

# DATABASE DESIGN FOR WHOLESALE MANAGEMENT SYSTEM

## Team Members: -

1. Sudarshan Deshmankar (002191198)
2. Vishesh Rawat (002192290)
3. Akshay Kumar Karthikeyan (002198969)
4. Sushanth Sunder Metpalli (002922641)

## Objectives: -

To design a database for wholesale companies which can provide the following features: -

- Accuracy in maintaining data and inventory structure.
- Managing the product storage and summarize point of sales.
- To provide sales data for each day.
- To provide details on goods expiry dates.
- Eradicate the redundancies.
- To maintain the integrity of data.

## Problem Statement: -

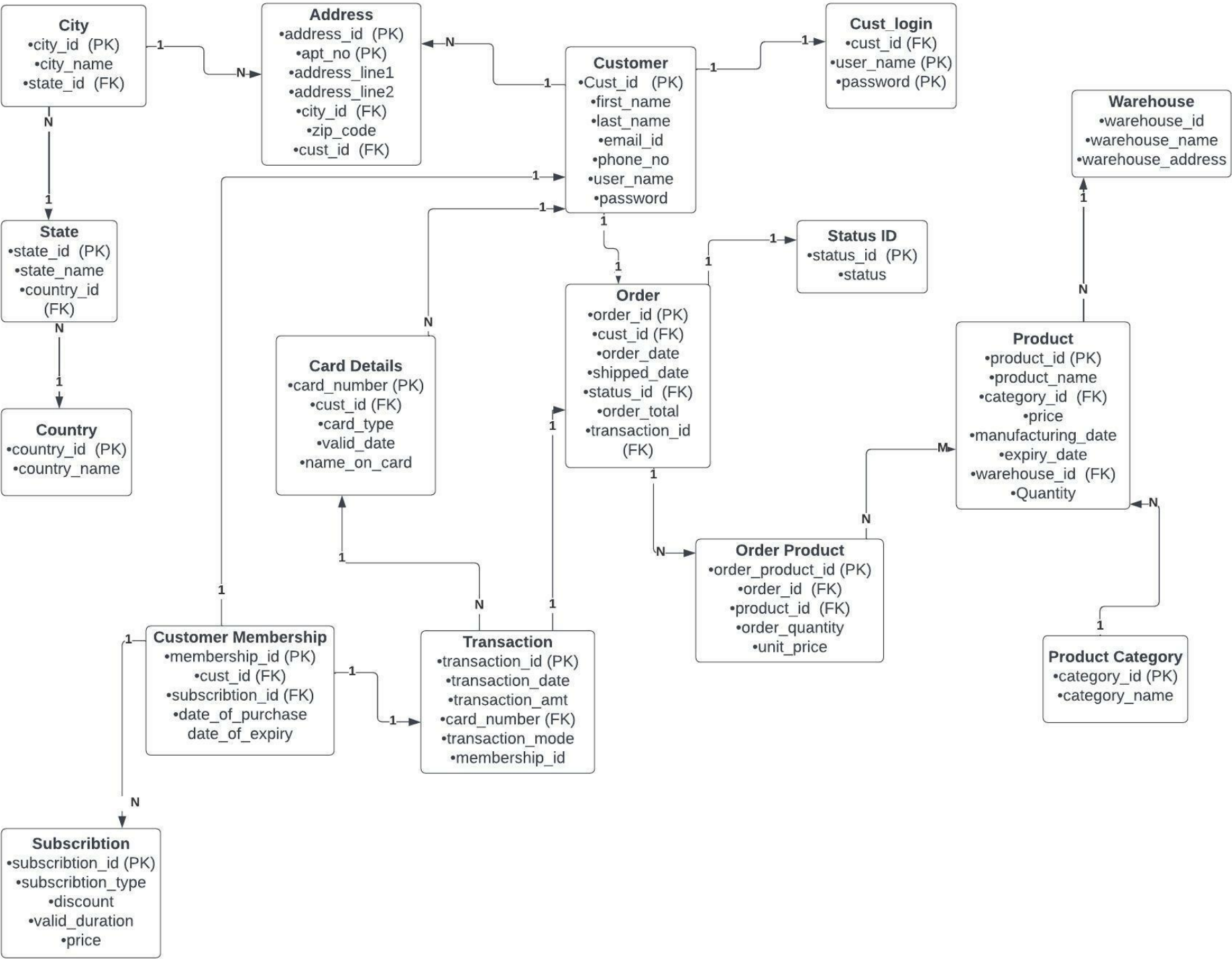
1. The existing system uses a manual inventory system to stock products, order, and purchase items.
2. The security level of data, documents related to transactions and inventory is low.
3. Existing data does not provide any records for expiration of food items.
4. Inadequate data and unstructured information are recorded, and data cannot be accessed because the records are stored in multiple files and formats.
5. Reports for total sales of the day are determined by the amount of money in the cashier deck, making it impossible to provide data to the owner for him to make sound business decisions.
6. Billing information, tickets, and coupons are not being handled correctly from wholesale to store.
7. Processing, adding, and managing are difficult tasks.
8. Time consuming, insufficient data on physical counts of products.
9. Missing daily orders data, insufficient data for predicting the supplies needed, and logistics are all factors that contribute to these challenges

## Proposed Solutions: -

To overcome the above problems, a database model can be used. The solutions are: -

1. Instead of manually searching for logistics availability, usernames details, we can use Natural keys in databases to prevent users for redundancies and makes the data consistent.
2. With the database design, we can obtain the pricing and customer's details by including the Customer ID and Product ID as PRIMARY KEY that identifies the records uniquely.
3. Using a database design, even though the Manufacturing ID and Sales ID are different, we can join the two tables using JOINS functions and obtain the data from two different entities. All sales information can be obtained according to their manufacturing details.
4. The details of the cards are not specified. Using this database, we can manage the card details of customers, discounted rate can be identified.
5. Managing of subscription is difficult so using this database, the subscription expiry dates, balance of customers in cards and discounted rates can be identified and managed properly.

DATA MODEL E-R DIAGRAM



CUSTOMER		
Attributes	Data Type & Size	Comments
Customer_ID	NUMBER	PRIMARY KEY, AUTO GENERATED
First_Name	VARCHAR(25)	NOT NULL
Last_Name	VARCHAR(25)	NOT NULL
Email_ID	VARCHAR(50)	UNIQUE KEY, NOT NULL
Phone_No	NUMBER	NOT NULL
Address	VARCHAR(120)	NOT NULL

LOGIN		
Attributes	Data Type & Size	Comments
Email_ID	VARCHAR(120)	PRIMARY KEY, NOT NULL
Password	VARCHAR(100)	UNIQUE KEY, NOT NULL
Status	VARCHAR(30)	NOT NULL

PRODUCT		
Attributes	Data Type & Size	Comments
Product_ID	NUMBER	PRIMARY KEY, AUTO GENERATED
Category_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Category_ID FROM PRODUCT CATEGORY
Product_Name	VARCHAR(50)	NOT NULL
Manufacturing_Date	DATE	NOT NULL
Expiry_Date	DATE	NOT NULL
Product_Price	FLOAT	NOT NULL

PRODUCT_CATEGORY		
Attributes	Data Type & Size	Comments
Category_ID	NUMBER	PRIMARY KEY, AUTO GENERATED
Product_category	VARCHAR(50)	NOT NULL

WAREHOUSE		
Attributes	Data Type & Size	Comments
Product_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Product_ID FROM PRODUCT
Seller_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Seller_ID FROM SELLER
Quantity	NUMBER	NOT NULL

SELLER		
Attributes	Data Type & Size	Comments
Seller_ID	NUMBER	PRIMARY KEY, AUTO GENERATED
Seller_name	VARCHAR(100)	UNIQUE KEY, NOT NULL
Location	VARCHAR(25)	NOT NULL
Contact_No	NUMBER	UNIQUE KEY, NOT NULL
Email_id	VARCHAR(120)	UNIQUE KEY, NOT NULL

SUBSCRIPTION		
Attributes	Data Type & Size	Comments
Subscription_ID	NUMBER	PRIMARY KEY, NOT NULL
Sub_Type	VARCHAR(20)	NOT NULL
Discount	FLOAT	UNIQUE KEY, NOT NULL
Duration	VARCHAR(20)	UNIQUE KEY, NOT NULL
Price	FLOAT	NOT NULL

CUSTOMER_MEMBERSHIP		
Attributes	Data Type & Size	Comments
Membership_ID	NUMBER	PRIMARY KEY

Customer_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Customer_ID FROM CUSTOMER
Subscription_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Subscription_ID FROM SUBSCRIPTION
Date_of_Purchase	TIMESTAMP	NOT NULL
Expiry_Date	TIMESTAMP	NOT NULL

CARD\_DETAILS

Attributes	Data Type & Size	Comments
Customer_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Customer_ID FROM CUSTOMER
Card_number	NUMBER	UNIQUE KEY, NOT NULL
Card_type	VARCHAR(30)	NOT NULL
Valid_date	DATE	NOT NULL
Name_on_card	VARCHAR(50)	UNIQUE KEY, NOT NULL

CARD\_MODE

Attributes	Data Type & Size	Comments
Mode_ID	NUMBER	PRIMARY KEY
Mode_type	VARCHAR(20)	NOT NULL

TRANSACTIONS

Attributes	Data Type & Size	Comments
Transaction_ID	INETGER	PRIMARY KEY
Mode_ID	INETGER	A FOREIGN KEY WHICH REFERENCES Mode_ID FROM CARD MODE
Transaction_Date	TIMESTAMP	NOT NULL
Transaction_amt	INETGER	NOT NULL

ORDER\_PRODUCT

Attributes	Data Type & Size	Comments
Order_product_ID	NUMBER	PRIMARY KEY
Order_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Order_ID FROM ORDER
Product_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Product_ID FROM PRODUCT
Quantity	NUMBER	NOT NULL
unit_price	FLOAT	NOT NULL

ORDER

Attributes	Data Type & Size	Comments
Order_ID	NUMBER	PRIMARY KEY
Customer_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Customer_ID FROM CUSTOMER
Order_date	TIMESTAMP	NOT NULL
Shipped_Date	DATE	NOT NULL
Status_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Status_ID FROM ORDER STATUS
Order_total	FLOAT	NOT NULL
Transaction_ID	NUMBER	A FOREIGN KEY WHICH REFERENCES Transaction_ID FROM TRANSACTIONS

ORDER\_STATUS

Attributes	Data Type & Size	Comments
Status_ID	NUMBER	PRIMARY KEY
Status	VARCHAR(30)	NOT NULL