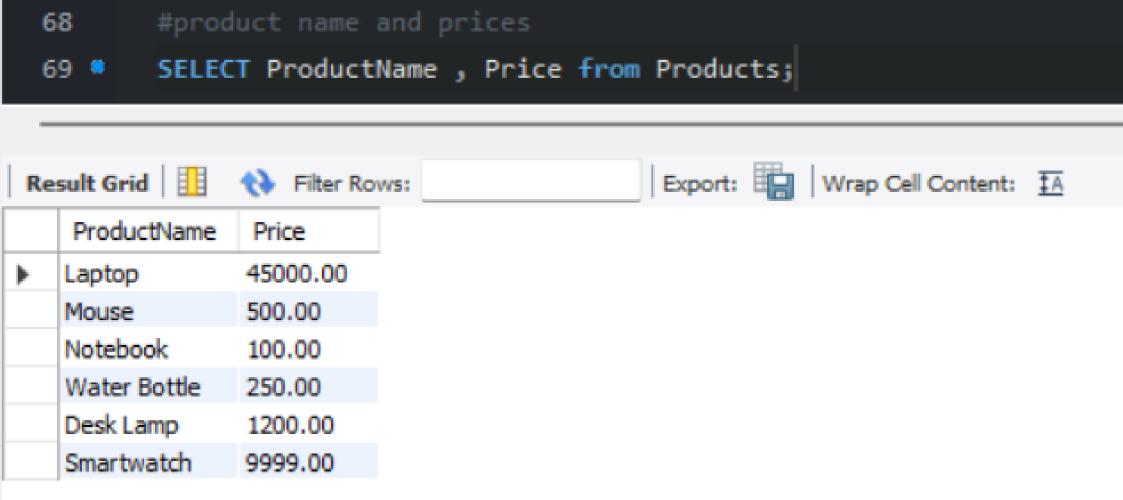
```
create database litmus7;
 1 •
       use litmus7;
 2 .
 3
 4 * CREATE TABLE Cutomer(
 5
       CustomerID INT PRIMARY KEY,
 6
       Name VARCHAR(100),
 7
       Email VARCHAR(100),
       City VARCHAR(100),
 8
9
     SignupDate DATE );
10
11
       RENAME TABLE Cutomer TO Customers;
12
13 • CREATE TABLE Orders(
       OrderID INT PRIMARY KEY,
14
15
       CustomerID INT,
       OrderDate DATE,
16
17
       TotalAmount DECIMAL(10,2),
     FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID));
18
19
20 • CREATE TABLE Products(
21
       ProductID INT PRIMARY KEY,
       ProductName VARCHAR(100),
22
       Category VARCHAR(50),
23
       Price DECIMAL(10,2));
24
25
```

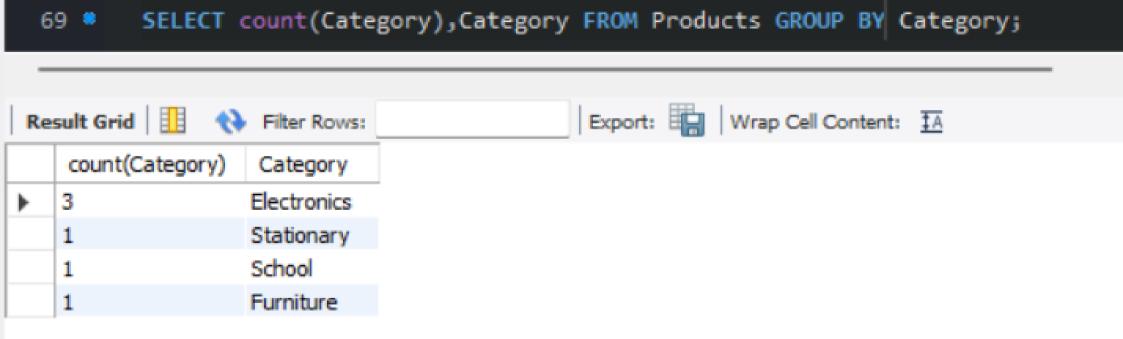
```
25
26 • CREATE TABLE OrderDetails(
       OrderDetailID INT PRIMARY KEY,
27
       OrderID INT,
28
29
       ProductID INT,
       Quantity INT,
30
31
       Price DECIMAL(10,2),
32
       FOREIGN KEY (OrderID) REFERENCES Orders(OrderID),
33
       FOREIGN KEY (ProductID) REFERENCES Products(ProductID));
34
35
36
       INSERT INTO Customers (CustomerID, Name, Email, City, SignupDate) VALUES
37
       (1, 'Alan', 'alan@ex.com', 'Kochi', '2024-01-15'),
       (2, 'Bob', 'bob@ex.com', 'Mumbai', '2023-02-20'),
38
       (3, 'Donna', 'donna@ex.com', 'Mumbai', '2024-03-10'),
39
       (4, 'Sharath', 'sharath@ex.com', 'Delhi', '2023-03-10');
40
41
42
43
       INSERT INTO Products (ProductID, ProductName, Category, Price) VALUES
       (201, 'Laptop', 'Electronics', 45000.00),
44
       (202, 'Mouse', 'Electronics', 500.00),
45
       (203, 'Notebook', 'Stationary', 100.00),
46
       (204, 'Water Bottle', 'School', 250.00),
47
       (205, 'Desk Lamp', 'Furniture', 1200.00),
48
       (206, 'Smartwatch', 'Electronics', 9999.00);
49
50
```

51

```
INSERT INTO Orders (OrderID, CustomerID, OrderDate, TotalAmount) VALUES
52
53
       (101, 1, '2024-05-15', 800.00), -- 1 Mouse and 3 Notebook
54
       (102, 2, '2024-06-01', 46000.00), -- 1 Laptop 4 Water Bottle
55
       (103, 1, '2024-06-05', 1000.00), -- 2 Mouse
       (104, 3, '2024-04-22', 1700.00); -- 5 Notebook and 1 Desk Lamp
56
57
58
59
       INSERT INTO OrderDetails (OrderDetailID, OrderID, ProductID, Quantity, Price) VALUES
       (301, 101, 202, 1, 500.00),
60
61
       (302, 101, 203, 3, 100.00), -- Notebook
62
       (303, 102, 201, 1, 45000.00), -- Laptop
       (304, 102, 204, 4, 250.00), -- Water Bottle
63
64
       (305, 103, 202, 2, 500.00), -- Mouse
       (306, 104, 203, 5, 100.00), -- Notebook
65
       (307, 104, 205, 1, 1200.00); -- Desk Lamp
66
67
```

```
68
69 •
       CREATE INDEX idx orders orderdate ON Orders(OrderDate);
70
71 •
       CREATE INDEX idx customers city ON Customers(City);
72
73 •
       CREATE INDEX idx customers signup ON Customers(SignupDate);
74
75
       CREATE INDEX idx orders customerid ON Orders(CustomerID);
76
77 •
       CREATE INDEX idx orderdetails productid ON OrderDetails(ProductID);
78
79 •
       CREATE INDEX idx orderdetails orderid productid ON OrderDetails(OrderID, ProductID);
```





- 69 #orders with customer names
 70 * SELECT o.CustomerID, o.OrderID, c.Name
- 71 from Orders o
- 72 join Customers c on c.CustomerID = o.CustomerID;

Export: Wrap Cell Content: IA

73

NE	Suit Grid H	A Lines	ROWS:
	CustomerID	OrderID	Name
•	1	101	Alan
	1	103	Alan
	2	102	Bob
	3	104	Donna

Popult Grid III A Eiter Pours

```
70
         SELECT od.OrderID, o.OrderDate, p.ProductName, od.Quantity, od.Price
         FROM OrderDetails od
 71
 72
         JOIN Orders o ON od.OrderID = o.OrderID
 73
         JOIN Products p ON od.ProductID = p.ProductID
 74
         ORDER BY o.OrderDate;
Result Grid
              ♦ Filter Rows:
                                              Export:
                                                         Wrap Cell Content: TA
                       ProductName |
   OrderID
            OrderDate
                                     Quantity
                                               Price
                       Notebook
                                     5
   104
            2024-04-22
                                               100.00
   104
                       Desk Lamp
           2024-04-22
                                               1200.00
   101
           2024-05-15
                       Mouse
                                              500.00
                       Notebook
                                     3
   101
           2024-05-15
                                              100.00
   102
            2024-06-01
                                              45000.00
                       Laptop
   102
            2024-06-01
                       Water Bottle
                                     4
                                              250.00
   103
            2024-06-05
                       Mouse
                                              500.00
```

#products bought in order (assuming date)

69

```
69
        #customers who didnt place order
 70 .
      SELECT c.Name , c.CustomerID
 71
        FROM Customers c
 72
        LEFT JOIN Orders o on o.CustomerID = c.CustomerID
        WHERE o.OrderID is NULL;
73
Result Grid Filter Rows:
                                         Export: Wrap Cell Content: TA
   Name
           CustomerID
  Sharath
```

```
#total amt spent by customer
 69
 70 .
        SELECT c.Name , sum(o.TotalAmount) as Expenditure
 71
        FROM Customers c
72
        JOIN Orders o on o.CustomerID = c.CustomerID
73
        GROUP BY c.Name;
Wrap Cell Content: TA
         Expenditure
   Name
  Alan
         1800.00
  Bob 46000.00
         1700.00
  Donna
```

```
#product sold the most
 69
        SELECT p.ProductName, sum(od.Quantity) as MostSold
 70 .
 71
        FROM OrderDetails od
        JOIN Products p ON p.ProductID = od.ProductID
 72
        GROUP BY p.ProductID, p.ProductName
 73
 74
        ORDER BY MostSold DESC
 75
        LIMIT 1;
 76
 77
Result Grid Filter Rows:
                                          Export: Wrap Cell Content:
   ProductName MostSold
  Notebook
```

```
#average order value

#average order value

### SELECT c.Name, avg(o.TotalAmount) as AverageOrderExpense

### FROM Customers c

### JOIN Orders o ON o.CustomerID = c.CustomerID

### GROUP BY c.Name;

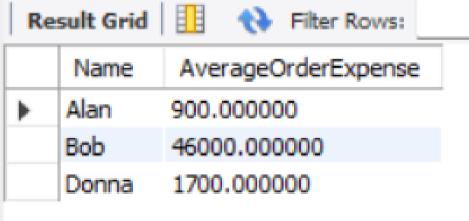
### Average order value

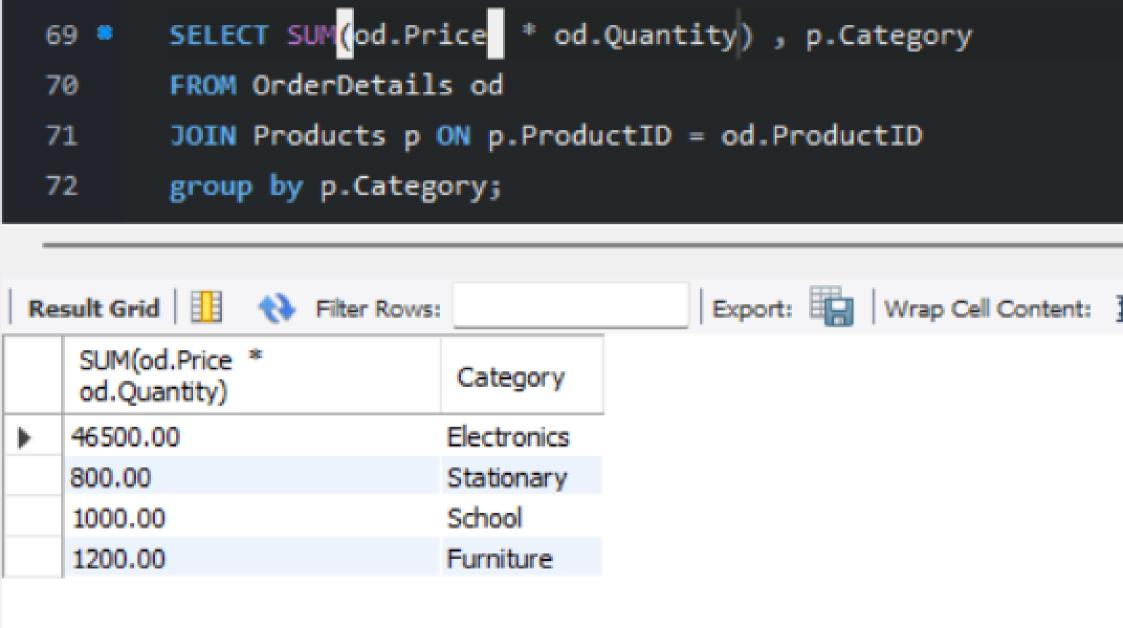
### Average order value

### AverageOrderExpense

### AverageOrder
```

Export: Wrap Cell Content: IA

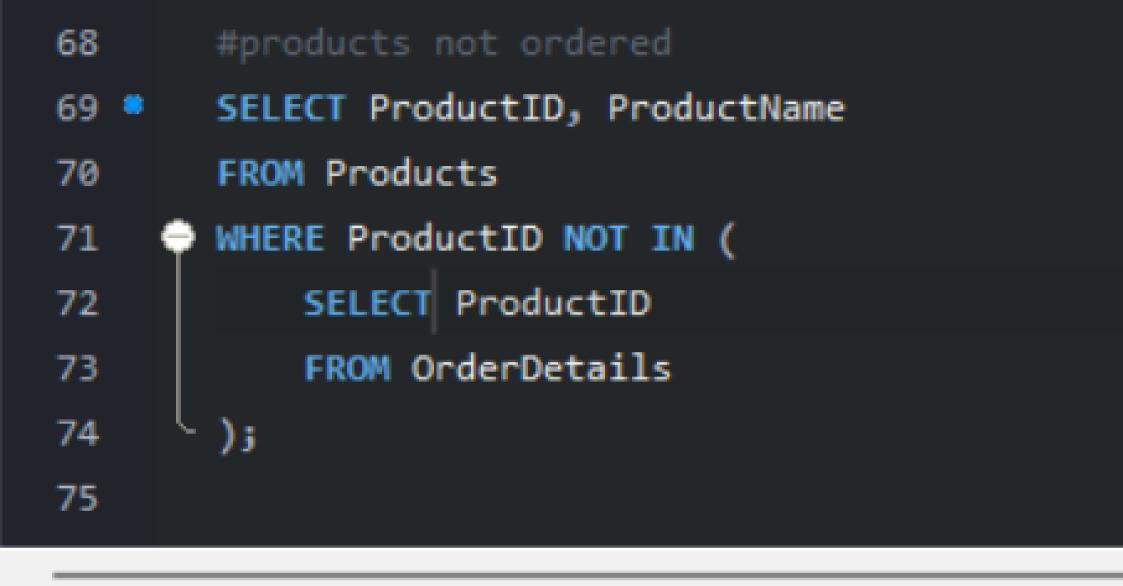




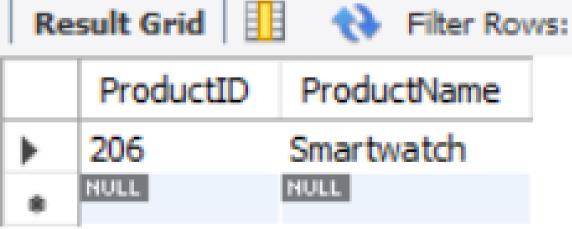
```
69
       #customers with spending > avg spending
       SELECT c.CustomerID, c.Name, SUM(od.Quantity * od.Price) AS Expense
70
71
       FROM Customers c
72
       JOIN Orders o ON o.CustomerID = c.CustomerID
       JOIN OrderDetails od ON od.OrderID = o.OrderID
73
74
       GROUP BY c.Name , c.CustomerID
75
       having Expense > (
           SELECT avg(CustomerTotal)
76
           FROM (
77
               SELECT SUM(od.Quantity * od.Price) as CustomerTotal
78
79
               FROM Orders o
               JOIN OrderDetails od on od.OrderID = o.OrderID
80
               GROUP BY o.CustomerID
81
                 )as CustomerTotals
82
           );
83
```

Export: Wrap Cell Content: TA





Edit:



```
68
       #most recent order for each customer
69 •
    o.OrderID o.CustomerID o.OrderDate o.OrderID
       from Orders o
70
71
     where o.OrderDate = (
72
           select max(o1.OrderDate)
           from Orders o1
73
74
           where o1.CustomerID = o.CustomerID);
75
```









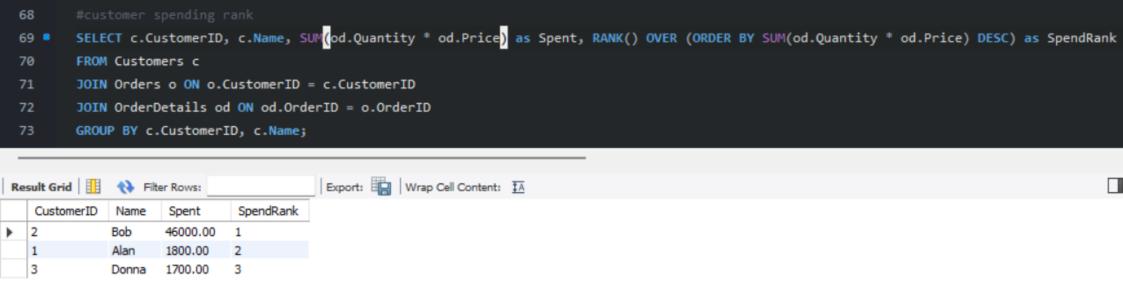


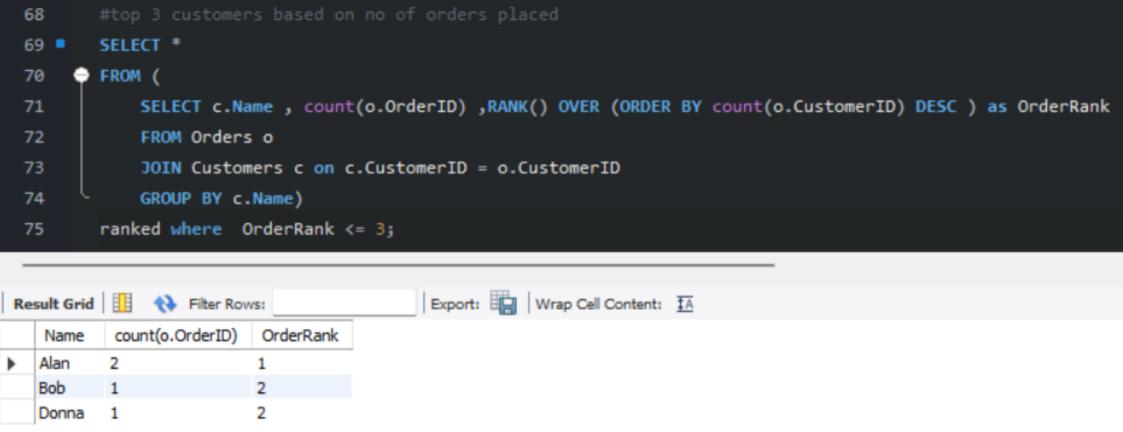


Edit: 🚄 🖶 Export/

	CustomerID	OrderDate	OrderID
•	2	2024-06-01	102
	1	2024-06-05	103
	3	2024-04-22	104
	NULL	NULL	NULL

```
68
 69
        SELECT
70
             c.CustomerID,
71
             c.Name,
 72
            SUM(od.Quantity * od.Price) AS TotalSpent,
             RANK() OVER (ORDER BY SUM(od.Quantity * od.Price) DESC) as SpendRank
73
        FROM Customers c
 74
75
        JOIN Orders o ON o.CustomerID = c.CustomerID
76
        JOIN OrderDetails od ON od.OrderID = o.OrderID
77
        GROUP BY c.CustomerID, c.Name;
78
                                          Export: Wrap Cell Content: TA
Result Grid Filter Rows:
   CustomerID
              Name
                     TotalSpent
                               SpendingRank
             Bob
                    46000.00
             Alan
                     1800.00
                               2
                     1700.00
                               3
             Donna
```





```
67
 68
 69 •
         SELECT p.ProductID, p.ProductName, count(distinct o.CustomerID) as UniqueCustomers
         FROM OrderDetails od
 70
 71
         JOIN Orders o ON od.OrderID = o.OrderID
 72
         JOIN Products p ON od.ProductID = p.ProductID
 73
         GROUP BY p.ProductID, p.ProductName;
 74
Result Grid Filter Rows:
                                             Export: Wrap Cell Content: $\overline{A}$
   ProductID
             ProductName
                          UniqueCustomers
   201
             Laptop
   202
             Mouse
   203
             Notebook
             Water Bottle
   204
             Desk Lamp
   205
Result 9 ×
```

69 #list of all customers 70 . City, SELECT CustomerID 71 FROM Customers; 72





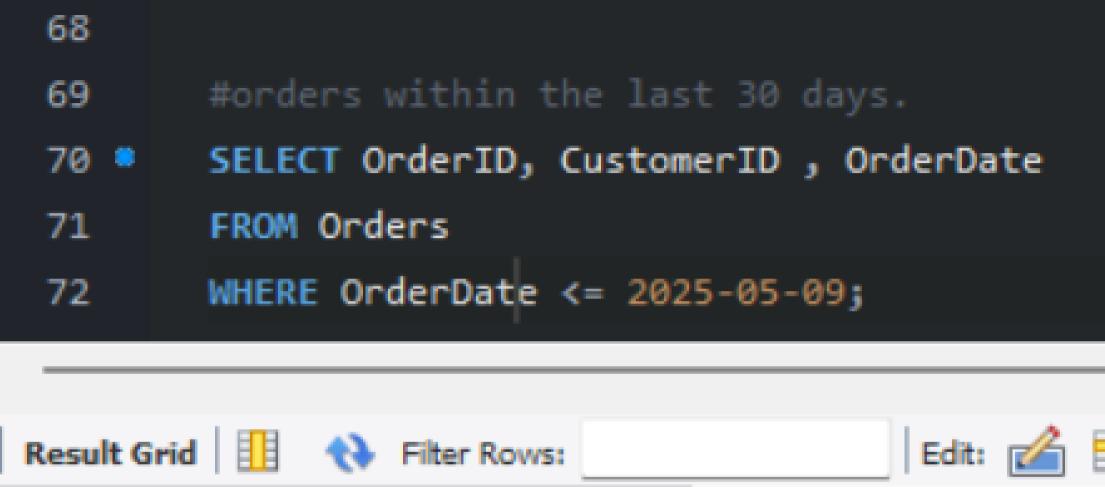


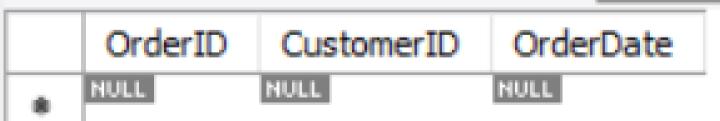






	CustomerID	Name	City
•	1	Alan	Kochi
	2	Bob	Mumbai
	3	Donna	Mumbai
	4	Sharath	Delhi
	NULL	HULL	NULL

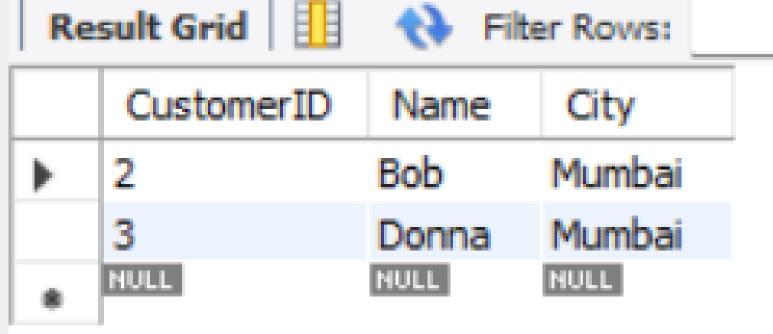




```
#customers from mumbai

#customers from mumbai

| Name | City
| FROM Customers
| WHERE City = 'Mumbai';
```



```
#customers who signed up after 2024-01-01
69
70 .
    SELECT CustomerID , Name , SignupDate
```

71 FROM Customers

WHERE SignupDate > '2024-01-01'; 72





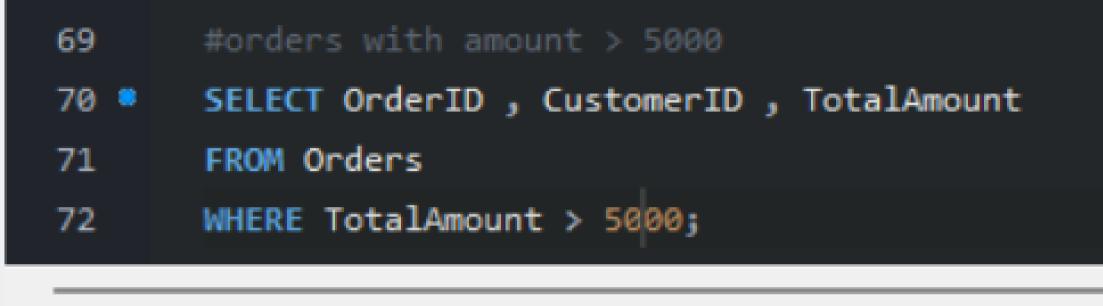








	CustomerID	Name	SignupDate
•	1	Alan	2024-01-15
	3	Donna	2024-03-10
	NULL	NULL	NULL



Edit: 🚄 🖶 🚟

