

Assignment 2

Title: Mastering Power BI Features through Product Data Analysis

Objective: To provide students with hands-on experience in using advanced Power BI features to analyze and gain insights from product data, enhancing their data analysis and visualization skills.

Dataset: [products.csv](#)

Tasks:

1. Create a custom column that calculates the profit margin for each product. Use the formula: $\text{ProfitMargin} = (\text{ProductPrice} - \text{ProductCost}) / \text{ProductPrice}$. Name this column "ProfitMargin". Add a conditional column to classify products as "High Margin", "Medium Margin", or "Low Margin" based on their profit margin. Define the thresholds: High Margin (> 0.5), Medium Margin ($0.2 - 0.5$), Low Margin (< 0.2).
2. Use the Q&A feature to find out "What is the average product cost by product color?" and display the results as a bar chart.
3. Create a decomposition tree to analyze ProductPrice by ProductColor and further by ProductStyle. Identify key drivers for high prices.

4. Use the Key Influencer visual to determine which factors (e.g., ProductColor, ProductSize, ProductStyle) influence high product prices. Provide a summary of your findings.
5. Create a new column using the "Column from Example" feature to extract the first letter from the product color column (eg: red should be R, etc). Create a table visual to display the total product cost by product color. Highlight the costs column using conditional formatting (highest costs in dark pink, medium costs in light pink and lowest costs in white)
6. Set up bookmarks to save different views of your report. Create bookmarks for views by ProductStyle, ProductColor, and ProductSize based on your own set conditions or filters.
7. Create a single row card to display the total number of unique products in the dataset. Create a multi-row card to display the total product cost, total product price, and average profit margin.
8. Add a reference line in a line chart to show the average product price over different product styles.

9. Identify and remove any duplicate product records in the dataset.

10. Create a Treemap to show product price for each color and subcategory. Also show the top 3 subcategories based on profit (price-cost).

Submission Instructions:

- Save your Power BI report as a .pbix file.
- Include a brief description of each task in the report.