P2. Database Design, Initial ERD

GROUP 16

Entities and Attributes:

1. Employee: It consists of all employee details who are working in the restaurant. It contains attributes such as EmpID, EmpName, EmpDOB (date of birth), EmpContact, EmpDOJ (date of joining), EmpDesignation, EmpSalary where EmpID is the primary key of the table, which uniquely identifies employee.

2. Customer: A person will be a customer only if he visits the restaurant at least once. It contains attributes such as CustomerID, CustomerName, CustomerDOB (Date of Birth), CustomerContact, CustomerEmail. CustomerID is used to identify a customer record uniquely.

3. Supplier: It has all the details of the supplier, who supplies the inventory to the restaurant. It has attributes such as SupplierID which distinctly identifies the supplier, SupplierName, SupplierContact, SupplierEmail.

4. Product: Product consists of a list of raw materials required for restaurant management. It consists of attributes such as ProductID, ProductName, ProductQuantity, ProductDOE (Date of Expiry), ProductCost. ProductID is used to identify the product distinctly.

5. Menu: It contains the list of items in a menu for a restaurant with attributes such as ItemID, ItemName, ItemDescription, ItemPrice, ItemCategory. The primary key of this entity is ItemID and ItemCategory is used to identify whether it is appetizer, mains or dessert.

6. Order: This table is used to store all the orders placed by a customer. OrderID, OrderDateTime, OrderPrepTime, OrderType are the attributes that are used to maintain the data. OrderPrepTime is the total time required for preparing the order listed and OrderType is used to categorize the order as Dining, Takeaway, Online. Each order is uniquely identified with the help of OrderID.

7. OrderList: This is a detailed breakdown of all the list of items that are present in a single order. Here OrderID and ItemID together are used to identify a row uniquely, and individually are used a foreign keys for Order table and Menu table respectively. In addition to these, we also have Quantity as an attribute in this relation.

8. Billing: It is used for storing the billing details of the customer in attributes such as BillingID, PaymentMode, TotalAmount. Primary key of this table is BillingID.

9. Table: Number of Tables in a restaurant are defined by this entity which includes TableNumber, TableStatus and SeatingCapacity. TableNumber uniquely identifies a table in the restaurant and TableStatus indicates whether a table is occupied, available, reserved.

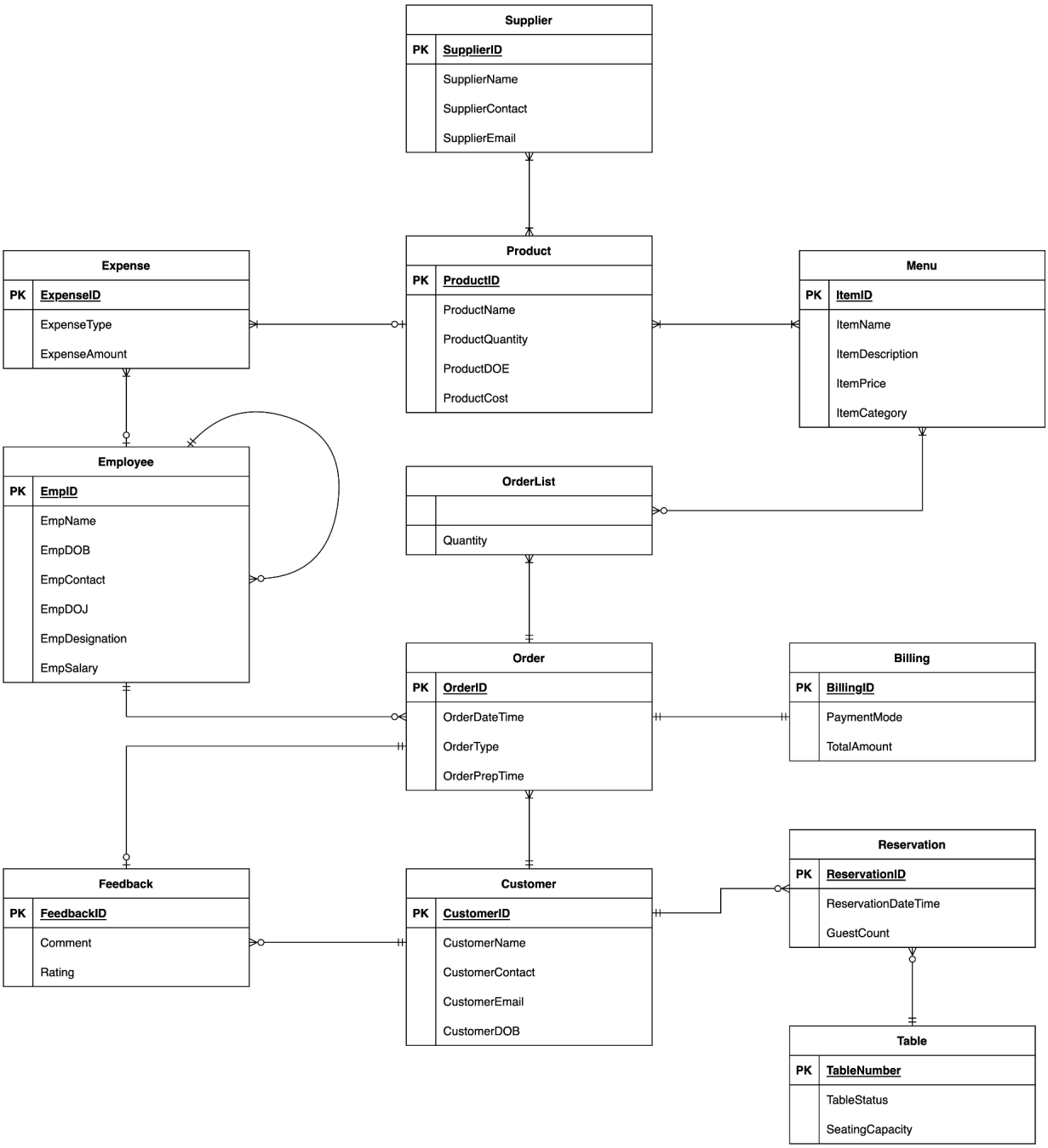
10. Reservation: Used for maintaining the reservation details made by customers with the help of attributes namely ReservationID, ReservationDateTime, TableNumber, GuestCount. ReservationID acts as a primary key and TableNumber is referencing the Table relation. GuestCount refers to the number of guests visiting.

11. Feedback: Every time a customer orders food, we can store all their feedback in this table in terms of Comments, Ratings. FeedbackID is associated to distinctly identify feedback given by a customer for a particular order.

12. Expense: It records the restaurant's expenses including ExpenseID, ExpenseType, ExpenseAmount. ExpenseID is used as the primary key, ExpenseType says whether it is rent, utilities, employee salaries, and other operational costs and ExpenseAmount is the cost of expense.

Relationships:

1. A supplier must supply at least one product and a product must be supplied by at least a single supplier. (many to many)
2. An item in the menu must at least contain one product and a product must be used in at least one of the items. (many to many)
3. An order list must have at least an item from a menu and an item in the menu may be included in an order list. (many to many)
4. An order must have at least one order listing and an order listing must be included in an order. (many to one)
5. An order must be billed, and a billing must be related to one order. (one to one)
6. An employee may manage multiple employees and an employee must be managed by one employee. (many to one)
7. An order must be handled by an employee and an employee may handle multiple orders. (one to many)
8. A customer must place at least one order and an order must be placed by only one customer. (many to one)
9. A customer may make multiple reservations and a reservation must be made by only one customer. (many to one)
10. A table may be included in multiple reservations and a reservation must include a table. (many to one)
11. A customer may give multiple feedback and feedback must be given by only a customer. (many to one)
12. Feedback must be given for an order and an order may get feedback. (one to one)
13. A product must have at least one expense and an expense may include product. (many to one)
14. An expense may include employee salary and an employee salary must be included at least in an expense. (one to many)


Supplier
PK
SupplierID
SupplierName
SupplierContact
SupplierEmail
Product
PK
ProductID
ProductName
ProductQuantity
ProductDOE
ProductCost
Expense
PK
ExpenseID
ExpenseType
ExpenseAmount
Menu
PK
ItemID
ItemName
ItemDescription
ItemPrice
ItemCategory
Employee
PK
EmpID
EmpName
EmpDOB
EmpContact
EmpDOJ
EmpDesignation
EmpSalary
OrderList
Quantity
Order
PK
OrderID
OrderDateTime
OrderType
OrderPrepTime
Billing
PK
BillingID
PaymentMode
TotalAmount
Reservation
PK
ReservationID
ReservationDateTime
GuestCount
Feedback
PK
FeedbackID
Comment
Rating
Customer
PK
CustomerID
CustomerName
CustomerContact
CustomerEmail
CustomerDOB
Table
PK
TableNumber
TableStatus
SeatingCapacity