

SMARTSHELFX AI BASED INVENTORY FORECAST AND AUTO RESTOCK





ABOUT OUR TEAM

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PROBLEM STATEMENT

Security & Loss

**Difficult to track
price changes**

**No real-time
stock updates**

**Manual records are
time-consuming**

**Overstocking and
stockouts during sales**

**High chance of
human errors**

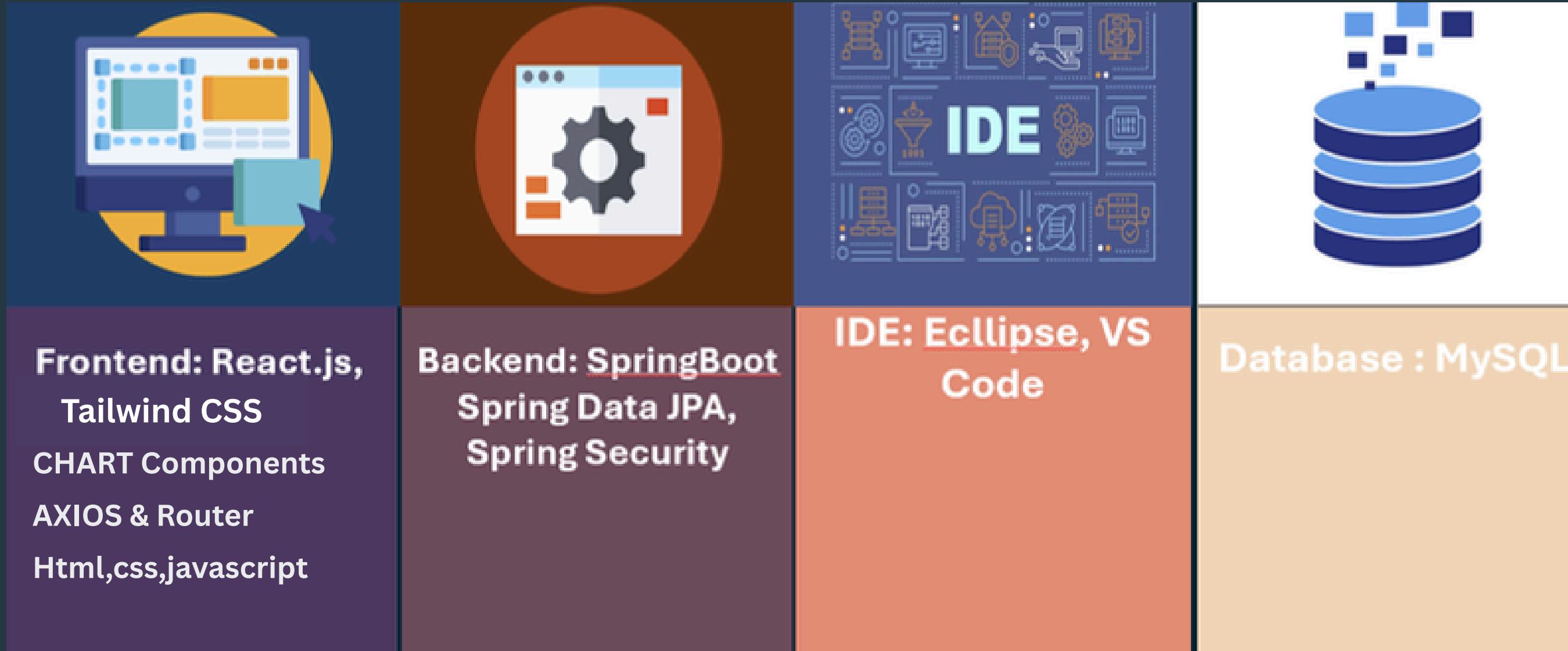


GOALS



-  **Centralized Data:** A single source of truth for all inventory.
-  **Demand Forecasting:** Use data to predict future needs.
-  **Reporting & Analytics:** Easy generation of reports for better planning.
-  **Security:** Secure, organized, and accessible digital records.

TECHNOLOGY STACK



MODULE OVERVIEW

User Management

- Handles user registration and login
- Provides secure authentication
- Supports role-based access for Admin and Vendor users

Product Management

- Allows creation and maintenance of product details
- Supports price and stock updates

SKU Management

- Manages SKU-level identification of products
- Tracks stock availability for each SKU
- Enables SKU updates and reporting

Transaction Management

- Records inventory-related transactions
- Generates Stock Issue Reports for outgoing items
- Generates Purchase Reports for incoming stock

Authentication & User Management Module

Components Used:

- Login Page
- Register User
- Admin Menu
- Manager Menu
- Vendor Menu
- User View

Functionality:

- User authentication
- Role-based access control
- Secure navigation for different users

Product Management Module

Components Used:

- Product Entry
- Product List
- Product Price Edit
- Product Stock Edit

Functionality:

- Add and manage products
- Update product price and stock
- View product details

SKU Management Module

Components Used:

- SKU Entry
- SKU Edit
- SKU Report

Functionality:

- Manage Stock Keeping Units
- Improve inventory categorization
- Monitor SKU-wise stock data

Product & Transaction Reports Module

Components Used:

- Product Report
- Transaction Report

Functionality:

- Generate product-wise reports
- Track inventory transactions
- Support decision-making

Service Module

Includes:

- Login Service
- Product Service
- SKU Service
- Transaction Service

Explanation:

This module connects the frontend with backend APIs.

Reports Module

Includes:

- Product Report
- SKU Report
- Transaction Report

Explanation:

This module generates reports to analyze inventory data.

UI & Navigation Module

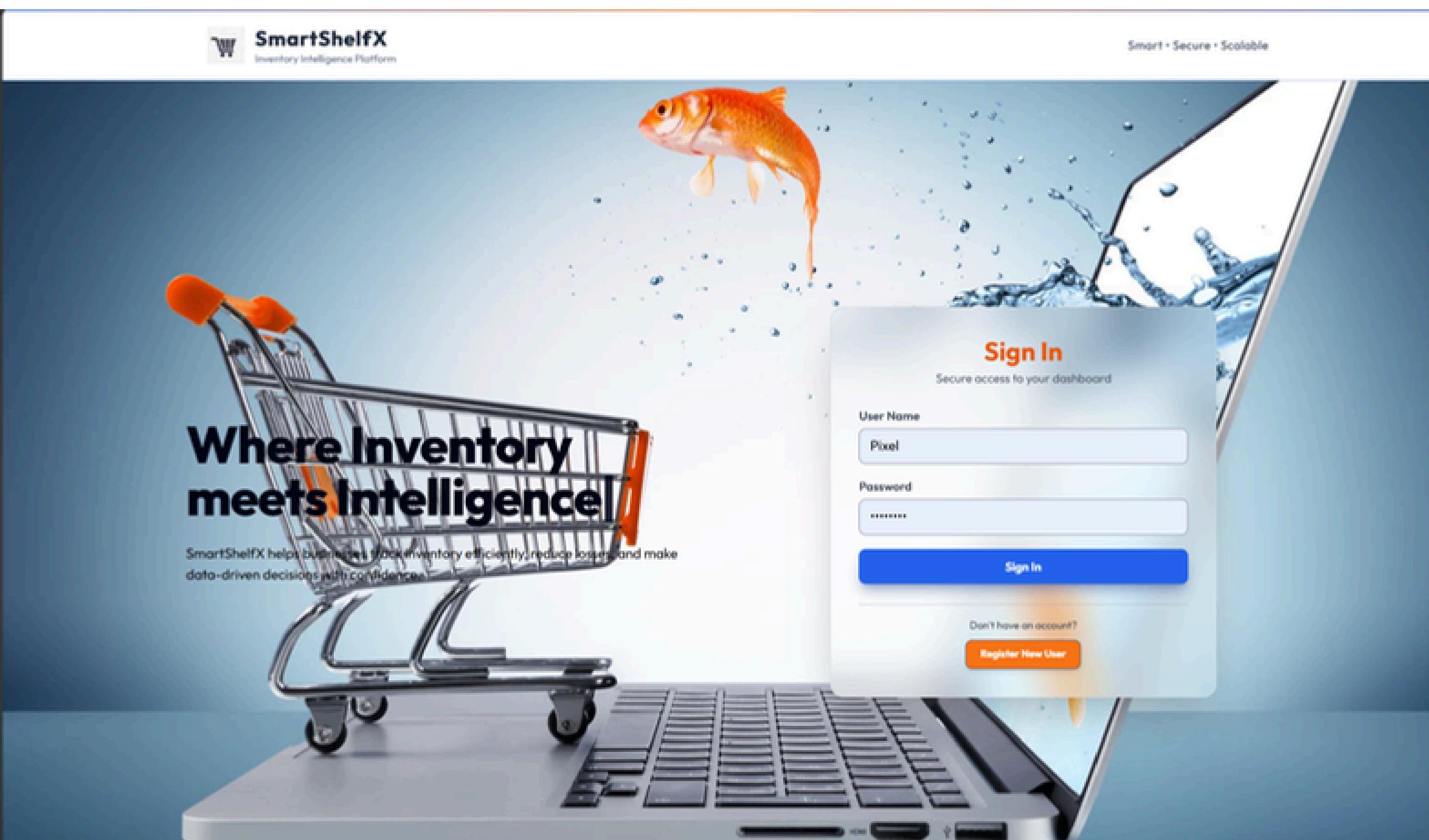
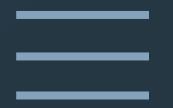
Includes:

- App.js
- Routing
- CSS Files

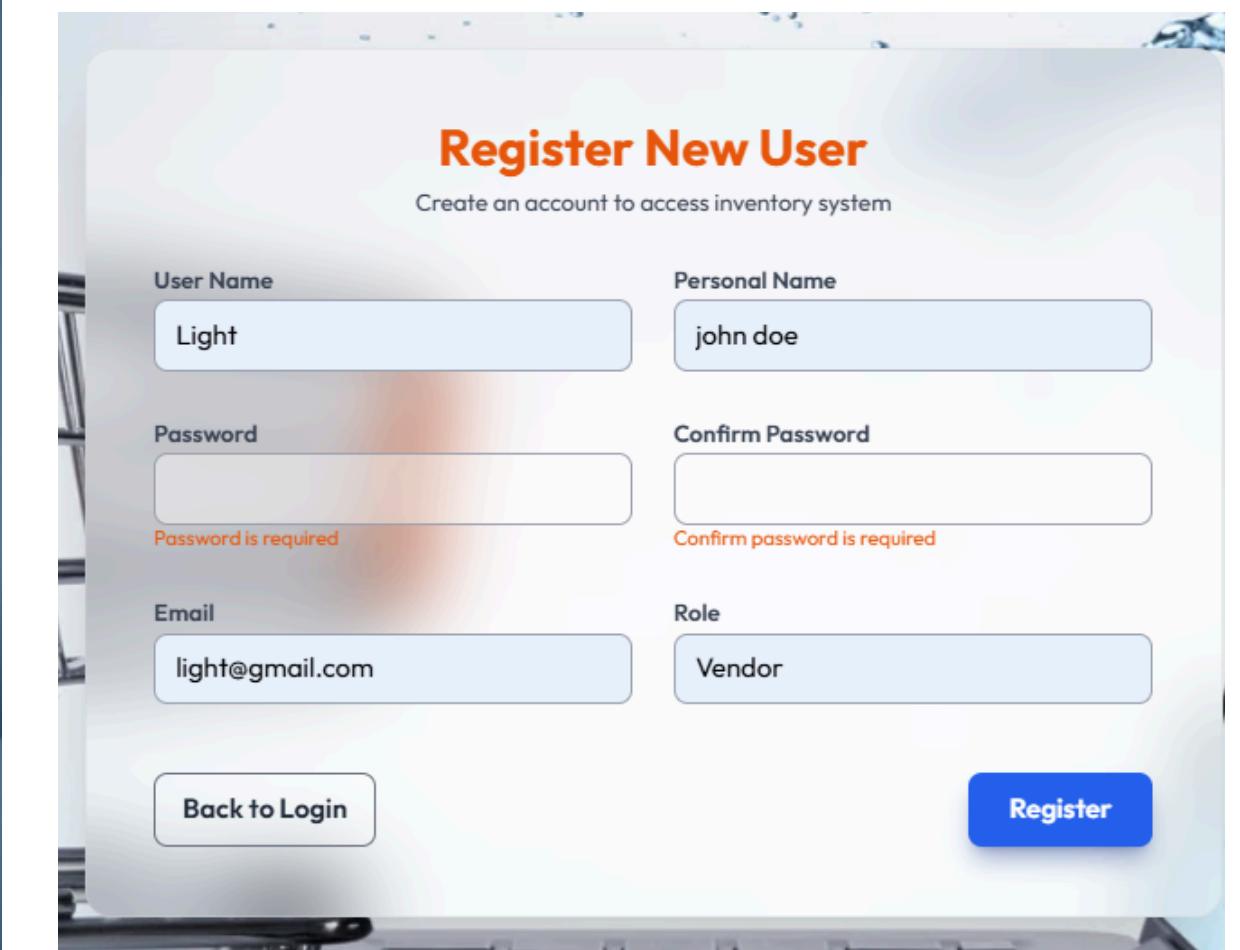
Explanation:

This module handles page navigation and user interface design.

OUTPUTS



The image shows the SmartShelfX inventory intelligence platform. At the top left is the logo "SmartShelfX" with the subtitle "Inventory Intelligence Platform". At the top right is the text "Smart • Secure • Scalable". The main visual is a goldfish jumping out of water, with a shopping cart and a laptop keyboard in the foreground. A large text overlay reads "Where Inventory meets Intelligence!". Below it, a smaller text states: "SmartShelfX helps businesses track inventory efficiently, reduce losses, and make data-driven decisions with confidence." A "Sign In" button is visible on the right side of the screen.



The image shows the "Register New User" page of the SmartShelfX platform. The title "Register New User" is at the top, followed by the subtitle "Create an account to access inventory system". The form includes fields for "User Name" (filled with "Light"), "Personal Name" (filled with "john doe"), "Password" (highlighted with a red blur), "Confirm Password" (highlighted with a red blur), "Email" (filled with "light@gmail.com"), and "Role" (selected as "Vendor"). There are "Back to Login" and "Register" buttons at the bottom.

User Name	Light
Personal Name	john doe
Password	>Password is required
Confirm Password	Confirm password is required
Email	light@gmail.com
Role	Vendor

ADMIN VIEW AND USER REPORT

SmartShelfX
ADMIN Dashboard

Dashboard SKU Products Stock Purchase Orders Users

Logout

Welcome, Admin 🙌

Manage inventory, users, AI forecasts, and auto-restocking from a single intelligent platform.

Inventory Health
Real-time stock monitoring

AI Forecast
Predict demand & stock risks

Auto Restock
Smart purchase recommendations

SmartShelfX
ADMIN Dashboard

Dashboard SKU Products Stock Purchase Orders Users

Logout

User Report

View users role-wise

All Roles Back

User ID	Username	Personal Name	Email	Role
1	Pixel	Student	test2@gmail.com	Admin
2	Groot	Garrison	miller@gmail.com	Manager
3	Light	john doe	light@gmail.com	Vendor

VENDOR AND MANAGER VIEW

SmartShelfX
VENDOR Dashboard

Dashboard My Products Purchase Orders [Logout](#)

Welcome, Vendor 

Manage purchase orders, track deliveries, and monitor your supply performance.

 Pending Orders 0

 Dispatched 0

 Completed 0

 My Products 0

SmartShelfX
Vendor Dashboard

[Dashboard](#)

SUPPLY MANAGEMENT

 Purchase Orders

 My Products

 Notifications

SmartShelfX
MANAGER Dashboard

Dashboard Products Stock Purchase Orders [Logout](#)

Welcome, Manager 

Monitor inventory levels, manage stock movements, and track transactions in real time.

 Inventory Status
View current stock levels

 Stock Movement
Manage stock in & out

 Reports
Transaction & inventory reports

SmartShelfX
Manager Panel

[Dashboard](#)

INVENTORY

 SKU List

 Product List

STOCK OPERATIONS

 Stock In

 Stock Out

 Transactions

PRODUCT ENTRY AND STOCK ISSUE

The screenshot displays two overlapping windows from a web application named SmartShelfX.

Left Window: Product Entry

- Header:** SmartShelfX ADMIN Dashboard
- Navigation:** Dashboard, SKU, **Products**, Stock, Purchase Orders, Users, Logout
- Section:** **Product Entry**
- Message:** Product saved successfully
- Form Fields:**
 - Product ID: P10001
 - Product Name: NUTS
 - SKU: DRY-FRT-1 – Dry fruit box 1kg
 - Vendor: 3 – john doe
 - Category: grocery
 - Stock Level:
 - Purchase Price: 499
 - Sale Price (Auto): 649
- Buttons:** Back, Save, New Entry

Right Window: Stock Issue (Sales)

- Section:** Stock Issue (Sales)
- Product:** P10001 - NUTS
- Product Details:**
 - Product:** NUTS
 - SKU:** DRY-FRT-1
 - Current Stock:** 500
 - Cost Price:** ₹ 499
 - Sale Price:** ₹ 649
 - Profit / Unit:** ₹ 150
- Quantity:** 2
- Total Sale:** ₹ 1298
- Buttons:** Issue Stock, Return

STOCK KEEPING UNIT AND PRODUCT REPORT

 SmartShelfX
ADMIN Dashboard

Dashboard [SKU](#) Products Stock Purchase Orders Users [Logout](#)

SKU Management

View, update, and manage product SKUs

[← Back](#) [+ Add SKU](#)

SKU ID	Description	Actions
DRY-FRT-1	Dry fruit box 1kg	Edit Delete
TSH-M-BLK	T-shirt, Medium, Black	Edit Delete

 SmartShelfX
ADMIN Dashboard

Dashboard [SKU](#) [Products](#) Stock Purchase Orders Users [Logout](#)

Product Inventory

Stock, pricing & operations

[← Back](#) [+ Add Product](#)

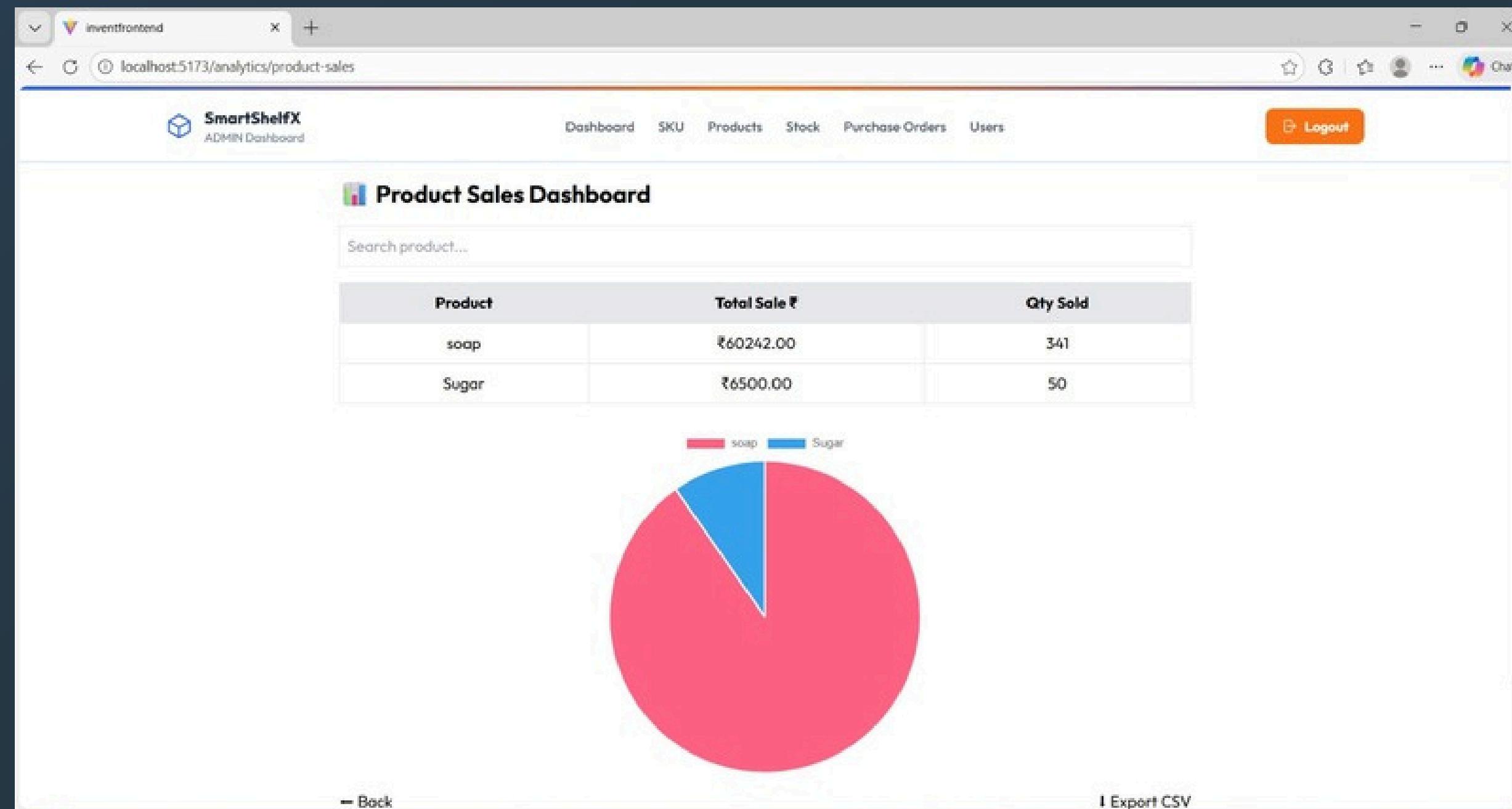
ID	Name	SKU	Category	Vendor	Stock	Reorder	Purchase	Sale	Status	Actions
P10001	NUTS	DRY-FRT-1	grocery	john doe	500	100	€499	€649	OK	Edit Issue Purchase Price Update Delete
P10002	Cotton Tshirt	TSH-M-BLK	Clothing	john doe	150	50	€290	€377	OK	Edit Issue Purchase Price Update Delete

TRANSACTION REPORT

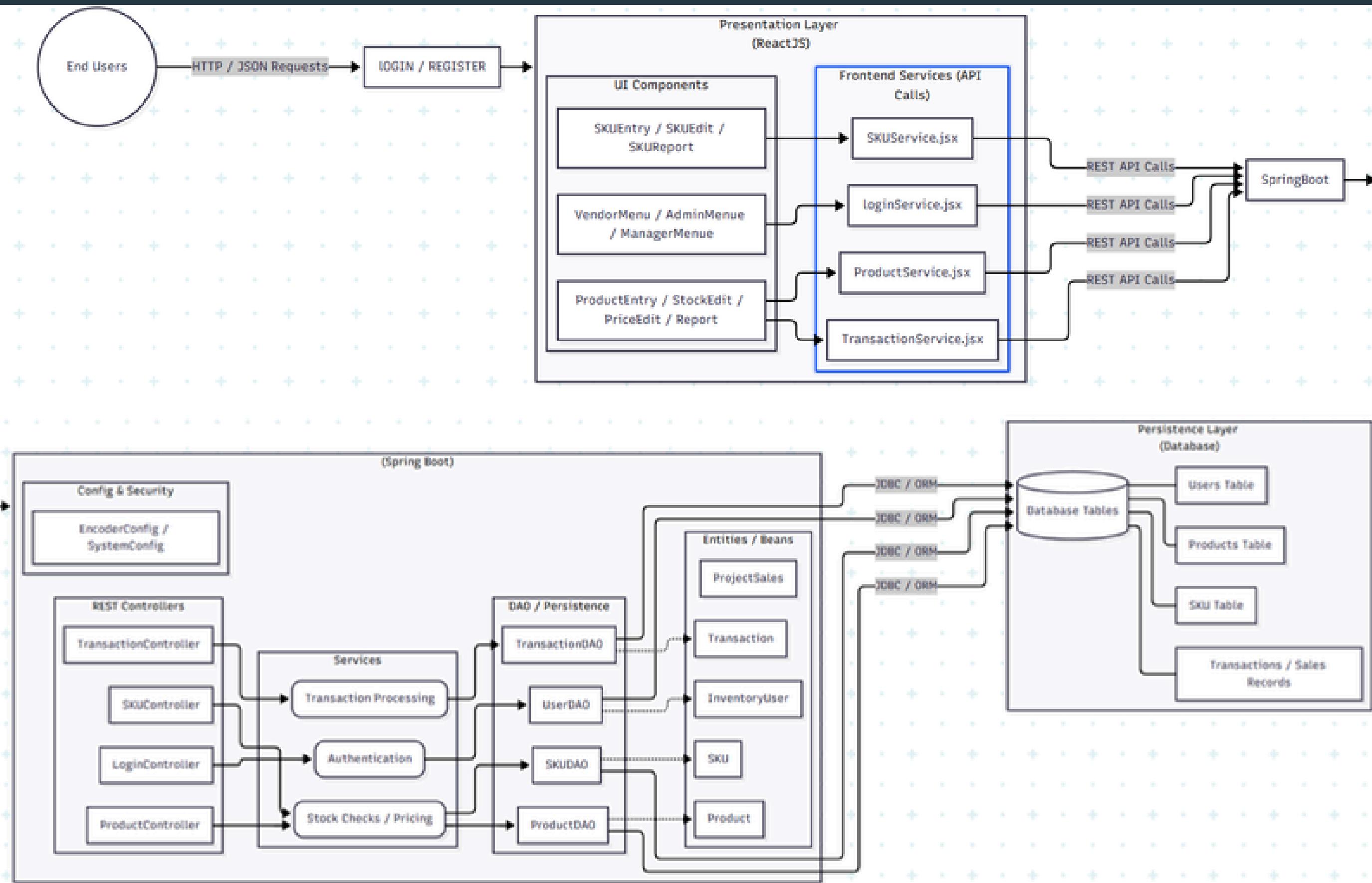
The screenshot shows a web browser window titled "SmartShelfX Admin Dashboard" with the URL "localhost:5173/po". The dashboard has a top navigation bar with links for Dashboard, SKU, Products, Stock, Purchase Orders (which is underlined to indicate it's the active page), and Users. There is also a Logout button. Below the navigation, the title "Purchase Transactions" is displayed, followed by a subtitle "Track stock purchases, pricing, and transactions". A back button is located on the right side of the title area. The main content is a table listing four purchase transactions. The table columns are: Transaction ID, Vendor, Product, Product ID, SKU, Qty, Rate (₹), Total (₹), Status, and Actions. The transactions are as follows:

Transaction ID	Vendor	Product	Product ID	SKU	Qty	Rate (₹)	Total (₹)	Status	Actions
PO-3F1E15245	Ramm	soap	P10001	Test-I01	11	₹140	₹1,540	PENDING	<button>Edit</button> <button>Delete</button>
PO-B82C5DAS7	Ramm	soap	P10001	Test-I01	10	₹140	₹1,400	PENDING	<button>Edit</button> <button>Delete</button>
PO-AE0187A76	Ramm	soap	P10001	Test-I01	100	₹140	₹14,000	COMPLETED	<button>Edit</button> <button>Delete</button>
PO-F6AC70003	Ramm	soap	P10001	Test-I01	100	₹140	₹14,000	PENDING	<button>Edit</button> <button>Delete</button>

PRODUCT SALES USING PIECHART



SYSTEM ARCHITECTURE



FUTURE ASPECTS

Demand Forecasting

- Use historical sales data to predict future inventory requirements.
- Helps in better stock planning and reduced wastage.

Real-Time Inventory Updates

- Enable real-time synchronization of stock across all modules.
- Improves accuracy during multiple user transactions.

Advanced Reporting & Analytics

- Provide interactive dashboards and downloadable reports.
- Supports data-driven business decisions.

Cloud Deployment & Scalability

- Deploy on cloud platforms for scalability and high availability.
- Ensures secure data storage and future system expansion.

These enhancements will improve scalability, efficiency, and reliability of the inventory management system.



THANK YOU

