

## 5-3 Major Activity: Analyzing Queries

1. **Analyze the results of queries** to identify specific information that can be presented in your summary.
  - A. Sales by region:
    - a. Analyze sales data by state to determine where the company has the largest customer base.

The screenshot shows a terminal window with the following content:

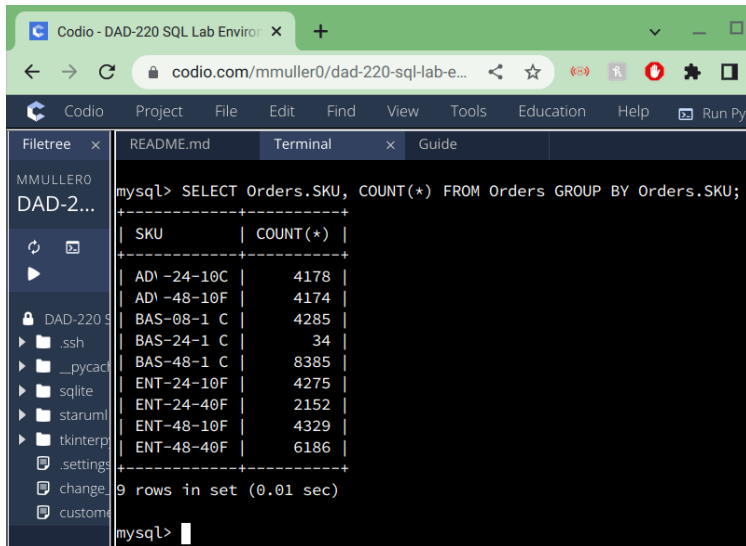
```
mysql> SELECT State, COUNT(*)
-> FROM Customers
-> GROUP BY State;
```

State	COUNT(*)
Alabama	838
Arizona	784
Arkansas	854
CA	1
California	771
Colorado	728
Connecticut	832
Delaware	824
FL	1
Florida	773
Georgia	724
Hawaii	792
Idaho	838
Illinois	759
Indiana	811
Iowa	814
Kansas	732
Kentucky	819
Louisiana	801
Maine	759
Maryland	777
Massachusetts	983
Michigan	760
Minnesota	801
Mississippi	834
Missouri	782
Montana	820
NC	1
Nebraska	731
Nevada	755

The company appears to have its largest customer base in Massachusetts. There are 983 records in the Customers table with a State value of Massachusetts. This information could be accessed through the query:  
**SELECT State, COUNT(\*) FROM Customers GROUP BY State;**

sqlite	Nevada	755
staruml	New Hampshire	771
tkinterpy	New Jersey	726
.settings	New Mexico	818
change_perm.sh	New York	792
customers.csv	North Carolina	785
FleetMaintenanceRecords.csv	North Dakota	776
HRandIS-Employees.csv	NY	1
mysqlsampledatabase.sql	Ohio	746
orders.csv	Oklahoma	756
README.md	Oregon	842
rma.csv	Pennsylvania	812
	Rhode Island	773
	South Carolina	713
	South Dakota	807
	Tennessee	831
	Texas	757
	Utah	759
	Vermont	793
	Washington	791
	West Virginia	843
	Wisconsin	822
	Wyoming	795
52 rows in set (0.02 sec)		
mysql>		

- b. Analyze the data to determine the top three products sold in the United States.



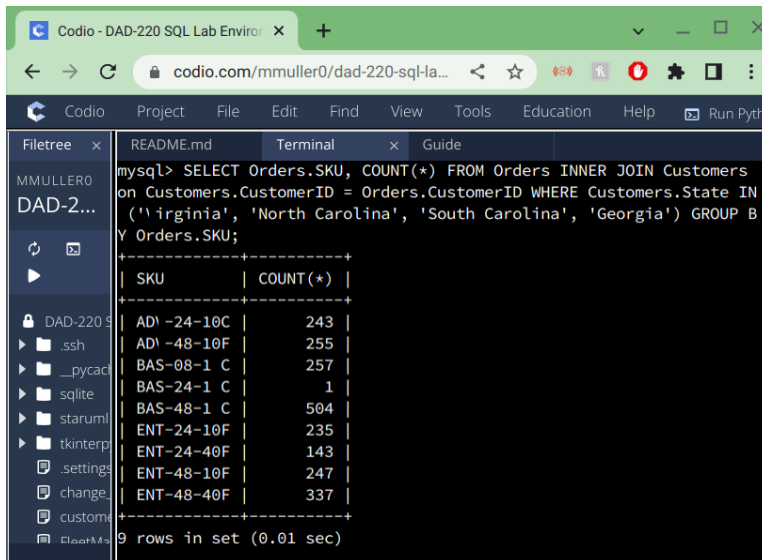
The screenshot shows a terminal window with a MySQL prompt. The query executed is `SELECT Orders.SKU, COUNT(*) FROM Orders GROUP BY Orders.SKU;`. The results are displayed in a table with two columns: SKU and COUNT(\*). The top three products are BAS-08-1 C (4285), ENT-24-10F (4275), and ENT-24-40F (2152). The terminal also shows the file explorer on the left and the browser address bar at the top.

SKU	COUNT(*)
AD\ -24-10C	4178
AD\ -48-10F	4174
BAS-08-1 C	4285
BAS-24-1 C	34
BAS-48-1 C	8385
ENT-24-10F	4275
ENT-24-40F	2152
ENT-48-10F	4329
ENT-48-40F	6186

The top three products sold in the United States are BAS-48-1 C, ENT-48-40F, and ENT-48-10F.

`SELECT Orders.SKU,  
COUNT(*) FROM Orders  
GROUP BY Orders.SKU;`

- c. Analyze the data to determine the top three products sold in the southeastern region of the United States.
1. Southeastern states to include in your analysis: Virginia, North Carolina, South Carolina, and Georgia



```
mysql> SELECT Orders.SKU, COUNT(*) FROM Orders INNER JOIN Customers
on Customers.CustomerID = Orders.CustomerID WHERE Customers.State IN
('Virginia', 'North Carolina', 'South Carolina', 'Georgia') GROUP BY
Orders.SKU;
```

SKU	COUNT(*)
ADV-24-10C	243
ADV-48-10F	255
BAS-08-1 C	257
BAS-24-1 C	1
BAS-48-1 C	504
ENT-24-10F	235
ENT-24-40F	143
ENT-48-10F	247
ENT-48-40F	337

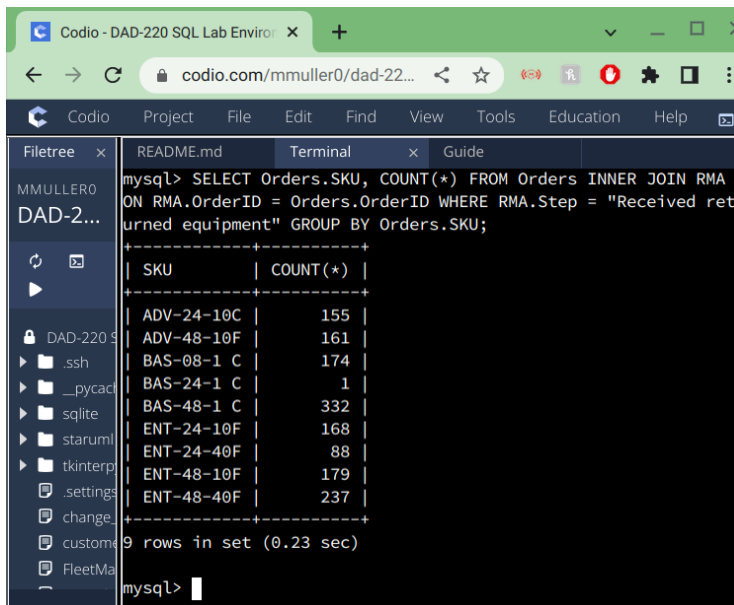
9 rows in set (0.01 sec)

The top three products sold in the Southeastern region of the United States are BAS-48-1 C, ENT-48-40F, and BAS-08-1 C.

```
SELECT Orders.SKU,
COUNT(*) FROM Orders
INNER JOIN Customers on
Customers.CustomerID =
Orders.CustomerID WHERE
Customers.State IN ('Virginia',
'North Carolina', 'South
Carolina', 'Georgia') GROUP
BY Orders.SKU;
```

## B. Returns by region:

- Analyze the data to determine the top three products returned in the United States.



```
mysql> SELECT Orders.SKU, COUNT(*) FROM Orders INNER JOIN RMA
ON RMA.OrderID = Orders.OrderID WHERE RMA.Step = "Received ret
urned equipment" GROUP BY Orders.SKU;
```

SKU	COUNT(*)
ADV-24-10C	155
ADV-48-10F	161
BAS-08-1 C	174
BAS-24-1 C	1
BAS-48-1 C	332
ENT-24-10F	168
ENT-24-40F	88
ENT-48-10F	179
ENT-48-40F	237

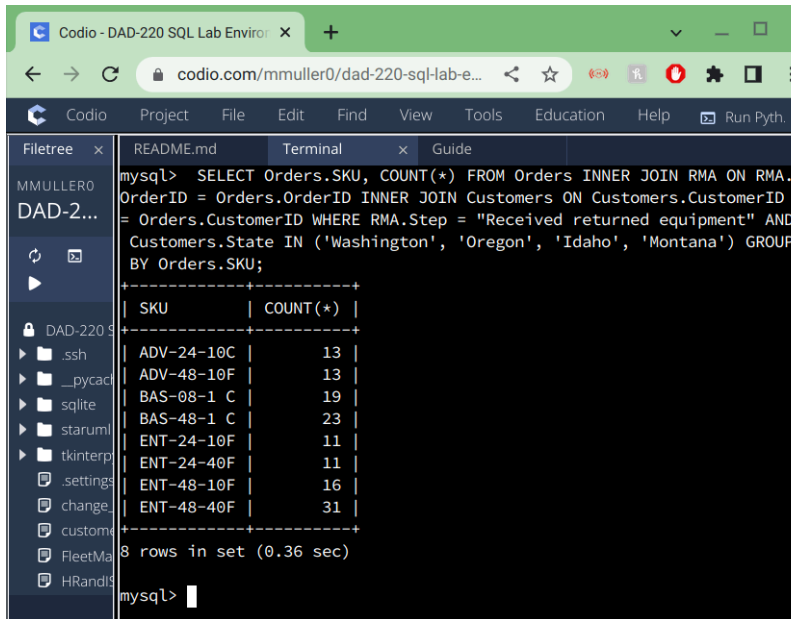
9 rows in set (0.23 sec)

The top three products returned in the United States are: BAS-48-1 C, ENT-48-40F, and ENT-48-10F.

```
SELECT Orders.SKU,
COUNT(*) FROM Orders
INNER JOIN RMA ON
RMA.OrderID =
Orders.OrderID WHERE
RMA.Step = "Received
returned equipment" GROUP
BY Orders.SKU;
```

b. Analyze the data to determine the top three products returned in the northwestern region of the United States.

2. Northwestern states to include in your analysis:  
Washington, Oregon, Idaho, and Montana



```
mysql> SELECT Orders.SKU, COUNT(*) FROM Orders INNER JOIN RMA ON RMA.
OrderID = Orders.OrderID INNER JOIN Customers ON Customers.CustomerID
= Orders.CustomerID WHERE RMA.Step = "Received returned equipment" AND
Customers.State IN ('Washington', 'Oregon', 'Idaho', 'Montana') GROUP
BY Orders.SKU;
+-----+-----+
| SKU          | COUNT(*) |
+-----+-----+
| ADV-24-10C   | 13       |
| ADV-48-10F   | 13       |
| BAS-08-1 C   | 19       |
| BAS-48-1 C   | 23       |
| ENT-24-10F   | 11       |
| ENT-24-40F   | 11       |
| ENT-48-10F   | 16       |
| ENT-48-40F   | 31       |
+-----+-----+
8 rows in set (0.36 sec)

mysql>
```

The top three returned products in the northwestern region of the United States are: ENT-48-40F, BAS-48-1 C, and BAS-08-1 C.

```
SELECT Orders.SKU, COUNT(*)
FROM Orders INNER JOIN RMA
ON RMA.OrderID =
Orders.OrderID INNER JOIN
Customers ON
Customers.CustomerID =
Orders.CustomerID WHERE
RMA.Step = "Received returned
equipment" AND Customers.State
IN ('Washington', 'Oregon', 'Idaho',
'Montana') GROUP BY
Orders.SKU;
```

**B. Write a report** to the Quantigration product manager that explains your findings in a way nontechnical stakeholders can digest and use.

a. This report should include an effective summary of the analysis of the captured data.

i. Sales data by region: Provide a well-written summary of your analysis on Part A.

The company currently has strong sales numbers across the United States, with a slight concentration of customers in Massachusetts. This translates to a total of 983 customers in the state of Massachusetts, which is over 100 more than the state with the second most being Arkansas with 854 customers. However, sales numbers are well spread out by region, as every state has at least 713 customers. This figure belongs to South Carolina, the state in which the company has the least current customers. The top three products sold by the company in all of the United States are

BAS-48-1 C, ENT-48-40F, and ENT-48-10F. This differs slightly from the company's top three products sold in the Southeastern region of the United States (Virginia, North Carolina, South Carolina, and Georgia) being BAS-48-1 C, ENT-48-40F, and BAS-08-1 C.

- ii. Returns data by region: Provide a well-written summary of your analysis of Part B.

Currently the company's top three most returned products in the United States are: BAS-48-1 C, ENT-48-40F, and ENT-48-10F. This differs slightly from the company's top three most returned products in the Northwestern region of the United States (Washington, Oregon, Idaho, and Montana) being ENT-48-40F, BAS-48-1 C, and BAS-08-1 C.