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- **Analyze** the frequency of returns by state and describe your findings in your report.

```
mysql> SELECT COUNT(*) AS 'TOTAL_RETURNS', Orders.SKU AS 'PRODUCT_SKU', Customers.State, RMA.Reason
    -> FROM RMA INNER JOIN Orders ON Orders.OrderID = RMA.OrderID
    -> JOIN Customers ON Customers.CustomerID = Orders.CustomerID
    -> GROUP BY Customers.State
    -> ORDER BY TOTAL_RETURNS DESC
    -> LIMIT 10;
+---------------+-------------+---------------+-----------+
| TOTAL_RETURNS | PRODUCT_SKU | State         | Reason    |
+---------------+-------------+---------------+-----------+
|           972 | ENT-48-10F  | Massachusetts | Defective |
|           844 | ADV-24-10C  | Arkansas      | Defective |
|           840 | BAS-08-1 C  | Oregon        | Defective |
|           837 | BAS-08-1 C  | West Virginia | Defective |
|           836 | BAS-08-1 C  | Alabama       | Defective |
|           822 | BAS-48-1 C  | Connecticut   | Defective |
|           822 | ENT-48-10F  | Idaho         | Defective |
|           821 | ENT-48-40F  | Mississippi   | Defective |
|           819 | ADV-48-10F  | Tennessee     | Defective |
|           811 | ADV-48-10F  | Delaware      | Defective |
+---------------+-------------+---------------+-----------+
10 rows in set (0.06 sec)
```

```
mysql> SELECT Customers.State AS 'STATE',
    -> (COUNT(*) * 100 / (SELECT COUNT(*) FROM Orders INNER JOIN RMA ON Orders.OrderID = RMA.OrderID)) AS 'PERCENTAGE'
    -> FROM Orders INNER JOIN RMA ON Orders.OrderID = RMA.OrderID
    -> INNER JOIN Customers ON Customers.CustomerID = Orders.CustomerID
    -> GROUP BY STATE
    -> ORDER BY PERCENTAGE DESC
    -> LIMIT 10;
+---------------+------------+
| STATE         | PERCENTAGE |
+---------------+------------+
| Massachusetts |     2.5874 |
| Arkansas      |     2.2467 |
| Oregon        |     2.2361 |
| West Virginia |     2.2281 |
| Alabama       |     2.2254 |
| Connecticut   |     2.1881 |
| Idaho         |     2.1881 |
| Mississippi   |     2.1855 |
| Tennessee     |     2.1802 |
| Delaware      |     2.1589 |
+---------------+------------+
10 rows in set (0.09 sec)
```

These screenshots show which states have had the most returns. The top three states are Massachusetts with 972 of ENT-48-10F, Arkansas with 844 of ADV-24-10C, and Oregon with 840 of BAS-08-1C. From the list that is shown it looks like ENT-48-10F, and BAS-08-1C are among the most returned products. However, ADV-24-10C only shows up one time on the list.

- **Analyze** the percentage of returns by product type and describe your findings in your report.

```
mysql> SELECT Orders.SKU AS SKU, COUNT(*) * 100 / (SELECT COUNT(*) FROM RMA) AS 'PERCENTAGE'    -> FROM RMA INNER JOIN Orders ON Orders.OrderID = RMA.OrderID
    -> GROUP BY SKU
    -> ORDER BY PERCENTAGE DESC;
+------------+------------+
| SKU        | PERCENTAGE |
+------------+------------+
| BAS-48-1 C |    22.0465 |
| ENT-48-40F |    16.2860 |
| ENT-48-10F |    11.4119 |
| BAS-08-1 C |    11.3081 |
| ENT-24-10F |    11.2628 |
| ADV-48-10F |    10.9780 |
| ADV-24-10C |    10.9727 |
| ENT-24-40F |     5.6461 |
| BAS-24-1 C |     0.0878 |
+------------+------------+
9 rows in set (0.06 sec)
```

This screenshot shows which products had the highest percentage of returns. The most returned product was BAS-48-1C which has been returned roughly 22% of the time. With roughly 16% was ENT-48-40F, followed by ENT-48-10F with roughly 11%. The only product that appears in the top three that is also shown with the states above is ENT-48-10F.

- How does the data provide the product manager with usable information?

The data captured in the screenshots contains usable information that the product manager can use. From these screenshots it can be determined which products have been returned the most and which states are returning products the most. With this knowledge in mind the product manager can determine if the products need to be a higher quality or if only minor adjustments

are needed. Since the data is organized in a way where most frequent is shown at the top, the product manager should have no trouble determining which products need to be investigated or primarily focused on. Getting to the main reason for the returns will prove to be beneficial to the company in the long run.

- What are the potential flaws in the data that has been presented?

The reasoning that is listed for the returns does not really seem specific. It only says that the reason for returning was because the product was "defective". There are many possibilities for returning a product with this type of reasoning.

- Are there any limitations on your conclusions, or any angles you haven't considered?

The data in the screenshot that is shown for the states only includes the 10 states that return products the most frequently. It is possible that showing data for every state may be somewhat valuable to the company when determining what steps to take next. For example, if they wanted to see which states they would not have to put too much focus on it might be best to show the states with the least number of returns.

- Make sure that all parts of your report are written in a way that very clearly explains the necessary information.

Of all the products that are listed with high return rates, BAS-48-1C is by far the most returned product. This product has a return percentage of 22%. The only other product that comes close is ENT-48-40F with 16%. Five products that are below this are all within the 10%-11% range which really showcases just how frequently BAS-48-1C and ENT-48-40F are being returned. Based on this data alone it seems it would be best to figure out why these two products are being returned more compared to the others.