# E-COMMERCE SALES AND CUSTOMER MANAGEMENT SYSTEM ANALYSIS

## Project Description:

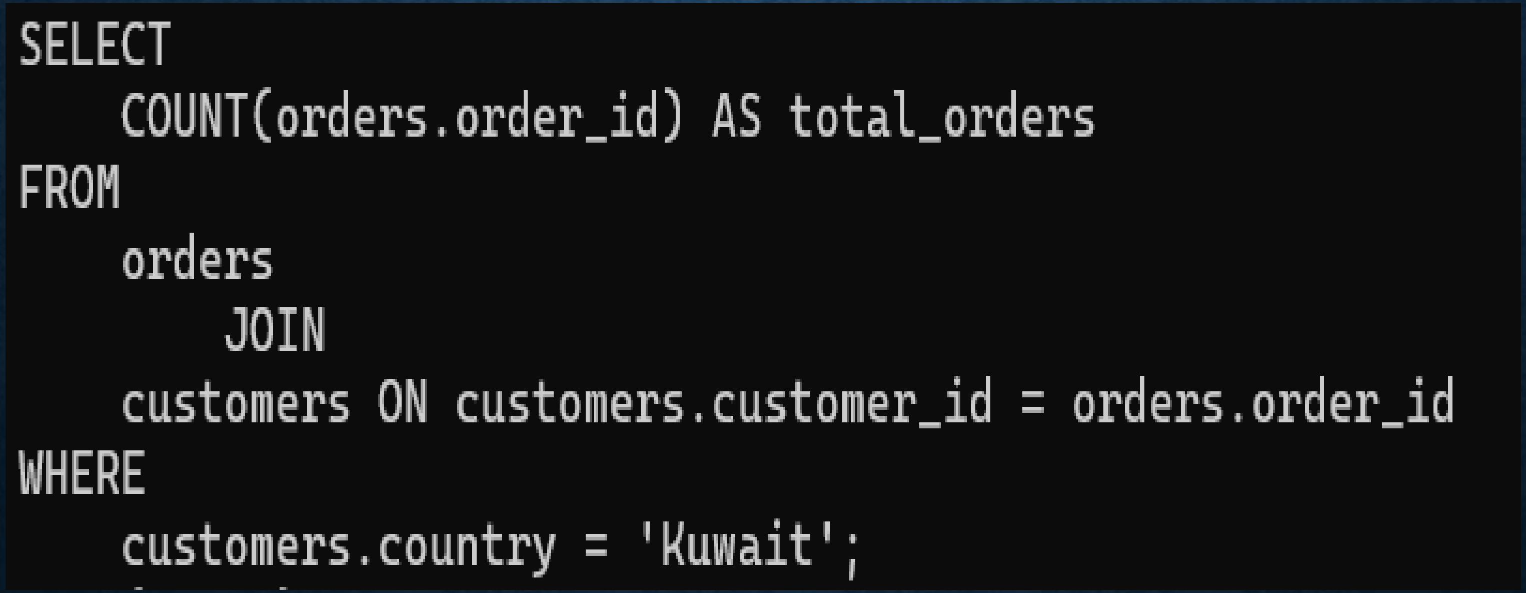
This project focuses on analyzing sales performance, customer behavior, and product trends in a simulated e-commerce environment. The dataset contains three interconnected tables: **Customers**, **Orders**, and **Order_Items**, representing customer details, their transactions, and individual order items, respectively.

# *INTRODUCTION ABOUT PROJECT*

**THIS PROJECT, "E-COMMERCE SALES AND CUSTOMER MANAGEMENT SYSTEM ANALYSIS," AIMS TO EXPLORE AND ANALYZE TRANSACTIONAL DATA TO UNCOVER TRENDS IN CUSTOMER BEHAVIOR, PRODUCT DEMAND, AND REVENUE GENERATION. THE PROJECT REVOLVES AROUND THREE CORE DATASETS: CUSTOMERS, ORDERS, AND ORDER ITEMS. THESE DATASETS REFLECT THE STRUCTURE OF AN ACTUAL E-COMMERCE BUSINESS, CAPTURING ESSENTIAL ASPECTS LIKE CUSTOMER DETAILS, ORDER HISTORY, AND PRODUCT PURCHASES. THROUGH SQL QUERIES, WE DIVE INTO THESE DATASETS TO EXTRACT MEANINGFUL PATTERNS AND ACTIONABLE INSIGHTS, SUCH AS IDENTIFYING HIGH-VALUE CUSTOMERS, TRACKING MONTHLY REVENUE GROWTH, AND ANALYZING PRODUCT POPULARITY BY REGION.**

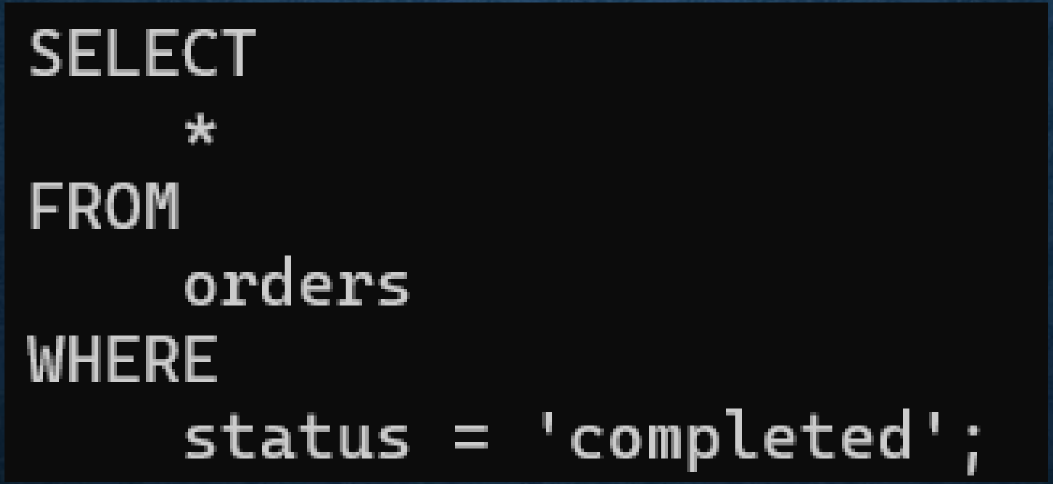
# *I SHARE SOME QUERIES THAT I SOLVED BY MYSELF*

# COUNT THE TOTAL NUMBER OF ORDERS RECEIVED FROM THE KUWAIT.



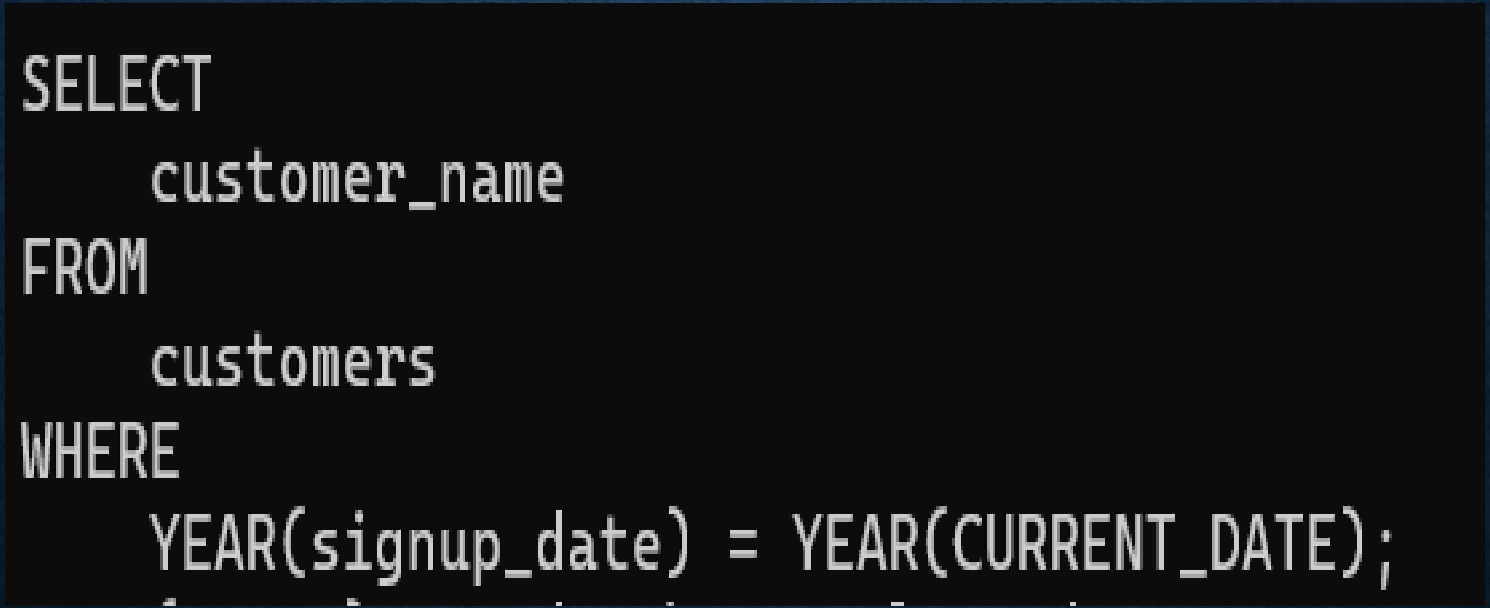
```
SELECT
    COUNT(orders.order_id) AS total_orders
FROM
    orders
        JOIN
    customers ON customers.customer_id = orders.order_id
WHERE
    customers.country = 'Kuwait';
```

# LIST ALL THE ORDERS THAT HAVE THE STATUS "COMPLETED".



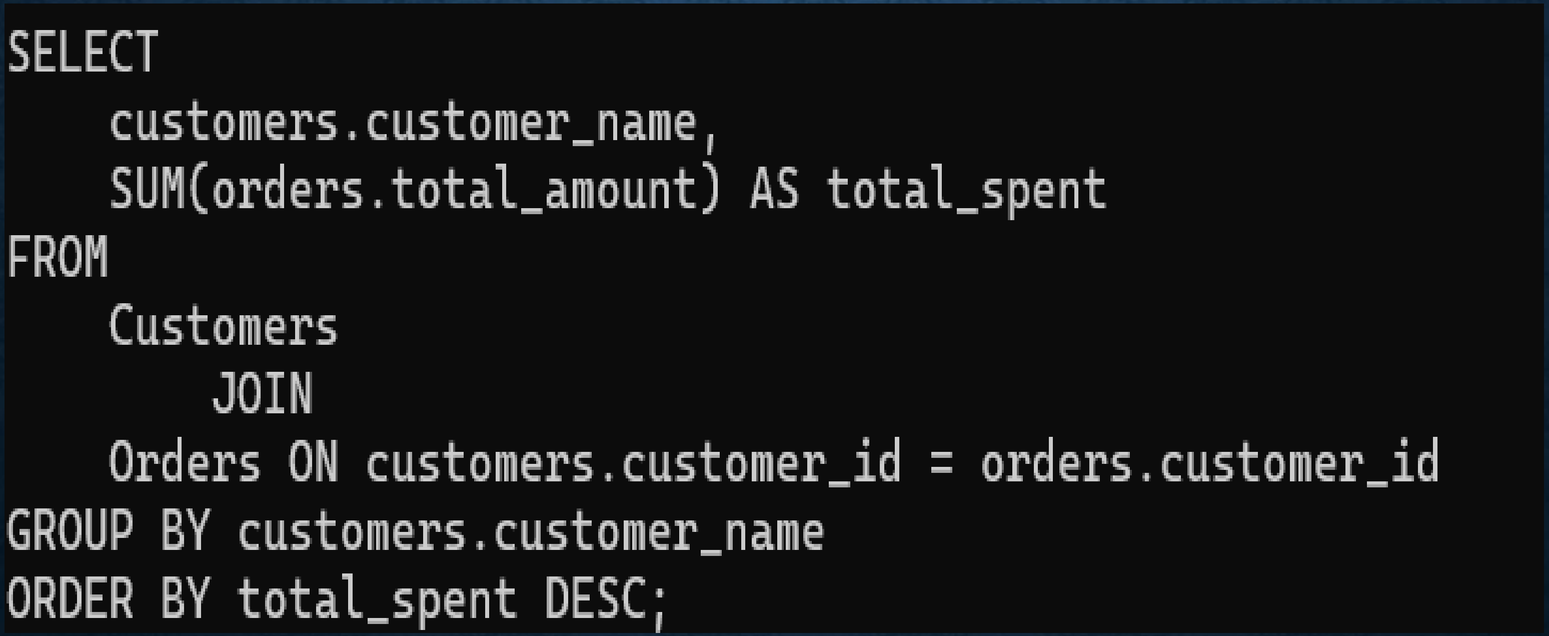
```
SELECT
    *
FROM
    orders
WHERE
    status = 'completed';
```

# FIND THE NAMES OF CUSTOMERS WHO SIGNED UP IN THE CURRENT YEAR.



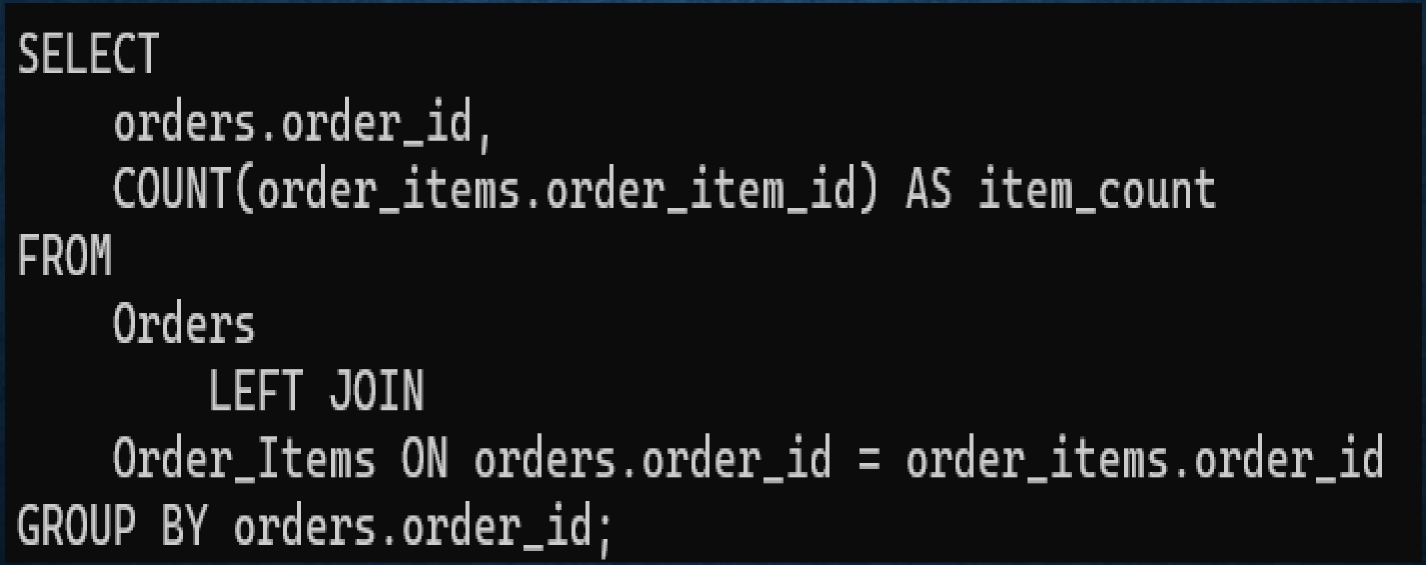
```
SELECT
    customer_name
FROM
    customers
WHERE
    YEAR(signup_date) = YEAR(CURRENT_DATE);
```

# CALCULATE THE TOTAL AMOUNT SPENT BY EACH CUSTOMER AND ORDER THE RESULTS FROM HIGHEST TO LOWEST.



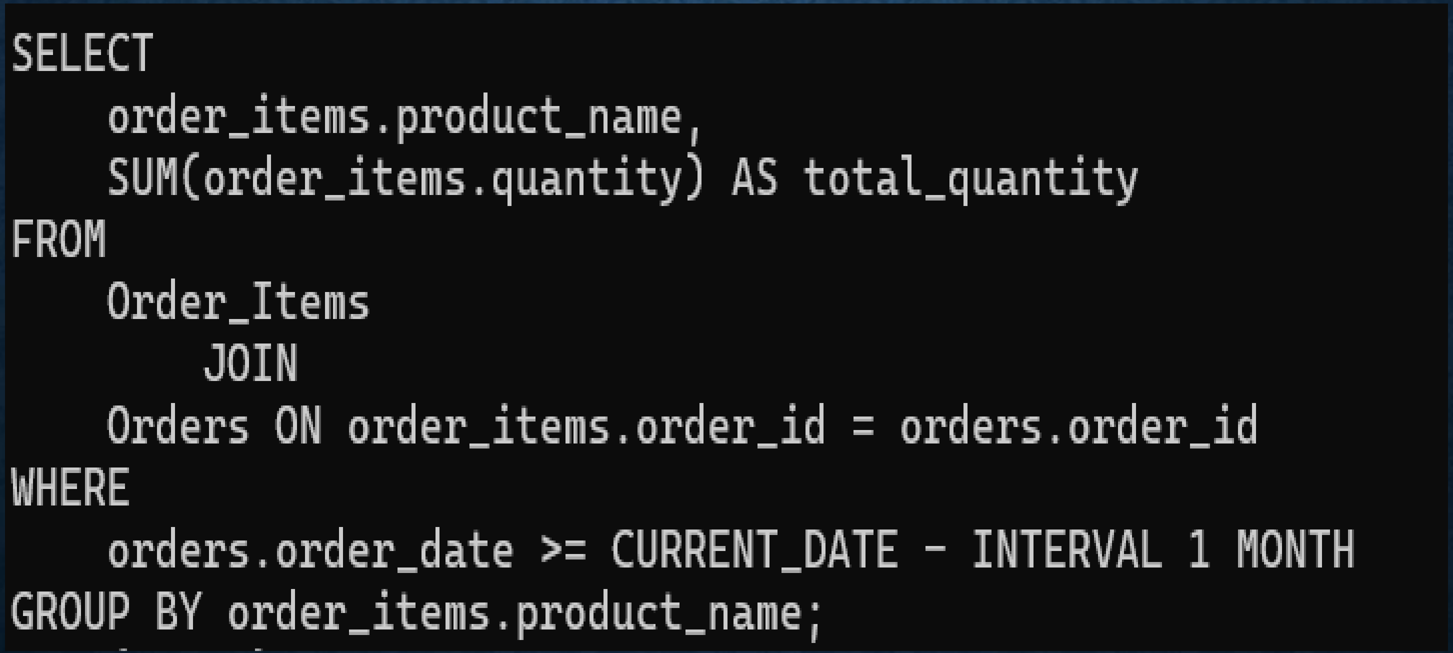
```
SELECT
    customers.customer_name,
    SUM(orders.total_amount) AS total_spent
FROM
    Customers
        JOIN
    Orders ON customers.customer_id = orders.customer_id
GROUP BY customers.customer_name
ORDER BY total_spent DESC;
```

# LIST ALL ORDERS ALONG WITH THE TOTAL NUMBER OF ITEMS IN EACH ORDER.



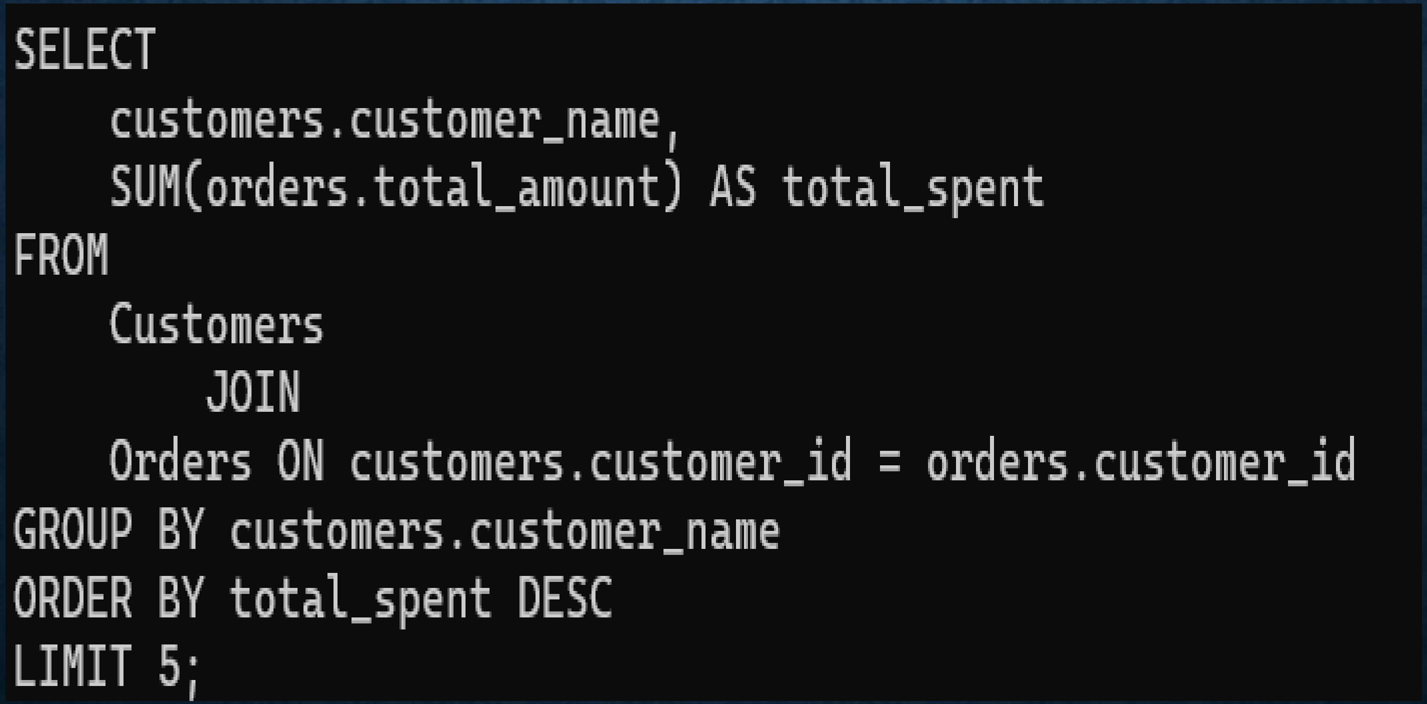
```
SELECT
    orders.order_id,
    COUNT(order_items.order_item_id) AS item_count
FROM
    Orders
        LEFT JOIN
    Order_Items ON orders.order_id = order_items.order_id
GROUP BY orders.order_id;
```

# FIND ALL PRODUCTS THAT WERE PURCHASED IN THE LAST MONTH, ALONG WITH THEIR QUANTITIES.



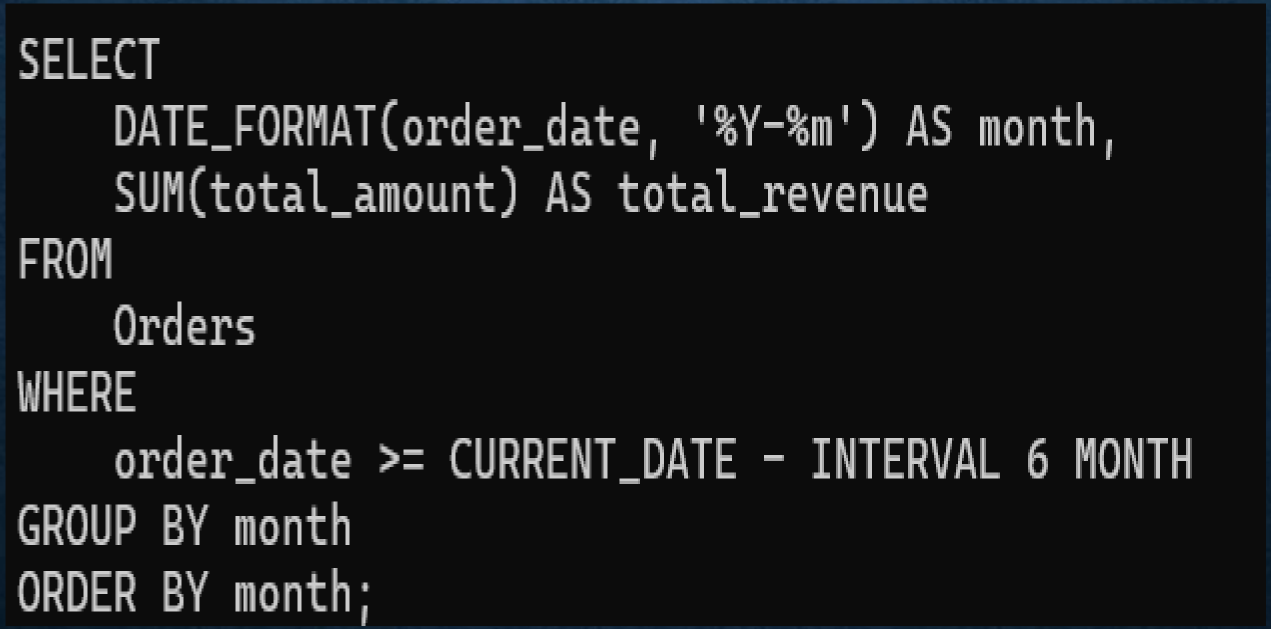
```
SELECT
    order_items.product_name,
    SUM(order_items.quantity) AS total_quantity
FROM
    Order_Items
        JOIN
    Orders ON order_items.order_id = orders.order_id
WHERE
    orders.order_date >= CURRENT_DATE - INTERVAL 1 MONTH
GROUP BY order_items.product_name;
```

# FIND THE TOP 5 CUSTOMERS BASED ON THE TOTAL AMOUNT SPENT ON ORDERS.



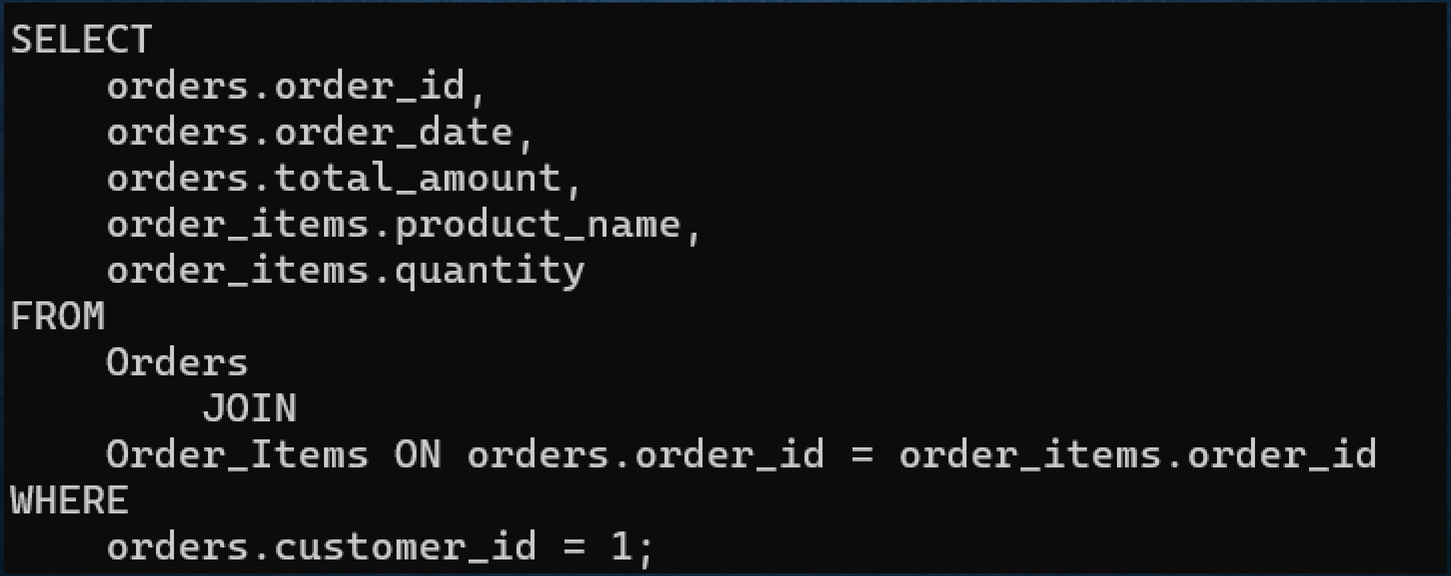
```
SELECT
    customers.customer_name,
    SUM(orders.total_amount) AS total_spent
FROM
    Customers
        JOIN
    Orders ON customers.customer_id = orders.customer_id
GROUP BY customers.customer_name
ORDER BY total_spent DESC
LIMIT 5;
```

# WRITE A QUERY TO GENERATE A MONTHLY REVENUE REPORT FOR THE LAST 6 MONTHS, SHOWING THE TOTAL REVENUE FOR EACH MONTH.



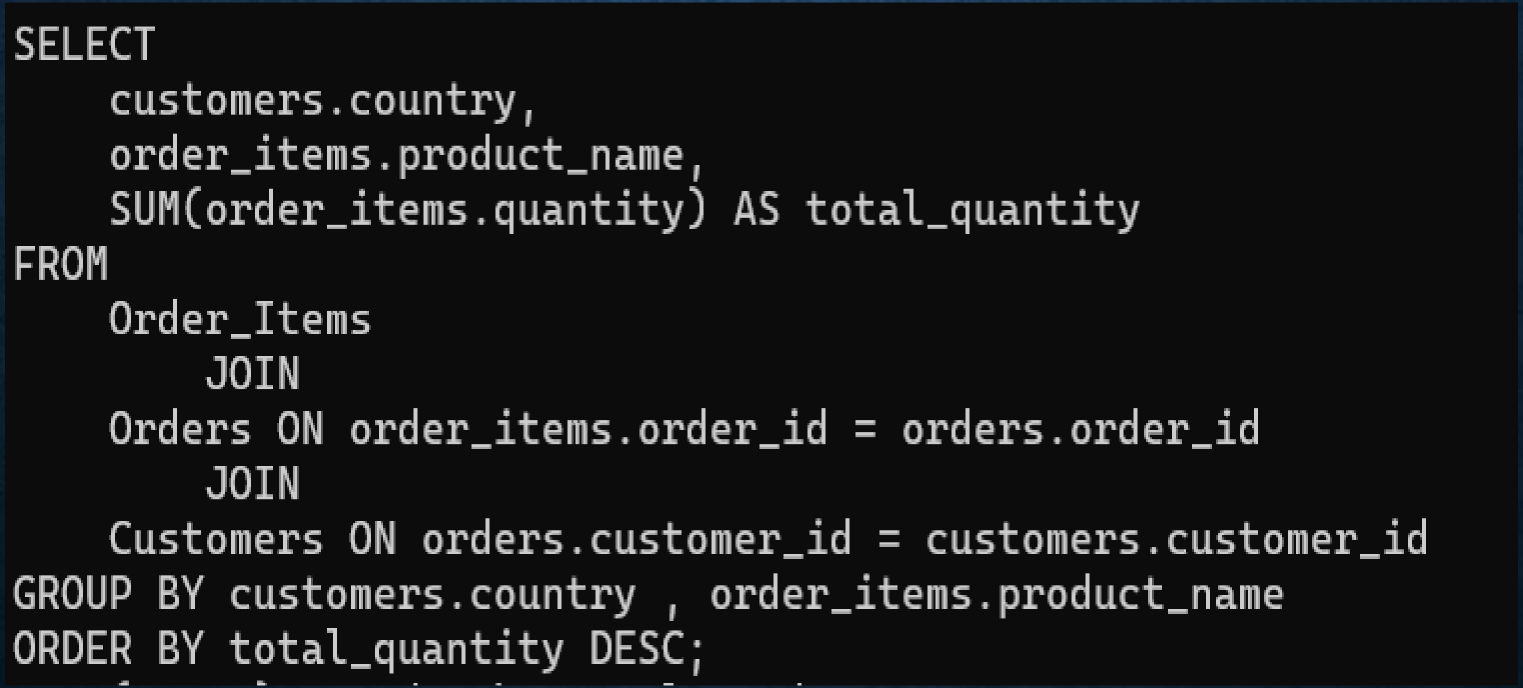
```
SELECT
    DATE_FORMAT(order_date, '%Y-%m') AS month,
    SUM(total_amount) AS total_revenue
FROM
    Orders
WHERE
    order_date >= CURRENT_DATE - INTERVAL 6 MONTH
GROUP BY month
ORDER BY month;
```

# WRITE A QUERY THAT RETRIEVES THE ORDER HISTORY FOR A SPECIFIC CUSTOMER, INCLUDING ORDER DATES, TOTAL AMOUNTS, AND ITEM DETAILS.



```sql
SELECT
    orders.order_id,
    orders.order_date,
    orders.total_amount,
    order_items.product_name,
    order_items.quantity
FROM
    Orders
        JOIN
    Order_Items ON orders.order_id = order_items.order_id
WHERE
    orders.customer_id = 1;
```

# WRITE A QUERY TO FIND THE MOST POPULAR PRODUCT (THE ONE WITH THE HIGHEST TOTAL QUANTITY SOLD) FOR EACH COUNTRY. THE RESULT SHOULD INCLUDE THE COUNTRY, PRODUCT NAME, AND TOTAL QUANTITY SOLD.



```sql
SELECT
    customers.country,
    order_items.product_name,
    SUM(order_items.quantity) AS total_quantity
FROM
    Order_Items
        JOIN
    Orders ON order_items.order_id = orders.order_id
        JOIN
    Customers ON orders.customer_id = customers.customer_id
GROUP BY customers.country , order_items.product_name
ORDER BY total_quantity DESC;
```

# CONCLUSION

The **“E-commerce Sales and Customer Management System Analysis”** project demonstrates the power of SQL in extracting valuable insights from interconnected datasets. By working with **Customers, Orders, and Order Items tables**, this project covers a wide range of real-world scenarios, such as identifying high-value customers, tracking revenue trends, and analyzing product popularity by region.

The 10 queries developed throughout this project range from basic data retrieval to more advanced use cases involving **JOINs, aggregation, window functions, and date/time filtering**. These queries not only solve individual business questions but also illustrate how SQL can be used to handle complex relationships between datasets.