Database Management for Retail Application

Project Description

Problem Statement:

* A business organization (_retail) is not able to handle and maintain the details of potential market.
* It is unable to manage various employees who belong to various departments, information about the customers and sold products their defects, quality and Voucher details etc.

Scope of Project:

* This lab project aims to build a database for retail application for an organization let say name Target where customers buy projects online and offline.
* Retail application database is mainly used by the retail store administrators to improve their sales by analyze the product sales, customer and employees working in their organization.
* This project helps in designing unique database which holds the information of the business model to properly store, analyze the data that company is looking for.
* Products list with minimum defects and maximum quality can be know which helps the organization to maintain good quality products in their store and increase their sales.
* This project helps the organization to store and analyze customers, employee, product sales details.
* This Database design helps in analyzing which product is highly rated by customers.

###STEPS :-

* Designed a relational database schema & entity relationship model with proper description of relationships,attributes,etc.
* Created multiple tables and managed the retail stores' data in MySQL.
* Applied database objects like triggers, stored procedures, views, functions on the database.
* Generated reports of queries which helped the retail organization to evaluate their sales, analyze sales for this season and forecast sales for next season.

Identification of Entities:

*** Employee**	*** Customer**
*** Address**	*** Zip Code**
*** Bill**	*** Payment Mode**
*** Order**	*** Order Item**
*** Order Product**	*** Product**
*** Voucher**	*** Product Group**
*** Product Description**	*** Reviews**

→ **Employee**-Any person who is employed as a part of company staff.
Attributes: EmployeeID, EmpFirst_Name, EmpLast_SSN, EmpMail_Address, Designation, Department, Salary, Employee_Type.

→ **Customer -**A person who buys products with cash or card basis. He may be internal or external customer.
Attributes: CustomerID, First_Name, Last_Name, Mail_Address, Phone_Number, Category

→ **Bill -**Bill includes the total bill for the purchased products and amount that customer paid .

Attributes: Billing_ID, Amount_Paid

→ **Address -**Address to with a particular order must be delivered.
Attributes: AddressID, Address_line1, Address_line2

→ **Zip Code -**Zip details of customers address is included
Attributes: ZipCode, City, State

→ **Payment-** This table hold Date of customer visit number, payment and payment type whether the customer bought directly from store or purchased online. It also includes the customer card details.
Attributes: Payment_ID, Payment_Type, CreditCard_Number,Card_Type, CVV_Number, ExpiryDate, CardHolder_Name

→ **Orders –** This table hold the status of the order whether the order is delivered or not and the shipment option given by the customer.
Attributes: Order_ID,Shippment_Duration, Order_Date,Status.

→ **Order Item-**OrderItem contains the details like date and quantity of items purchased.
Attributes: Date of Order, Quantity

→ **Order Product-** This contains the details of quantity of product that customer ordered
Attributes: OrderProduct_ID, Quantity

→ **Voucher-** Voucher includes priority of customers so based on that customers are given discount on their purchase.
Attributes: Voucher_Number, Description, Priority, Quantity_Item

→ **Product -**It is a form of good that is purchased by customer.
Attributes: ProductID, Product_Name, Available_Number

→ **Product Details –** Product details contains the description of particular product.
Attributes: Weight, Width, Colour, Height

⇾ **Product Group –** Product group tells to which category the product belongs to (Ex. Electronics).
Attributes: Group_ID, Group_Name

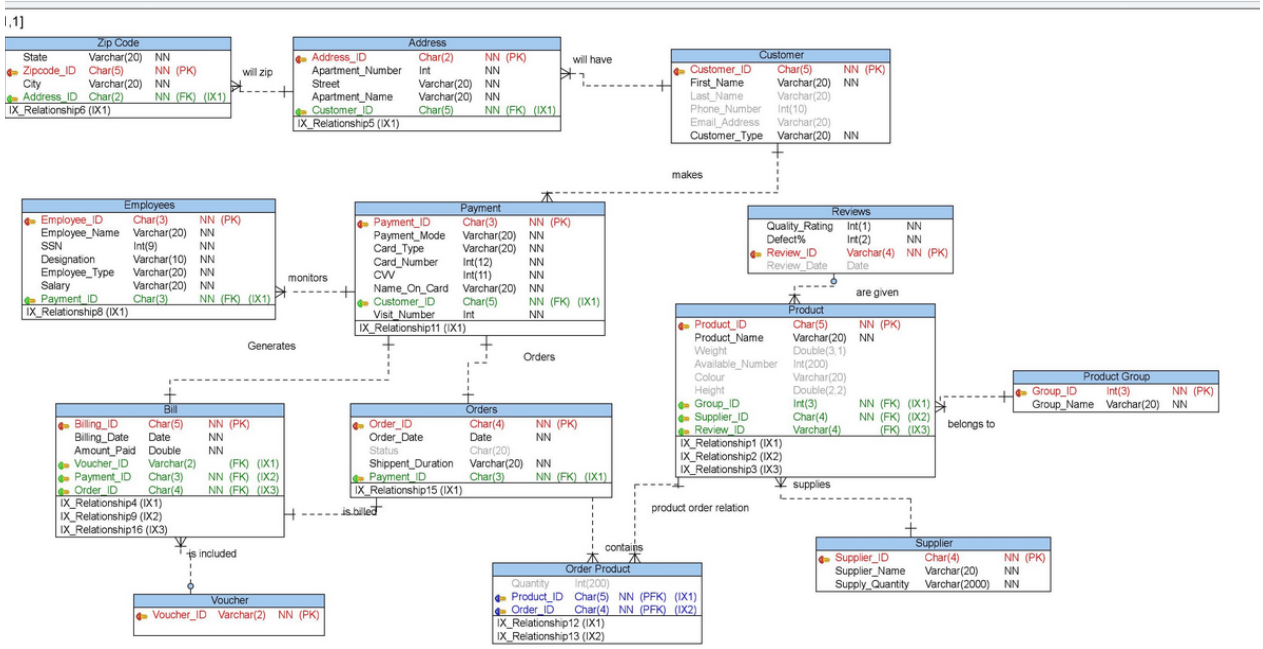
⇾ **Review-**Reviews are the feedback given to the product by customers.
Attributes: Quality, Defect%, Review_ID, Review_Date

###CONCEPTS:-

1.Creating tables.
2.Filtering, sorting, and calculating data using:
WHERE, SELECT, FROM, IN, OR, AND, NOT, ORDER BY
3.Using wildcards to find specific strings
4.Math operations
5.Aggregate functions such as :
MAX, MIN, SUM, AVG, COUNT
6.Grouping data using :
GROUP BY
7.Subqueries
8.Different type of joins including :
INNER JOIN, LEFT JOIN, RIGHT JOIN, FULL OUTER JOIN, and self joins
9.Creating aliases
10. Using UNION queries
11. Working with string variables : Concatenations, Trimming, Substring, Upper case and Lower case
12. Date and Time Strings: STRFTIME, Date('now'), computing how many years have passed from a certain time period
13. Case Statements
14. Creating Views

ER Diagram for Retail Application

Before Normalization:



After Normalization: