Name- Harshit Selarka
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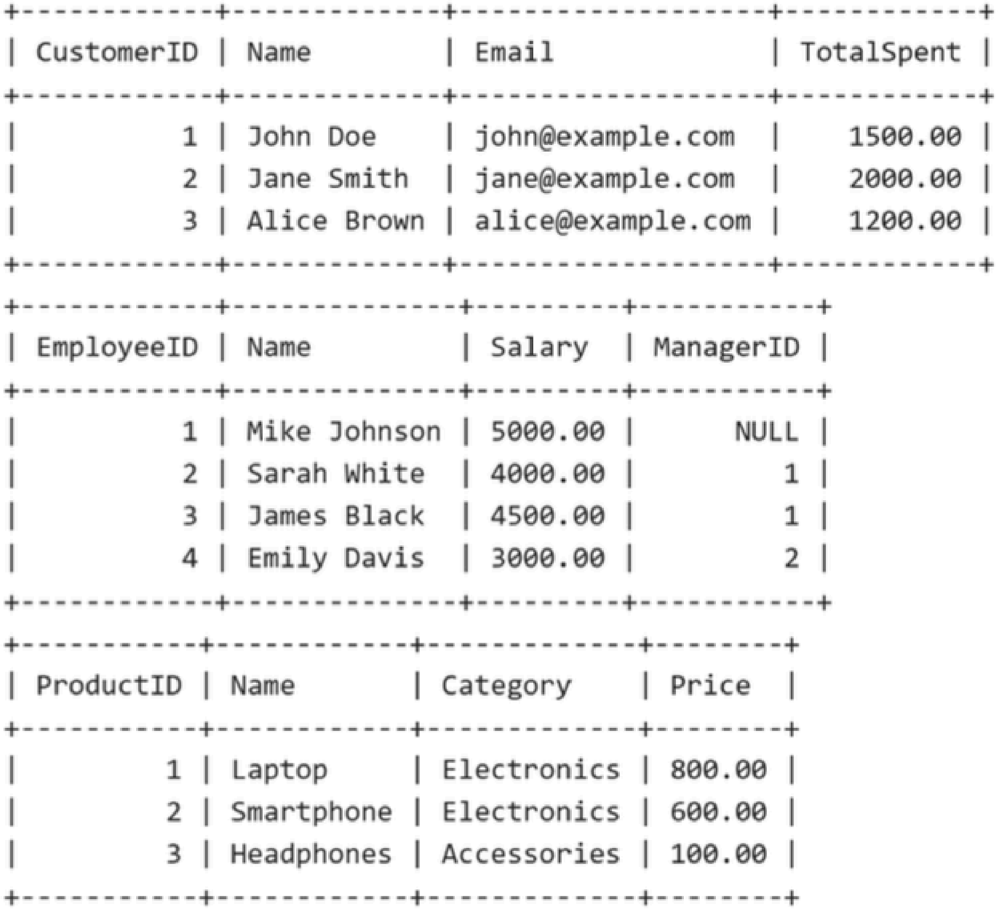
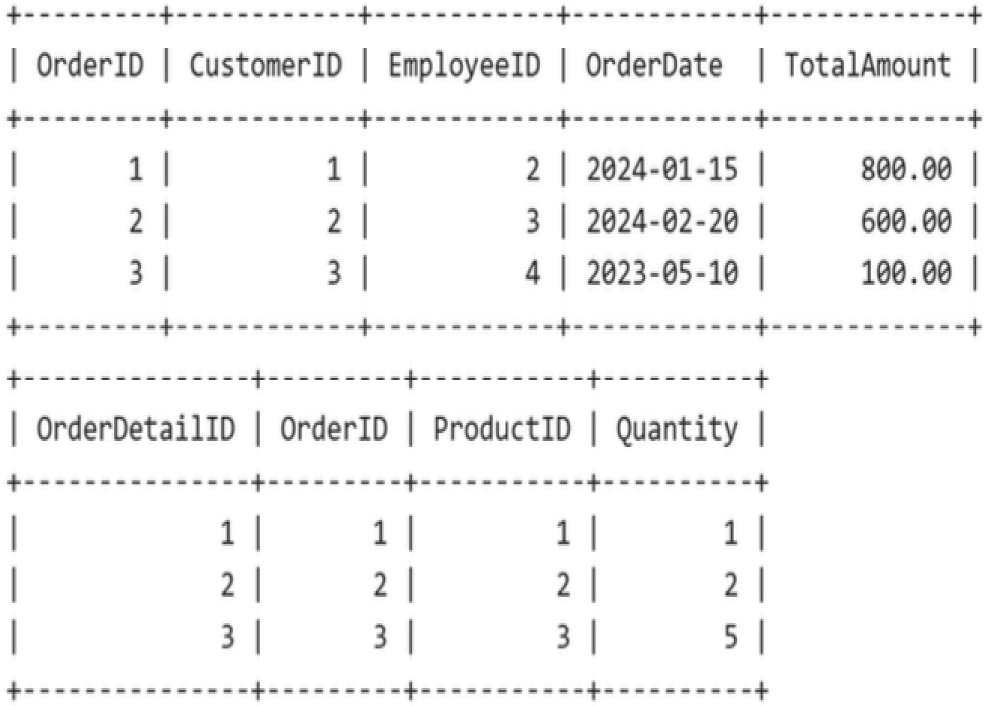
Sec B2
Prac 5 assignment

Table



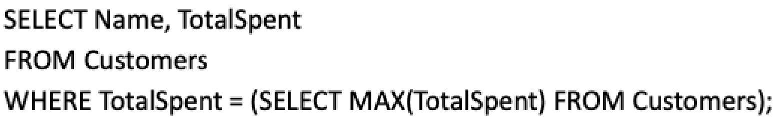
```
+------------+-------------+-------------------+------------+
| CustomerID | Name        | Email             | TotalSpent |
+------------+-------------+-------------------+------------+
|          1 | John Doe    | john@example.com  |    1500.00 |
|          2 | Jane Smith  | jane@example.com  |    2000.00 |
|          3 | Alice Brown | alice@example.com |    1200.00 |
+------------+-------------+-------------------+------------+
+------------+--------------+---------+-----------+
| EmployeeID | Name         | Salary  | ManagerID |
+------------+--------------+---------+-----------+
|          1 | Mike Johnson | 5000.00 |      NULL |
|          2 | Sarah White  | 4000.00 |         1 |
|          3 | James Black  | 4500.00 |         1 |
|          4 | Emily Davis  | 3000.00 |         2 |
+------------+--------------+---------+-----------+
+-----------+------------+-------------+--------+
| ProductID | Name       | Category    | Price  |
+-----------+------------+-------------+--------+
|         1 | Laptop     | Electronics | 800.00 |
|         2 | Smartphone | Electronics | 600.00 |
|         3 | Headphones | Accessories | 100.00 |
+-----------+------------+-------------+--------+
```



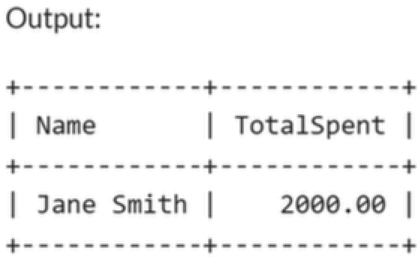
```
+---------+------------+------------+------------+-------------+
| OrderID | CustomerID | EmployeeID | OrderDate  | TotalAmount |
+---------+------------+------------+------------+-------------+
|       1 |          1 |          2 | 2024-01-15 |      800.00 |
|       2 |          2 |          3 | 2024-02-20 |      600.00 |
|       3 |          3 |          4 | 2023-05-10 |      100.00 |
+---------+------------+------------+------------+-------------+
+---------------+---------+-----------+----------+
| OrderDetailID | OrderID | ProductID | Quantity |
+---------------+---------+-----------+----------+
|             1 |       1 |         1 |        1 |
|             2 |       2 |         2 |        2 |
|             3 |       3 |         3 |        5 |
+---------------+---------+-----------+----------+
```

Subquery Tasks

1. Find the **highest-spending customer** in 2024.



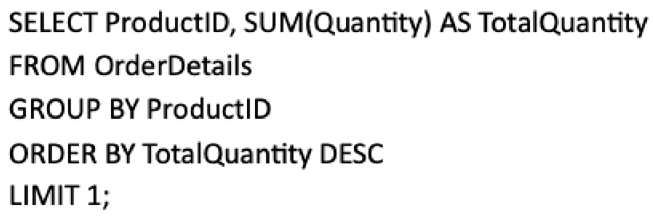
```
SELECT Name, TotalSpent
FROM Customers
WHERE TotalSpent = (SELECT MAX(TotalSpent) FROM Customers);
```



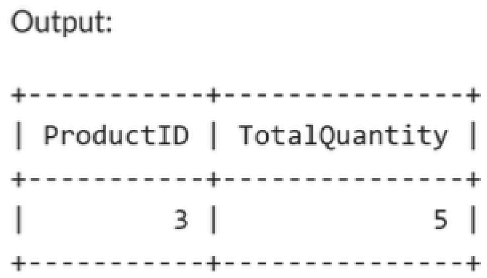
Output:

```
+------------+-----------+
| Name       | TotalSpent |
+------------+-----------+
| Jane Smith |    2000.00 |
+------------+-----------+
```

2. Retrieve the **most ordered product** based on quantity.



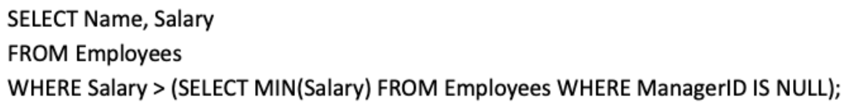
```
SELECT ProductID, SUM(Quantity) AS TotalQuantity
FROM OrderDetails
GROUP BY ProductID
ORDER BY TotalQuantity DESC
LIMIT 1;
```



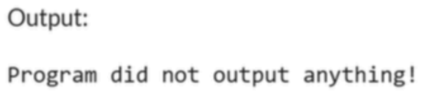
Output:

```
+-----------+---------------+
| ProductID | TotalQuantity |
+-----------+---------------+
|         3 |             5 |
+-----------+---------------+
```

3. Find employees who **earn more than the lowest-paid manager**.



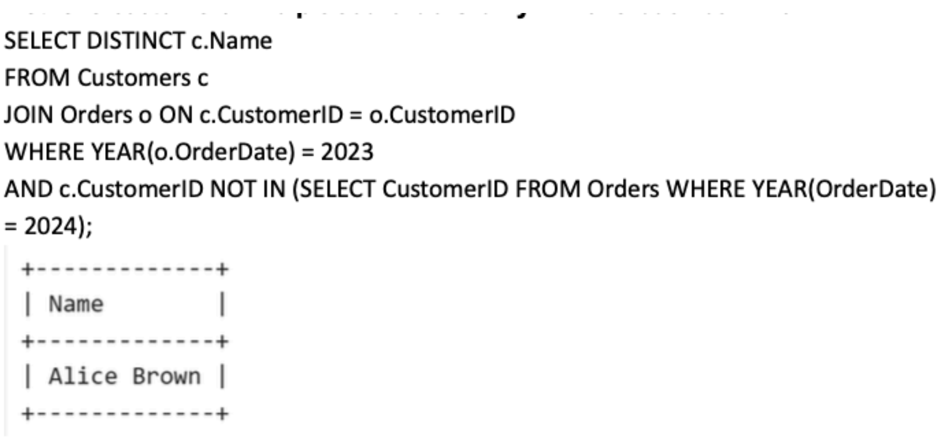
```
SELECT Name, Salary
FROM Employees
WHERE Salary > (SELECT MIN(Salary) FROM Employees WHERE ManagerID IS NULL);
```



Output:

```
Program did not output anything!
```

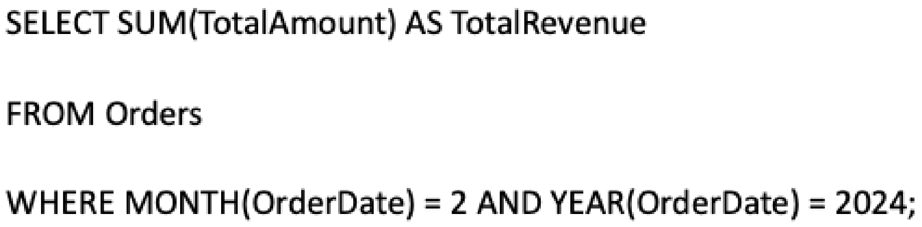
4. Retrieve customers who **placed orders only in 2023 but not in 2024**.



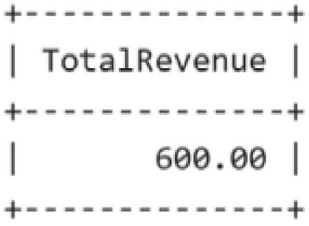
```
SELECT DISTINCT c.Name
FROM Customers c
JOIN Orders o ON c.CustomerID = o.CustomerID
WHERE YEAR(o.OrderDate) = 2023
AND c.CustomerID NOT IN (SELECT CustomerID FROM Orders WHERE YEAR(OrderDate)
= 2024);
```

```
+-------------+
| Name        |
+-------------+
| Alice Brown |
+-------------+
```

5. Find the **total revenue generated in February 2024**.



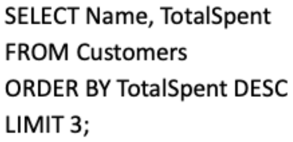
```
SELECT SUM(TotalAmount) AS TotalRevenue

FROM Orders

WHERE MONTH(OrderDate) = 2 AND YEAR(OrderDate) = 2024;
```



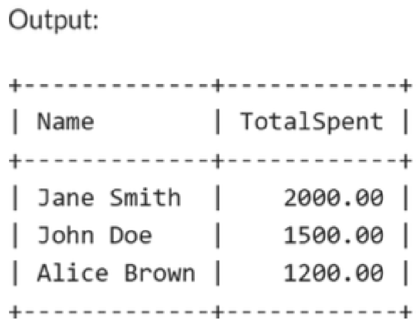
```
+--------------+
| TotalRevenue |
+--------------+
|       600.00 |
+--------------+
```

Joins Tasks

1. Find the **top 3 customers** with the **highest total spending**.



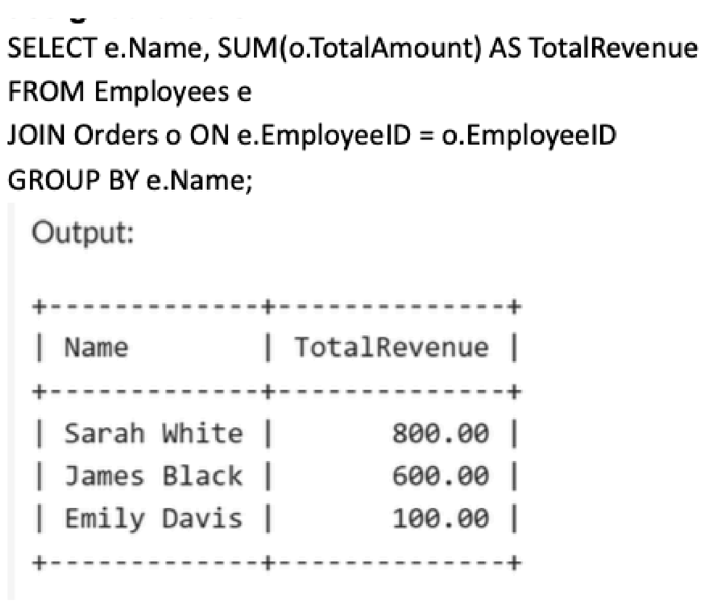
```
SELECT Name, TotalSpent
FROM Customers
ORDER BY TotalSpent DESC
LIMIT 3;
```



Output:

```
+-------------+-----------+
| Name        | TotalSpent |
+-------------+-----------+
| Jane Smith  |    2000.00 |
| John Doe    |    1500.00 |
| Alice Brown |    1200.00 |
+-------------+-----------+
```

2. Retrieve **employee names** along with the **total revenue generated from their assigned orders**.

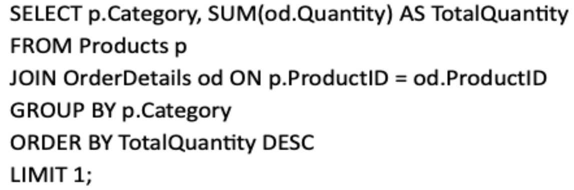


```
SELECT e.Name, SUM(o.TotalAmount) AS TotalRevenue
FROM Employees e
JOIN Orders o ON e.EmployeeID = o.EmployeeID
GROUP BY e.Name;
```

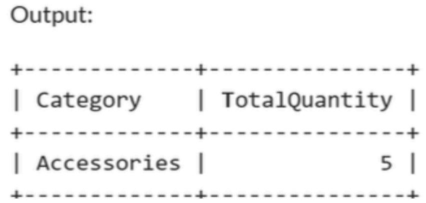
Output:

```
+-------------+-------------+
| Name        | TotalRevenue |
+-------------+-------------+
| Sarah White |      800.00 |
| James Black |      600.00 |
| Emily Davis |      100.00 |
+-------------+-------------+
```

3. Show the **most ordered product category** and its total quantity sold.



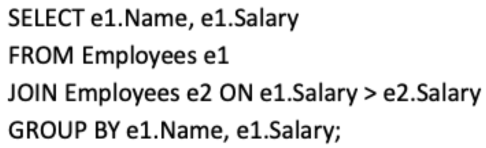
```
SELECT p.Category, SUM(od.Quantity) AS TotalQuantity
FROM Products p
JOIN OrderDetails od ON p.ProductID = od.ProductID
GROUP BY p.Category
ORDER BY TotalQuantity DESC
LIMIT 1;
```



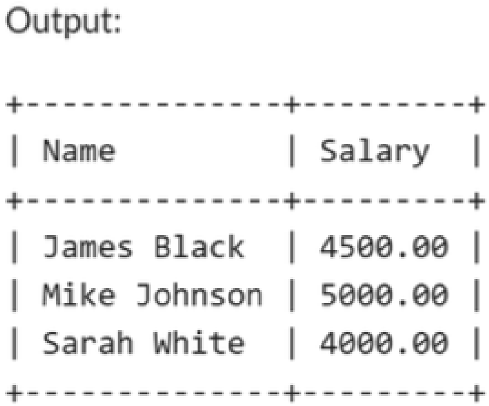
Output:

```
+-------------+---------------+
| Category    | TotalQuantity |
+-------------+---------------+
| Accessories |             5 |
+-------------+---------------+
```

4. Retrieve employees who **earn more than their colleagues** using a **SELF JOIN**.



```
SELECT e1.Name, e1.Salary
FROM Employees e1
JOIN Employees e2 ON e1.Salary > e2.Salary
GROUP BY e1.Name, e1.Salary;
```



Output:

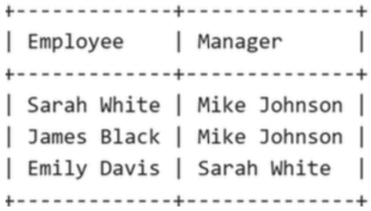
```
+-------------+---------+
| Name        | Salary  |
+-------------+---------+
| James Black | 4500.00 |
| Mike Johnson | 5000.00 |
| Sarah White | 4000.00 |
+-------------+---------+
```

5. Find employees who **work under the same manager** using a **SELF JOIN**.

SELECT e1.Name AS Employee, e2.Name AS Manager

FROM Employees e1

JOIN Employees e2 ON e1.ManagerID = e2.EmployeeID;



```
+-------------+--------------+
| Employee    | Manager      |
+-------------+--------------+
| Sarah White | Mike Johnson |
| James Black | Mike Johnson |
| Emily Davis | Sarah White  |
+-------------+--------------+
```