Aayush Shinde

1. Create a custom column that calculates the profit margin for each product. Use the formula: ProfitMargin = (ProductPrice - ProductCost) / 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).

OUTPUT:

ProfitMargin	MarginCategory
0.625998856816233	High Margin
0.642500044584208	High Margin
0.642500044584208	High Margin
0.339996760833854	Medium Margin
0.555999865065443	High Margin
0.555999772066785	High Margin
0.555999825700466	High Margin
0.556	High Margin
0.555999608954932	High Margin
0.556000160346348	High Margin
0.555999002244949	High Margin
0.555999282299626	High Margin
0.556000563398832	High Margin
0.555999002244949	High Margin
0.555999282299626	High Margin
0.556000563398832	High Margin
0.555999670754795	High Margin
0.556	High Margin
0.555999866762154	High Margin
0.555999532519137	High Margin
0.556000161040321	High Margin
0.556000121190087	High Margin

STEPS:

1. **Load the data**:
    - Open Power BI Desktop > Click "Get Data" > "Excel" and select your Products.xlsx file > Select the "products" sheet and click "Load"
2. **Create ProfitMargin column**:
    - Go to the "Data" view in Model View > Click "New Column" in the Modeling tab > Enter this formula: ProfitMargin = (products[ProductPrice] - products[ProductCost]) / products[ProductPrice]
3. **Create conditional margin classification**:
    - Click "New Column" again > Enter this formula: MarginCategory = SWITCH(TRUE(), products[ProfitMargin] > 0.5, "High Margin", products[ProfitMargin] > 0.2, "Medium Margin", "Low Margin")

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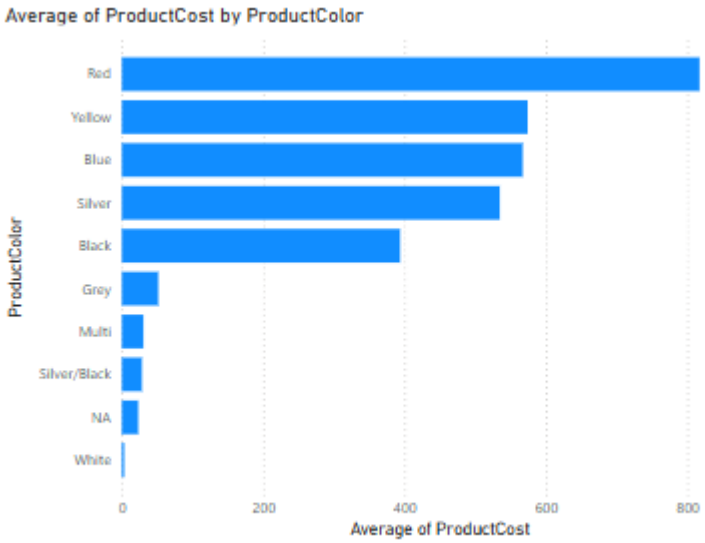
2. Use the Q&A feature to find out "What is the average product cost by product color?"and display the results as a bar chart.

OUTPUT:



STEPS:

1. **Enable Q&A**:
    - Go to "Report" view
    - Click on the Q&A visual from the Visualizations pane
    - Drag it to your report canvas and resize it
2. **Ask the question**:
    - Type in the Q&A box: "What is the average product cost by product colour?"
    - Power BI will interpret your question and show results
3. **Convert to bar chart**:
    - Click the bar chart icon in the Q&A visualization options

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3. Create a decomposition tree to analyze ProductPrice by ProductColor and further by ProductStyle. Identify key drivers for high prices.

OUTPUT:

“U” being the highest price.

STEPS:

1. **Add decomposition tree**:
    - From Visualizations, select the "Decomposition Tree" icon
    - Drag it to your report canvas and resize it.
2. **Configure the tree**:
    - Add "ProductPrice" to the "Analyze" field
    - Add "ProductColor" to the "Explain by" field > Also add “ProductStyle” in same field.
    - Click the "+" icon in the visual to add another level
    - Select "ProductStyle" as the next level
3. **Identify high price drivers**:
    - Explore different branches to see which combinations drive higher prices.

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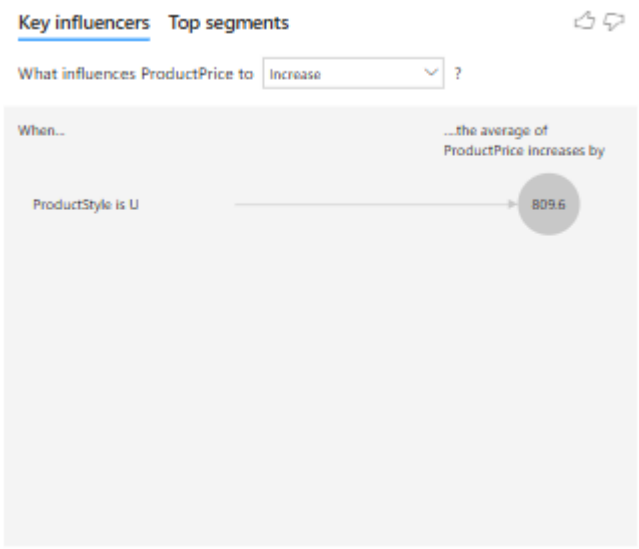
4. Use the Key Influencer visual to determine which factors (e.g., ProductColor, ProductSize, ProductStyle) influence high product prices. Provide a summary of your findings.

OUTPUT:



When ProductStyle is U, the average ProductPrice is 809.60 units higher compared to all other values of ProductStyle. This influencer contains approximately 59.39% of the data.

STEPS:

1. **Create Key Influencer visual**:
    - Add the "Key Influencers" visual to your report
    - Add "ProductPrice" to the "Analyze" field
    - Add potential influencers to "Explain by":
        - ProductColor
        - ProductSize
        - ProductStyle
2. **Interpret results**:
    - Power BI will show which factors most influence higher prices
    - Note the top influencers and their impact percentages.

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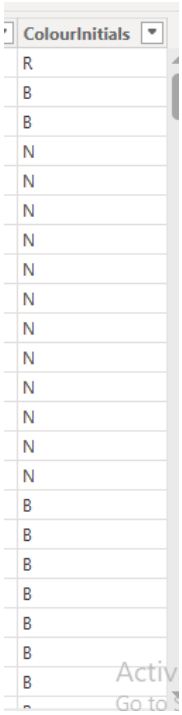
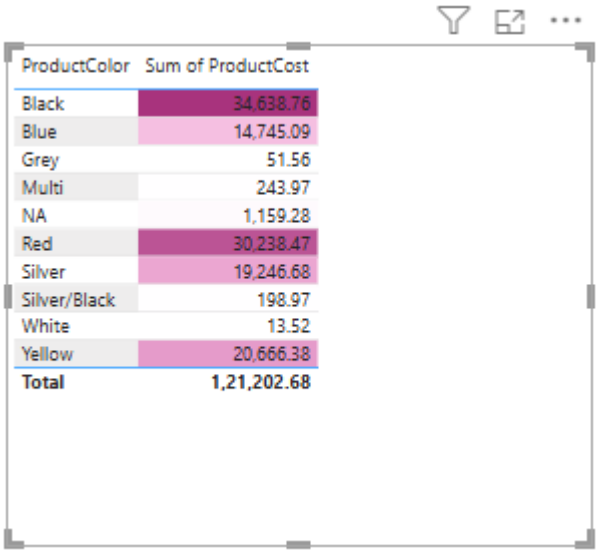
5. Create a new column using the "Column from Example" feature to extract the first letter from the product color column (eg: red should be R, etc). Create a table visual to display the total product cost by product color. Highlight the costs column using conditional formatting (highest costs in dark pink, medium costs in light pink and lowest costs in white).

OUTPUT:



ColourInitials
R
B
B
N
N
N
N
N
N
N
N
N
N
N
B
B
B
B
B
B
B



ProductColor	Sum of ProductCost
Black	34,638.76
Blue	14,745.09
Grey	51.56
Multi	243.97
NA	1,159.28
Red	30,238.47
Silver	19,246.68
Silver/Black	198.97
White	13.52
Yellow	20,666.38
Total	**1,21,202.68**

STEPS:

1. **Create first letter column**:
    - Go to power query editor > add columns ribbon > "Column from Examples" > From selection > select Product color column.
    - In the new column, type "R" next to "Red", "B" next to "Black", etc. > Power BI will detect the pattern and fill the column > Rename the column to "ColourInitial"
2. **Create table visual**:
    - Switch to Report view > Add a table visual > Add "ProductColor" and "ProductCost" to the fields > Click the dropdown on "ProductCost" > "Sum"
3. **Apply conditional formatting**:
    - Under Visualizations > Format > Cell Elements > Select ProductCost Column > Enable "Background color" > select Fx (Set rules)
    - Choose "Dark pink" for highest values, "Light pink" for medium, "White" for lowest

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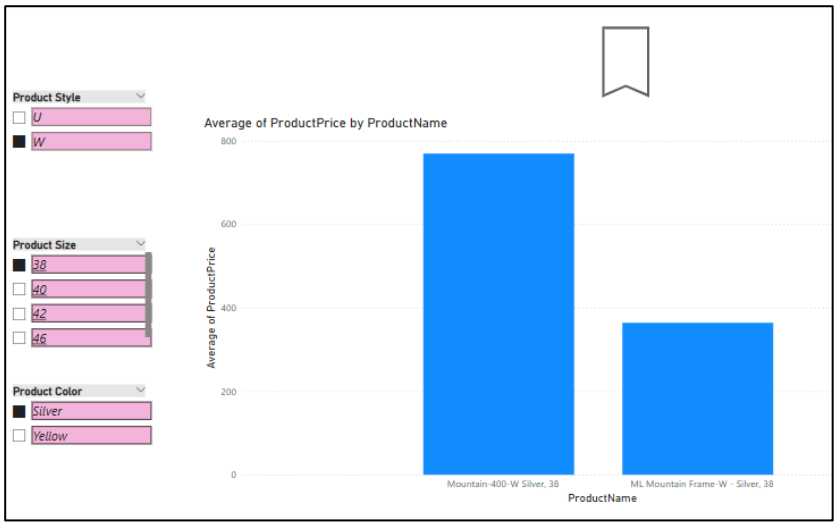
6. Set up bookmarks to save different views of your report. Create bookmarks for views by ProductStyle, ProductColor, and ProductSize based on your own set conditions or filters.

OUTPUT:



STEPS:

A. Create a Visual for Bookmark

- Go to the **Report view** > Click on the **"Bar chart"** icon in the Visualizations pane > Drag **ProductName** to the **X-axis** field.
- Drag **ProductPrice** to the **Y-axis** field > By default, Power BI will **SUM** the prices. To change this > Click the dropdown on **ProductPrice** in the Y-axis field > Select **Average** (if you want to see average price per category).

B. Add a Slicer for Interactive Filtering (Optional)

- Click on the **"Slicer"** visual in the Visualizations pane > Drag **ProductStyle** into the slicer > Repeat for **ProductColor** and **ProductSize** > Format the slicer (Color etc)

C. Create Bookmark

- Go to View > click Bookmark > set the filter or condition (e.g. Pstyle = W, Psize =38, Pcolor = Silver) > add to bookmark > Give a suitable name (e.g. Aayush1).
- Go to insert > Button > Bookmark > action > Type – Bookmark, Bookmark – Aayush1.

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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.

OUTPUT:

STEPS:

1. **Single row card (unique products)**:
    - Add a "Card" visual
    - Add "ProductKey" to the field
    - Click the dropdown on "ProductKey" > "Count (Distinct)"
    - Format the title as "Total Unique Products"
2. **Multi-row card**:
    - Add a "Multi-row card" visual
    - Add these measures (create them first if needed):
        - Total Product Cost = SUM(products[ProductCost])
        - Total Product Price = SUM(products[ProductPrice])
        - Average Profit Margin = AVERAGE(products[ProfitMargin])

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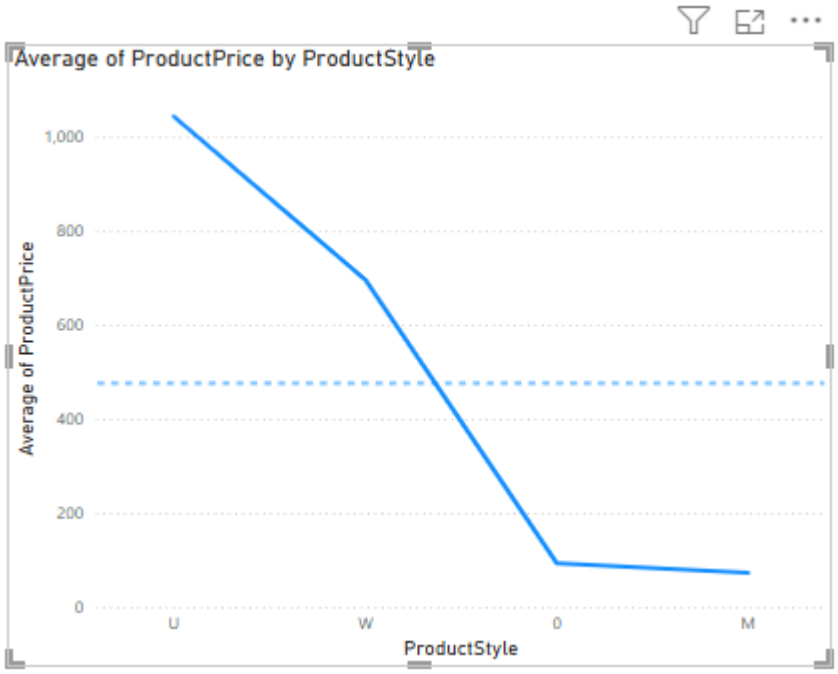
8. Add a reference line in a line chart to show the average product price over different product styles.

OUTPUT:



STEPS:

1. **Create line chart**:
    - Add a line chart visual
    - Add "ProductStyle" to X-axis
    - Add "ProductPrice" to Y-axis (set to average)
2. **Add reference line**:
    - Under Analytics pane, click "Average Line" > click "Add Line" > Name the line (e.g. Average of ProductPrice)

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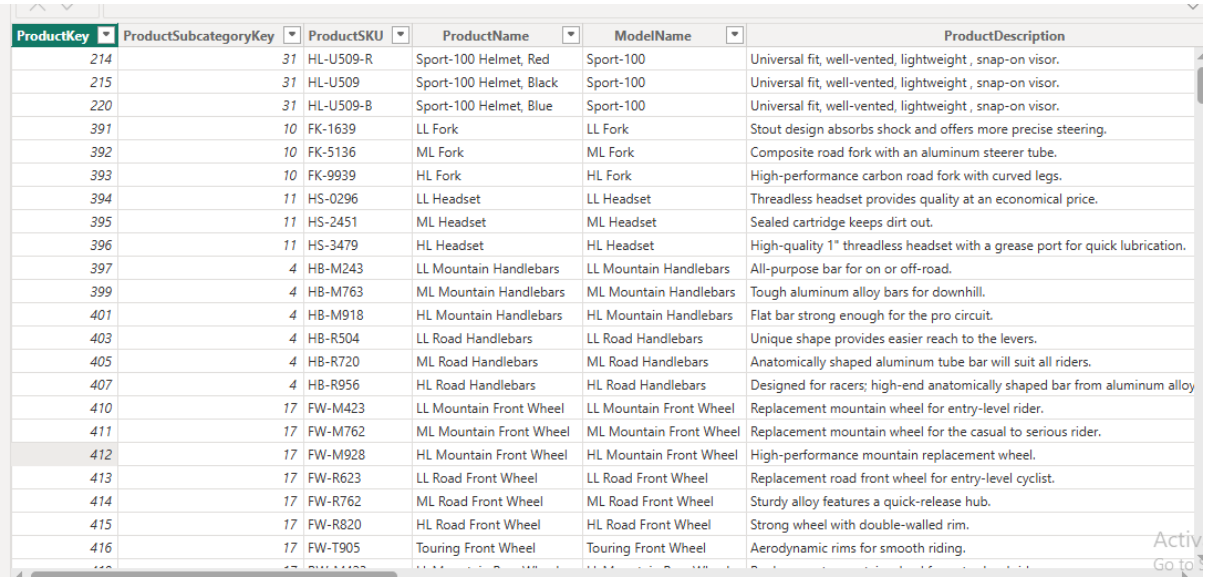
9. Identify and remove any duplicate product records in the dataset.

OUTPUT:



ProductKey	ProductSubcategoryKey	ProductSKU	ProductName	ModelName	ProductDescription
214	31	HL-U509-R	Sport-100 Helmet, Red	Sport-100	Universal fit, well-vented, lightweight , snap-on visor.
215	31	HL-U509	Sport-100 Helmet, Black	Sport-100	Universal fit, well-vented, lightweight , snap-on visor.
220	31	HL-U509-B	Sport-100 Helmet, Blue	Sport-100	Universal fit, well-vented, lightweight , snap-on visor.
391	10	FK-1639	LL Fork	LL Fork	Stout design absorbs shock and offers more precise steering.
392	10	FK-5136	ML Fork	ML Fork	Composite road fork with an aluminum steerer tube.
393	10	FK-9939	HL Fork	HL Fork	High-performance carbon road fork with curved legs.
394	11	HS-0296	LL Headset	LL Headset	Threadless headset provides quality at an economical price.
395	11	HS-2451	ML Headset	ML Headset	Sealed cartridge keeps dirt out.
396	11	HS-3479	HL Headset	HL Headset	High-quality 1" threadless headset with a grease port for quick lubrication.
397	4	HB-M243	LL Mountain Handlebars	LL Mountain Handlebars	All-purpose bar for on or off-road.
399	4	HB-M763	ML Mountain Handlebars	ML Mountain Handlebars	Tough aluminum alloy bars for downhill.
401	4	HB-M918	HL Mountain Handlebars	HL Mountain Handlebars	Flat bar strong enough for the pro circuit.
403	4	HB-R504	LL Road Handlebars	LL Road Handlebars	Unique shape provides easier reach to the levers.
405	4	HB-R720	ML Road Handlebars	ML Road Handlebars	Anatomically shaped aluminum tube bar will suit all riders.
407	4	HB-R956	HL Road Handlebars	HL Road Handlebars	Designed for racers; high-end anatomically shaped bar from aluminum alloy
410	17	FW-M423	LL Mountain Front Wheel	LL Mountain Front Wheel	Replacement mountain wheel for entry-level rider.
411	17	FW-M762	ML Mountain Front Wheel	ML Mountain Front Wheel	Replacement mountain wheel for the casual to serious rider.
412	17	FW-M928	HL Mountain Front Wheel	HL Mountain Front Wheel	High-performance mountain replacement wheel.
413	17	FW-R623	LL Road Front Wheel	LL Road Front Wheel	Replacement road front wheel for entry-level cyclist.
414	17	FW-R762	ML Road Front Wheel	ML Road Front Wheel	Sturdy alloy features a quick-release hub.
415	17	FW-R820	HL Road Front Wheel	HL Road Front Wheel	Strong wheel with double-walled rim.
416	17	FW-T905	Touring Front Wheel	Touring Front Wheel	Aerodynamic rims for smooth riding.

Table: products (293 rows) Column: ProductKey (293 distinct values)

STEPS:

- Click **Transform Data** (Home tab) to open Power Query Editor.
- Select the **"products"** table.
- Go to **Home** → **Remove Rows** → **Remove Duplicates**.
- Select the **unique column(s)** (ProductKey or ProductSKU).
- Click **OK**.
- Click **Close & Apply** to save changes.

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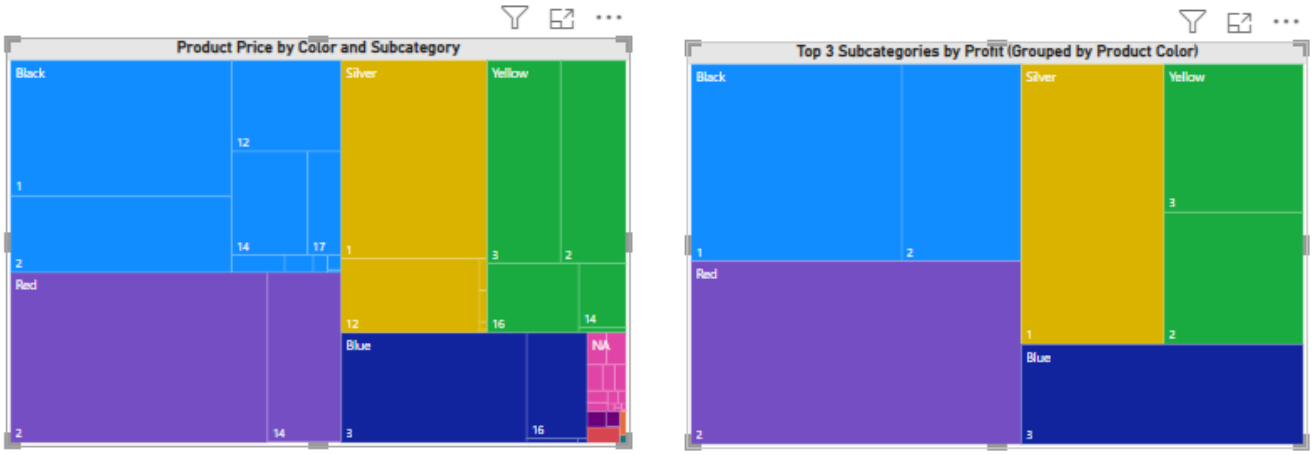
10. Create a Treemap to show product price for each color and subcategory. Also show the top 3 subcategories based on profit (price-cost).

OUTPUT:



STEPS:

A. Add the Treemap to Your Report and Format it.

- Go to **Report view** in Power BI > Drag and Drop the **Treemap** icon in the Visualizations pane **>** Drag **ProductColor** to the "Category" field > Drag **ProductSubcategoryKey** to "Details" > Drag **ProductPrice** to "Values"
- Click the **Format** tab > **Title**: Rename to "Product Price by Color and Subcategory" **(etc..)**

B. Show Top 3 Subcategories by Profit.

- Modify the treemap > In the **Filters pane**, Go to **ProductSubcategory** to filter data > Click on the dropdown → Choose **Top N** > Enter **3** > For **By value**, drag the Profit column > Click **Apply filter** > Give your Treemap a title like: **"Top 3 Subcategories by Profit (Grouped by Product Color)"**

(Note – Create a measure first to filter ProductSubcategory)

Click on 3 dots right of product table in report view > new measure > Profit = SUM(Products[ProductPrice]) - SUM(Products[ProductCost]) > press enter