# DAD 220 Project Two – Michael McBrayer

## Overview

Review the scenario for this activity in the guidelines and rubric. Then complete the steps below as you work through the directions for this activity. Replace the bracketed text with your screenshots and responses to the prompts. Size each screenshot and its explanation to fit approximately one-quarter of the page with the description written below the screenshot. Review the Template Screenshot Example linked in the guidelines and rubric for this assignment to see an example of how screenshots for your assignment should look.

## RMA Report

Write a report to respond to the manager’s requests. In the report, you should complete the following actions:

* Summarize the data you’ve been working with.
* Identify key information that will help the company streamline operations.

Your report should explain your findings in a way nontechnical stakeholders can understand and use.

Use the steps below to capture the required data and produce the analysis report.

1. Begin by writing SQL commands to **capture** specific **usable data** for your analysis. You already preloaded the data you need into Codio.
2. Specifically, the product manager wants you to complete the following analysis:
   1. **Analyze** the number of **returns by state** and describe findings to include in your report.

A screenshot of a computer

AI-generated content may be incorrect.

Massachusetts is the state with the most returns equaling 972, and a close second for Arkansas with 844 returns. The state with the least number of returns is South Carolina with a total of 702 returns.

Command used to pull this information:

SELECT State, COUNT(\*) AS Count

FROM RMA

INNER JOIN Orders ON RMA.OrderID = Orders.OrderID

INNER JOIN Collaborators ON Orders.CollaboratorID = Collaborators.CollaboratorID

GROUP BY Collaborators.State

ORDER BY Count DESC;

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

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The items with the highest percentage of returns is the BAS-08-1 C switch with a 99.14% return rate.

The next two items with the highest return rate is the ENT-48-10F with 99.03% return rate, and ENT-24-10F with a 98.97% return rate.

Command used to pull this information:

SELECT

Orders.SKU,

Orders.Description,

COUNT(RMA.RMAID) AS Returns,

COUNT(DISTINCT Orders.OrderID) AS Orders,

ROUND((COUNT(RMA.RMAID) \* 100.0) / COUNT(DISTINCT Orders.OrderID), 2) AS ReturnPercentage

FROM

Orders

LEFT JOIN

RMA ON Orders.OrderID = RMA.OrderID

GROUP BY

Orders.SKU, Orders.Description

ORDER BY

ReturnPercentage DESC;

Left join is used in this query to pull back all orders total needed to calculate the percentage.

COUNT(RMA.RMAID) gets the total returns

COUNT(DISTINCT Orders.OrderID) gets the total orders

ReturnPercentage calculates the percentage of returns based off the total orders

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

Based on the results from the data analysis for product returns we can see a few patterns for consideration. First, we can see that from the U.S. customer base the state with the highest number of returns is Massachusetts with a total of 972, and a close second is Arkansas with 844. South Carolina came in as the state with the least number of returns, equaling only 702 returns. This information can help prioritize quality control efforts and customer service in these areas to help reduce the number of returns. We also see that overall, every product has a high return rate with an average return rate for all products, which is over 97%. The highest return percentage was for the BAS-08-1 C switch at 99.14%, ENT-48-10F at 99.03%, and the ENT-24-10F at 98.97%. This could indicate a large number of hardware failures but could also indicate issues with user satisfaction as well. Further investigation may be needed to further determine where the company should focus their efforts.

Based on the data available there are potential flaws that should also be considered. First, we do not have a way to track product details such as the manufacturing date or batch number. This could help identify issues with particular runs of the products. This analysis also does not take into consideration the reasons why products were returned. This could be refined to count the total number of each reason that was given for the return. Lastly, we have to consider the accuracy of the information in the database. If there is any repurpose or duplication of order or SKU numbers that could also skew the final results.

The information provided could indicate regional issues from warehouse issues or customers abusing return policies and not necessarily manufacturing defects. Local warehouses may also have issues tracking and managing inventory leading to incorrect products being sold. In either case it may be wise to pull the BAS-08-1 C, ENT-48-10F and ENT-24-10F for further evaluation to determine if the issue is with the product itself or due to other circumstances. This will help further direct focus on the root issue and help to drive down this high percentage of returns.