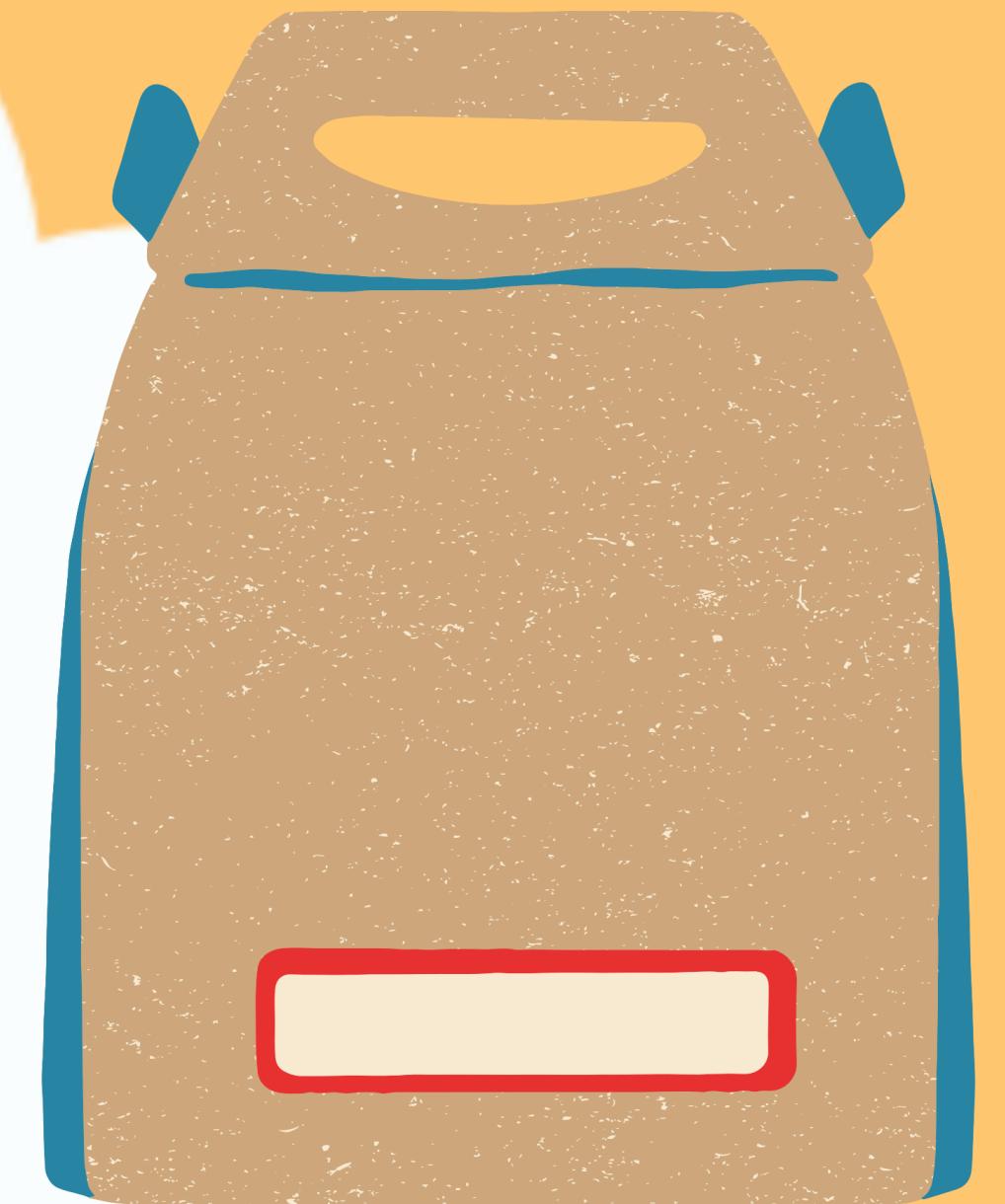


STORE SIMULATOR



PRESenTATION OUTLiNE

1. Project Overview
2. System Technologies Used
3. Key Features
4. Testing Strategy
5. Test Results
6. Demo Screenshots
7. System Diagrams



WHAT IS SIMPLE STORE?

- Complete e-commerce system
- Built with F# backend + Python frontend
- Full shopping experience:
 - Product catalog browsing
 - Shopping cart management
 - Secure checkout process
 - Admin dashboard for management



TECHNOLOGY STACK

Backend:

- F# Programming Language-
- Suave Web Framework- SQLite Database

Frontend:

- Python with Streamlit
- RESTful API Communication

Testing:

- Custom F# Testing Framework



KEY FEATURES:

User Features:

- User Registration & Login
- Browse Product Catalog
- Search & Filter Products
- Add Items to Cart
- Real-time Stock Checking



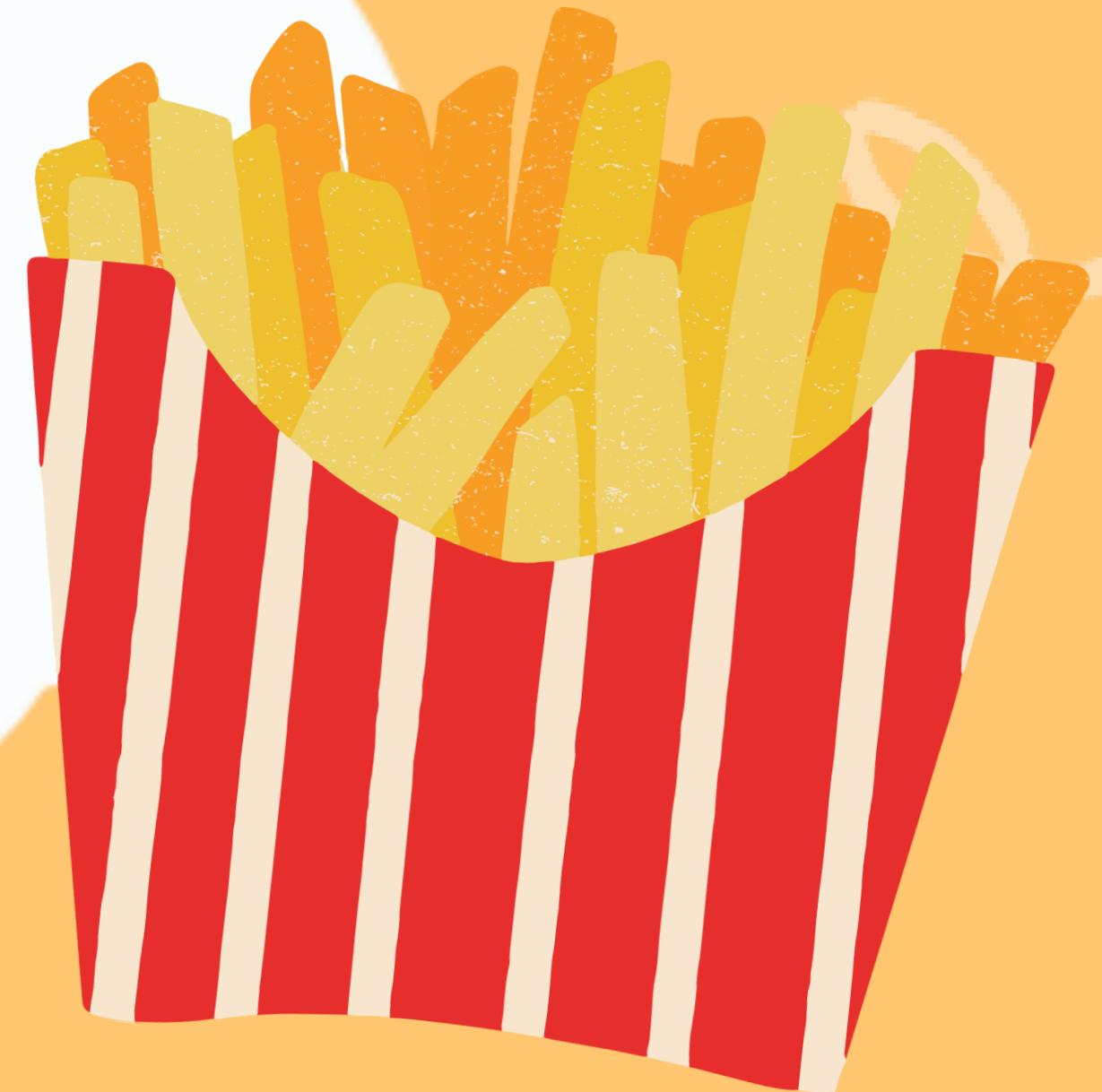
KEY FEATURES (CON.):

Admin Features:

- Product Management (CRUD)
- View Store Statistics
- Transaction History
- Financial Reports

System Features:

- Automated Testing
- Input Validation
- Error Handling



TESTING APPROACH

Test Framework:

- Custom F# Testing Framework
- Automated Test Execution
- CSV Result Export.

TEST COVERED

1. Catalog : 8 tests

- CRUD operations
- Product validation

2. Cart : 9 tests

- Add/Remove/Update items
- Stock checking
- Price calculations



TEST COVERED (CON.)

3. Checkout : 4 tests

- Payment processing
- Invoice generation

4. Search & Filter: 9 tests

- Search functionality
- Category filtering
- Sorting options.



TEST RESULTS SUMMARY

Total Tests: 30

- Passed: 30 ✓
- Failed: 0 ✗
- Success Rate: 100%

Key Achievements:

- ✓ All modules tested
- ✓ Edge cases covered
- ✓ Validation confirmed
- ✓ Bug fixed during testing

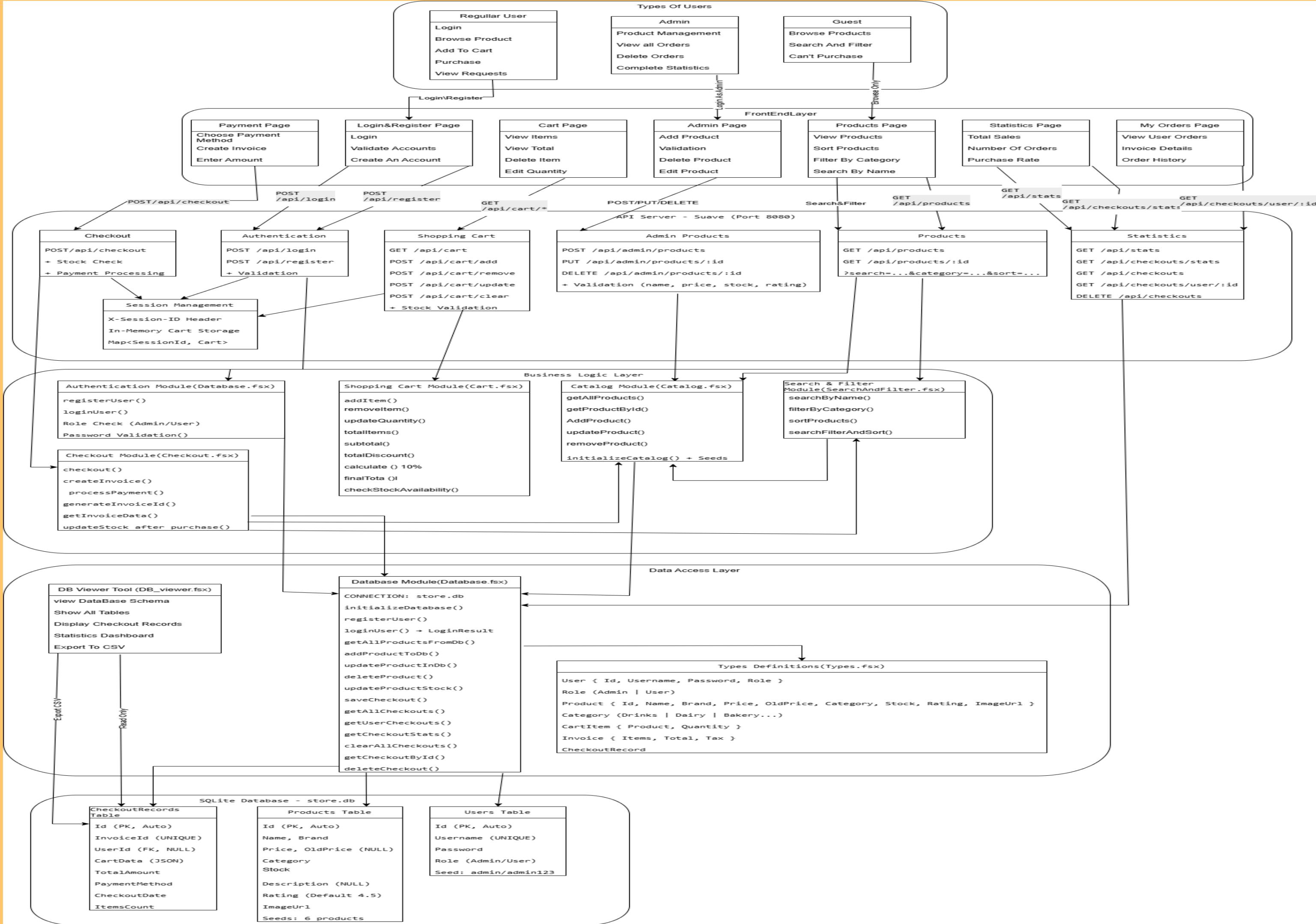
```
backend > test_results.csv
1 Module,Function,Description,Result,Message
2 Catalog,addProduct,Add a valid product,Passed,
3 Catalog,getAllProducts,Retrieve products list,Passed,
4 Catalog,getProductById,Get existing product by ID,Passed,
5 Catalog,getProductById,Get non-existent product returns None,Passed,
6 Catalog,updateProduct,Update product price and stock,Passed,
7 Catalog,removeProduct,Remove an existing product,Passed,
8 Catalog,removeProduct,Remove non-existent ID returns false,Passed,
9 Catalog,updateProduct,Update non-existent product returns false,Passed,
10 Cart,addItem,Add item to empty cart,Passed,
11 Cart,addItem,Add non-existent product ID (no change),Passed,
12 Cart,addItem,Add existing item increases quantity,Passed,
13 Cart,removeItem,Remove item from cart,Passed,
14 Cart,removeItem,Remove non-existent product (no change),Passed,
15 Cart,updateQuantity,Update existing item quantity,Passed,
16 Cart,updateQuantity,Update to 0 removes item,Passed,
17 Cart,checkStockAvailability,Sufficient stock returns true,Passed,
18 Cart,checkStockAvailability,Insufficient stock returns false,Passed,
19 Cart,calculations,Calculate Subtotal and Total,Passed,
20 Checkout,processPayment,Sufficient payment with change,Passed,
21 Checkout,processPayment,Exact payment message,Passed,
22 Checkout,processPayment,Insufficient payment fails,Passed,
23 Checkout,createInvoice,Invoice matches cart totals,Passed,
24 Search,searchByName,Partial match search,Passed,
25 Search,searchByName,Case insensitive search,Passed,
26 Search,searchByName,No match returns empty,Passed,
27 Search,filterByCategoryString,Filter by specific category,Passed,
28 Search,filterByCategoryString,Filter 'All' returns everything,Passed,
29 Search,sortProducts,Sort by Price Low to High,Passed,
30 Search,sortProducts,Sort by Price High to Low,Passed,
31 Search,sortProducts,Sort by invalid option (no change),Passed,
```

DiAGRAMS

Let's see the system in action!.

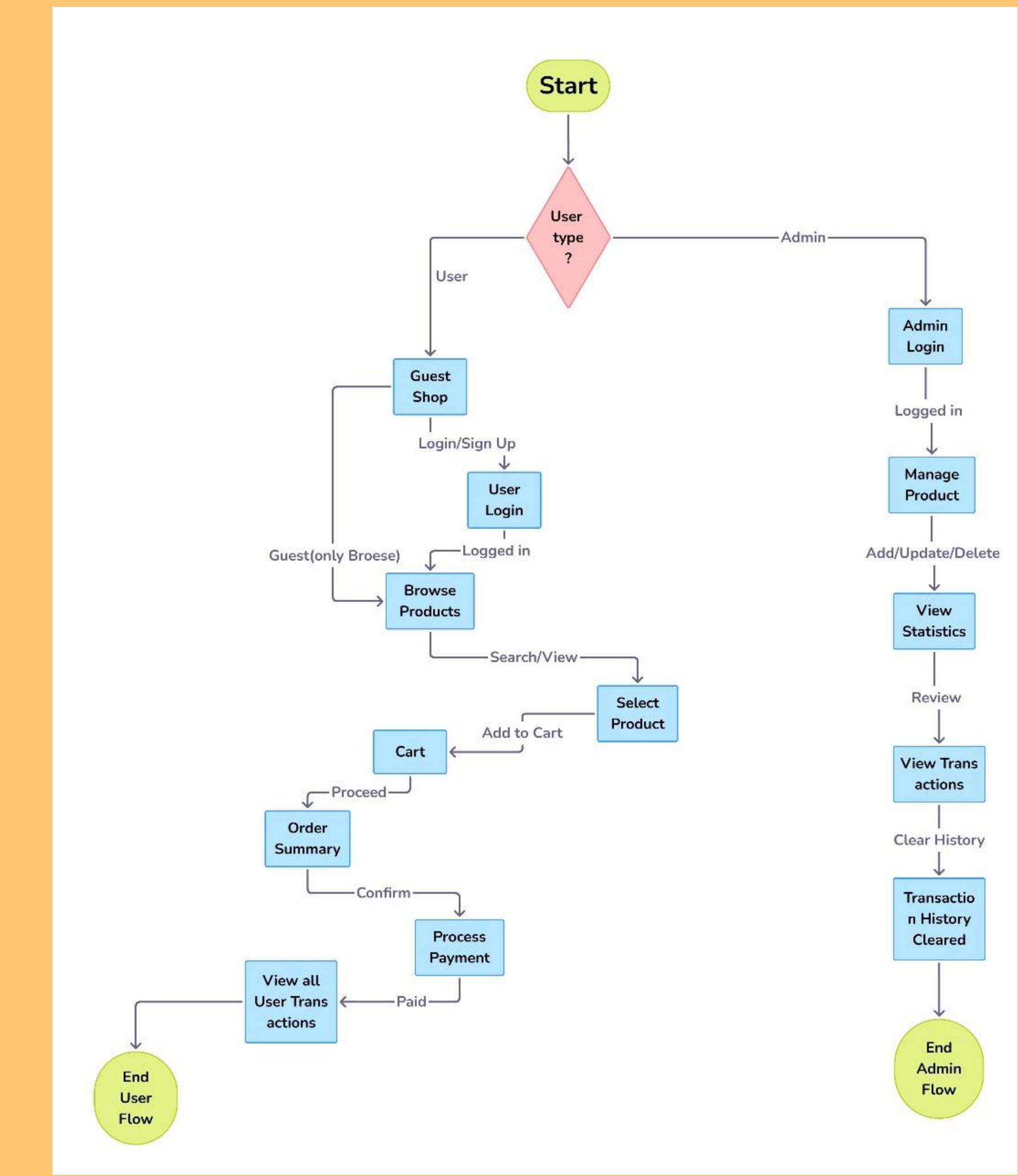


ARCHITECTURE

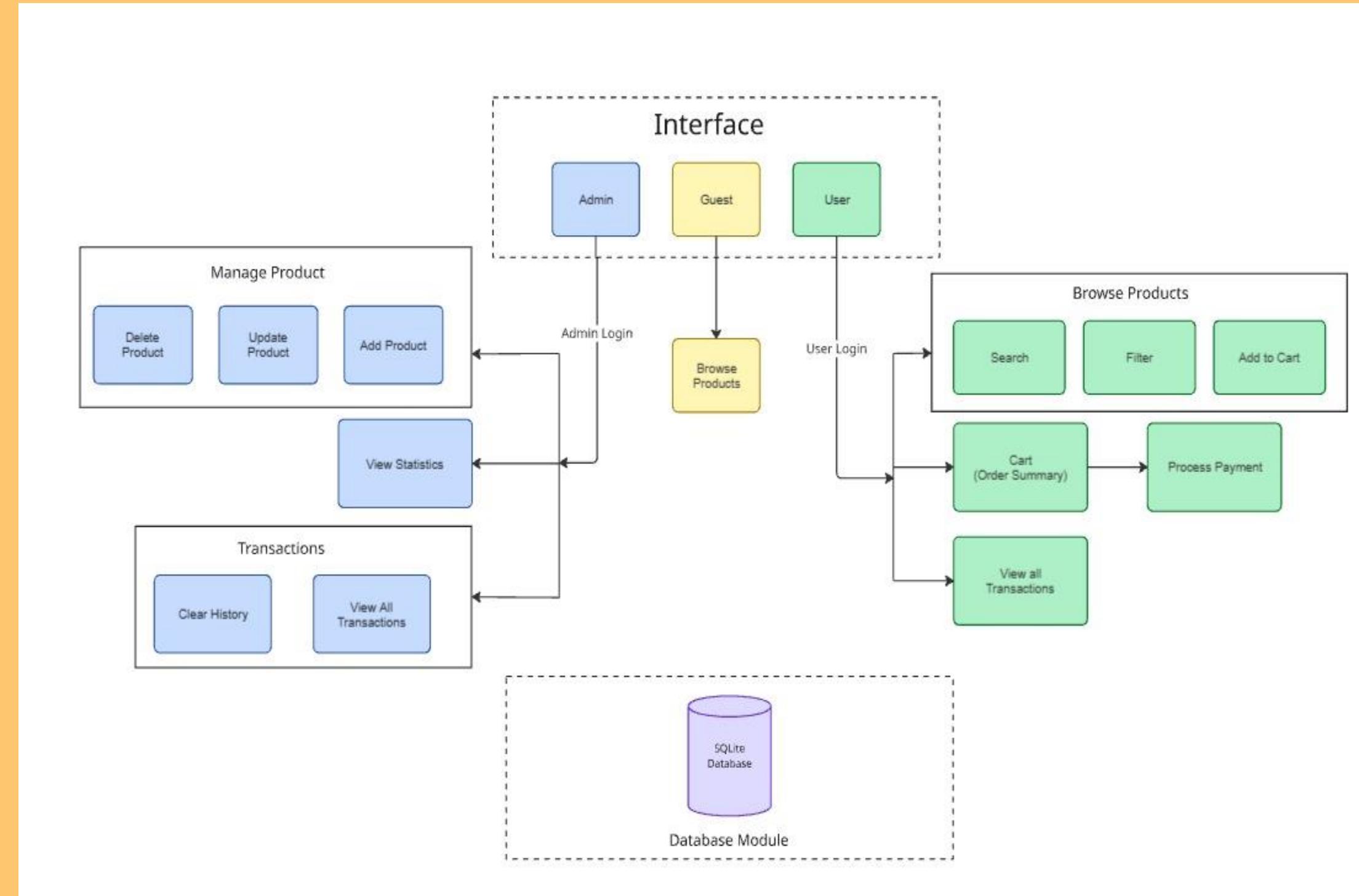




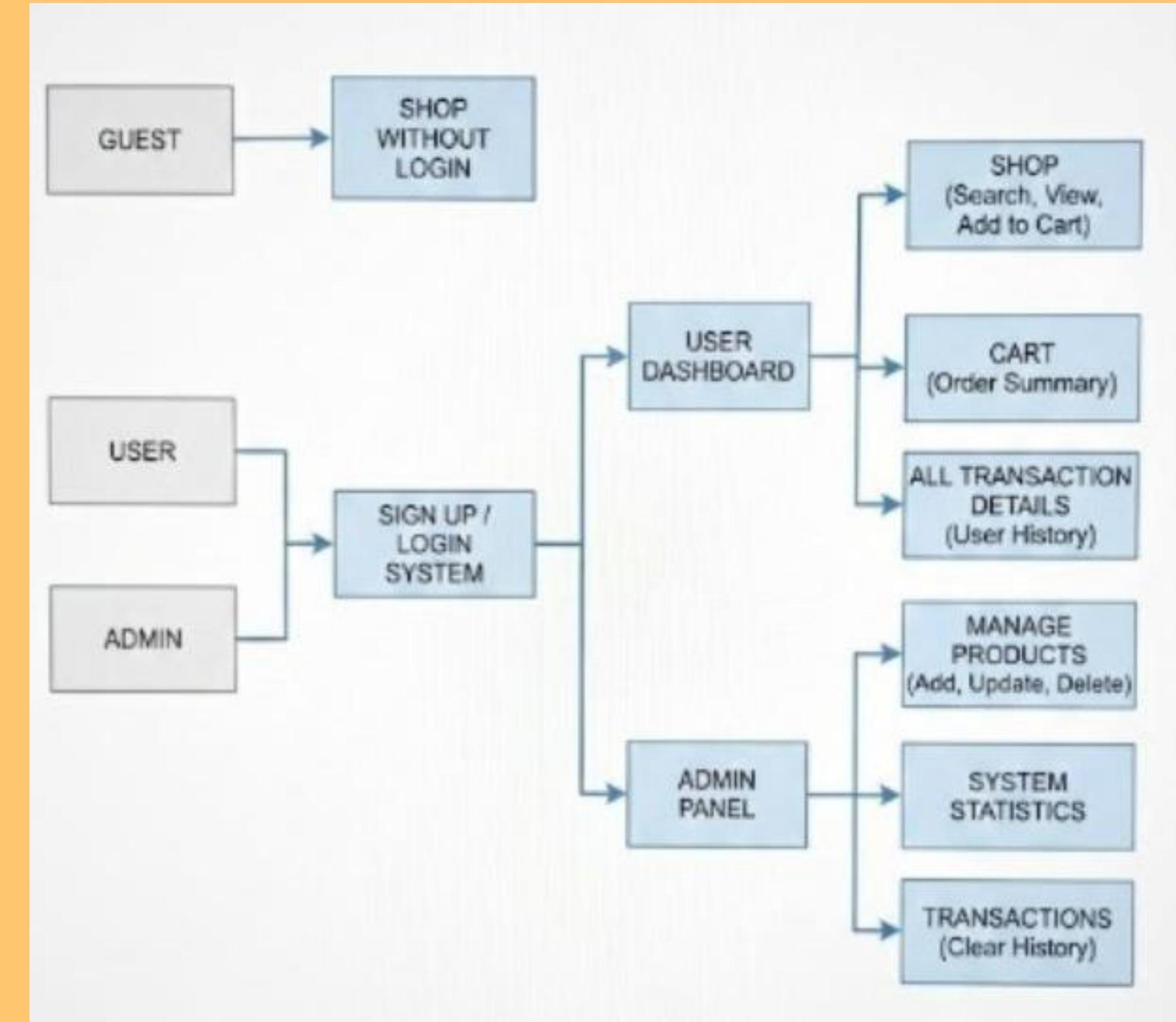
BLOCK



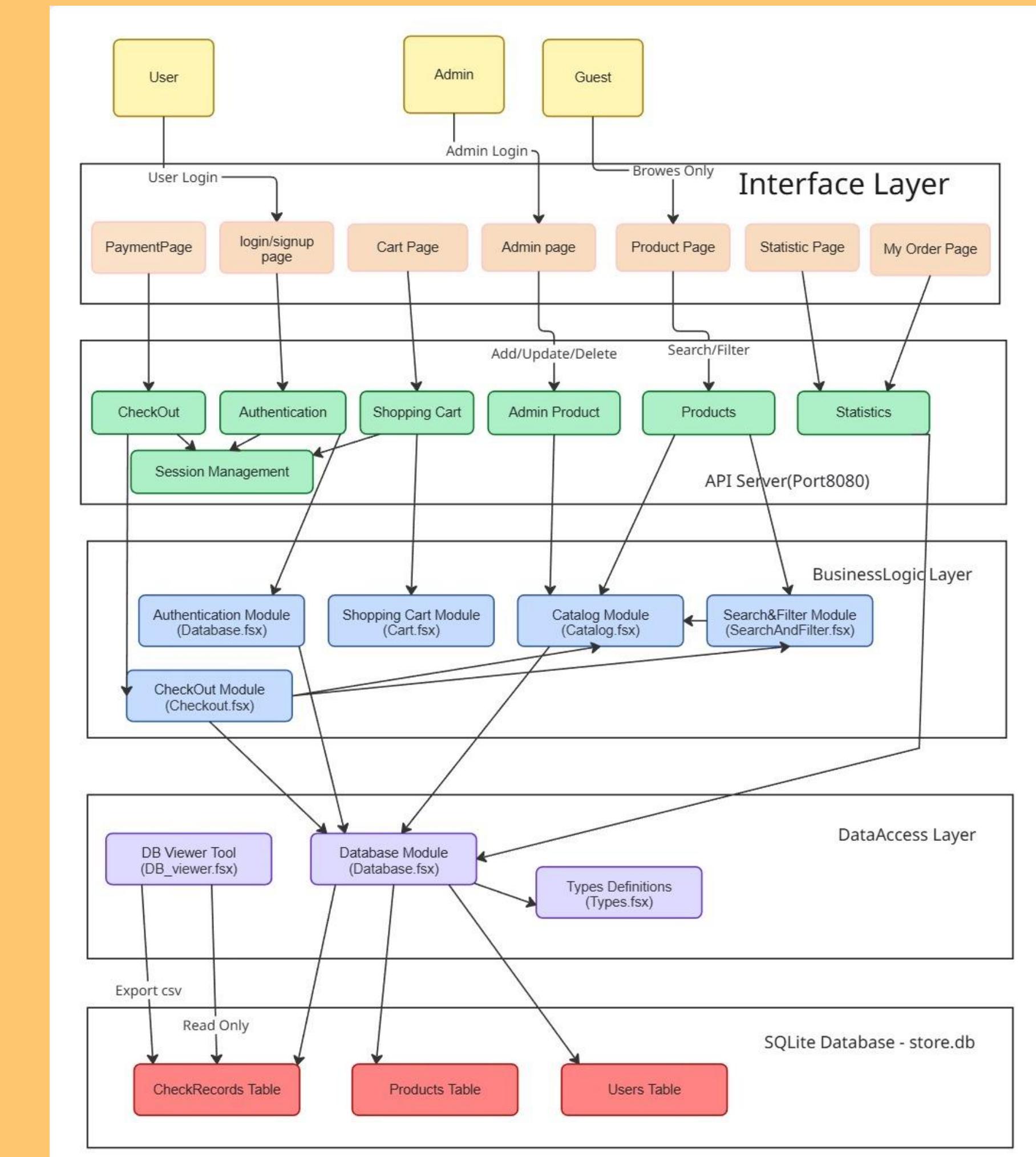
BLOCK



BLOCK



BLOCK



SYSTEM DEMO

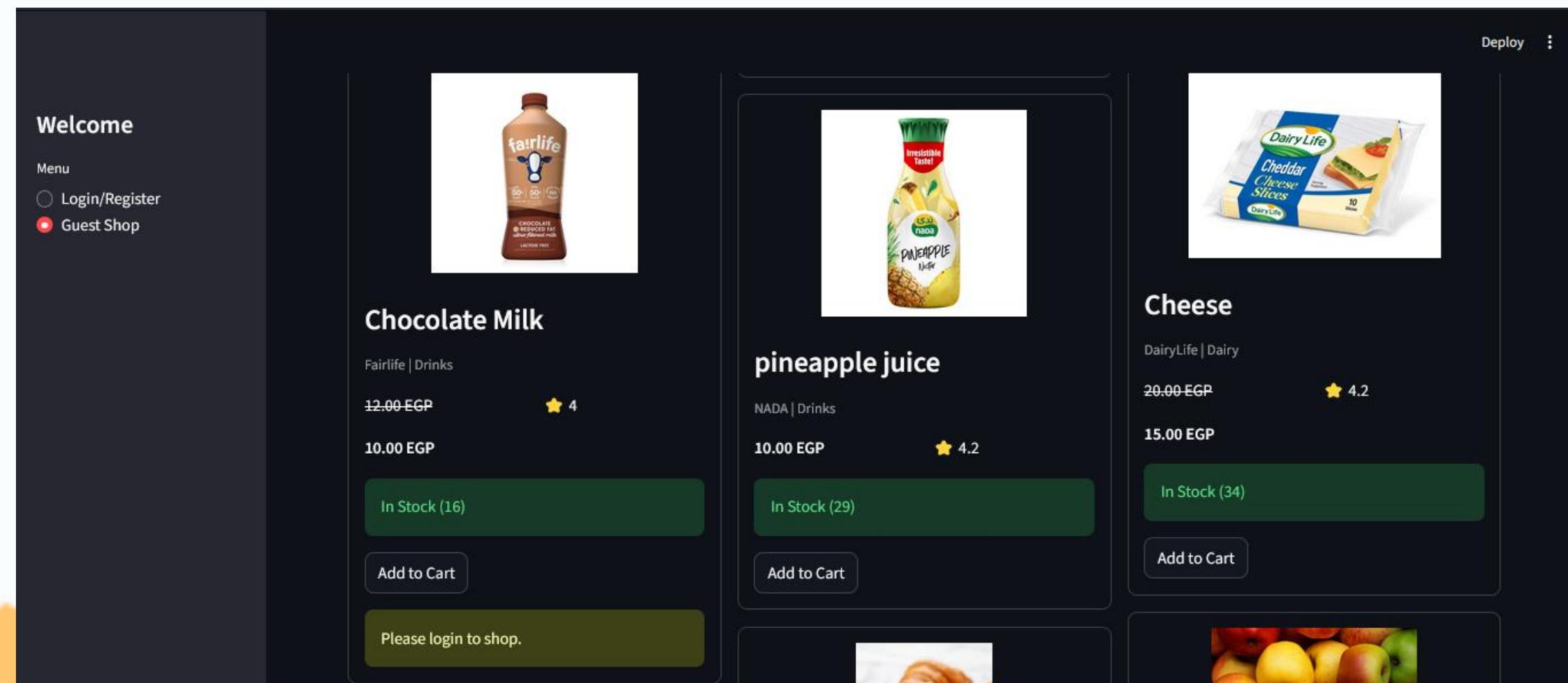
Let's see the system in action!.



GUEST SHOP

Features:

- ✓ Browse Products
- ✓ Search and Filter
- ✓ Can not Add to Cart



AUTHENTiCATION (CON.)

Login / Register

Login [Register](#)

Username

Password

Confirm Password

[Register](#)

Please fill in all fields.

AUTHENTiCATION (CON.)



The image shows a dark-themed "Login / Register" interface. At the top left is a lock icon. Below it, the title "Login / Register" is displayed, with "Register" being underlined. A navigation bar below the title has "Login" and "Register" tabs. The "Register" tab is active, indicated by a red underline.

The registration form consists of four input fields:

- Username:** The input field contains the text "menna". To the right of the input field is a red error icon (a small circle with a red exclamation mark).
- Password:** The input field contains four dots ("••••"). To the right are two icons: a red circular icon with three dots and a blue eye icon.
- Confirm Password:** The input field contains four dots ("••••"). To the right are two icons: a red circular icon with three dots and a blue eye icon.
- Register:** A button labeled "Register" in white text.

At the bottom of the form, there is a dark red horizontal bar containing the error message "Passwords do not match!" in white text.

AUTHENTICATION (CON.)

Login / Register

Login [Register](#)

Username

Password

Confirm Password

[Register](#)

Registration successful! Please login.

AUTHENTICATION (CON.)

 Login / Register 

[Login](#) [Register](#)

Username

0

Password

•• eye

[Login](#)

Password is wrong

AUTHENTiCATION (CON.)

 Login / Register

Login Register

Username

?

Password

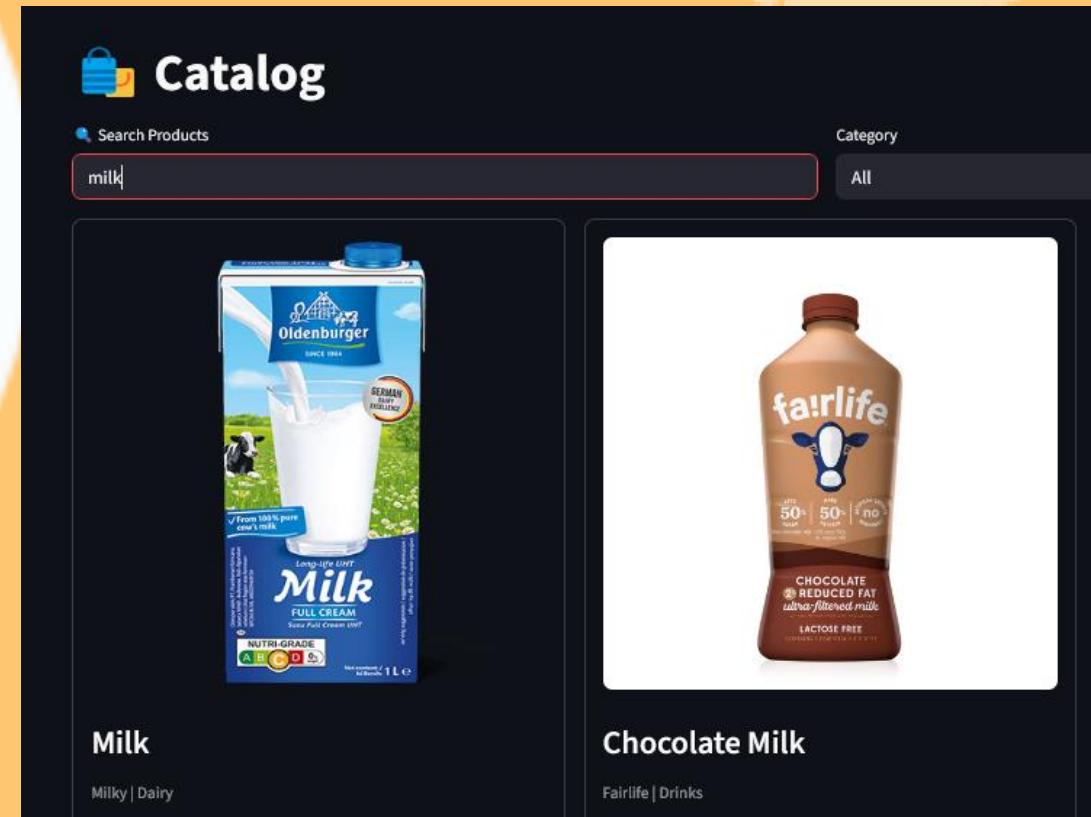
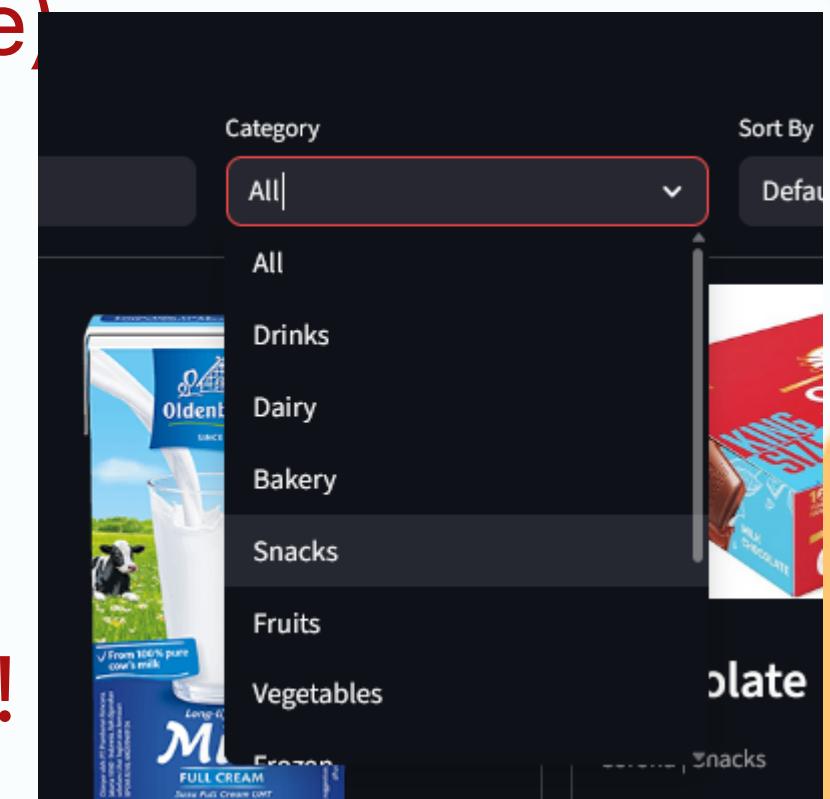
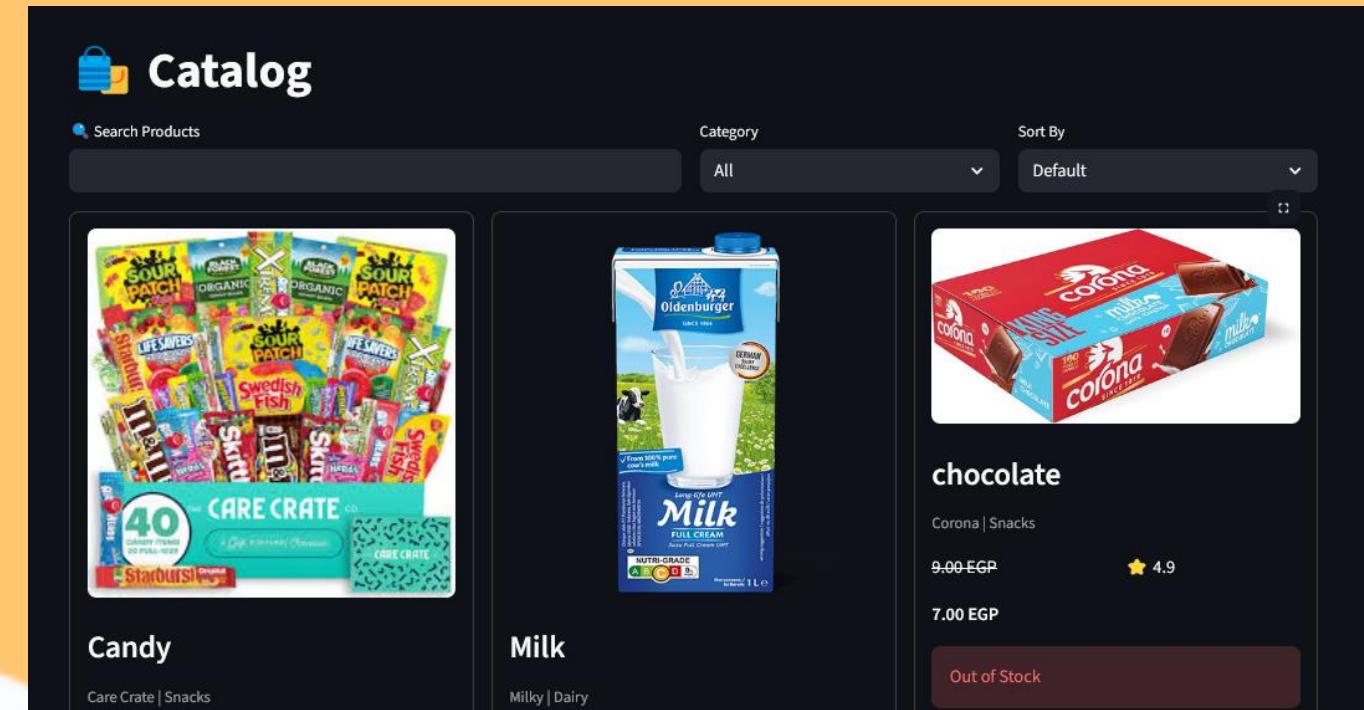
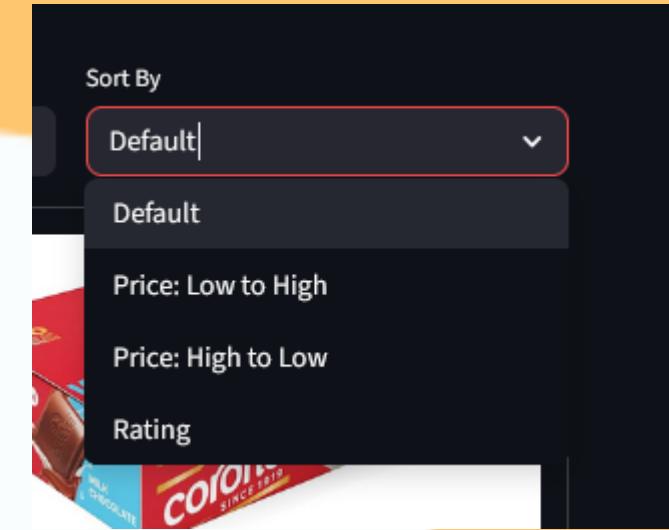
? Eye icon

Username is wrong

PRODUCT CATALOG

Features:

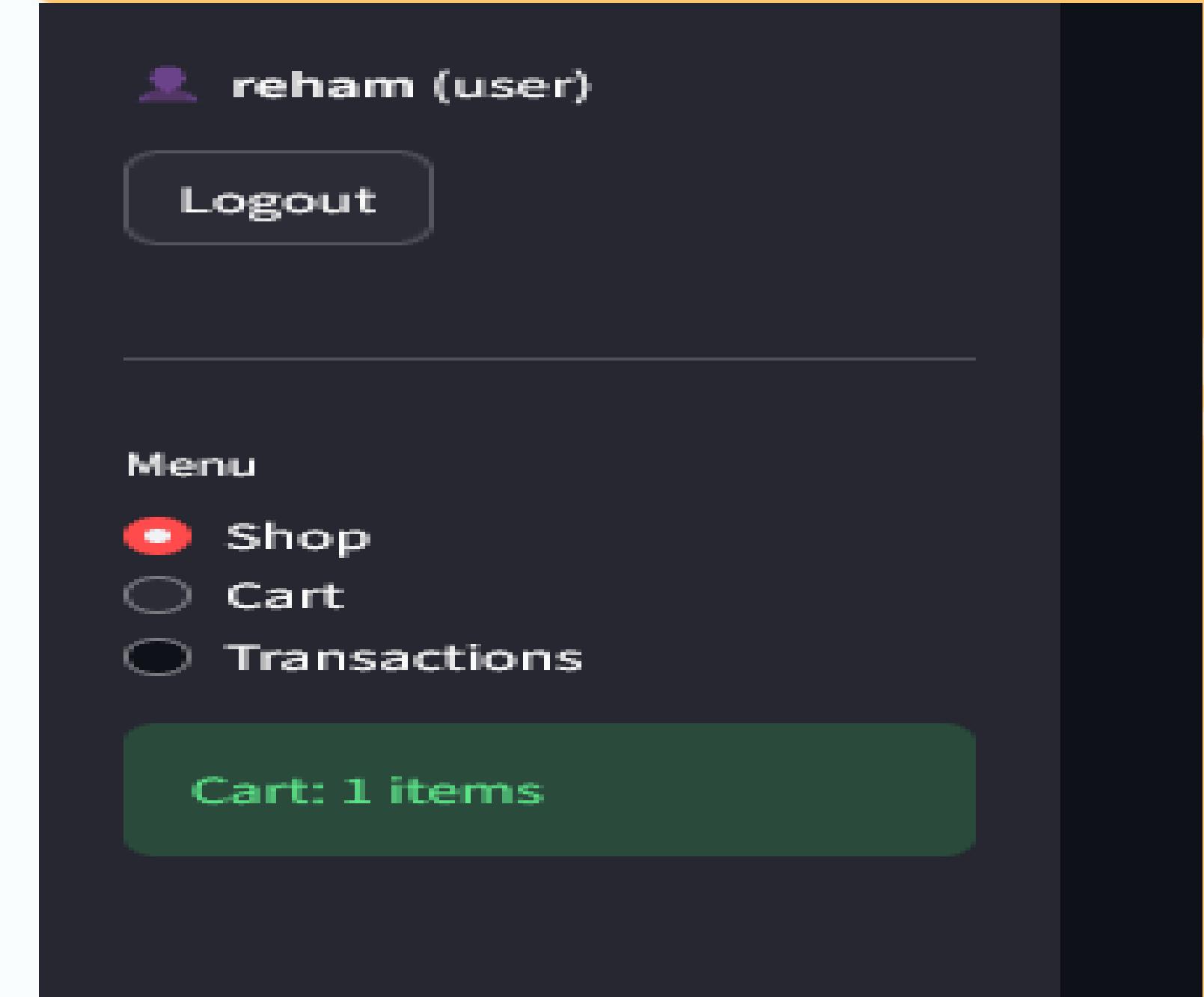
- Browse all products
- Search by name (case-insensitive)
- Filter by category
- Sort by price/rating
- View stock availability
- Real-time stock status displayed!



SHOPPiNG CART

Features:

- ✓ Add items to cart
- ✓ Update quantities
- ✓ Remove items- Auto
- ✓ calculate totals (Tax 10%)
- ✓ Real-time price updates



SHOPPiNG CART

Your Cart

	French Fries McCain	15.00 EGP 15.00 EGP	Qty 1	Remove
	Apple Fresh Farm	10.00 EGP 10.00 EGP	Qty 1	Remove

Your Cart

Your cart is empty.

SHOPPiNG CART

Error Handling:

- ✗ Stock Limit Exceeded
- ✗ Update Quantity Failed

Your Cart

	French Fries McCain	15.00 EGP 300.00 EGP	Qty 21	Remove
	Apple Fresh Farm	10.00 EGP 10.00 EGP	Qty 1	Remove

Failed to update..Insufficient stock

CHECKOUT PROCESS

Features:

- ✓ Payment validation
- ✓ Change calculation
- ✓ Invoice generation

Checkout

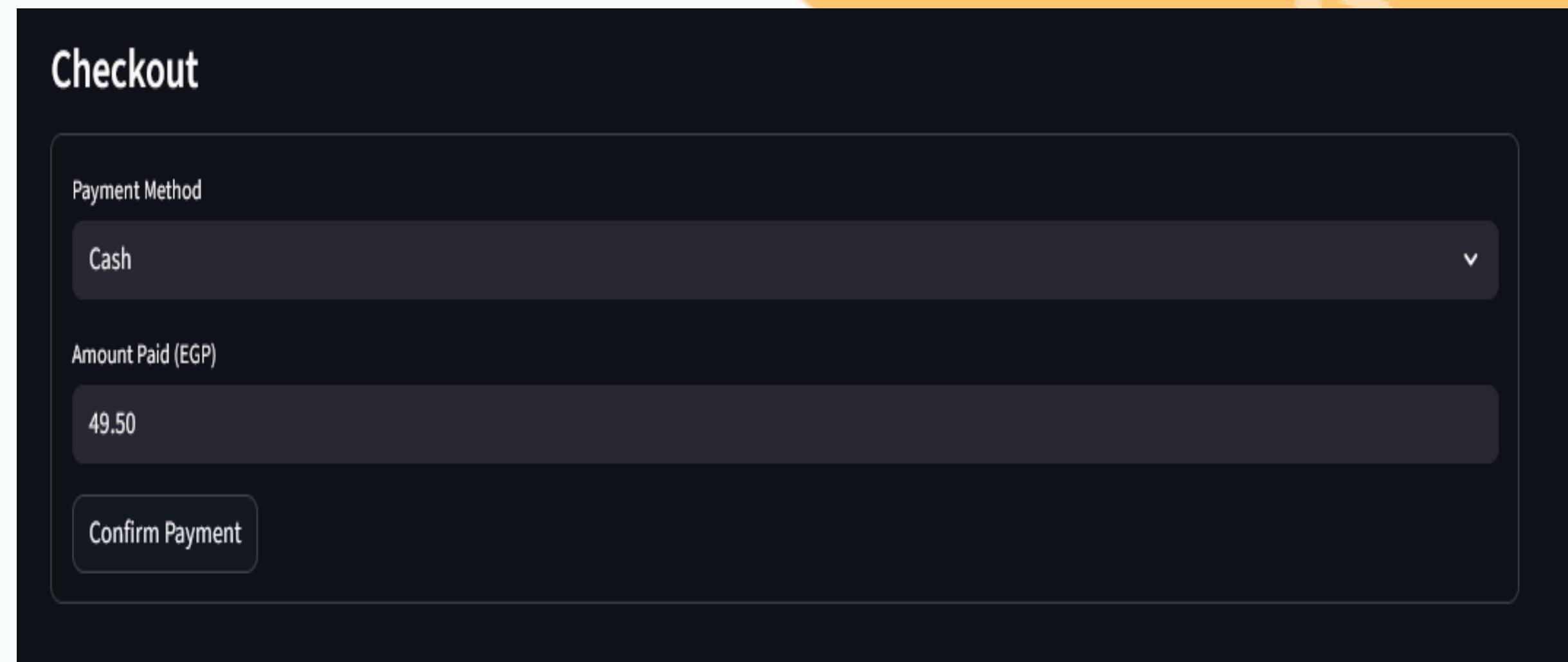
Payment Method

Cash

Amount Paid (EGP)

49.50

Confirm Payment



CHECKOUT PROCESS

Error Handling:

- ✗ Insufficient Payment
- ✗ Negative Amount
- ✗ Invalid Input

Total: 11.00 EGP

Checkout

Payment Method

Cash

Amount Paid (EGP)

9

Confirm Payment

Insufficient Payment! You are short by 2.00 EGP

Checkout

Payment Method

Cash

Amount Paid (EGP)

10

Confirm Payment

You are paying 1.20 EGP extra. Change will be calculated.

USER TRANSACTIONS

 Your Transactions

	Invoiceld	CheckoutDate	TotalAmount	PaymentMethod	ItemsCount
0	INV-20251213102321-1572	2025-12-13 10:23:21	8.8	Cash	1
1	INV-20251213102225-6527	2025-12-13 10:22:25	8.8	Cash	1
2	INV-20251213102052-7618	2025-12-13 10:20:52	16.5	Cash	1
3	INV-20251213101832-8370	2025-12-13 10:18:32	11	Cas	
4	INV-20251212181809-8769	2025-12-12 18:18:09	11	Cas	
5	INV-20251212181442-3395	2025-12-12 18:14:42	11	Cre	
6	INV-20251211214625-4890	2025-12-11 21:46:25	5.5	Cas	
7	INV-20251211214002-5262	2025-12-11 21:40:02	11	Cas	Date: 2025-12-13 10:23:21
8	INV-20251211212307-3607	2025-12-11 21:23:07	5.5	Cas	Payment: Cash
9	INV-20251211211236-4292	2025-12-11 21:12:36	18.7	Cre	Total: 8.80 EGP

Transaction Details

Select Invoice to View Details

INV-20251213102321-1572

Items

- 1x Chocolate Milk (Fairlife) @ 10.00 = 10.00

Subtotal: 10.00

Tax: 0.80

Final Total: 8.80

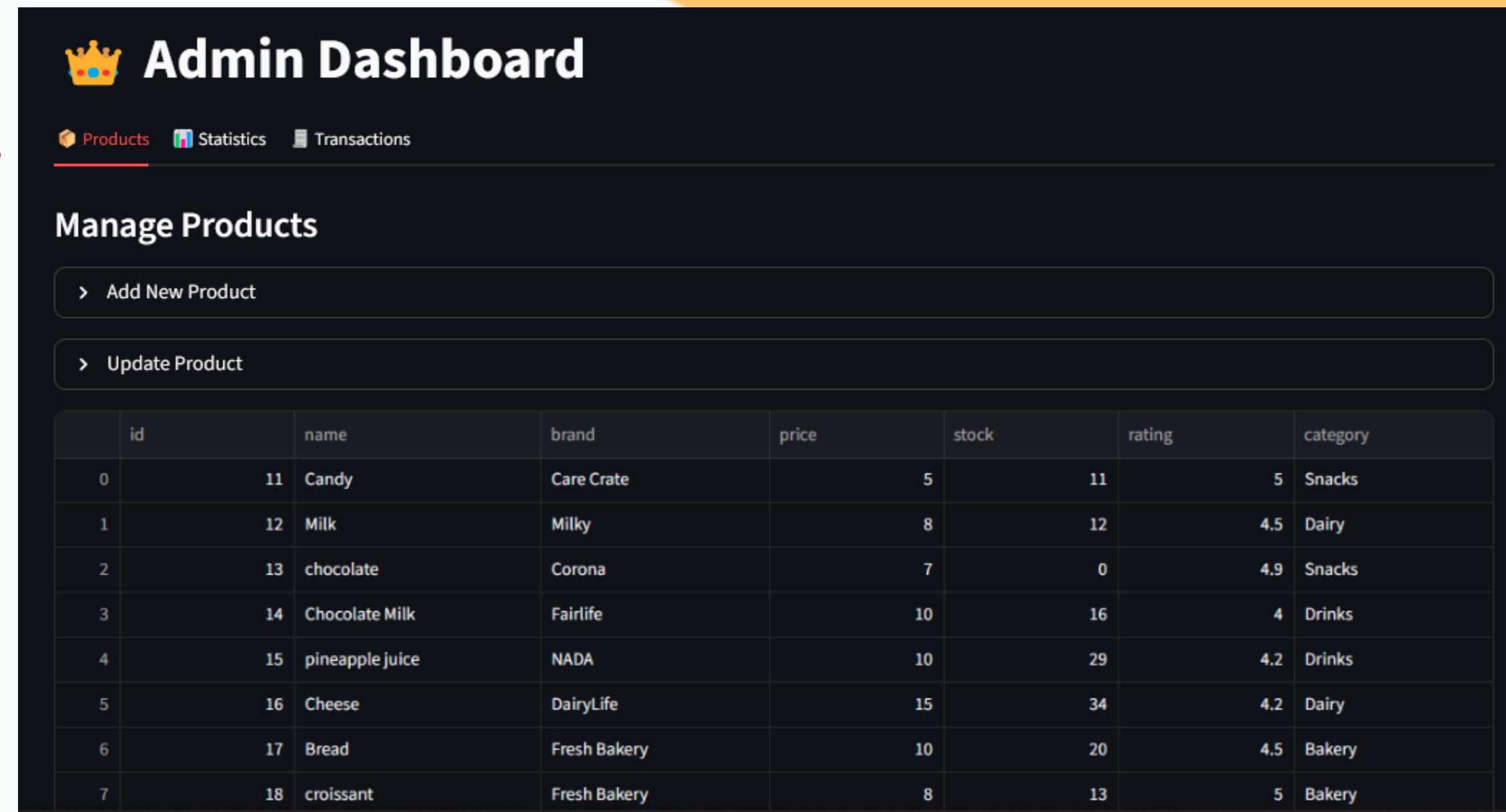
ADMIN DASHBOARD

Product Management:

- Add new products
- Update existing products
- Delete products
- View product list

Update & Delete:

- Fetch product details
- Modify product info
- Remove products



The image shows a screenshot of an Admin Dashboard. At the top, there's a navigation bar with a crown icon and the text "Admin Dashboard". Below it are three tabs: "Products" (which is active, indicated by a red underline), "Statistics", and "Transactions". The main area is titled "Manage Products" and contains two buttons: "Add New Product" and "Update Product". Below these buttons is a table with 18 rows of product data. The columns are labeled: id, name, brand, price, stock, rating, and category. The data includes various items like Candy, Milk, chocolate, Chocolate Milk, pineapple juice, Cheese, Bread, and croissant, categorized into Snacks, Dairy, Drinks, and Bakery.

	id	name	brand	price	stock	rating	category
0	11	Candy	Care Crate	5	11	5	Snacks
1	12	Milk	Milky	8	12	4.5	Dairy
2	13	chocolate	Corona	7	0	4.9	Snacks
3	14	Chocolate Milk	Fairlife	10	16	4	Drinks
4	15	pineapple juice	NADA	10	29	4.2	Drinks
5	16	Cheese	DairyLife	15	34	4.2	Dairy
6	17	Bread	Fresh Bakery	10	20	4.5	Bakery
7	18	croissant	Fresh Bakery	8	13	5	Bakery

ADMIN DASHBOARD (CON.)

Store Statistics:

- Total Products
- Categories
- Total Revenue
- Transactions

The image shows a dark-themed Admin Dashboard interface. At the top, there's a navigation bar with a crown icon and the text "Admin Dashboard". Below it, there are three tabs: "Products" (orange icon), "Statistics" (blue and green icon, currently selected), and "Transactions" (grey icon). The main content area is divided into two sections: "Store Statistics" and "Financials".

Total Products	Categories	Active Carts
14	8	1

Total Revenue	Transactions	Avg Ticket
1153.90 EGP	20	57.69 EGP

ADMIN DASHBOARD (CON.)

Update Product

Enter Product ID to fetch details

Product ID

90

Fetch Details

Product not found

Error Handling:

- ✗ Invalid Product Data
- ✗ Empty Name/Brand
- ✗ Product Not Found

9	20	potato	Fresh Farm
10	21	French Fries	McCain
11	22	ToothPaste	Colgate

Enter ID to Delete

99

Delete Product

Failed to delete.. Product does not exist!

ADMIN DASHBOARD (CON.)

TRANSACTIONS

Transaction History

	Invoiceld	CheckoutDate	Username	TotalAmount	PaymentMethod	ItemCount
0	INV-20251213102321-1572	2025-12-13 10:23:21	reham	8.8	Cash	1
1	INV-20251213102225-6527	2025-12-13 10:22:25	reham	8.8	Cash	1
2	INV-20251213102052-7618	2025-12-13 10:20:52	reham	16.5	Cash	1
3	INV-20251213101832-8370	2025-12-13 10:18:32	reham	11	Cash	1
4	INV-20251212181809-8769	2025-12-12 18:18:09	reham	11	Cash	2
5	INV-20251212181442-3395	2025-12-12 18:14:42	reham	11	Credit Card	1
6	INV-20251212161141-3861	2025-12-12 16:11:41	user_lErPKNAp	132	Credit Card	1
7	INV-20251211223247-5229	2025-12-11 22:32:47	user_tFfT1TQk	132	Credit Card	1
8	INV-20251211223103-1754	2025-12-11 22:31:03	user_ZGjsbhAR	132	Credit Card	1
9	INV-20251211223007-2166	2025-12-11 22:30:07	user_rwoRSoXH	132	Credit Card	1

ADMIN DASHBOARD (CON.)

TRANSACTIONS

Transaction Details

Select Invoice to View Details

INV-20251213102321-1572

Date: 2025-12-13 10:23:21

User: reham

Payment: Cash

Total: 8.80 EGP

Items

- 1x Chocolate Milk (Fairlife) @ 10.00 = 10.00

Subtotal

10.00

Tax

0.80

Final Total

8.80

[Clear All History](#)

THANKS

