



**INSTITUTE FOR ADVANCED  
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Documentation On

**Store Management System**

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## **ABSTRACT**

The Store Management System (SMS) is a comprehensive software solution designed to revolutionize retail operations by automating and optimizing various processes involved in managing a store. Developed within the realm of computer science, this project aims to address the challenges faced by traditional brick-and-mortar stores in efficiently handling inventory, sales, customer data, and employee management.

### **Key features of the Store Management System include:**

1. **Inventory Management:** The system facilitates real-time tracking of inventory levels, enabling store managers to monitor stock levels and automate reordering processes to prevent stockouts or overstocking.
2. **Sales and Transaction Processing:** With built-in point-of-sale (POS) functionality, the system streamlines the checkout process, allowing for swift and accurate transactions. It provides support for various payment methods, generates invoices, and maintains a record of sales transactions for future reference.
3. **Customer Relationship Management (CRM):** Store system stores customer information, purchase history, and preferences, which can be leveraged to personalize marketing efforts, enhance customer service, and foster loyalty programs.
4. **Store Management:** System admin can manage allocation of employees to the store activities with preset restrictions. Manager also can overview sales activities over selected period of time to track store progress.

**Reporting and Analytics:** The system offers comprehensive reporting tools that provide insights into various aspects of store operations, including sales performance, inventory turnover. These analytics empower decision-makers to identify trends, optimize strategies, and make data-driven decisions.

The Store Management System is built using modern programming languages and frameworks, ensuring scalability, reliability, and security. Its user-friendly interface makes it accessible to store managers and staff with minimal training, while its robust architecture supports integration with existing systems and future enhancements.

## **ACKNOWLEDGEMENT**

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## 1. INTRODUCTION

In the dynamic landscape of retail, efficient management of store operations is paramount for ensuring smooth functioning and maximizing profitability. With the advent of technology, Store Management Systems have become indispensable tools for modern businesses to streamline their processes and enhance customer satisfaction.

The Store Management System (SMS) is a comprehensive software solution designed to automate and integrate various aspects of store operations, including inventory management, sales tracking, employee management, and customer relationship management. By leveraging advanced computing technologies, such as database management systems and user-friendly interfaces to optimize resource utilization, and provide actionable insights for informed decision-making.

This project endeavors to develop a robust and user-friendly Store Management System tailored to the specific needs of retail businesses. Through the implementation of key features like real-time inventory tracking, sales analytics, and customizable reporting tools, the system aims to empower store owners and managers with the tools necessary to effectively manage their operations, improve efficiency, and drive growth.

The Store Management System project will employ industry-standard software development methodologies and technologies to ensure scalability, reliability, and maintainability. Furthermore, emphasis will be placed on user experience design to create an intuitive and seamless interface that enhances usability and productivity for store staff at all levels.

Overall, the Store Management System project represents a significant step towards modernizing store operations and equipping businesses with the tools they need to thrive in today's competitive retail landscape.

- **Purpose**

In a store management system project in computer science, the purpose of the system is to efficiently manage various aspects of the store's operations. Here's a breakdown of its purposes:

**Inventory Management:** The system tracks inventory levels, updates stock quantities, and alerts when stock is running low. It helps in managing stock procurement, storage, and distribution.

**Sales Management:** It records sales transactions, generates invoices or receipts, and maintains a sales history. This helps in analyzing sales patterns, identifying popular products, and managing pricing strategies.

**Customer Management:** The system stores customer information, including contact details and purchase history. This facilitates personalized marketing, loyalty programs, and customer relationship management.

**Employee Management:** It manages employee access and activities with preset conditions. This ensures efficient management of employees.

- **Scope**

We believe that Online Store Management System will become even more popular in the future for the obvious reason that they save users, time and money by allowing purchase goods from anywhere, anytime.

- **Objective of Store Management System:**

When designing objectives for a store management system project in computer science, you'll want to consider both the technical and functional aspects of the system. Here are some objectives to consider:

1. Functional Objectives:

- **Inventory Management:** Develop a system to efficiently track and manage inventory levels, including stock updates, product additions, and removals.
- **Sales Tracking:** Implement a feature to record sales transactions, including items sold, quantities, prices, and total revenue.
- **Customer Management:** Create a module for managing customer information, including profiles, purchase history, and loyalty programs if applicable.
- **Reporting:** Generate various reports such as sales reports, inventory status reports, profit analysis, etc., to provide insights for decision-making.

2. Technical Objectives:

- **Scalability:** Design the system architecture to accommodate growth and increasing transaction volumes over time.
- **Reliability:** Ensure the system is robust and reliable, minimizing downtime and data loss.
- **Performance:** Optimize system performance to ensure fast response times, even during peak usage periods.

3. Project Management Objectives:

- **Timeliness:** Define clear milestones and deadlines to ensure the project progresses according to schedule.
- **Budget Control:** Manage costs effectively to prevent budget overruns and ensure the project remains financially viable.
- **Stakeholder Communication:** Maintain regular communication with stakeholders (e.g., store owners, end-users) to gather requirements, provide updates, and address any concerns or feedback.
- **Quality Assurance:** Implement rigorous testing procedures to identify and fix bugs, ensuring the system meets quality standards before deployment.

- **Functionalities provided by Store Management System are as follows:**

**Inventory Management:** This includes features for adding, updating, and deleting products in the inventory. It may also involve tracking stock levels, generating reports on inventory status, and setting up alerts for low stock levels.

**Sales Management:** This involves functionalities for processing sales transactions, including adding items to a sale, calculating the total cost, applying discounts or promotions, and generating invoices or receipts.

**Customer Management:** This includes features for managing customer information, such as storing customer details, tracking purchase history, managing loyalty programs, and generating customer reports.

**Employee Management:** This includes features for managing employee information, such as adding new employees, managing roles and permissions.

**Reporting and Analytics:** This involves functionalities for generating various reports and analyzing data related to sales, inventory, customer behavior. It may include features for creating custom reports, visualizing data, and identifying trends or patterns.

**Point of Sale (POS) System:** This is a critical functionality that enables store staff to process sales transactions directly with customers. It typically includes a user-friendly interface for adding items to a sale, accepting different payment methods.

These functionalities can vary depending on the specific requirements of the store and the complexity of the system being developed.



## 2. REQUIREMENTS

### ❖ Functional Requirements

Functional requirements for a store management system project in computer science typically encompass the specific features and functionalities that the system must provide to meet the needs of the users. Here's a list of common functional requirements for such a system:

#### **FR-1. User Management:**

- Registration of new users (store managers, employees).
- Authentication mechanisms (login, logout).
- User roles and permissions management (admin, manager, cashier, etc.)

#### **FR-2. Inventory Management:**

- Add, edit and delete products.
- Tracking of product quantity (e.g., in stock, out of stock)

#### **FR-3. Sales Management:**

- Processing sales transactions.
- Generating invoices/receipts.
- Applying discounts and promotions.
- Sales reporting and analytics.

#### **FR-4. Customer Management:**

- Maintaining customer profiles.
- Loyalty programs and customer rewards.
- Tracking customer purchase history and preferences.

#### **FR-5. Reporting and Analytics:**

- Generating various reports (sales, inventory, profit/loss).
- Trend analysis and forecasting.
- Customizable reporting options.

#### **FR-6. User Interface:**

- Intuitive and user-friendly interface.

- Support for different devices (desktop, mobile, tablet).

**FR-7. Notifications and Alerts:**

- Alerts for low stock levels.
- Notification of successful transactions.

**❖ Non Functional Requirements:****➤ Performance:**

- System can handle large number of users accessing system simultaneously.

**➤ Reliability:**

- Availability: The system should be available for use during specified hours with minimal downtime for maintenance.
- Fault tolerance: The system should be able to recover gracefully from hardware failures, software bugs, or other issues without losing data or compromising functionality.

**➤ Usability:**

- User interface design: The user interface should be intuitive, easy to navigate, and visually appealing.

**➤ Scalability:**

- The system should be able to accommodate growth in the number of products, customers, and transactions over time without requiring significant architectural changes.
- Database scalability: The database should be able to handle increasing amounts of data without performance degradation.

**➤ Maintainability:**

- Modularity: The system should be designed in a modular fashion, with loosely coupled components which can be modified or replaced independently.

**Other Requirements:****Hardware and Network Interfaces:**

Back-end Server Configuration:

- Intel Pentium-IV Processor
- 128 MB RAM
- 1 Raid Controller Card
- 32-bit Ethernet Controller (100 Base-T)
- 8 x 2.0 GB Fast SCSI/2 with Raid Support
- 2.88 MB FDD
- 48x CD ROM Drive
- SVGA Colour Monitor on PCI with 1MB RAM
- 101 Keys Keyboard
- 1 Microsoft Mouse with pad
- 4/8 GB DAT
- One Serial & Two Parallel Ports
- Internet Information Server (IIS)
- Microsoft Transaction Server (MTS)

Front-end Client Configuration:

- Intel Pentium-III @ 650 MHz Processor
- 128 MB SDRAM
- 10 GB Hard Disk Drive
- 1.44 MB Floppy Disk Drive
- 15" SVGA Digital Color Monitor
- One Serial, One Parallel port, and One USB port
- 104 Keys Keyboard
- PS2 Mouse with pad
- 32-bit PCI Ethernet Card
- 48X CD Drive

**Software Interfaces:**

Software configuration for back-end Services:

- STS 3.9.18
- JDK 11

Software configuration for front-end Services:

- Visual Studio Code
- Node.js
- Web Browser – Google Chrome

### 3. DATABASE DESIGN

#### Database Design

The following table structures depict the database design.

Table 1: UserStd :

```
mysql> desc user_std;
```

Field	Type	Null	Key	Default	Extra
user_std_id	bigint	NO	PRI	NULL	auto_increment
area	varchar(50)	NO		NULL	
city	varchar(30)	NO		NULL	
first_name	varchar(20)	NO		NULL	
home_address	varchar(50)	NO		NULL	
last_name	varchar(20)	NO		NULL	
pincode	varchar(10)	NO		NULL	
street	varchar(50)	NO		NULL	
user_role	varchar(255)	NO		NULL	

Table 2: User :

```
mysql> desc user;
```

Field	Type	Null	Key	Default	Extra
user_id	bigint	NO	PRI	NULL	auto_increment
user_creation_date	date	YES		NULL	
user_email	varchar(255)	YES	UNI	NULL	
user_password	varchar(255)	YES		NULL	
user_phone	varchar(255)	YES	UNI	NULL	
user_std_id	bigint	YES	MUL	NULL	

Table 3: ProductStd:

```
mysql> desc product_std;
```

Field	Type	Null	Key	Default	Extra
product_std_id	bigint	NO	PRI	NULL	auto_increment
product_cost	double	NO		NULL	
cart_cart_id	bigint	YES	MUL	NULL	
cart_std	bigint	YES	MUL	NULL	

Table 4: Product :

```
mysql> desc product;
```

Field	Type	Null	Key	Default	Extra
product_id	bigint	NO	PRI	NULL	auto_increment
product_desc	varchar(255)	YES		NULL	
product_img	varchar(255)	YES		NULL	
product_name	varchar(255)	YES		NULL	
product_stock	int	YES		NULL	
product_std_id	bigint	YES	MUL	NULL	

Table 5: Cart :

```
mysql> desc dispatch;
```

Field	Type	Null	Key	Default	Extra
dispatch_id	bigint	NO	PRI	NULL	auto_increment
arrival_date	date	YES		NULL	
sales_dispatch_id	bigint	YES	MUL	NULL	
user_dispatch_id	bigint	YES	MUL	NULL	

Table 6: SalesDoc :

```
mysql> desc sales_doc;
```

Field	Type	Null	Key	Default	Extra
sales_id	bigint	NO	PRI	NULL	auto_increment
sales_date	date	YES		NULL	
total_cost	double	YES		NULL	
user_cart_id	bigint	YES	MUL	NULL	

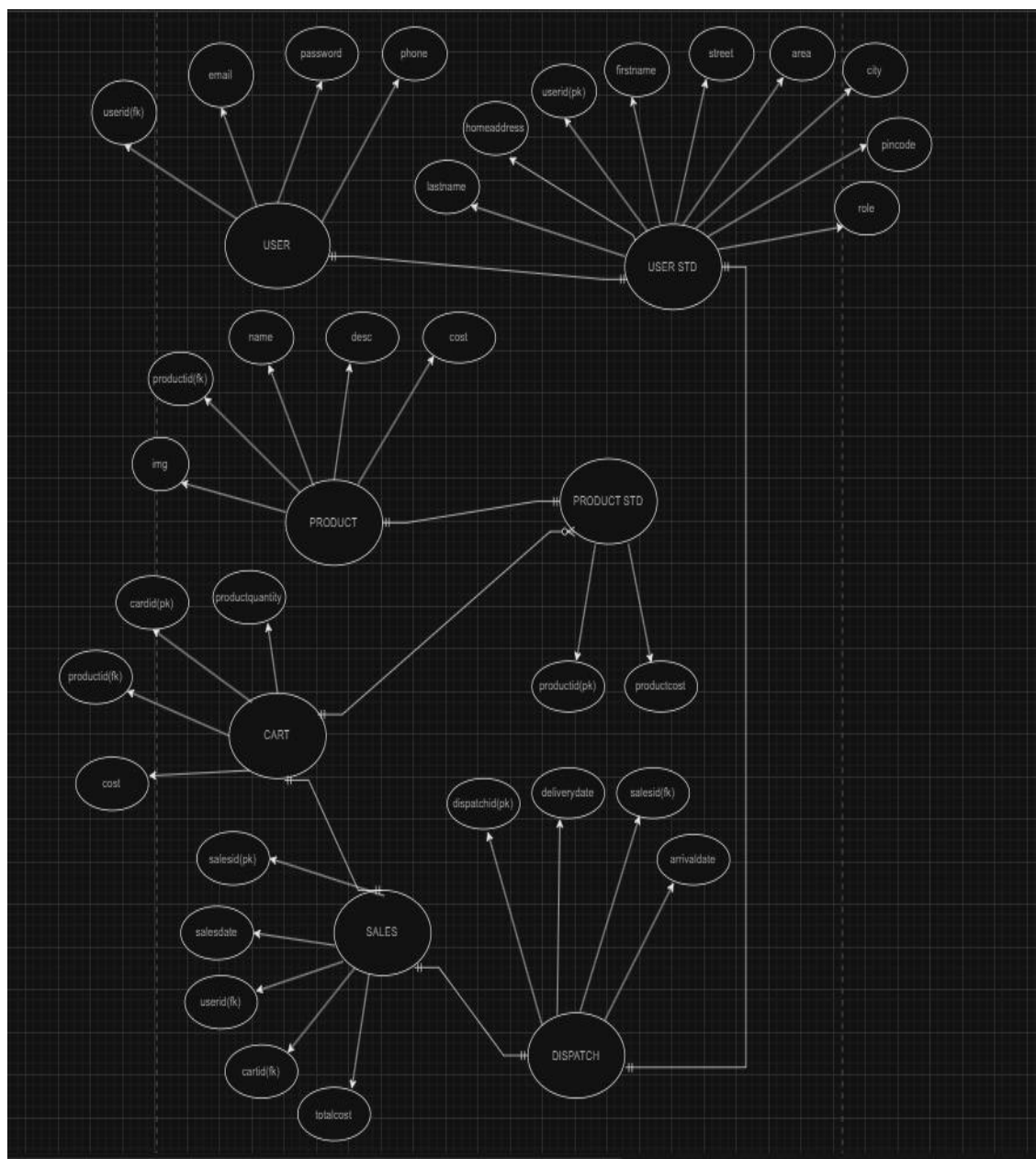
Table 7: Dispatch :

```
mysql> desc dispatch;
```

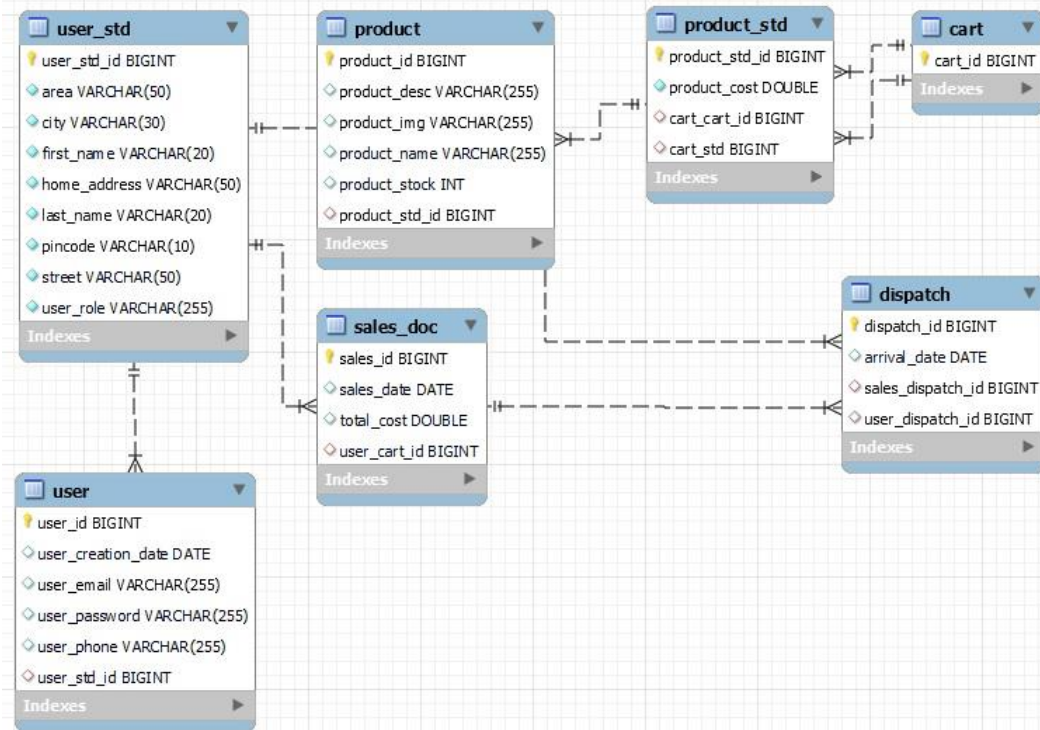
Field	Type	Null	Key	Default	Extra
dispatch_id	bigint	NO	PRI	NULL	auto_increment
arrival_date	date	YES		NULL	
sales_dispatch_id	bigint	YES	MUL	NULL	
user_dispatch_id	bigint	YES	MUL	NULL	

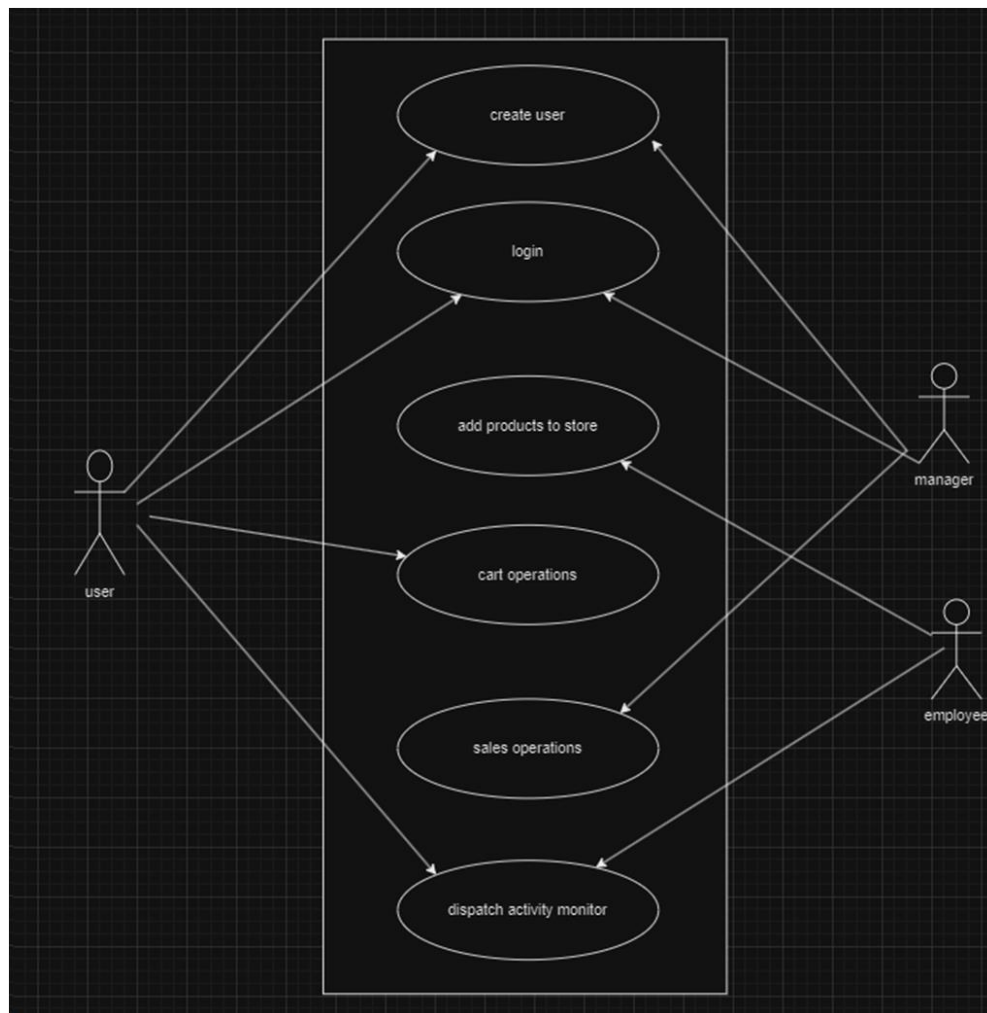
## 4. APPENDIX A

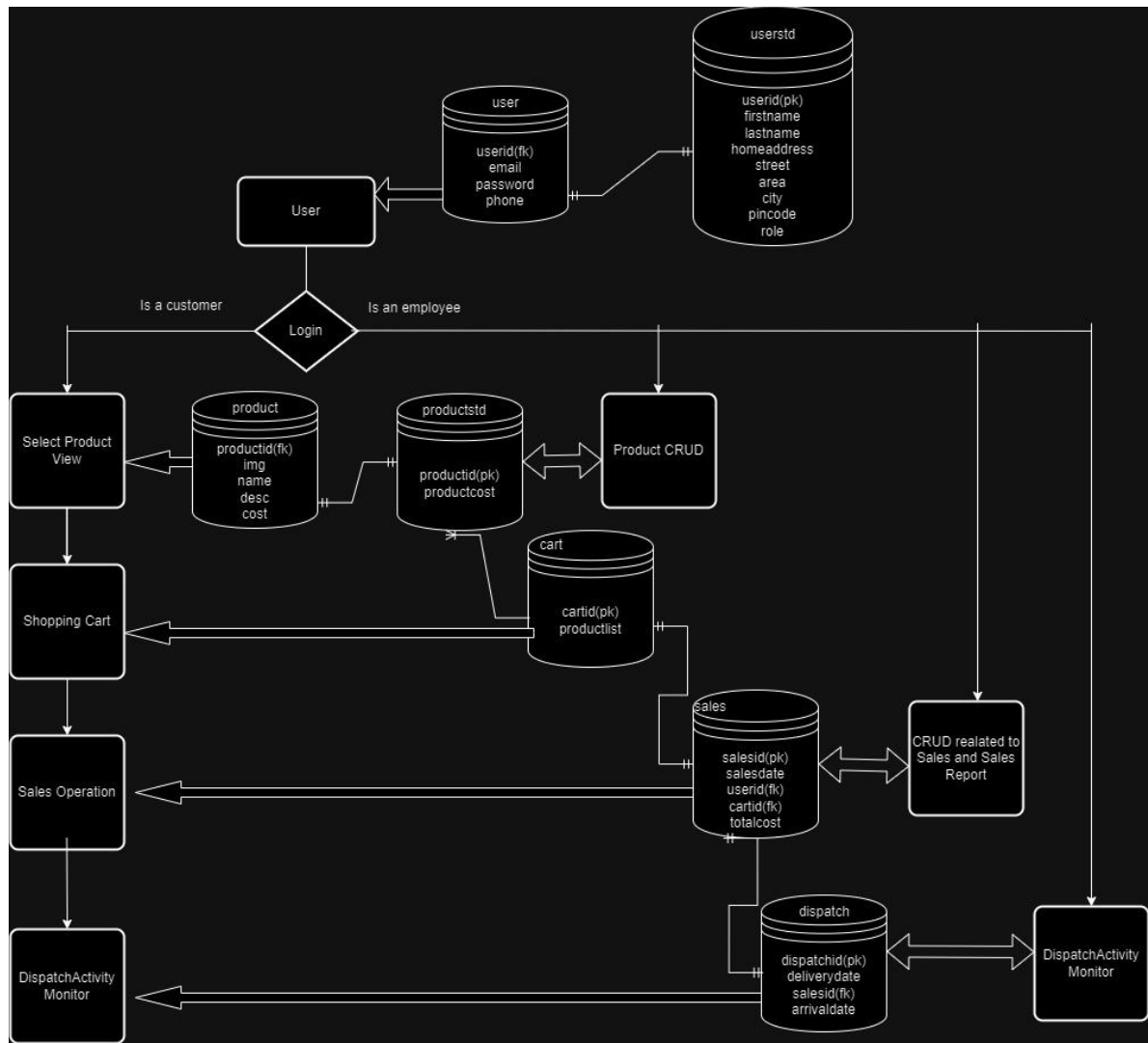
### Entity Relationship Diagram:





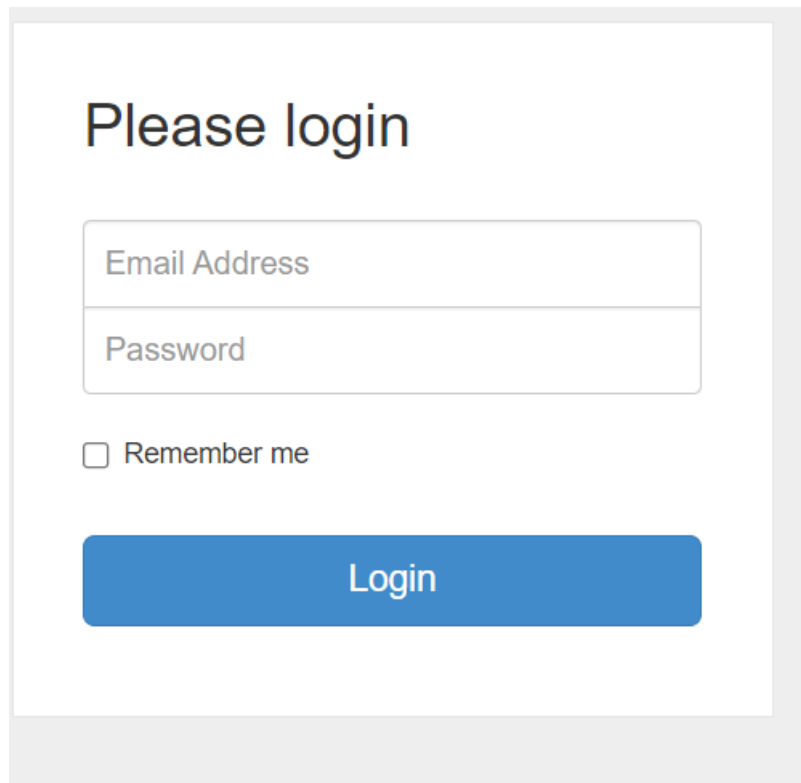
**Class Diagram:**

**Use Case Diagram:**

**Data Flow Diagram:**

## 2. APPENDIX B

### **Login :**

A login form UI mockup. It features a light gray background with a white rectangular area containing the form elements. At the top of the white area is the text "Please login" in a large, dark font. Below this are two stacked input fields: the top one is labeled "Email Address" and the bottom one is labeled "Password". Under the password field is a checkbox followed by the text "Remember me". At the bottom of the white area is a blue rectangular button with the word "Login" in white text.

Please login




Email Address

Password

☐ Remember me

Login

**Home Page :****From Classic to Digital****----Our best-selling Range----**

Product ID	Product Name	Product Description	Product Sample Image	Price Rs.
100	Titan 1501		Analog, Waterproof, Metal Body	1599
101	Timex 999		Digital, Waterproof, Sports	2199
102	Titan 200		Analog, Waterproof, Rubber	850

**Sales Document :****Order Invoice**

User ID	Sales TxNo.	Date	Product ID	Transaction Amount
102	15660	2024-02-21	1236	1699

Disclaimer:- This document is digitally signed.

**Thank you for shopping with us..!!!!**

**Dispatch Details:****Dispatch Details**

Sales ID	Dispatch ID	Sales Date	Expected Delivery Date
15660	102	2024-02-21	2024-02-26

**For more info Contact us on**

**Support@mystore.com**

**Helpline No. 1800985985**

## 5. REFERENCES

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