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1. Begin by writing SQL commands to capture usable data (which you’ve preloaded into Codio) for your analysis.

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Commands:

chmod +x change\_perm.sh

./change\_perm.sh

mysql

show databases;

use QuantigrationUpdates;

show tables;

select count(\*) from Collaborators – Orders – RMA

I used the show tables and select count commands to make sure all my data was accounted for before beginning the assignment.

1. Specifically, the product manager wants you to analyze the following:  
   * Analyze the number of returns by state and describe your findings in your report.

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Command:

SELECT Collaborators.State AS State, Count(\*) AS Return\_Number FROM Orders

INNER JOIN RMA ON Orders.OrderID = RMA.OrderID

INNER JOIN Collaborators ON Collaborators.CollaboratorID = Orders.CollaboratorID

GROUP BY State

ORDER BY Return\_Number DESC

LIMIT 15;

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Command:

SELECT Collaborators.State AS State, Count(\*) AS Return\_Number FROM Orders

INNER JOIN RMA ON Orders.OrderID = RMA.OrderID

INNER JOIN Collaborators ON Collaborators.CollaboratorID = Orders.CollaboratorID

GROUP BY State

ORDER BY Return\_Number ASC

LIMIT 15;

Looking at the return data, we can see that the top five states with the most returns are Massachusetts, Arkansas, Oregon, West Virginia, and Alabama. Massachusetts is at the top with 972 returns. This could be because of things like product quality, what customers like, or issues with distribution.

On the flip side, when we check which states have the fewest returns, we find Nebraska, Georgia, Colorado, New Jersey, and South Carolina at the bottom, each with 702 returns. We need to dig deeper to figure out why these states have fewer returns compared to others. It could be because products are made nearby, people in these states like the products more, or there are different standards for product quality.

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

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Command:

SELECT SKU AS Product\_SKU, Description AS Product\_Description, COUNT(\*) AS TOTAL,

(COUNT(\*) / (SELECT COUNT(\*) FROM Orders INNER JOIN RMA ON Orders.OrderID = RMA.OrderID) \* 100) AS Percentages\_of\_Returns

FROM Orders

INNER JOIN RMA ON Orders.OrderID = RMA.OrderID

WHERE UPPER(Status) = 'COMPLETE'

GROUP BY Product\_SKU, Product\_Description

ORDER BY Percentages\_of\_Returns

DESC LIMIT 10;

Explanation:

The analysis of returns by product type reveals significant variations in return percentages across different products. For instance, products like "Basic Switch 10/100/1000 BaseT 24 port" and "Enterprise Switch 40GigE SFP+ 24 port" exhibit relatively low return percentages, standing at 0.0745% and 4.9965% respectively, suggesting that customers are generally satisfied with these products. However, there are products such as "Basic Switch 10/100/1000 BaseT 48 port" with a notably higher return percentage of 19.7120%, signifying a potential concern. These disparities may be attributed to a range of factors, including product quality, customer preferences, and specific product features. To better address these discrepancies and enhance overall product performance, it is advisable to delve deeper into the reasons behind these return rates and consider adjustments or improvements as needed.

1. In your report, clearly summarize your analysis of the data for stakeholders. Include screenshots of the results of each query. When summarizing results, you may want to consider the following questions:  
   * How does the data provide the product manager with usable information?
   * What are the potential flaws in the data that has been presented?
   * Are there any limitations on your conclusions, or any other ways of looking at it that you haven’t considered? Clearly communicate your findings to stakeholders.

RMA Data Analysis Report

In our analysis of the return data, we've identified key insights that provide valuable information for the product manager and other stakeholders. Firstly, we've pinpointed the top five states with the highest return rates, namely Massachusetts, Arkansas, Oregon, West Virginia, and Alabama. Massachusetts stands out at the top with 972 returns, indicating a potential concern that requires further investigation. This data informs the product manager about regions with higher return rates, allowing them to focus on potential issues related to product quality, customer preferences, or distribution challenges in these areas.

On the other hand, our analysis also highlights states with the lowest return rates, including Nebraska, Georgia, Colorado, New Jersey, and South Carolina, each with 702 returns. While this data suggests that products may be performing better in these regions, it prompts the need for a deeper examination to understand why these states experience fewer returns. This could be due to various factors, such as localized manufacturing, stronger customer liking for the products, or variations in product quality standards. Identifying and leveraging these positive aspects can help the product manager modify strategies to replicate successful outcomes in other regions.

Moving on to the analysis of returns by product type, we find variations in return percentages. Products like "Basic Switch 10/100/1000 BaseT 24 port" and "Enterprise Switch 40GigE SFP+ 24 port" exhibit low return percentages of 0.0745% and 4.9965%, respectively, indicating a high level of customer satisfaction. However, the product "Basic Switch 10/100/1000 BaseT 48 port" raises concerns with a significantly higher return rate of 19.7120%. This information equips the product manager with important insights into which products are performing well and which may require further attention.

While this analysis provides valuable insight, it's important to acknowledge potential flaws in the data, such as incomplete customer feedback or unaccounted factors influencing returns. Additionally, our conclusions are based on the data available, and there may be other perspectives or variables that we haven't considered. Therefore, it's advisable to conduct further research and gather more detailed feedback from customers to validate these findings and make informed decisions regarding product quality improvements and market strategies.