



COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS

CDCS253

BACHELOR OF COMPUTER SCIENCE (HONS.) MULTIMEDIA  
COMPUTING

CSC584 – ENTERPRISE PROGRAMMING

REPORT: Web Application System

TITLE: Healthcare Equipment Inventory & Sales Management for  
Online Retailers

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## 1.0 INTRODUCTION

In the rapidly evolving healthcare industry, efficient management of medical equipment inventory and sales is crucial for ensuring seamless operations and customer satisfaction. The Healthcare Equipment Inventory & Sales Management System is an enterprise-grade web application designed to streamline the tracking, distribution, and sales of healthcare equipment for online retailers. This system provides a centralized platform for managing inventory, processing orders, and generating real-time reports, ensuring accuracy and efficiency in business operations. By automating key workflows, the system reduces manual errors, enhances productivity, and improves the overall customer experience.

## 2.0 OBJECTIVES

The primary objectives of the Healthcare Equipment Inventory & Sales Management System are:

### 1. Centralized Inventory Management

- Provide a unified interface for tracking and managing healthcare equipment stock levels.
- Support categorization of products (diagnostic tools, surgical instruments, mobility aids).

### 2. Efficient Sales Processing

- Enable customers to browse products, add items to their cart, and complete purchases seamlessly.
- Implement secure payment processing and order confirmation.

### 3. User Role-Based Access Control

- Differentiate functionalities for admin (inventory management, supplier tracking) and customers (product browsing, purchasing).

### 4. Real-Time Analytics & Reporting

- Track sales trends, inventory levels, and customer purchase history.
- Generate exportable reports for business analysis.

### 5. Supplier & Category Management

- Allow admins to add, edit, and manage suppliers and product categories.

### 3.0 PROBLEM STATEMENT

Numerous healthcare equipment dealers depend on manual methods or disjointed systems for managing inventory and sales, resulting in inefficiencies like:

- Inventory mismatches caused by insufficient real-time monitoring.
- Order processing delays due to mistakes in manual entry.
- Restricted insight into sales effectiveness and supplier connections.
- Inconsistent customer service resulting from obsolete or disconnected systems.

The suggested Healthcare Equipment Inventory & Sales Management System tackles these issues by offering a scalable, automated, and user-friendly solution that consolidates all essential business operations

## 4.0 FINAL DESIGN DATABASE

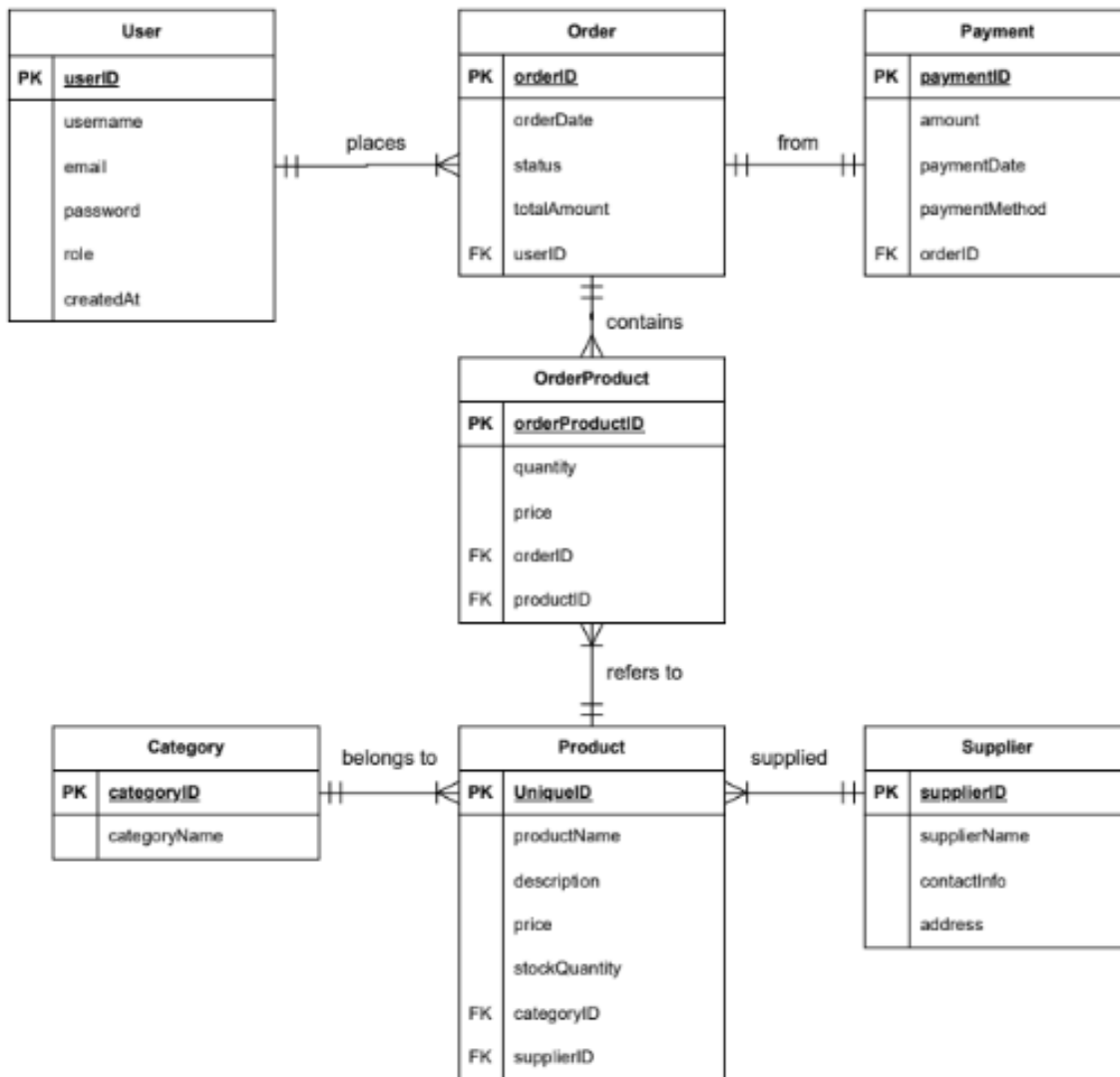


Figure 1.0 shows the ERD for Healthcare Equipment Inventory & Sales Management System

## **4.1 Key Features Implemented**

For Admins:

- Product Management (Add/Edit/Delete products).
- Supplier & Category Management (Track suppliers and categorize products).
- Sales Analytics (View payment history and generate reports).

For Customers:

- Product Browsing (View available healthcare equipment).
- Shopping Cart & Checkout (Add items, adjust quantities, and complete purchases).
- Order History (Track past purchases).

## **4.2 Technologies Used**

- Frontend: JSP, HTML, CSS, JavaScript.
- Backend: Java Servlets.
- Database: Apache Derby (JDBC).
- Styling: Custom CSS for responsive design.

## 5.0 MVC Framework Design

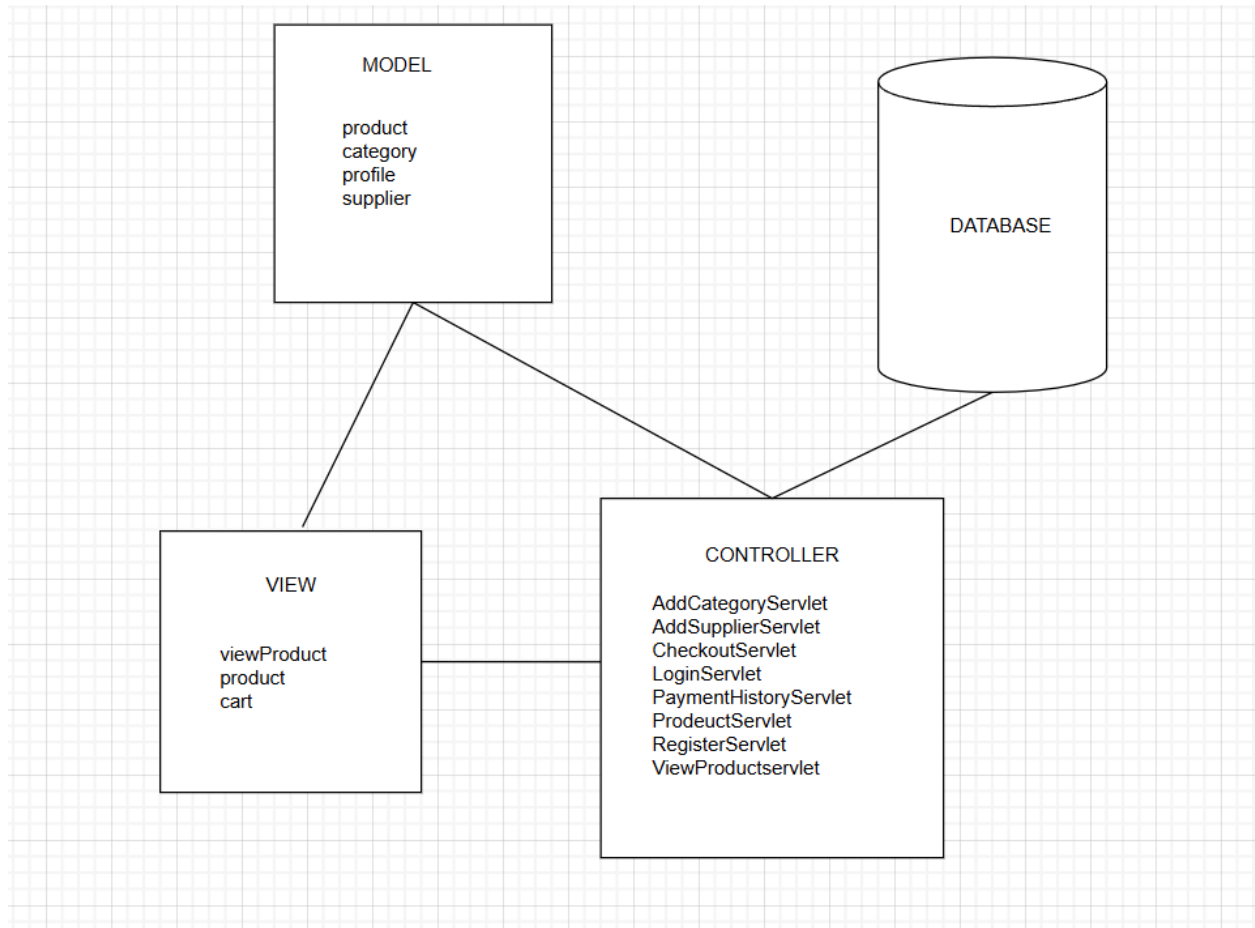
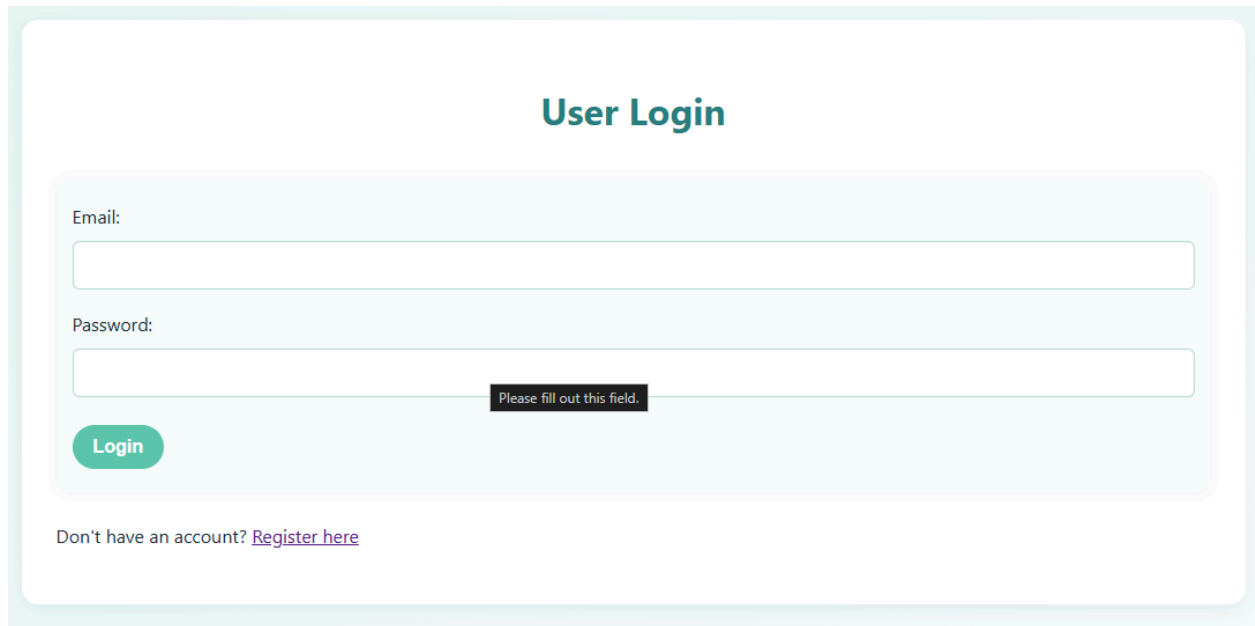


Figure 2.0 shows the Model View Controller (MVC) Framework Design for the Healthcare Equipment Inventory & Sales Management System

## 6.0 USER MANUAL



The image shows a 'User Login' form within a light blue rounded rectangle. The title 'User Login' is centered at the top in a bold, dark teal font. Below the title, the form is contained within a light gray rounded rectangle. It features two input fields: 'Email:' and 'Password:'. The 'Email' field is empty, while the 'Password' field has a black error message 'Please fill out this field.' displayed below it. A green 'Login' button is positioned below the password field. At the bottom of the form, there is a link: 'Don't have an account? [Register here](#)'.

**User Login**

Email:

Password:

Please fill out this field.

Login

Don't have an account? [Register here](#)

Figure 3.0 shows the Login Page, in this page Users must insert their email and password in the form and click the “Login” button to enter into the website. If they haven't registered yet, they can click on the “Register here” button to access Register Page.



## Register New User

Username:

Email:

Password:

Role:

Customer ▼

Register

Already have an account? [Login here](#)

Figure 4.0 shows the Register Page, in this page user can enter their desired username , email, password and role as admin or customer to register. When they have registered, they can proceed with login by clicking “Login here” button.



Figure 5.0 shows when users are greeted with a welcome message in the homepage when they login into the system. There are six option button in the web which are Browse Products, View Cart & Checkout , Payment History , Category , My Profile and Logout

VITAL VAULT

### Products

Name	Price	Stock	Qty	Action
Digital Thermometer	39.90	44	1	Add to Cart
Blood Pressure Monitor (Omron)	199.00	28	1	Add to Cart
Wheelchair (Standard)	450.00	8	1	Add to Cart
Infrared Forehead Thermometer	85.00	18	1	Add to Cart

### Your Cart

Infrared Forehead Thermometer 85.00 1 85.00 **Total: 85.00**

Back to Dashboard

Figure 6.0 shows product list for user to add to cart . The user can choose what product and quantity.

VITAL VAULT

### Your Cart

Product	Unit Price	Quantity	Subtotal
Infrared Forehead Thermometer	85.00	1	85.00
<b>Total:</b>			<b>85.00</b>

Pay Now

Back to Products

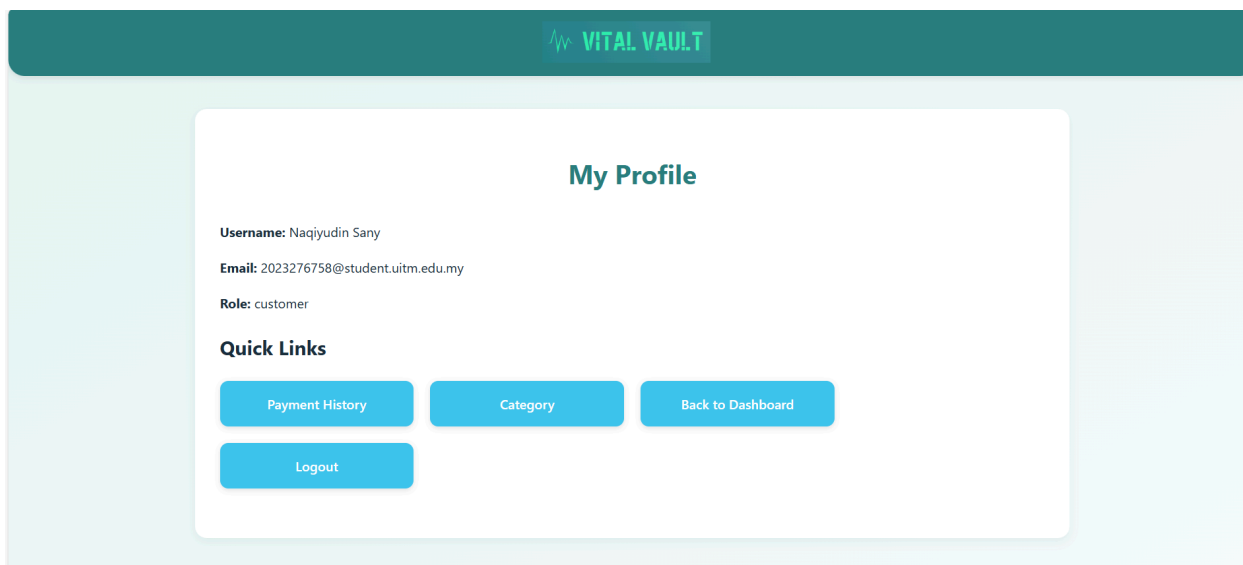
Figure 7.0 shows the user cart after add the product . The page also calculates subtotal of all selected products. User then can proceed to make payment.



Order ID	Date	Total Amount
17	2025-07-10	85.00

Back

Figure 8.0 shows the purchase history made by the user .



### My Profile

**Username:** Naqiyudin Sany  
**Email:** 2023276758@student.uitm.edu.my  
**Role:** customer

**Quick Links**

Payment History   Category   Back to Dashboard   Logout

Figure 9.0 shows the profile of the user that contains Username , Email , Role and access to the 4 related navigation . Which is Payment History , Category , Back to Dashboard and Logout.

Product List						
ID	Name	Price	Stock	Category ID	Supplier ID	Actions
9	Digital Thermometer	39.90	49	2	1	<div>Update</div> <div>Delete</div>
10	Blood Pressure Moni	199.00	30	2	3	<div>Update</div> <div>Delete</div>
11	Wheelchair (Standar	450.00	10	2	2	<div>Update</div> <div>Delete</div>
12	Surgical Face Mask (	25.00	100	2	4	<div>Update</div> <div>Delete</div>

Figure 10 shows product list for admin to update the inventory wether to update all the informations or delete the product. The product list include information of Name , Price, Stock, Category Id and Supplier Id.

Add New Product	
Name:	<input type="text"/>
Price:	<input type="text"/>
Stock Quantity:	<input type="text"/>
Category ID:	<input type="text"/>
Supplier ID:	<input type="text"/>
<div>Add Product</div>	

Figure 11 shows when admin can add new product in the inventory. This includes Name, Price, Stock, Category Id and Supplier Id.

Payment History			
Order ID	Date	Total Amount	User
1	2025-07-04	112.49	farisihusin
2	2025-07-04	200.98	farisihusin
3	2025-07-04	48.00	cheong
4	2025-07-04	160.49	cheong
5	2025-07-04	703.43	farisihusin
6	2025-07-09	39.90	farisihusin
7	2025-07-10	160.00	farisihusin
8	2025-07-10	75.00	farisihusin
9	2025-07-10	900.00	naqi
10	2025-07-10	39.90	farisihusin

Figure 12 shows when admin can view payment history made by all users. This includes OrderID, Date , Total Amount and User data from the earlier payment.

Categories	
ID	Name
2	Healthcare Tools
3	Health Medicine

### Add New Category

Name:

Add

Back to Dashboard

Figure 13 shows when admin can add new category of health equipment or else.

**Suppliers**

ID	Name	Contact Info
1	ABC supply.co	03-4455678
2	MediPro Medical Supplies	medipro@email.com, +6012-3456789
3	WellCare Equipment Sdn Bhd	info@wellcare.com.my, +603-1234567
4	VitalMed Solutions	support@vitalmed.com, +6010-9988776

**Add New Supplier**

Name:

Contact Info:

Add

Figure 14 shows when admin can add new information of suppliers and information contacts.

**My Profile**

**Username:** admin

**Email:** admin@gmail.com

**Role:** admin

**Quick Links**

Payment History

Suppliers

Back to Dashboard

Logout

Figure 15 shows profile of the admin which contains the username , email, roles and access to the 4 related navigation . Which is Payment History , Suppliers , Back to Dashboard and Logout.

## 7.0 NOTES

The Healthcare Equipment Inventory & Sales Management System effectively tackles the issues of manual inventory monitoring and ineffective sales management. The system boosts operational efficiency, enhances customer satisfaction, and facilitates data-driven decision-making through a centralized, automated, and role-based platform. Potential improvements might involve:

- Support for multiple payment methods (credit cards, e-wallets, bank transfers) to improve customer convenience.
- Email/SMS notifications for admins when product stock falls below a threshold.
- Allow customers to filter products by price range, category, or supplier for faster browsing.

This system provides a solid base for healthcare retailers to update their operations and remain competitive in the online market.