DATABASE MANAGEMENT SYSTEMS

Course Code: CSE2007 Slot: L13+L14

Class Number: AP2023246000686 Venue: CB-102

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create a for a restaurant database with two tables: `orders` and `customers`.

order_id	customer_id	order_date	total_amount	payment_method
101	1	2024-03-20 12:30:00	50	Credit Card
201	2	2024-03-20 18:45:00	75	Cash
301	3	2024-03-21 13:15:00	100	Credit Card
401	4	2024-03-21 19:30:00	45	Cash
501	5	2024-03-21 20:00:00	60	Credit Card
601	1	2024-03-22 14:00:00	90	Cash
701	2	2024-03-22 19:45:00	120	Credit Card
801	3	2024-03-23 12:45:00	55	Cash
901	4	2024-03-23 18:30:00	70	Credit Card
1010	5	2024-03-24 20:15:00	85	Cash
1110	1	2024-03-24 21:00:00	110	Credit Card
1210	2	2024-03-25 13:30:00	65	Cash
1310	3	2024-03-25 19:45:00	95	Credit Card
1410	4	2024-03-26 17:00:00	75	Cash
1510	5	2024-03-26 20:30:00	80	Credit Card

customer_id	name	phone_number
1	John Doe	123-456-7890
2	Jane Smith	987-654-3210
3	Alice Johnson	555-555-5555
4	Bob Brown	333-333-3333
5	Emily Davis	111-222-3333

- How many orders have been placed in total?

- What is the total revenue generated from orders?
- What is the average order amount?
- How many orders were placed on March 21, 2024?
- What is the maximum order amount?
- How many orders were paid by credit card?
- What is the earliest order date and time?
- How many unique customers have placed orders?
- How many customers have phone numbers starting with the area code '555'?
- Who are the top 3 customers with the highest total order amounts?
- How many orders were placed in each month of 2024?
- What is the total amount spent by customers named 'John Doe'?
- What is the total number of orders placed by customers with phone numbers ending in '3333'?

CREATING TABLE ORDERS:

Run SQL query/queries on table resturant.orders:

```sql
CREATE TABLE orders (
    order_id INT PRIMARY KEY,
    customer_id INT,
    order_date DATETIME,
    total_amount DECIMAL(10, 2),
    payment_method VARCHAR(50),
    FOREIGN KEY (customer_id) REFERENCES customers(customer_id)
);
INSERT INTO orders (order_id, customer_id, order_date, total_amount, payment_method)
VALUES
    (101, 1, '2024-03-20 12:30:00', 50, 'Credit Card'),
    (201, 2, '2024-03-20 18:45:00', 75, 'Cash'),
    (301, 3, '2024-03-21 13:15:00', 100, 'Credit Card'),
    (401, 4, '2024-03-21 19:30:00', 45, 'Cash'),
    (501, 5, '2024-03-21 20:00:00', 60, 'Credit Card'),
    (601, 1, '2024-03-22 14:00:00', 90, 'Cash'),
    (701, 2, '2024-03-22 19:45:00', 120, 'Credit Card'),
    (801, 3, '2024-03-23 12:45:00', 55, 'Cash'),
    (901, 4, '2024-03-23 18:30:00', 70, 'Credit Card'),
    (1010, 5, '2024-03-24 20:15:00', 85, 'Cash'),
    (1110, 1, '2024-03-24 21:00:00', 110, 'Credit Card'),
    (1210, 2, '2024-03-25 13:30:00', 65, 'Cash'),
    (1310, 3, '2024-03-25 19:45:00', 95, 'Credit Card'),
    (1410, 4, '2024-03-26 17:00:00', 75, 'Cash'),
    (1510, 5, '2024-03-26 20:30:00', 80, 'Credit Card');
SELECT * FROM `orders` WHERE 1
```

Output:

order_id	customer_id	order_date	total_amount	payment_method
101	1	2024-03-20 12:30:00	50.00	Credit Card
201	2	2024-03-20 18:45:00	75.00	Cash
301	3	2024-03-21 13:15:00	100.00	Credit Card
401	4	2024-03-21 19:30:00	45.00	Cash
501	5	2024-03-21 20:00:00	60.00	Credit Card
601	1	2024-03-22 14:00:00	90.00	Cash
701	2	2024-03-22 19:45:00	120.00	Credit Card
801	3	2024-03-23 12:45:00	55.00	Cash
901	4	2024-03-23 18:30:00	70.00	Credit Card
1010	5	2024-03-24 20:15:00	85.00	Cash
1110	1	2024-03-24 21:00:00	110.00	Credit Card
1210	2	2024-03-25 13:30:00	65.00	Cash
1310	3	2024-03-25 19:45:00	95.00	Credit Card
1410	4	2024-03-26 17:00:00	75.00	Cash
1510	5	2024-03-26 20:30:00	80.00	Credit Card

Creating table Customers :

Run SQL query/queries on table resturant.customers:

```
CREATE TABLE customers (
    customer_id INT PRIMARY KEY,
    name VARCHAR(255),
    phone_number VARCHAR(20)
);
INSERT INTO customers (customer_id, name, phone_number)
VALUES
    (1, 'John Doe', '123-456-7890'),
    (2, 'Jane Smith', '987-654-3210'),
    (3, 'Alice Johnson', '555-555-5555'),
    (4, 'Bob Brown', '333-333-3333'),
    (5, 'Emily Davis', '111-222-3333');
```

Output:

customer_id	name	phone_number
1	John Doe	123-456-7890
2	Jane Smith	987-654-3210
3	Alice Johnson	555-555-5555
4	Bob Brown	333-333-3333
5	Emily Davis	111-222-3333

2)How many orders have been placed in total?

Program:

Run SQL query/queries on table resturant.orders:

```
SELECT COUNT(*) AS total_orders FROM orders;
```

Output:

total_orders
15

3) What is the total revenue generated from orders?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT SUM(total_amount) AS total_revenue FROM orders;
2
```

Output:

total_revenue
1175.00

4) What is the average order amount?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT AVG(total_amount) AS average_order_amount FROM orders;
2
```

Output:

average_order_amount
78.333333

5) How many orders were placed on March 21, 2024?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT COUNT(*) AS orders_on_march_21 FROM orders WHERE DATE(order_date) = '2024-03-21';
2
```

Output:

orders_on_march_21
3

6) What is the maximum order amount?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT MAX(total_amount) AS max_order_amount FROM orders;
2
```

Output:

max_order_amount
120.00

7)How many orders were paid by credit card?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT COUNT(*) AS credit_card_orders FROM orders WHERE payment_method = 'Credit Card';
2
```

Output:

credit_card_orders
8

8) What is the earliest order date and time?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT MIN(order_date) AS earliest_order_date FROM orders;
2
```

Output:

earliest_order_date
2024-03-20 12:30:00

9) How many unique customers have placed orders?

Program :

Run SQL query/queries on table resturant.orders:

```
SELECT COUNT(DISTINCT customer_id) AS unique_customers FROM orders;
```

Output:

unique_customers
5

10) How many customers have phone numbers starting with the area code '555'?

Program :

Run SQL query/queries on table resturant.orders:

```
SELECT COUNT(*) AS customers_with_area_code_555 FROM customers WHERE phone_number LIKE '555%';
```

Output:

customers_with_area_code_555
1

11) Who are the top 3 customers with the highest total order amounts?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT c.name, SUM(o.total_amount) AS total_order_amount
2 FROM customers c
3 JOIN orders o ON c.customer_id = o.customer_id
4 GROUP BY c.name
5 ORDER BY total_order_amount DESC
6 LIMIT 3;
7
```

Output:

name	total_order_amount 1
Jane Smith	260.00
John Doe	250.00
Alice Johnson	250.00

12) How many orders were placed in each month of 2024?

Program :

Run SQL query/queries on table resturant.orders:

```sql
SELECT
    EXTRACT(MONTH FROM order_date) AS month,
    COUNT(*) AS orders_count
FROM
    orders
WHERE
    EXTRACT(YEAR FROM order_date) = 2024
GROUP BY
    EXTRACT(MONTH FROM order_date);

```

Output:

month	orders_count
3	15

13) What is the total amount spent by customers named 'John Doe'?

Program :

Run SQL query/queries on table resturant.orders:

```sql
SELECT SUM(total_amount) AS total_amount_spent
FROM orders
WHERE customer_id = (SELECT customer_id FROM customers WHERE name = 'John Doe');

```

Output:

total_amount_spent
250.00

14) What is the total number of orders placed by customers with phone numbers ending in '3333'?

Program :

Run SQL query/queries on table resturant.orders:

```
1 SELECT COUNT(*) AS orders_count
2 FROM orders o
3 JOIN customers c ON o.customer_id = c.customer_id
4 WHERE c.phone_number LIKE '%3333';
5
```

Output:

orders_count
6