Analysis of e-commerce order management system

Entities and their relationship -

Customers, Products, Orders, OrderItems

Relationships:

- A customer can place multiple orders.
- An order can have multiple products (through OrderItems).
- A product can be in multiple orders.

Creating Database Schema

Customer database schema

```
Create table Customers_table (

Customer_id INT,

First_name VARCHAR(50),

Last_name VARCHAR(50),

Email VARCHAR(100),

Phone VARCHAR(20),

Address VARCHAR(255)

);
```

Inserting Data into Customers_table

```
Insert into Customers_table (First_name, Last_name, Email, Phone, Address)

Values

('John', 'Doe', 'john.doe@example.com', '1234567890', '123 Elm Street'),

('Jane', 'Smith', 'jane.smith@example.com', '9876543210', '456 Oak Avenue');
```

Product database schema

```
Create table Product_table(

Product_id INT,

Product_name VARCHAR(100),

Product_Description TEXT,
```

Price Decimal (10, 2),

Stock INT

);

Inserting Data into Product_table

Insert into Product_table (Product_id, Product_name, Product_Description, Price, Stock)

Values

(‘1’, ‘Laptop’, ‘A_high_performance_laptop’, ‘999.99’, ‘50’),

(‘2’, ‘Smartphone, ‘A_latest_model_smartphone’, ‘699.99’, ‘100’);

Order database schema

Create table Order_table(

Order_id INT,

Customer_id INT,

Order_Date DATE,

Total_Amount Decimal (10, 2),

);

Inserting Data into Order_table

Insert into Order_table (Order_id, Customer_id, Order_Date, Total_Amount)

Values

(‘1’, '2024-06-01', ‘1699.98’),

(‘2’, '2024-06-02', ‘699.99’);

Order Items database schema

Create table Order_Item_table(

Order_Item_ID INT,

Order_id INT,

Product_id INT,

Quantity INT,

Unit_Price Decimal (10, 2),

);

Inserting Data into Order_Item_table

Insert into Order_Item_table (Order_id, Product_id, Quantity, Unit_Price)

Values

(1, 1, 1, 999.99),

(1, 2, 1, 699.99),

(2, 2, 1, 699.99);

Questions

Questions 1 - Find the total number of orders placed by each customer along with their details.

select CT.customer_ID, CT.First_name, CT.Phone, OT.Order_date, OT.Total_amount, Count(1) as Total_orders

from customers_table CT

inner join order_table OT on CT.customer_ID=OT.Customer_ID

group by CT.customer_ID, CT.First_name, CT.Phone, OT.Order_date, OT.Total_amount

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Questions 2 - Calculate the total revenue generated from each product.

select OIT.Product_ID, PT.Product_name, Sum(OIT.Quantity_ID * OIT.Unit_price) as Total_sales

from product_table PT

Inner join Order_Item_table OIT on PT.product_id=OIT.product_id

group by OIT.Product_ID, PT.Product_name

Question 3 - Find the top 5 most sold products based on quantity.

Select OIT.Product_ID, PT.Product_name, sum(OIT.Quantity_ID) as Top_sold

from Order_Item_table OIT

inner join product_table PT on OIT.Product_ID=PT.product_id

group by OIT.Product_ID, PT.Product_name

Having count(1) > 1

Question 4 - Find the total amount spent by each customer.

```
select CT.customer_ID, CT.first_name, OT.Total_amount

from customers_table CT

inner join Order_table OT on CT.customer_ID=OT.Customer_ID
```

Question 5 - Find the order details along with product names and their respective prices.

```
SELECT oit.order_id, oit.Product_ID, oit.Unit_price, Ot.Order_date, pt.Product_name

FROM Order_Item_table oit

INNER JOIN Order_table ot ON oit.Order_ID=ot.order_id

inner join product_table pt on oit.Product_ID=pt.product_id

order by Order_date
```

Question 6 - What is the total revenue generated per month?

```
select oit.order_id, format(ot.order_date, 'MMM') as Month, sum(oit.Quantity_ID*oit.Unit_price) as Revenue

from Order_Item_table oit

inner join Order_table Ot on oit.Order_ID=ot.order_id

group by oit.order_id, format(ot.order_date, 'MMM')

order by Order_ID
```