**Flutter Project:**

**Mobile Development**

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**Code:**

**Models**

**`models/product.dart`**

class Product {

final String id;

final String title;

final String description;

final double price;

final String imageUrl;

Product({

required this.id,

required this.title,

required this.description,

required this.price,

required this.imageUrl,

});

}

**Providers**

**`providers/cart\_provider.dart`**

import 'package:flutter/material.dart';

class CartItem {

final String id;

final String title;

final int quantity;

final double price;

CartItem({

required this.id,

required this.title,

required this.quantity,

required this.price,

});

}

class CartProvider with ChangeNotifier {

Map<String, CartItem> \_items = {};

Map<String, CartItem> get items {

return {...\_items};

}

void addItem(String productId, double price, String title) {

if (\_items.containsKey(productId)) {

\_items.update(

productId,

(existingCartItem) => CartItem(

id: existingCartItem.id,

title: existingCartItem.title,

quantity: existingCartItem.quantity + 1,

price: existingCartItem.price,

),

);

} else {

\_items.putIfAbsent(

productId,

() => CartItem(

id: DateTime.now().toString(),

title: title,

quantity: 1,

price: price,

),

);

}

notifyListeners();

}

int get itemCount {

return \_items.length;

}

double get totalAmount {

var total = 0.0;

\_items.forEach((key, cartItem) {

total += cartItem.price \* cartItem.quantity;

});

return total;

}

void removeItem(String productId) {

\_items.remove(productId);

notifyListeners();

}

}

`providers/products\_provider.dart`

import 'package:flutter/material.dart';

import '../models/product.dart';

class ProductsProvider with ChangeNotifier {

List<Product> \_items = [

Product(

id: 'p1',

title: 'Red Shirt',

description: 'A red shirt - it is pretty red!',

price: 29.99,

imageUrl: 'https://example.com/products/red\_shirt.png',

),

Product(

id: 'p2',

title: 'Blue Jeans',

description: 'A nice pair of blue jeans.',

price: 59.99,

imageUrl: 'https://example.com/products/blue\_jeans.png',

),

];

List<Product> get items {

return [...\_items];

}

Product findById(String id) {

return \_items.firstWhere((prod) => prod.id == id);

}

}

**Screens**

**`screens/home\_screen.dart`**

import 'package:flutter/material.dart';

import 'products\_overview\_screen.dart';

import 'cart\_screen.dart';

import 'package:provider/provider.dart';

import '../providers/cart\_provider.dart';

import '../widgets/badge.dart';

class HomeScreen extends StatelessWidget {

@override

Widget build(BuildContext context) {

return Scaffold(

appBar: AppBar(

title: Text('E-Commerce App'),

actions: <Widget>[

Consumer<CartProvider>(

builder: (\_, cart, ch) => Badge(

child: ch!,

value: cart.itemCount.toString(),

),

child: IconButton(

icon: Icon(Icons.shopping\_cart),

onPressed: () {

Navigator.of(context).pushNamed(CartScreen.routeName);

},

),

),

],

),

body: ProductsOverviewScreen(),

);

}

}

**`screens/products\_overview\_screen.dart`**

import 'package:flutter/material.dart';

import 'package:provider/provider.dart';

import '../providers/products\_provider.dart';

import '../widgets/product\_item.dart';

class ProductsOverviewScreen extends StatelessWidget {

@override

Widget build(BuildContext context) {

final productsData = Provider.of<ProductsProvider>(context);

final products = productsData.items;

return GridView.builder(

padding: const EdgeInsets.all(10.0),

itemCount: products.length,

itemBuilder: (ctx, i) => ChangeNotifierProvider.value(

value: products[i],

child: ProductItem(),

),

gridDelegate: SliverGridDelegateWithFixedCrossAxisCount(

crossAxisCount: 2,

childAspectRatio: 3 / 2,

crossAxisSpacing: 10,

mainAxisSpacing: 10,

),

);

}

}

`screens/product\_detail\_screen.dart`

import 'package:flutter/material.dart';

import 'package:provider/provider.dart';

import '../providers/products\_provider.dart';

class ProductDetailScreen extends StatelessWidget {

static const routeName = '/product-detail';

@override

Widget build(BuildContext context) {

final productId = ModalRoute.of(context)!.settings.arguments as String;

final loadedProduct = Provider.of<ProductsProvider>(

context,

listen: false,

).findById(productId);

return Scaffold(

appBar: AppBar(

title: Text(loadedProduct.title),

),

body: SingleChildScrollView(

child: Column(

children: <Widget>[

Container(

height: 300,

width: double.infinity,

child: Image.network(

loadedProduct.imageUrl,

fit: BoxFit.cover,

),

),

SizedBox(height: 10),

Text(

'\$${loadedProduct.price}',

style: TextStyle(

color: Colors.grey,

fontSize: 20,

),

),

SizedBox(

height: 10,

),

Container(

padding: EdgeInsets.symmetric(horizontal: 10),

width: double.infinity,

child: Text(

loadedProduct.description,

textAlign: TextAlign.center,

softWrap: true,

),

)

],

),

),

);

}

}

**`screens/cart\_screen.dart`**

import 'package:flutter/material.dart';

import 'package:provider/provider.dart';

import '../providers/cart\_provider.dart';

class CartScreen extends StatelessWidget {

static const routeName = '/cart';

@override

Widget build(BuildContext context) {

final cart = Provider.of<CartProvider>(context);

return Scaffold(

appBar: AppBar(

title: Text('Your Cart'),

),

body: Column(

children: <Widget>[

Card(

margin: EdgeInsets.all(15),

child: Padding(

padding: EdgeInsets.all(8),

child: Row(

mainAxisAlignment: MainAxisAlignment.spaceBetween,

children: <Widget>[

Text(

'Total',

style: TextStyle(fontSize: 20),

),

Spacer(),

Chip(

label: Text(

'\$${cart.totalAmount}',

style: TextStyle(

color: Theme.of(context).primaryTextTheme.headline6!.color,

),

),

backgroundColor: Theme.of(context).primaryColor,

),

TextButton(

child: Text('ORDER NOW'),

onPressed: () {},

)

],

),

),

),

SizedBox(height: 10),

Expanded(

child: ListView.builder(

itemCount: cart.items.length,

itemBuilder: (ctx, i) => ListTile(

title: Text(cart.items.values.toList()[i].title),

subtitle: Text(

'Total: \$${cart.items.values.toList()[i].price \* cart.items.values.toList()[i].quantity}'),

trailing: Text('${cart.items.values.toList()[i].quantity} x'),

),

),

)

],

),

);

}

}

**Widgets**

**`widgets/badge.dart`**

import 'package:flutter/material.dart';

class Badge extends StatelessWidget {

final Widget child;

final String value;

final Color? color;

Badge({

required this.child,

required this.value,

this.color,

});

@override

Widget build(BuildContext context) {

return Stack(

alignment: Alignment.center,

children: <Widget>[

child,

Positioned(

right: 8,

top: 8,

child: Container(

padding: EdgeInsets.all(2.0),

decoration: BoxDecoration(

borderRadius: BorderRadius.circular(10.0),

color: color != null ? color : Theme.of(context).accentColor,

),

constraints: BoxConstraints(

minWidth: 16,

minHeight: 16,

),

child: Text(

value,

textAlign: TextAlign.center,

style: TextStyle(

fontSize: 10,

),

),

),

)

],

);

}

}

**`widgets/product\_item.dart`**

import 'package:flutter/material.dart';

import 'package:provider/provider.dart';

import '../providers/cart\_provider.dart';

import '../screens/product\_detail\_screen.dart';

import '../models/product.dart';

class ProductItem extends StatelessWidget {

@override

Widget build(BuildContext context) {

final product = Provider.of<Product>(context, listen: false);

final cart = Provider.of<CartProvider>(context, listen: false);

return ClipRRect(

borderRadius: BorderRadius.circular(10),

child: GridTile(

child: GestureDetector(

onTap: () {

Navigator.of(context).pushNamed(

ProductDetailScreen.routeName,

arguments: product.id,

);

},

child: Image.network(

product.imageUrl,

fit: BoxFit.cover,

),

),

footer: GridTileBar(

backgroundColor: Colors.black87,

leading: IconButton(

icon: Icon(Icons.shopping\_cart),

color: Theme.of(context).accentColor,

onPressed: () {

cart.addItem(product.id, product.price, product.title);

},

),

title: Text(

product.title,

textAlign: TextAlign.center,

),

),

),

);

}

}

**Main Application Entry Point**

**`main.dart`**

import 'package:flutter/material.dart';

import 'package:provider/provider.dart';

import './screens/cart\_screen.dart';

import './screens/home\_screen.dart';

import './screens/product\_detail\_screen.dart';

import './providers/products\_provider.dart';

import './providers/cart\_provider.dart';

void main() {

runApp(MyApp());

}

class MyApp extends StatelessWidget {

@override

Widget build(BuildContext context) {

return MultiProvider(

providers: [

ChangeNotifierProvider(

create: (ctx) => ProductsProvider(),

),

ChangeNotifierProvider(

create: (ctx) => CartProvider(),

),

],

child: MaterialApp(

title: 'Flutter Demo',

theme: ThemeData(

primarySwatch: Colors.blue,

accentColor: Colors.deepOrange,

fontFamily: 'Lato',

),

home: HomeScreen(),

routes: {

ProductDetailScreen.routeName: (ctx) => ProductDetailScreen(),

CartScreen.routeName: (ctx) => CartScreen(),

},

),

);

}

}

**App Visual**

