

PROJECT SPECIFICATION

Market Analysis Report for National Clothing Chain

Power Query

CRITERIA	MEETS SPECIFICATIONS
SWBAT organize, clean and format data using the pre-set Power Query tools.	<p>The joined data on the 'Product Inventory' table of the Customer List is split into 6 columns, each labeled with correct formatting and no resulting Power Query errors.</p> <p>Submission: Screenshot of final table in Power Query (include applied steps)</p> <p>Submission: Also submit a final copy of your Power BI file along with all screenshots.</p>
SWBAT organize clean and format data by creating custom M formulas.	<p>The 'Purchase List' table is un-pivoted, organized, and has a date column that is correctly formatted as a date. There should be no resulting Power Query errors for any of the columns or rows.</p> <p>Submission: Screenshot of the final table in Power Query (include applied steps)</p> <p>Submission: Also submit a final copy of your Power BI file along with all screenshots.</p>

CRITERIA	MEETS SPECIFICATIONS

DAX

CRITERIA	MEETS SPECIFICATIONS
<p>SWBAT create a calculated column with DAX logic to generate a histogram</p>	<p>The income categories should be defined using a DAX formula. The DAX formula should aggregate the different predicted customer incomes into buckets which can be used to create a histogram. The appropriate bin size for the histogram can be determined by the student but should still be a good reflection of the range, distribution, and shape of the data. It is recommended that the histogram contain at least 4 columns. Refer to the histogram example in the instructions section.</p> <p>Submission: Screenshot of DAX formula Submission: Also submit a final copy of your Power BI file along with the screenshots.</p>
<p>SWBAT create a calculated column or measure with DAX logic to generate a column chart</p>	<p>The product recommendations should be defined using a DAX formula. The DAX formula should use logic to determine which products are recommended to different income categories. The recommended product for each income category can be determined by the student.</p> <p>Submission: Screenshot of DAX formula</p> <p>Submission: Also submit a final copy of your Power BI file along with all screenshots.</p>

Visualization & Analysis

CRITERIA	MEETS SPECIFICATIONS
SWBAT use linear regression to predict future outcomes	<p>A formula is created that can be used to predict customer incomes based linear regression of sales and income. Using $y = mx + b$, the m and b variables are replaced with the actual values and presented in the written summary.</p> <ul style="list-style-type: none"> • Submission: The formula is included in the written summary and Power BI file. • Submission: Screenshot of the formula found in the Power BI file. • Submission: Also submit a final copy of your Power BI file along with all screenshots.
SWBAT analyze data with histogram visualization	<p>The histogram shows the distribution and shape of predicted income by category. The histogram is created using a column chart and DAX formula (the calculated column created earlier) to define the ranges/bins of the columns.</p> <p>Submission: Screenshot of histogram Submission: Also submit a final copy of your Power BI file along with the screenshots.</p>
SWBAT analyze data with scatter plot and card visualization	<p>The scatter plot with trendline and correlation coefficient quick measure (on a card) is used to perform a regression analysis of the relationship between average household income by state and average 6 months sales by state.</p> <p>Submission: Screenshot of scatterplot and card</p> <p>Submission: Also submit a final copy of your Power BI file along with all screenshots.</p>

CRITERIA	MEETS SPECIFICATIONS
SWBAT analyze data with heatmap visualization	<p>The heatmap is used to visualize income household income distribution across the US.</p> <p>Submission: Screenshot of the heatmap</p> <p>Submission: Also submit a final copy of your Power BI file along with all screenshots.</p>
SWBAT set up table relationships so that visualizations correctly cross filter	<p>Cross-filter: The histogram columns can be used to update the heatmap. The scatterplot can be used to update the histogram. The scatterplot can be used to update the map.</p> <p>Submission: Screenshot of cross-filtered histogram and heatmap Screenshot of cross-filtered scatterplot and histogram Screenshot of cross-filtered scatterplot and heatmap</p> <p>Submission: Also submit a final copy of your Power BI file along with the screenshots.</p>
SWBAT present the findings of their analysis and as conclusive, evidence-based recommendations.	<p>The 1-2 page written report provides a detailed summary of the results, conclusions and recommendations of the analysis. The document reads like a well-written executive summary and includes the following:</p> <ul style="list-style-type: none"> • All 5 of the analysis questions are addressed with 1-2 sentences

CRITERIA	MEETS SPECIFICATIONS
	<ul style="list-style-type: none"> • The formula for predicting customer incomes • The scatterplot relationships with R-Squared values • Findings from the research of 1-2 additional variables (as noted in the instructions) are included • Any findings that are used to inform the marketing strategy • Specific visuals that speak to the narrative of summary are included in the summary. • Final recommendations are presented and are based on the results of the statistical analysis. <p>Submission: A 1-2 page document (a little longer is ok)</p>

Suggestions to Make Your Project Stand Out!

1. Further analyze the data sets. Not all relationships, correlations, or distributions have been explored. Think about these questions:
2. Is there a way you could recommend specific clothing styles by region?
3. Is there a way to explain the sales trends over time? What is the variance or standard deviation?
4. Are there any states that have a disproportionately large customer base when compared to the population? How can that information be leveraged?
5. Bring in outside data to add further context to the analysis. Think about how these variables could be brought in and used to more precisely drive a marketing strategy:
6. Weather (precipitation, temperature, etc):

- National Oceanic and Atmospheric Administration NOAA: noaa.gov
- 7. Economic Data (unemployment rate, industries, credit ratings, etc.):
 - Bureau of Labor Statistics: bls.gov
 - Federal Reserve: fred.stlouisfed.org
- 8. Population Data (age, ethnicity, education, etc.)
- 9. Census Bureau: data.census.gov/cedsci

10. Competition Data

- What national or regional retailers are considered competitors and why?
- How do competitors' product offerings and prices compare?
- Are there locations with minimal or no competition that could present as good opportunities to expand?

11. Consider using other advanced visuals covered in this course to present your data:

12. KPI

13. Decomposition Tree

14. Funnel

15. Radial Gauge

16. Waterfall
