Database Management Systems (DBMS)

ER Diagrams and Relational Model - Assignment – B

Supercity: An Inventory management system for a supermarket

Managing inventory in any warehouse/storage is a critical task. This enables the users of the inventory system to track the usage and generate reports based on the said usage. *Supercity* is created having supermarkets in the mind where employees involve in selling the inventory items for fixed prices. *Supercity* is robust on providing very flexible functions such as loyalty cards and promotions based on previous purchases.

In the supermarket there will be several employees serving customers. Among these employees, one person will act as the manager and depending on the number of POS systems available, there will be cashiers and packers. Basic demographic information about an employee is stored in the system while storing the employee's job role. The demographic information include name, age, gender, address, NIC, EPF number. Supermarket will store the items which they will be selling at the cashier. These items have an id, price, quantity available & item type. To buy some item types the customer must be a special type of a customer. If the type is medicinal, the customer must have a prescription with them or if they are buying liquor they bust be older than 18.

The information about the customer is not that relevant for the supermarket, unless the customer has a loyalty card the information will be limited to a customer id. For the customers who have loyalty cards, their information will be stored in the database since there is a rewarding system. Stored information of the customer is the following; name, age, address, preferred payment method, reward points & NIC.

Customers will be buying items from a cashier. A receipt will be created with the timestamp, customer information, and extra details depending on the item types, serving cashier, items bought and their quantities with prices, total amount and the payment method. If the customer makes the payment with a credit/debit card, the curd number also should be stored. Customers will purchase the items via a POS system which an employee will operate. At the end of the day, the manager will create a report on all the sales and the revenue generated in each POS system.

1. Design an Entity Relationship(ER) Diagram for the above scenario.
2. Convert the ER diagram into the relational schema.