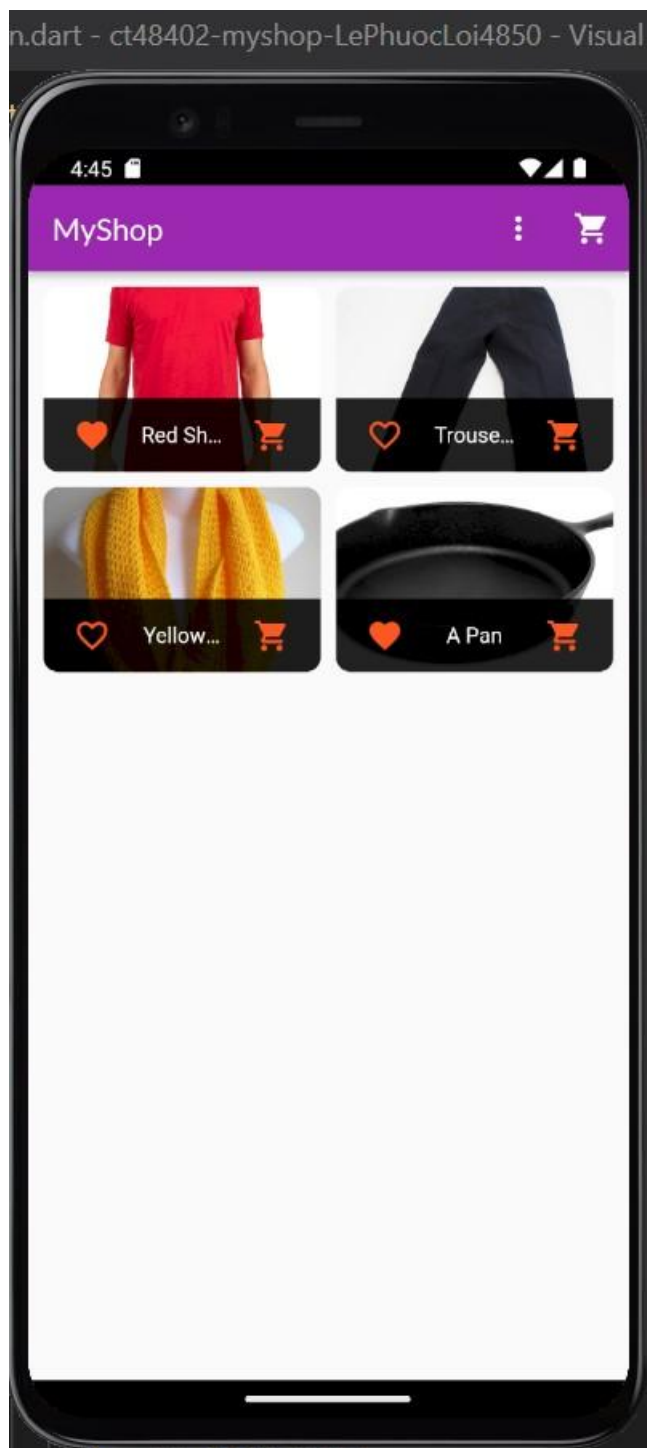




Hiệu chỉnh lib/main.dart và thực thi chương trình:

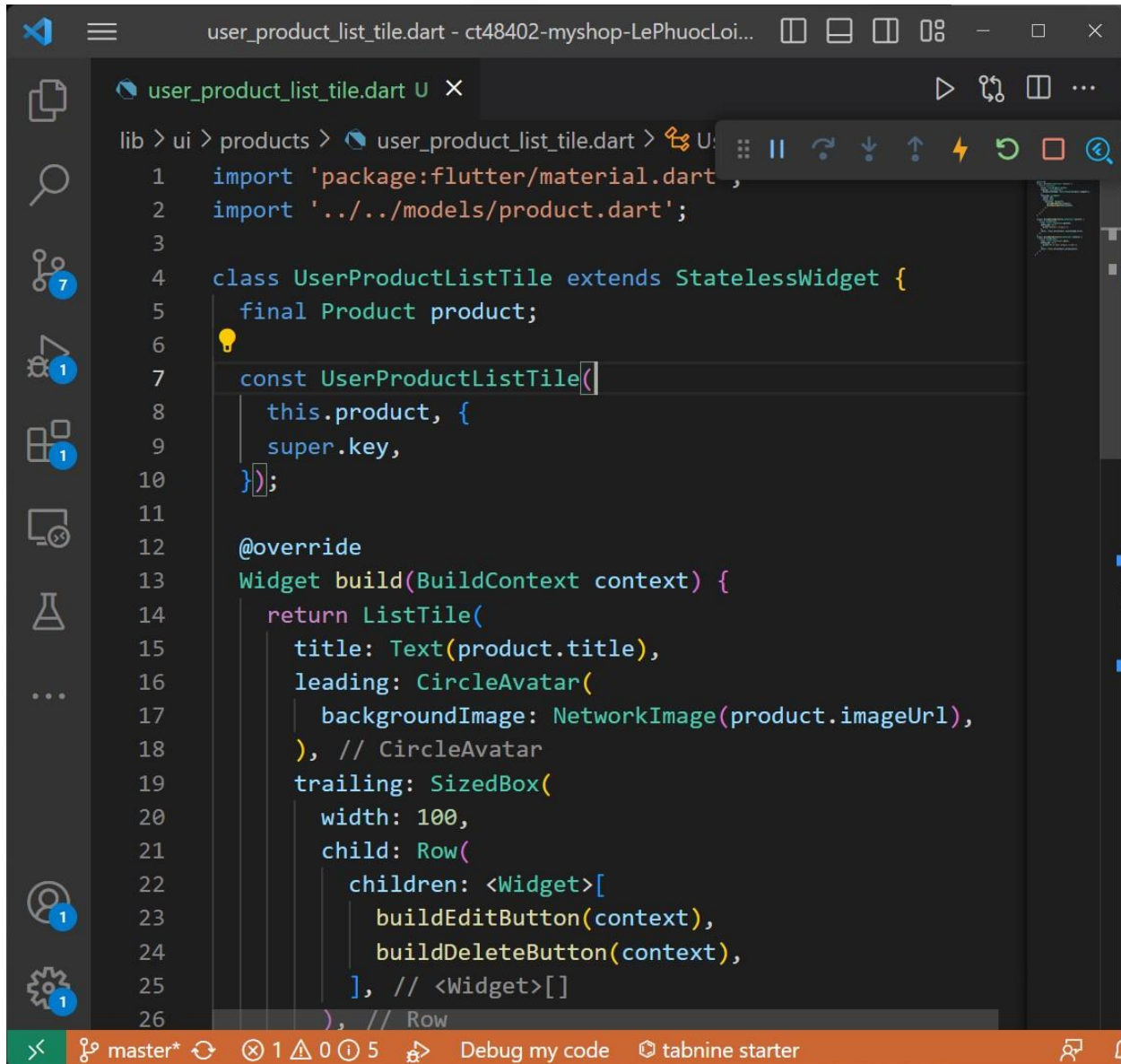


```
lib > main.dart > MyApp > build
1  import 'package:flutter/material.dart';
2
3  // ignore: unused_import
4  import 'ui/products/products_manager.dart';
5  // ignore: unused_import
6  import 'ui/products/product_detail_screen.dart';
7  import 'ui/products/product_overview_screen.dart';
8
9
10 void main() {
11   runApp(const MyApp());
12 }
13
14 class MyApp extends StatelessWidget {
15   const MyApp({super.key});
16
17   @override
18   Widget build(BuildContext context) {
19     return MaterialApp(
20       title: 'MyShop',
21       debugShowCheckedModeBanner: false,
22       theme: ThemeData(
23         fontFamily: 'Lato',
24         colorScheme: ColorScheme.fromSwatch(
25           primarySwatch: Colors.purple,
26         ).copyWith() // ColorScheme.fromSwatch
27           secondary: Colors.deepOrange,
28       ), // ThemeData
29       home: const SafeArea(
30         child: ProductsOverviewScreen(),
31       ),
32     );
33   }
34 }
```



## Bước 4: Xây dựng trang các sản phẩm của người dùng

Định nghĩa widget UserProductListTile:



```
lib > ui > products > user_product_list_tile.dart > U
1 import 'package:flutter/material.dart';
2 import '../models/product.dart';
3
4 class UserProductListTile extends StatelessWidget {
5   final Product product;
6
7   const UserProductListTile({
8     this.product, {
9     super.key,
10   });
11
12   @override
13   Widget build(BuildContext context) {
14     return ListTile(
15       title: Text(product.title),
16       leading: CircleAvatar(
17         backgroundImage: NetworkImage(product.imageUrl),
18       ), // CircleAvatar
19       trailing: SizedBox(
20         width: 100,
21         child: Row(
22           children: <Widget>[
23             buildEditButton(context),
24             buildDeleteButton(context),
25           ], // <Widget>[]
26         ), // Row
```



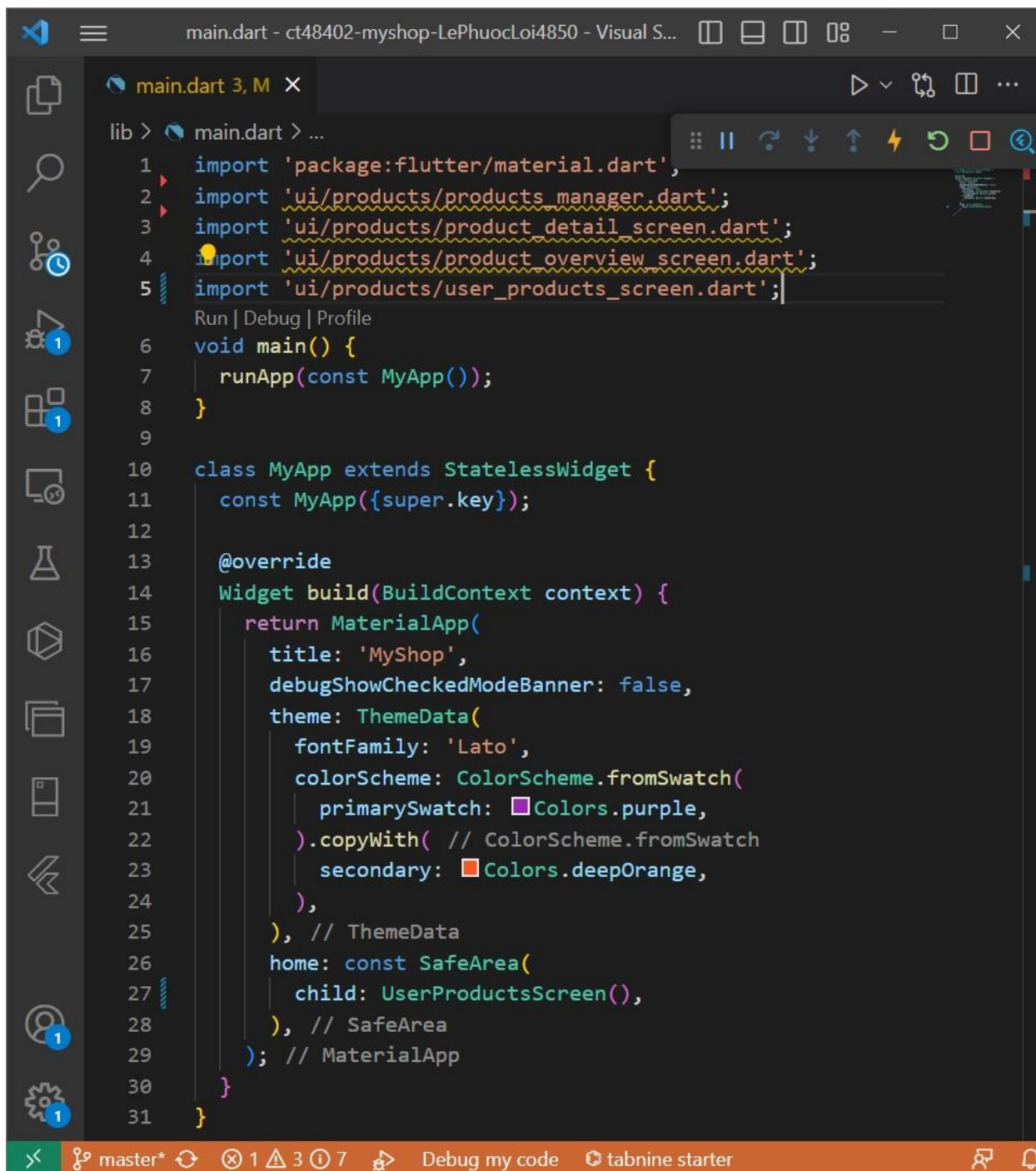
Định nghĩa trang hiển thị các sản phẩm của người dùng:

```
user_products_screen.dart - ct48402-myshop-LePhuocL...  
lib > ui > products > user_products_screen.dart > Use  
18 body: RefreshIndicator(  
19   onRefresh: () async => print('refresh products'),  
20   child: buildUserProductListView(productsManager),  
21 ), // RefreshIndicator  
22 ); // Scaffold  
23 }  
24  
25 Widget buildUserProductListView(ProductsManager productMan  
26   return ListView.builder(  
27     itemCount: productManager.itemCount,  
28     itemBuilder: (ctx, i) => Column(  
29       children: [  
30         UserProductListTile(  
31           productManager.items[i],  
32         ), // UserProductListTile  
33         const Divider(),  
34       ],  
35     ), // Column  
36   ); // ListView.builder  
37 }  
38  
39 Widget buildAddButton() {  
40   return IconButton(  
41     icon: const Icon(Icons.add),  
42     onPressed: () {  
43       print('Go to edit product screen');  
44     },  
45   ); // IconButton  
46 }  
47 }  
48  
master* 1 0 7 Debug my code tabnine starter
```

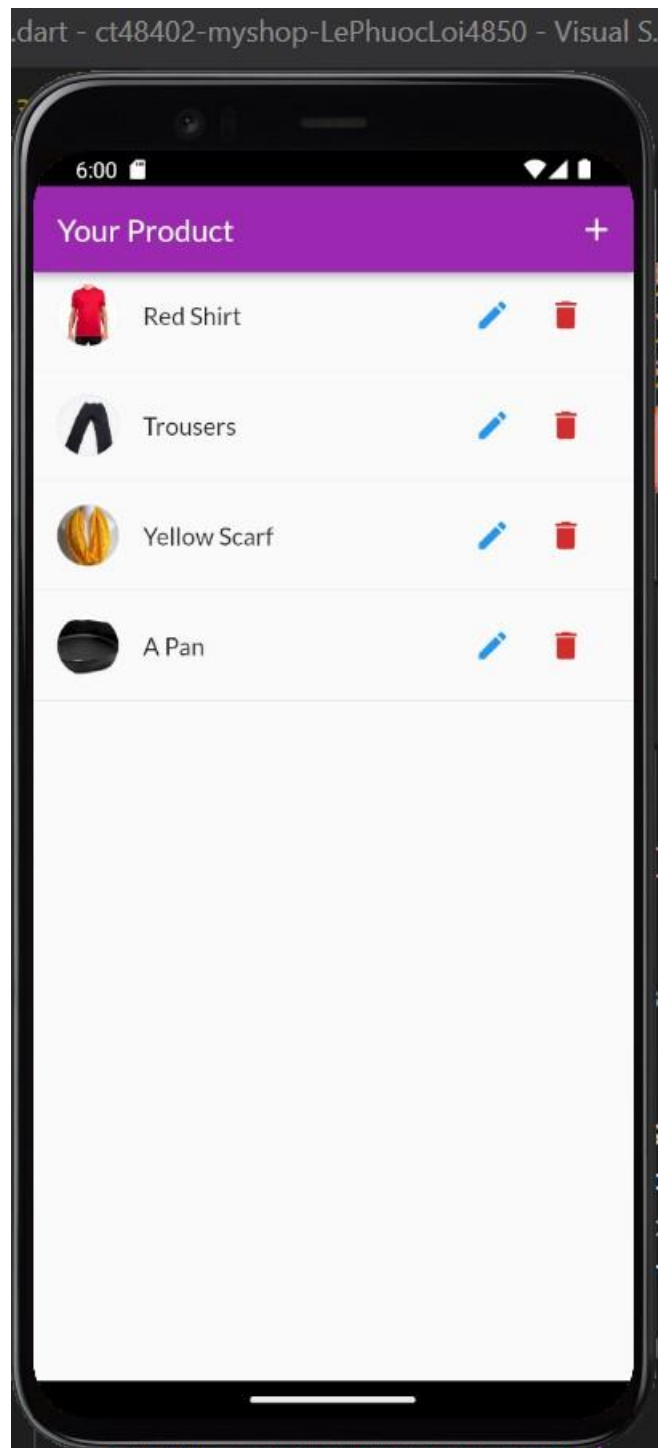




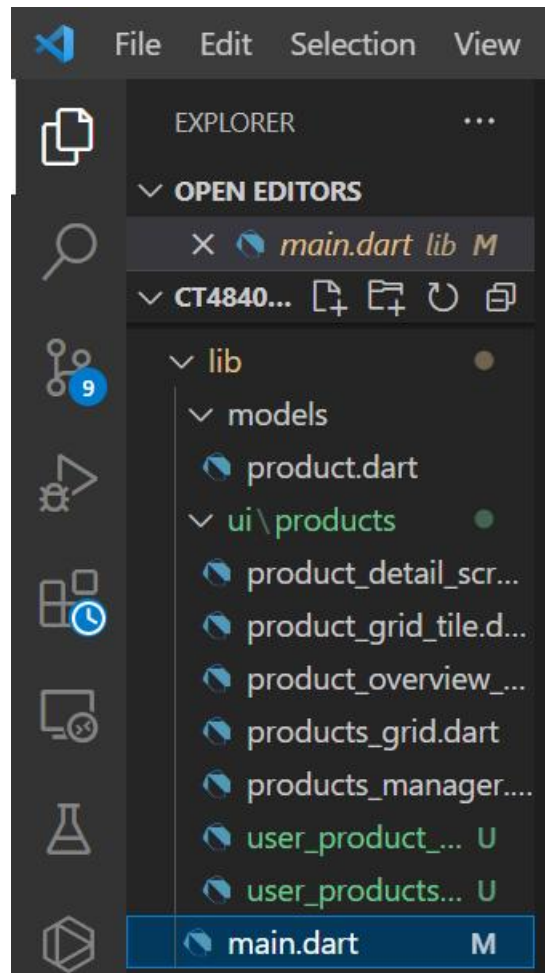
Hiệu chỉnh lib/main.dart và thực thi chương trình:



```
lib > main.dart > ...
1 import 'package:flutter/material.dart';
2 import 'ui/products/products_manager.dart';
3 import 'ui/products/product_detail_screen.dart';
4 import 'ui/products/product_overview_screen.dart';
5 import 'ui/products/user_products_screen.dart';
6
7 void main() {
8   runApp(const MyApp());
9 }
10
11 class MyApp extends StatelessWidget {
12   const MyApp({super.key});
13
14   @override
15   Widget build(BuildContext context) {
16     return MaterialApp(
17       title: 'MyShop',
18       debugShowCheckedModeBanner: false,
19       theme: ThemeData(
20         fontFamily: 'Lato',
21         colorScheme: ColorScheme.fromSwatch(
22           primarySwatch: Colors.purple,
23         ).copyWith( // ColorScheme.fromSwatch
24           secondary: Colors.deepOrange,
25         ), // ThemeData
26       home: const SafeArea(
27         child: UserProductsScreen(),
28       ), // SafeArea
29     ); // MaterialApp
30   }
31 }
```



## Cấu trúc thư mục mã nguồn hiện tại:



<https://github.com/23-24Sem1-Courses/ct48402-myshop-LePhuocLoi4850>