INTERVIEWEE ROLE: ASSISTANT MANAGER at RENEE'S COFFEE SHOP

Mini World Scenario:
My chosen mini-world is a Coffee Shop. My database system will manage the shop's day to day operations. This includes orders, customers, items on the menu, employees, and inventory.

1: What types of items are on the coffee shop's menu?
• **A1:** Our menu holds a variety of things. We carry beverages including coffee, tea, lattes, and specialty drinks. We offer baked goods as well like muffins, croissants, and cookies. Each item has details like its name, ingredients, price, and category (e.g., hot drink, cold drink, dessert).

Q2: How do you manage customer orders?
• **A2:** When a customer puts in an order, we take down their name, what their order is, whether they have special requests like if they want no sugar or no milk, or a substitute, and lastly, their payment method. Once we have gathered that information, our system then processes the order and sends it to the kitchen or to the barista on the clock. The order status (pending, preparing, completed) will start to change based on where in the process they are.

Q3: How do you handle customer payments?
• **A3:** We keep track of payments three ways. They can choose to pay with cash, card, and online via the mobile app should they choose though we don't really get many orders through the app; as we are a small coffee shop. Each payment is associated with an order, and we make sure the payment and the time of transaction correspond to the order. This helps us review our sales more efficiently and maintain accurate records when we do inventory at the end of the day.

Q4: What do you track about each menu item?
• **A4:** Each item on our menu has its name, a brief description of what it is, how much we have it up for, the category the item falls into whether it is food, snack, coffee. Along with that, we also list the ingredients and dietary notes. We make sure to include those because some people have allergies and we like to avoid people getting sick. This also helps us identify which items are favored amongst our customers.

Q5: How do you manage inventory for ingredients and supplies?
• **A5:** Each time we use an item, the system automatically updates our inventory. This makes it so much easier and helps us keep track of our inventory as it cuts the time by a lot. Because of this, when an item is low in stock, we are alerted or notified immediately so that we may make arrangements to restock. Our inventory items vary from coffee beans, milk, sugar, pastries, cups, napkins, even down to our cleaning products.

Q6: How do you keep track of employee schedules and shifts?
• **A6:** The system of software that we use allows the manager to set shift times, employee attendance, weekly schedules, and even payroll. Because we are a small coffee shop, we allow

the liberty of our employee to switch shifts amongst themselves should the need arise so long as it does not disrupt with what is already inputted into the system.

Q7: Do you have any incentives to ensure customers keep coming back? How are these tracked?
• **A7:** Yes, of course. Though we are a small coffee shop, we make it a point to appreciate our customers because we wouldn't be open without them. We offer an incentive which for every tenth visit, they get a free beverage or pastry of their choosing. It isn't much but it is what we can offer now. Perhaps, in the near future, we can do more as we really are grateful to each and every single one of them. We usually track using their receipts as the include the dates.

Q8: How do you go about returns or complaints about orders?
• **A8:** Like other businesses as you know, the customer is always right. If a customer is unhappy with their order, we take down their complaint. As a solution, we may offer apologies, replacement, and in extreme cases, offer them a refund. But we are fortunate not to have many of the latter.

Q9: Can you produce reports from your system? What kinds of reports are needed?
• **A9:** Absolutely. We generate daily sales reports, inventory usage reports, most sought after menu items, and even our employee performance reports. All of these reports help us examine trends, manage stock levels, and assess employee productivity.

Q10: How do you secure sensitive customer and employee information?
• **A10:** Personal information is encrypted. This includes customer contact details and payment history as well as Employee payroll data and personal details. Authorized staff members have the ability to view and access that information.

System Design Requirements

My database system will suppowed the following:
Customer Management - Customer information will include the customer's name, phone number, and Email. Customers may put multiple orders at a time and multiple orders may belong to one customer.
Order Processing - will hold the details of an order. It will hold information such as the date of order date, total amount, and which customer it belongs to. Each order may have multiple menu items.
Menu Management - will have a list of items that are available. That will include coffee, other beverages, pastries, snacks, and anything the shop may offer. Each item on the menu will have a name. It will have the type of food or drink it is, its price, and status whether it is available or not.

Payment Processing - will keep track of all payments. This includes the amount and how the payment is made, whether, by cash, card, or online(cash, card, or online) and amount. And each order corresponds to one payment.

Employee Management - Keeps hold of employee details such as their name, job tile, and work shift. And as employees at a coffee shop, they will handle orders.

Inventory Management - This will keep track of inventory by monitoring stock. For example, How many ingredients there are, and what needs to be restocked. Link menu items to their stock availability.

Analysis

Entities and Attributes:

- **Customer**
  - **Attributes:**
    - Customer_ID (Primary Key, Integer)
    - Name (Varchar(45))
    - Phone (Varchar(45))
    - Email (Decimal (10,2))
- Order
  - **Attributes:**
    - Order_ID (Primary Key, Integer)
    - Order_Date (Datetime)
    - Total_Amount (Decimal(10,2))
    - Customer_ID (Foreign Key Integer)
- **Order_Item**
  - **Attributes:**
    - Order_ID (Foreign Key, Integer)
    - Item_ID (Foreign Key, Integer)
    - Quantity (Integer)
- **Menu_Item**
  - **Attributes:**
    - Item_ID (Primary Key, Integer)
    - Name ((varchar(45))
    - Category (varchar(100))
    - Price (Decimal(10,2))
    - Availability (varchar(45))
- **Payment**
  - **Attributes:**
    - Payment_ID (Primary Key, Integer)
    - Order_ID (varchar(45))
    - Amount (Decimal(10,2))
    - Payment_Method (Varchar(45)

- **Employee**
  - **Attributes:**
    - Employee_ID (Primary Key, Integer)
    - Name (varchar(45))
    - Job_Title (varchar(100))
    - Shift (varchar(45))
- **Inventory**
  - **Attributes:**
    - Item_ID (Primary Key, Integer)
    - Stock_Level (Integer)
    - Supplier (Varchar(100))
    - Last_Restock_Date (Datetime)

Relationships and Cardinality:

1. **Customer to Order Relationship:**
   - **Cardinality:** One customer can have many orders (1 to M). However, each order is associated with exactly one customer (M to 1).
   - **Participation:** Total participation for Orders (every order must be placed by a customer), but partial participation for Customers (not all customers may have placed orders at any given time).
2. **Order to Order_Item Relationship:**
   - **Cardinality:** One order can have multiple items (1 to M). Each order item corresponds to exactly one order (M to 1).
   - **Participation:** Total participation for Order_Item (each order must have at least one item), but partial participation for Orders (not all orders may contain items at every time).
3. **Menu_Item to Order_Item Relationship:**
   - **Cardinality:** A menu item may appear in more than one order items (1 to M). An order item means just one menu item (M to 1).
   - **Participation:** Total participation for Order_Item (every order item must reference a menu item), but partial participation for Menu_Item (not all menu items will be ordered in every order).
4. **Order to Payment Relationship:**
   - **Cardinality:** Each order can have one payment (1 to 1), but each payment is associated with one specific order (1 to 1).
   - **Participation:** Total participation for both Order and Payment (every order must be paid for, and every payment must be linked to an order).
5. **Employee to Order Relationship:**
   - **Cardinality:** One employee may handle many orders (1 to M). Each order is handled by one employee (M to 1).

- **Participation:** Partial participation for Employees (not every employee may handle orders at all times), but total participation for Orders (each order must be taken by an employee).

6. **Inventory to Menu_Item Relationship:**
   - **Cardinality:** An inventory item is associated with one or more menu items (1 to M). A menu item is connected to exactly one inventory item (M to 1).
   - **Participation:** Total participation for Inventory (each inventory item must be linked to at least one menu item), but partial participation for Menu_Item (not all menu items may be currently in stock).

ER Diagram Structure (Chen Style):

- **Entities:**
   - Represented as rectangles labeled with entity names.
- **Attributes:**
   - Listed within ovals connected to their entities.
- **Relationships:**
   - Show as diamonds with lines connecting them to the involved entities.
- **Cardinality:**
   - Shown at the ends of the relationship lines (ex: 1 to M for the Customer to Order relationship).

Report:

The Coffee Shop database project provides an understanding of the different aspects of a coffee shop's operations. Customer management is such a vital component in that it is where customer details like name, phone number, and email are stored, allowing them to place many orders. The order processing system keeps orders by customer and stores details like total amount, order date, and menu items. The menu management system ensures a list of available items, separated into categories like coffee, tea, pastries, and snacks, along with their prices and availability status. Payment processing ensures each order is connected to a payment method, whether it was made by cash, card, or through the app (online), and keeps the payment amount. The employee management system holds employee information, including titles and work shifts, while inventory management ensures that stock levels for ingredients and connects them to the items on the menu.. This database structure supports the smooth operation of the coffee shop by combining customer, order, menu, payment, employee, and inventory data into one reliable system.