User Module

- Functionality:
    - Handles user registration, login authentication, and password recovery.
    - Validates user credentials against database records.
    - On successful login, user is redirected to the dashboard.
- Implementation:
    - User data is captured via JSP forms and sent to the backend controllers.
    - Service layer performs validation and calls repository for database operations.

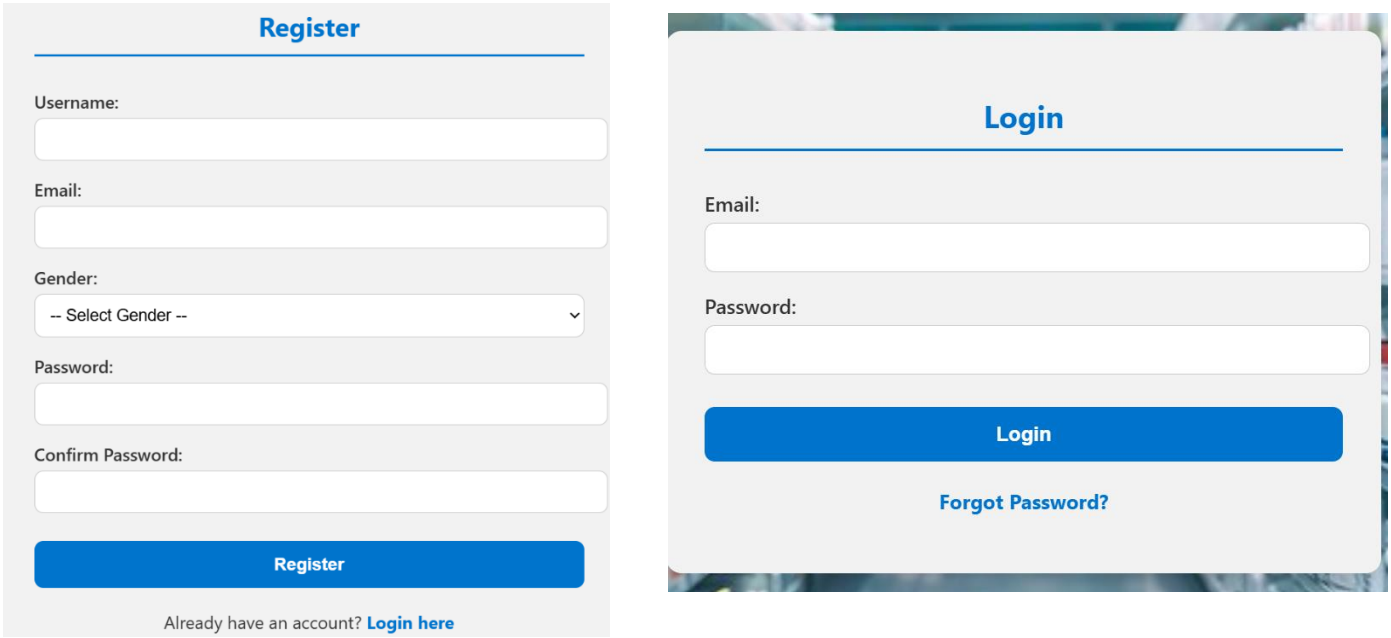


Figure : User Module

Dashboard Module

- Functionality:
    - Displays the summary of total products, low stock products, total sales, and today's sales.
    - Provides navigation options to other modules such as Add Product, Create Invoice, and Product List.
- Implementation:
    - Dashboard data is fetched from the database using service methods in the backend.
    - Controller aggregates the required counts and sales amounts and passes them to the dashboard JSP view.

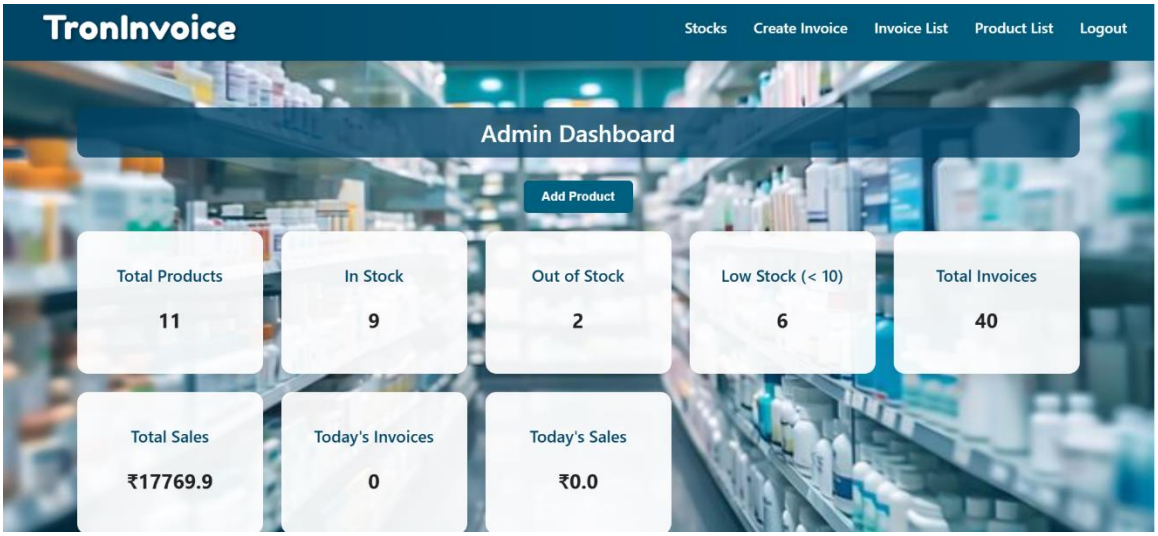


Figure : Dashboard Module

Product Module

- Add Product:
    - User inputs product details including barcode, product name, cost, GST percentage, quantity, and type (In Stock/Out of Stock).
    - System calculates SGST, CGST, total GST, and net total automatically.
    - Product data is saved into the products table.
- Product List:
    - Displays all products in a scrollable table with options to update or delete records.
    - Includes search functionality by product name, barcode, or category.
    - Allows filtering for low stock or in-stock items.
- Implementation:
    - JSP forms capture product details and send to backend controllers.
    - Backend services perform GST calculations and validate inputs before saving via Hibernate.
    - The product list page fetches product data via service calls and displays it using JSTL loops.

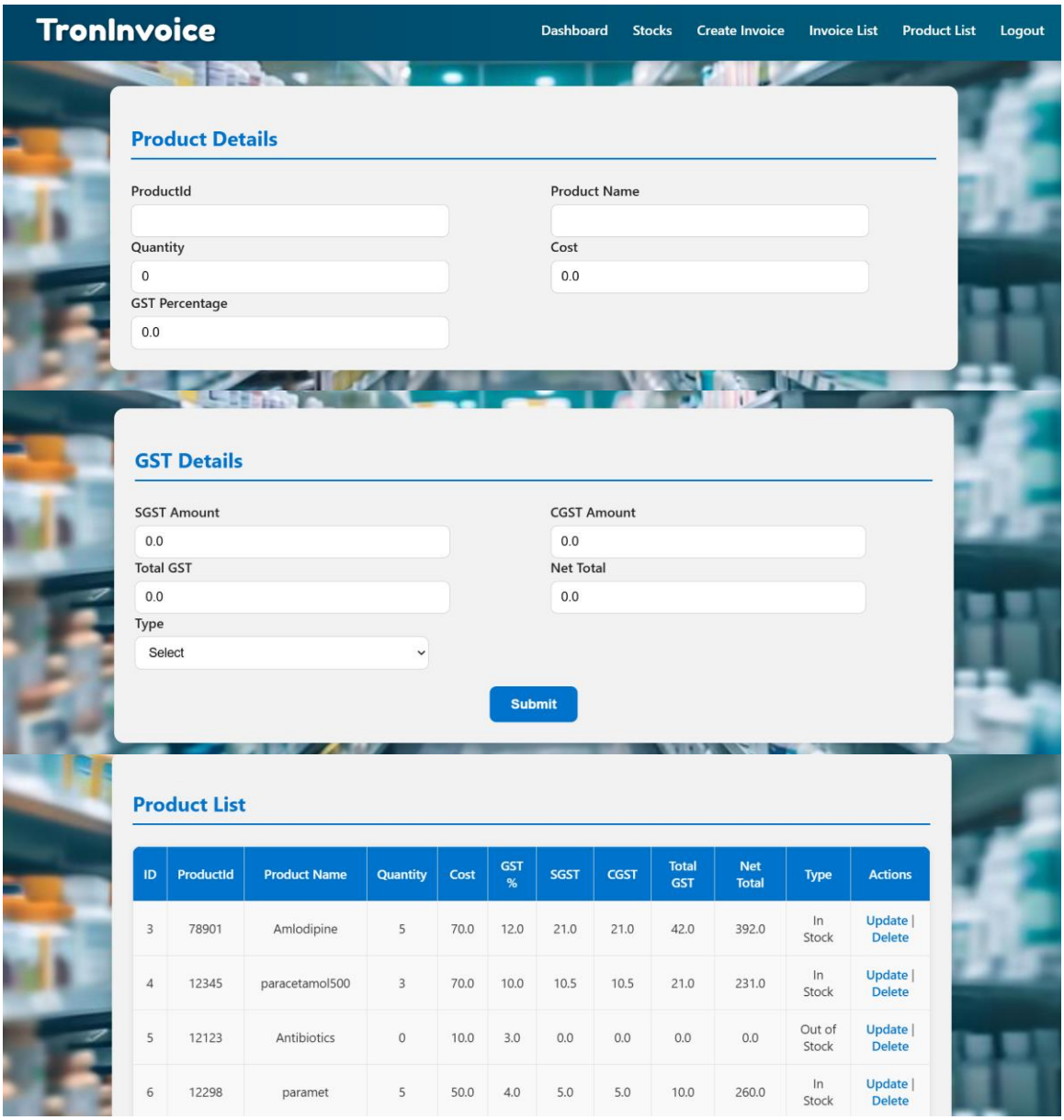


Figure : Product Module

Invoice Module

- Functionality:
    - Allows selection of multiple products to add to an invoice.
    - Captures customer details and calculates total GST and net amount.
    - Validates product stock before confirming invoice creation.
    - Provides options to save the invoice or print it as a PDF.
- Implementation:
    - Invoice creation form submits product selections and customer info to the controller.
    - Controller checks stock availability using product service methods.
    - On success, an InvoiceEntity and associated InvoiceItemEntity objects are saved using cascading in Hibernate.

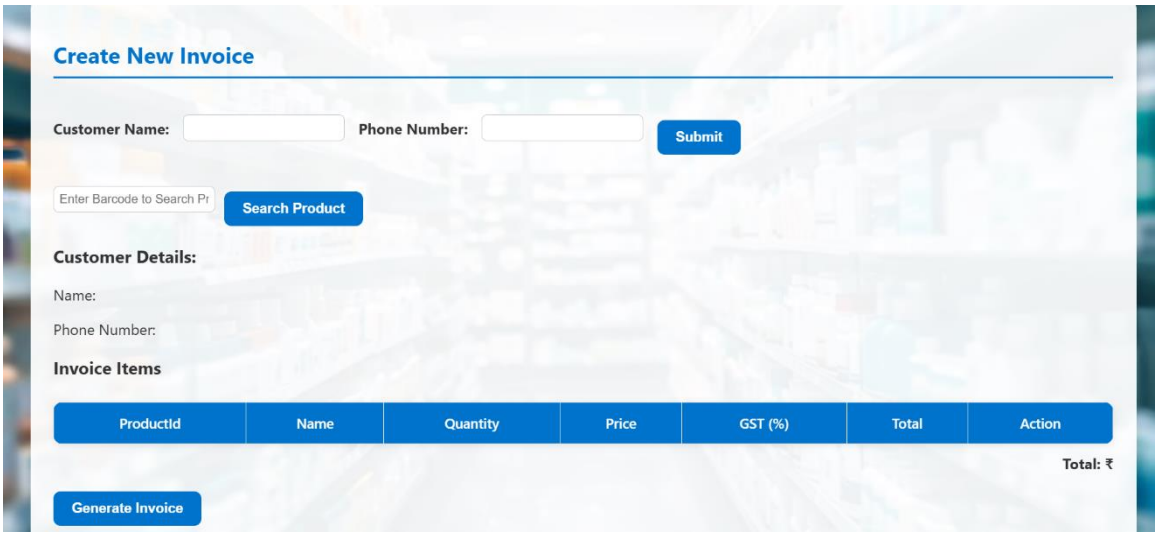


Figure : Invoice Module

Stock Module

- Functionality:
    - Identifies and flags products that are low in stock or completely out of stock.
    - Helps users take timely action for restocking, ensuring smooth inventory management.
    - Displays alerts or highlights in the product list to inform users about low stock items.
- Implementation:
    - Stock quantity is stored in the products table and updated during product addition, invoice generation, or manual update.
    - On the Product List and Dashboard, service methods fetch and compare current quantity with threshold levels to determine stock status.
    - Backend logic in the service layer automatically reduces stock when an invoice is created (based on quantity sold).
    - JSP pages use conditional logic to highlight low stock products and trigger user alerts for action.
    - Optional filters (e.g., "Low Stock", "In Stock", "Out of Stock") allow users to view stock-based product segments.

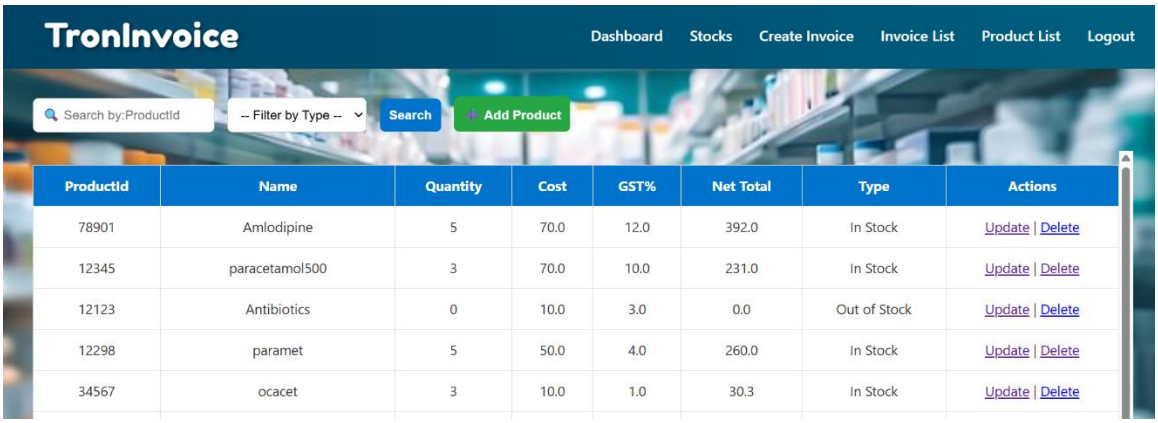


Figure 4.6: StockModule

GST CALCULATION

The system automatically calculates GST components including CGST, SGST, and the total GST based on the selected products and their respective GST rates. This ensures compliance with tax regulations and accurate billing.

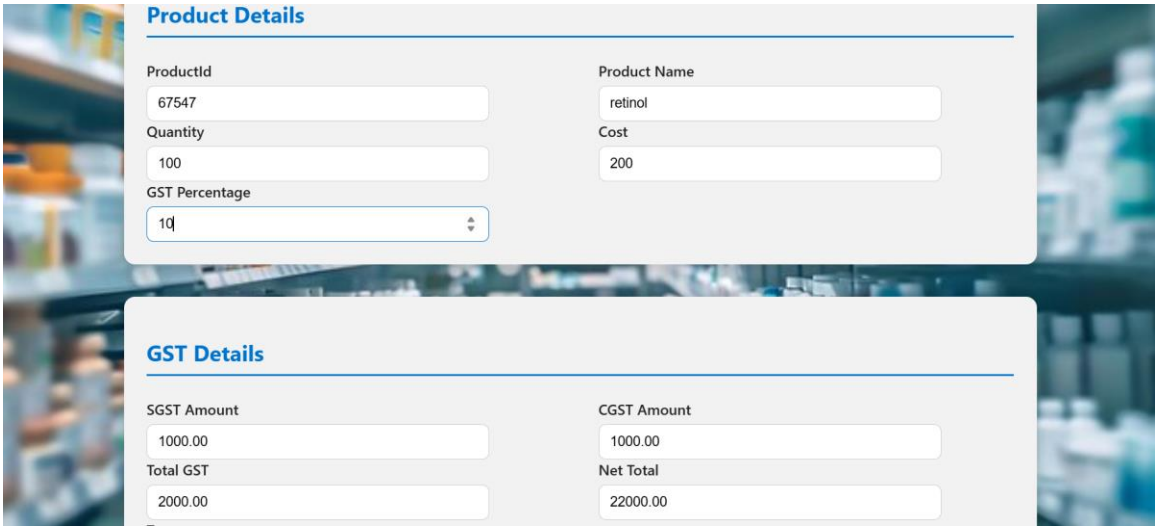
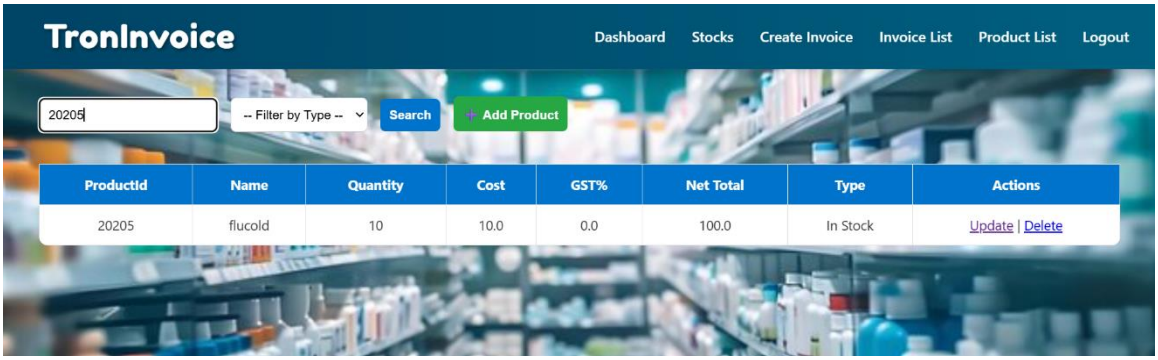


Figure :GST Calculation

STOCK UPDATES AND SEARCHING PRODUCTS

After invoice generation, the system updates the stock quantities for the sold products. This real-time stock management helps maintain accurate inventory levels and prevents overselling.



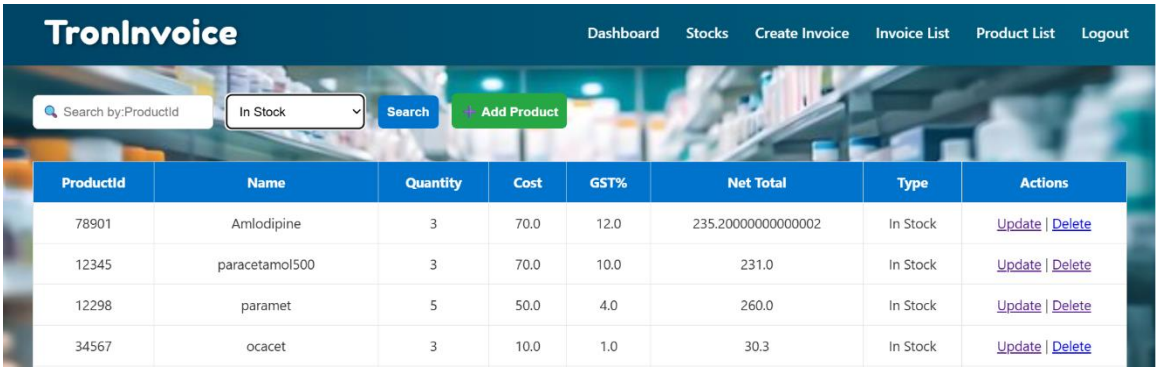
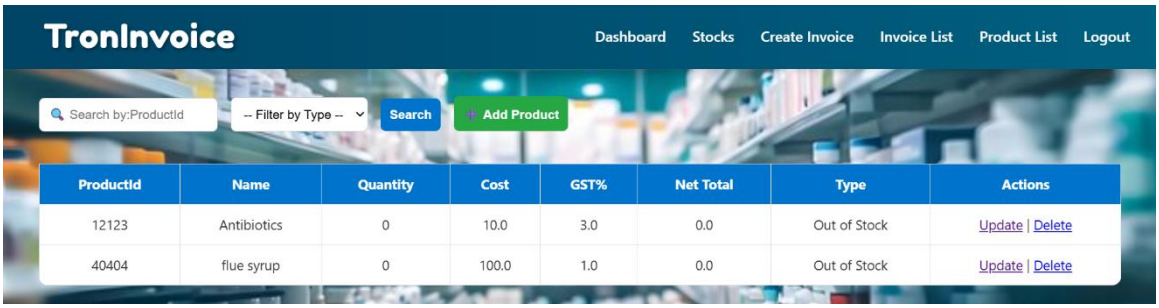


Figure : Stock Searching and updates



INVOICE GENERATION

The invoice generation module allows users to create detailed invoices by selecting products and entering customer details. Upon submission, the system processes the input, calculates necessary taxes, and displays the final invoice.

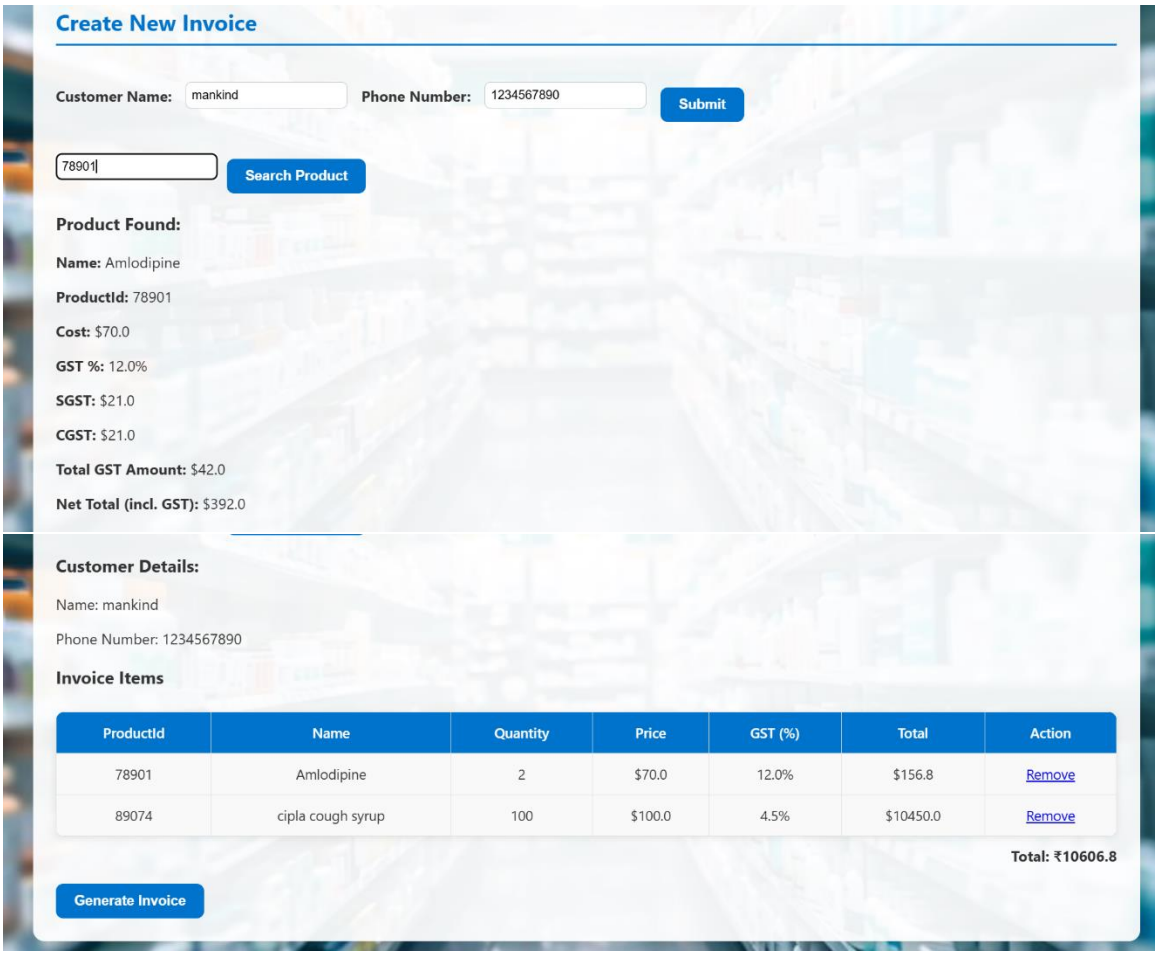
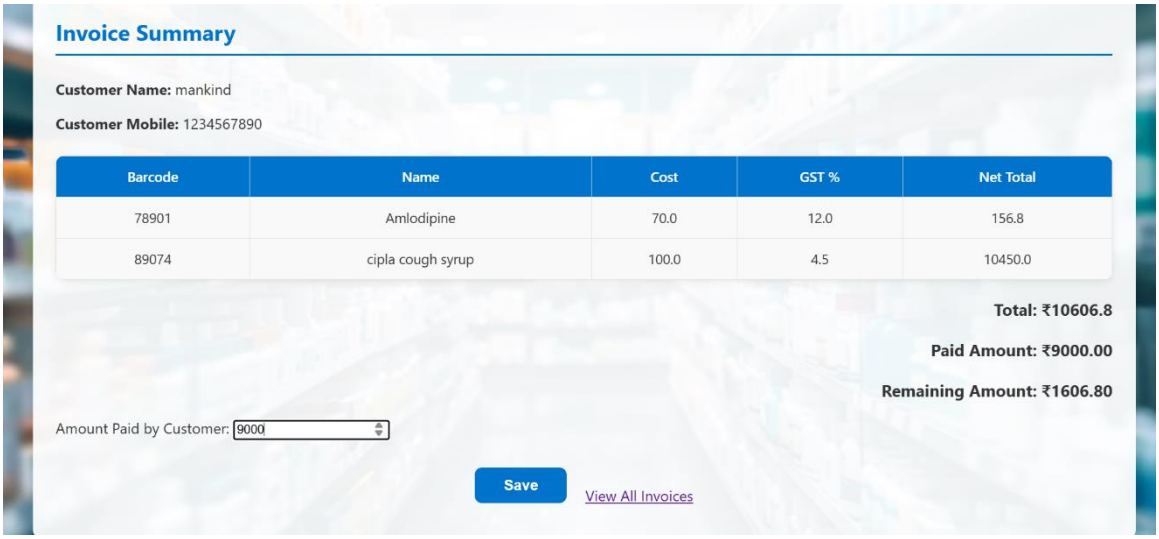
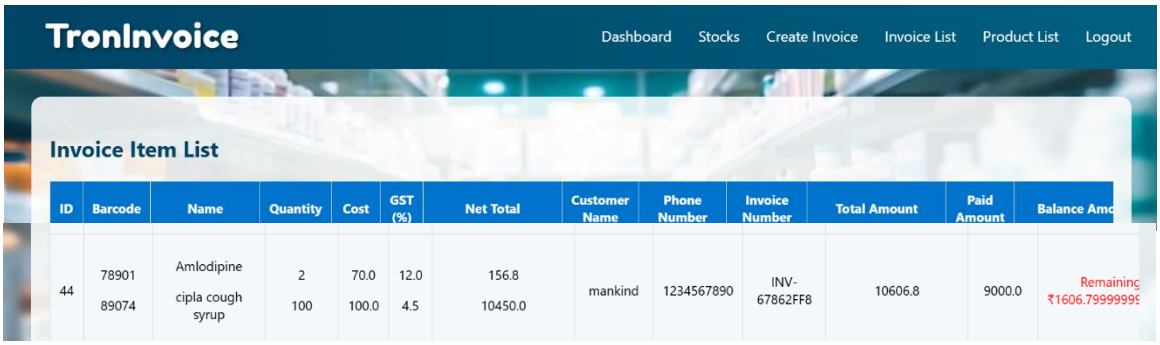


Figure : Invoice Generation



Invoice Item List:



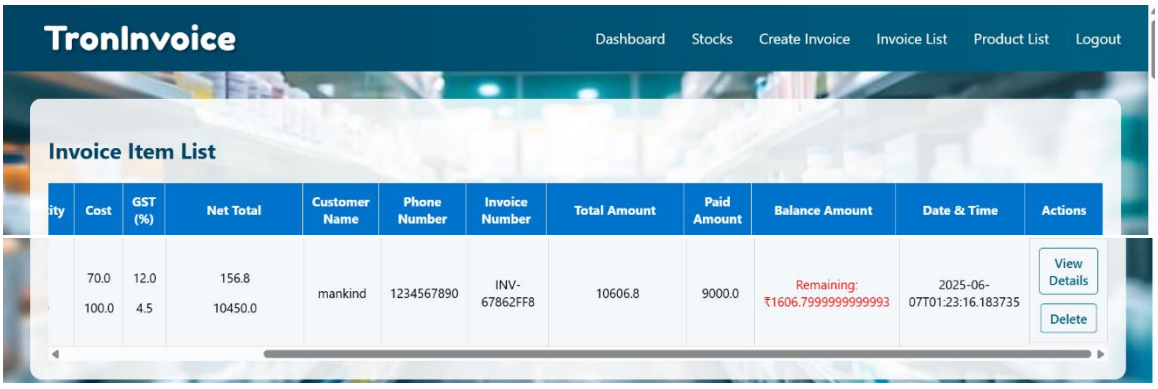
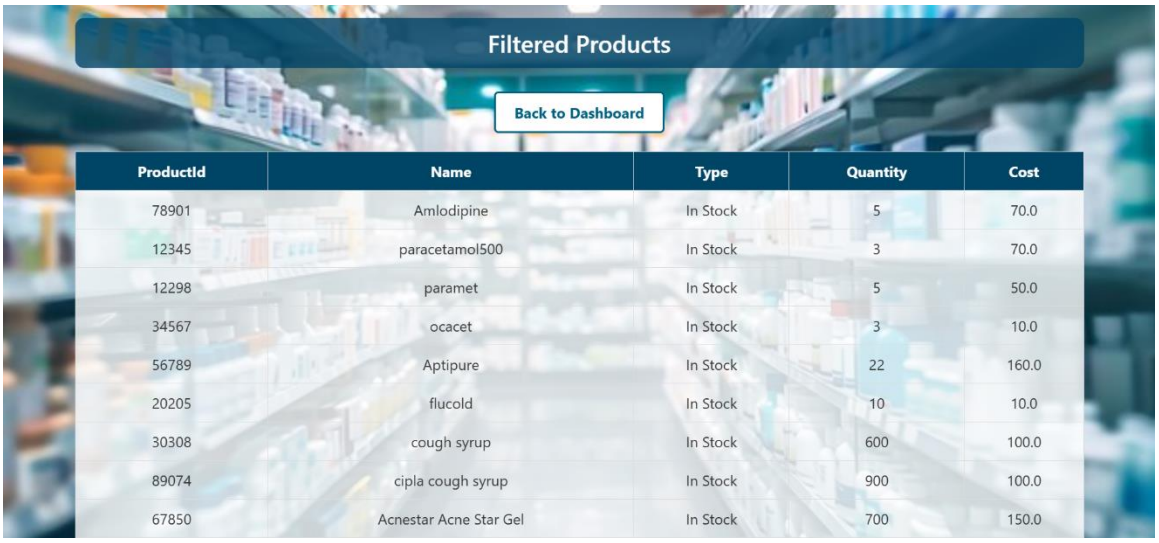


Figure : Invoice Item List

DASHBOARD NAVIGATION VIA CARDS

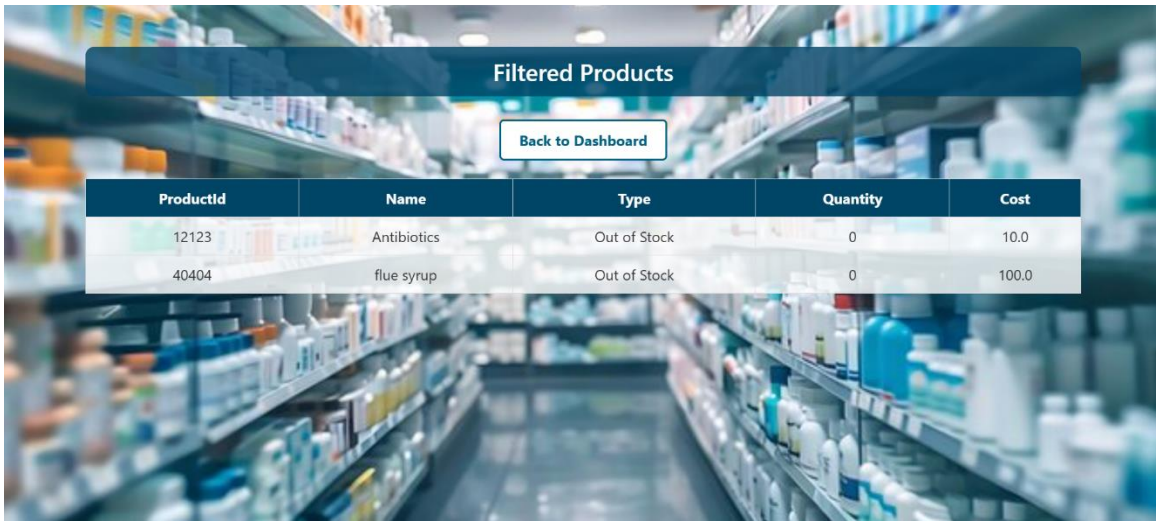
When a user clicks on a card, they are redirected to the respective module's interface.



Filtered Products

Back to Dashboard

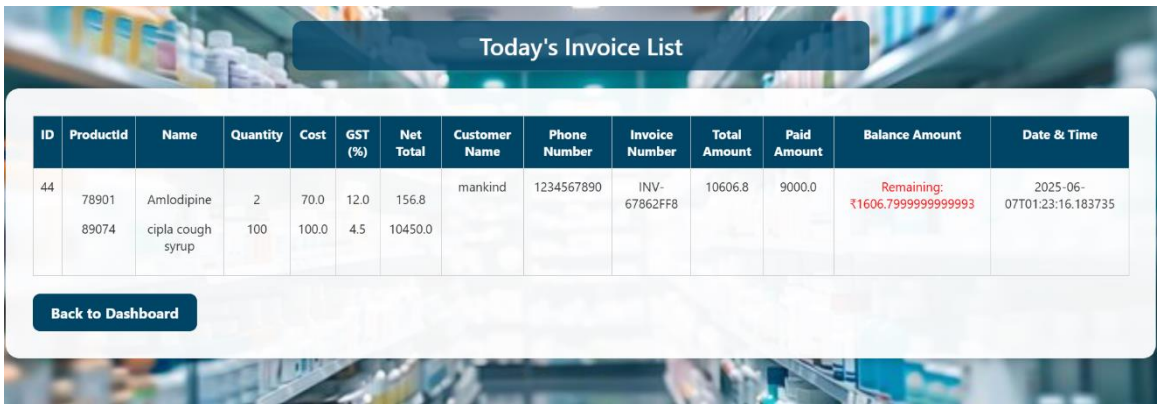
ProductId	Name	Type	Quantity	Cost
78901	Amlodipine	In Stock	5	70.0
12345	paracetamol500	In Stock	3	70.0
12298	paramet	In Stock	5	50.0
34567	ocacet	In Stock	3	10.0
56789	Aptipure	In Stock	22	160.0
20205	flucold	In Stock	10	10.0
30308	cough syrup	In Stock	600	100.0
89074	cipla cough syrup	In Stock	900	100.0
67850	Acnestar Acne Star Gel	In Stock	700	150.0



Filtered Products

Back to Dashboard

ProductId	Name	Type	Quantity	Cost
12123	Antibiotics	Out of Stock	0	10.0
40404	flue syrup	Out of Stock	0	100.0



Today's Invoice List

ID	ProductId	Name	Quantity	Cost	GST (%)	Net Total	Customer Name	Phone Number	Invoice Number	Total Amount	Paid Amount	Balance Amount	Date & Time
44	78901	Amlodipine	2	70.0	12.0	156.8	mankind	1234567890	INV-67862FF8	10606.8	9000.0	Remaining: ₹1606.7999999999993	2025-06-07T01:23:16.183735
	89074	cipla cough syrup	100	100.0	4.5	10450.0							

Back to Dashboard

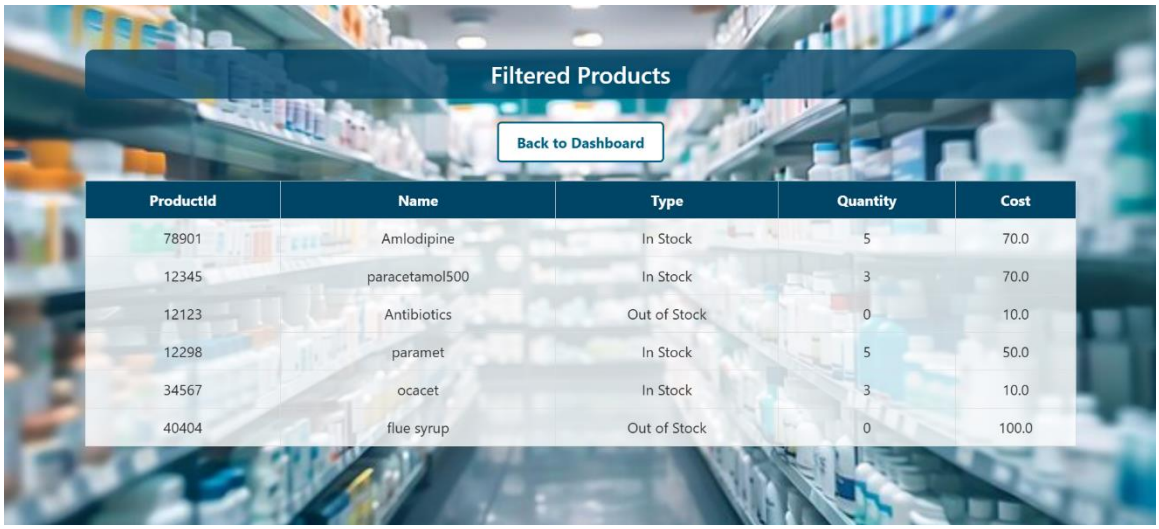


Figure 6.5: navigations on dashboard