

Chain Shop Management System for Clothing Band.

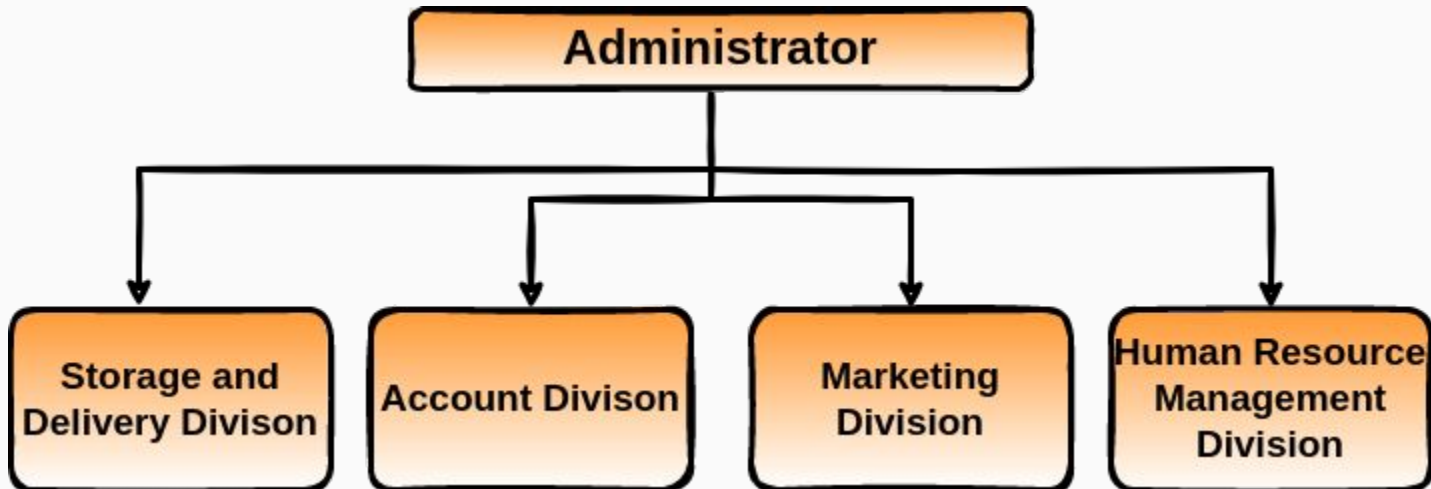


What is The Problem?

A Clothing band is want to open some outlet across the country. They also want to open online selling system. The main objective of their project is to sell product across the country over online or by hand using their outlets.

Business Architecture

How do they run their business?



Business Architecture

How do they run their business?

- They have two types of outlet systems. Online and Offline. Online Outlet is just a website.
- A product was built in the factory and received by the **Storage and Delivery Division**. Then the **Storage and Delivery Division** delivers this product according to the online outlet's instructions and the offline outlet's needs. Every product has a unique identification number.
- Every division and outlets has some stuffs to manage certain tasks.



Let's talk about proposed system.....

Users of the System

1. Administrator
2. Divisional Head
3. Divisional Stuff
4. Outlet Manager
5. Outlet Stuff
6. Customer

N: B: Every user will have the required permission for performing his/her task.

Administrator

The administrator is the top level user who initialize this system having every permission of this system. The basic functionalities of the administrator are:

1. Create a outlet.
2. Manage permission of users.
3. Viewing sell report, employee performance report etc.

Divisional Head and Stuffs

Every division has a divisional head and some stuff under the head. The basic functionality of divisions are :

1. **Storage and Delivery Division :**

- Entry product information.
- Print product unique id and information for tag.
- Delivery product according to Outlet's instruction. For online outlet, delivery means parcel or home delivery. For Online outlet, delivery means deliver product according to outlet's need.
- Receiving damaged product from online and offline outlet. And return new product if needed.
- Request for money to account division according to need.

Divisional Head and Stuffs

2. Account Division :

- Make salary statement according to employee records.
- Observe daily sales report.
- Basic tasks related to salary management.
- Billing according to the need of other divisional head and outlet's Manager.

Divisional Head and Stuffs

3. Marketing Division :

- Observe sales reports and analysis the customer's interest.
- Make marketing strategies such as discounts, flash sales, offers, etc.
- Request for money to account division according to need.

Divisional Head and Stuffs

4. HRM Division :

- Add employee to the system.
- Analysis employee performance.
- Request for money to account division according to need.

Outlet Manager and Stuffs

Every shop/outlet will has one manager and some stuff under him/her.

Basic functionalities are :

- Create invoice
- Receive payment (Cash or Payment API)
- Return product
- Daily backup of sales and expenses information.
- Request money to **Account Division** according to needs.
- Receive and return product from/to **Storage and Delivery Division**.

Every employee level user will be entry the time of his/her arrival and departure.

Customer

There are two types of customer.

1. **Authorized:** Authorized customer is the person who has an account in this system (central database) and can able to order via online (online outlet/website). Necessary information will store in central database.
2. **Anonymous:** Anonymous customer is the person who is not a user of this system directly. He/She will able to buy product in the help of outlet's stuff of a certain offline outlet. In this case, his phone no will be store to track his/her order(s).

Functional Requirements

The system will provide following functional requirements:

- Every user will be able to use this system only if he/she has an authorized account. Authorized process will be perform by login.
- Authorized customer will be able to see his previous purchases history.
- Search functionality will be available to all kind of users.
- Add/remove to cart functionality will be available to both guest user and authorized customer.
- Product categorizing by size, type, color and price will be available.
- Authorized customer will be able to track his/her order status.

Functional Requirements

- Guest user can add product to cart, but to order authorization must be needed.
- All kind of cashless payment will be performed by SSLCOMMERZ Payment API.
- Offline Outlets will have the required device for taking payment by bank, card and mobile banking system.
- Customer information and orders data will be encrypted.
- The system will have proper interface to interact with POS machine, printer and BARCode Scanner.

Functional Requirements

- Offline outlet stuff will be input product information via BARCode scanner, customer information via keyboard and payment information via keyboard or API request (in the case of cashless payment).
- Every type of product will have an unique barcode by which this kind of product known to system.
- The system will contain two types of database. Local and Central. Every outlet will maintain a local database. The Central database will be synchronized with local database automatically depending on network.
- Current quantity of a product in offline outlets will be automatically updated. In case of website, the product quantity will be determined by the quantity in Storage and Delivery Division.

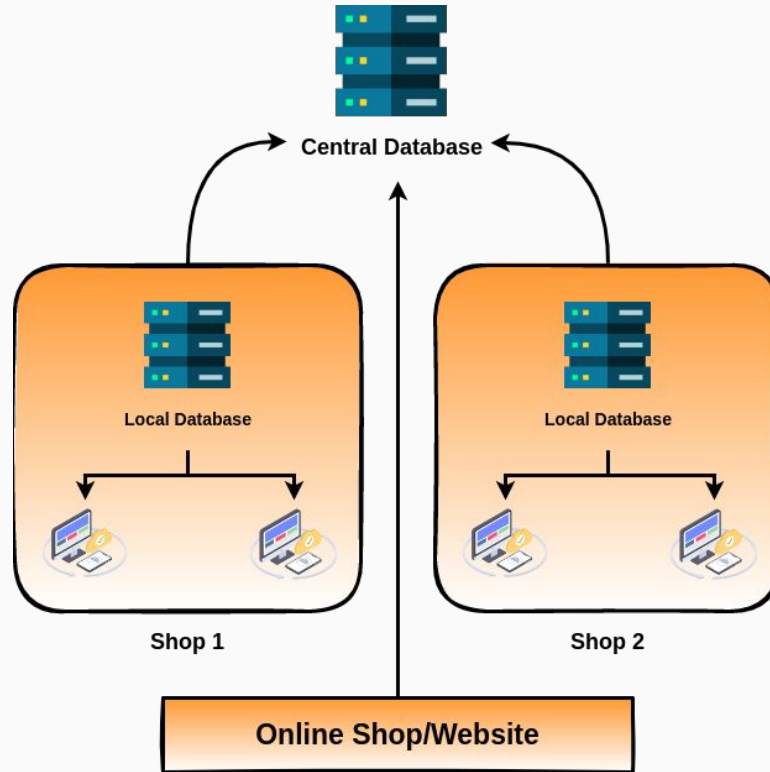
Functional Requirements

- Change of product price will be automatically updated in the time of synchronization.
- Advertisement system will be available in the website.
- Product picture(s), price, color variations, size variations, reviews will be available in the website.
- Authorized customer will be able to give numerical and descriptive review of a product.
- All the store locations will present in website.
- Offline outlets will be use Desktop application which will be communicates will central database via API.

Functional Requirements

- Enough power backup will be available in every offline outlet and only cash payment will be available during any network or device issue.
- Any customer will be able to check if his desire product is available or not in a certain outlet via website.
- Every employee will be able to input his arrival and departure time using card scanner.
- Local database will be able to access without ethernet.

Central and Local Database System



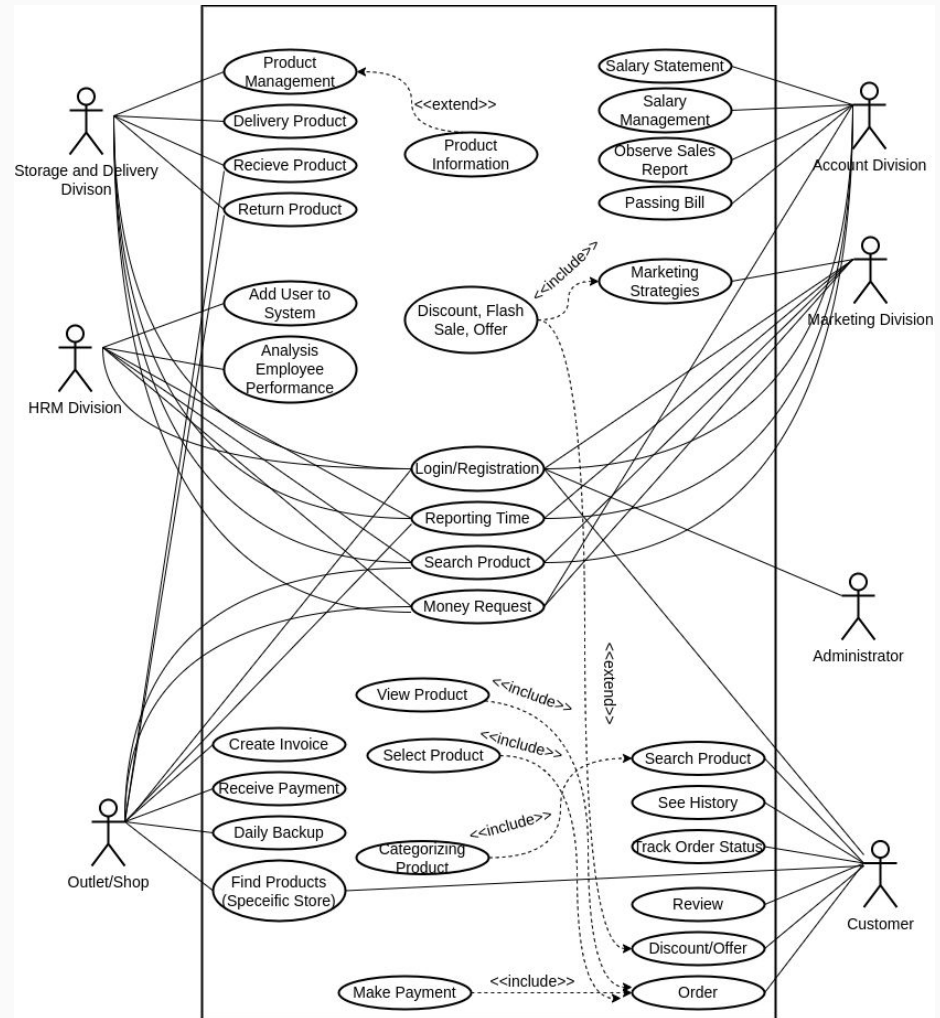
Non-Functional Requirements

- **Security:** The system must ensure the security of sensitive information, including customer and employee information.
- **Reliability:** The system must be reliable and have a high level of uptime to ensure the smooth operation of the retail shops.
- **Performance:** The system must provide fast and responsive performance, even when handling large amounts of data.
- **Usability:** The system must be user-friendly and easy to navigate, allowing users to perform their tasks efficiently.
- **Scalability:** The system must be scalable to accommodate growth in the number of outlets and the amount of data being processed.

Hardware Requirements

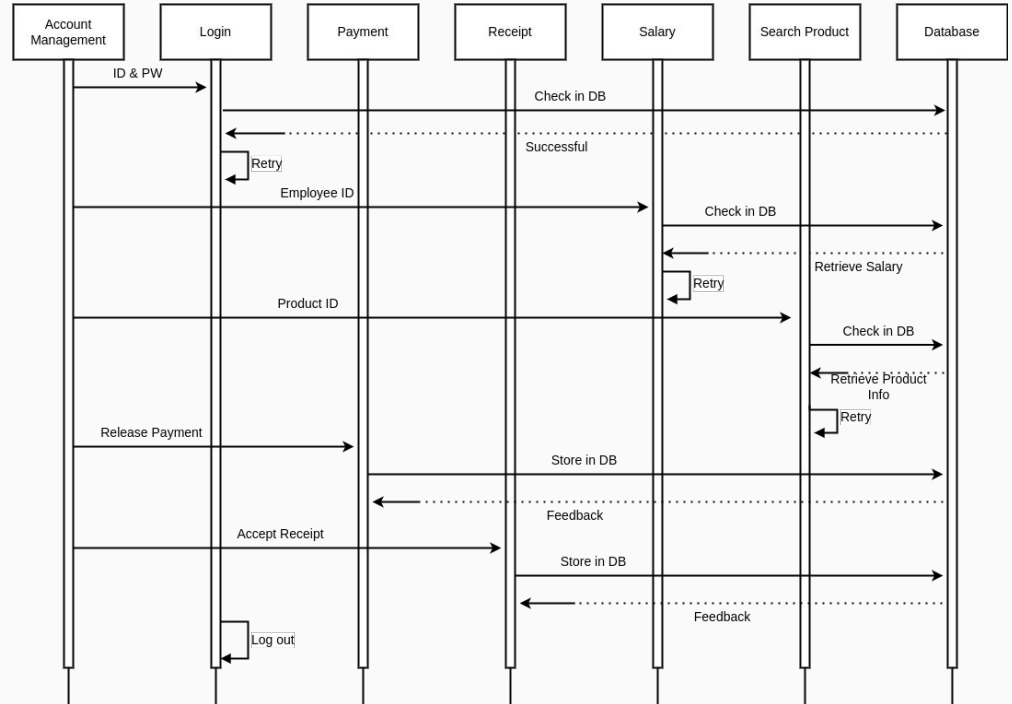
- The website will be responsive and able to load in all kind of screen size.
- The website will be accessible in all the major browsers.
- The desktop application will be supported by Windows 7, Windows 10 and Windows 11.
- The central database and API will be host in a apache server, so it will meet the needed requirements.

Use Case Diagram

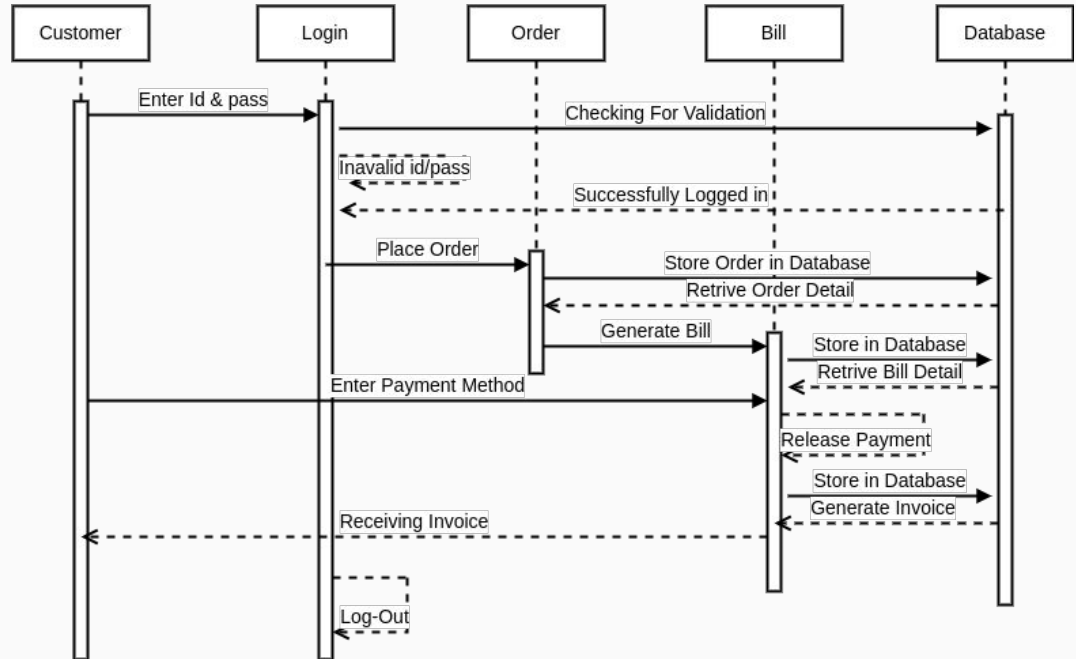


Sequence Diagram

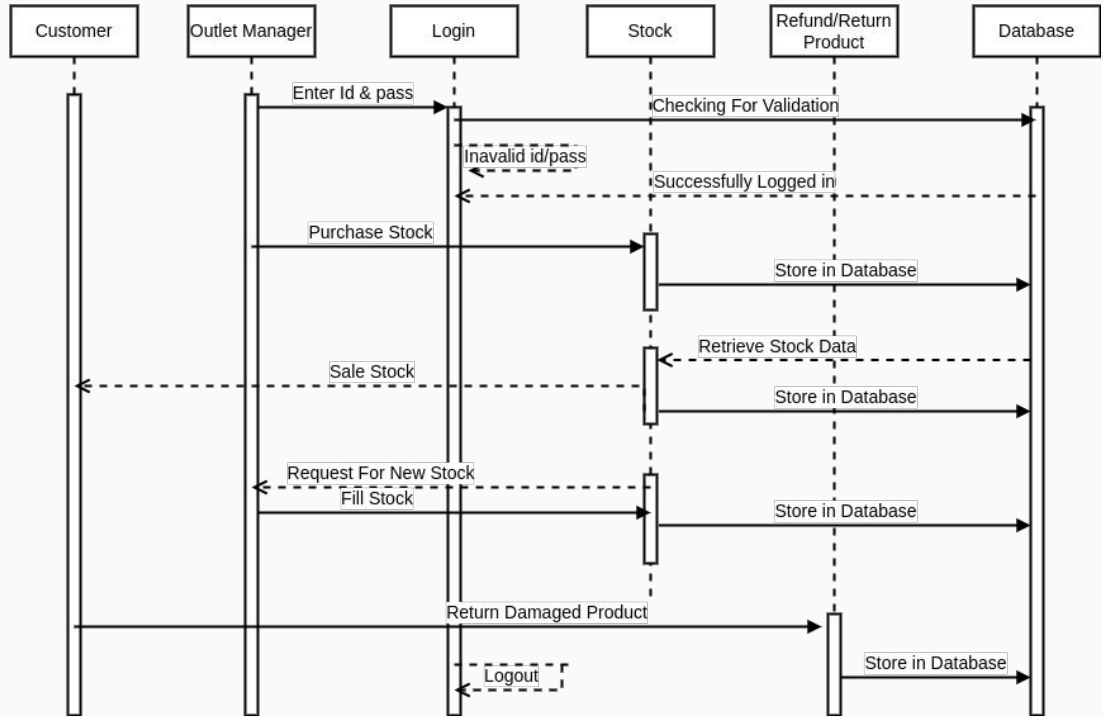
Account



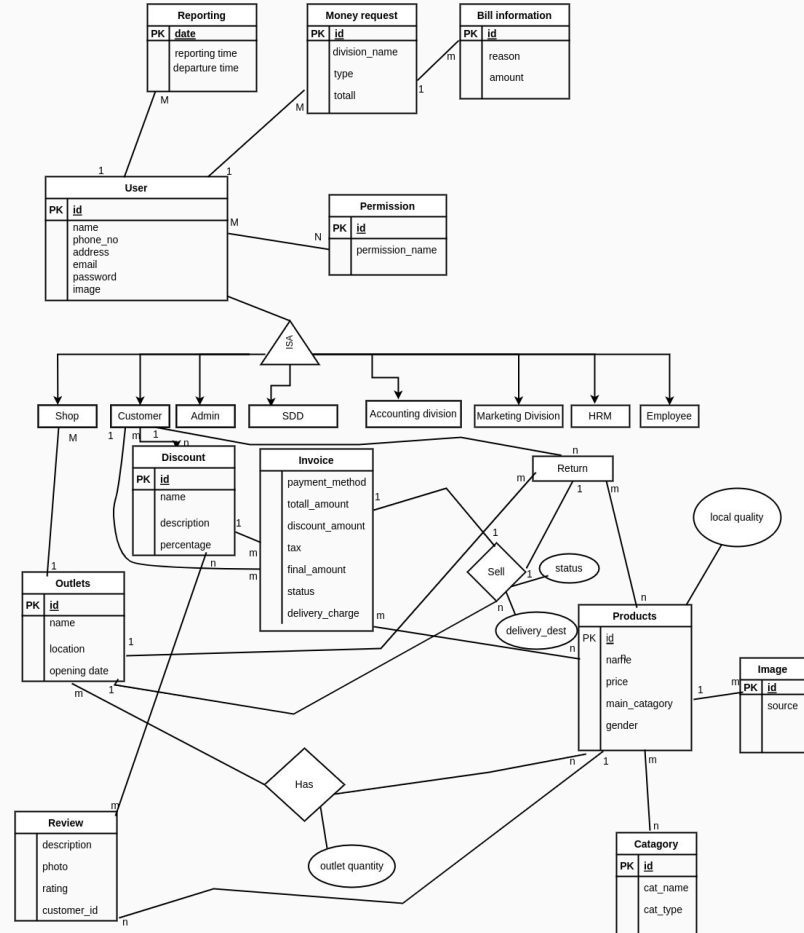
Sequence Diagram Sales



Sequence Diagram Stock



ER Diagram



Thank You