

Task 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)

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Column From Examples Custom Column Invoke Custom Function Conditional Column Index Column Duplicate Column

General

Format Merge Columns Extract Parse From Text

Statistics Standard Scientific Trigonometry Rounding Information From Number

Date Time Duration From Date & Time

Text Analytics Vision Azure Machine Learning AI Insights

Queries [1]

products

ABC 123 ProductStyle 1.2 ProductCost 1.2 ProductPrice 1.2 ProfitMargin ABC 123 MarginCategory

1 0 0 13.0853 34.99 0.6 High Margin

2 0 0 12.0278 33.6442 0.6 High Margin

3 U 3.3963 9.5 0.6 High Margin

4 U 3.3963 9.5 0.6 High Margin

5 0 0 12.0278 33.6442 0.6 High Margin

6 0 U 5.7052 8.6442 0.3 Medium Margin

7 U 31.7244 48.0673 0.3 Medium Margin

8 U 31.7244 48.0673 0.3 Medium Margin

9 U 31.7244 48.0673 0.3 Medium Margin

10 U 31.7244 48.0673 0.3 Medium Margin

11 62 U 747.9682 1263.4598 0.4 Medium Margin

12 44 U 747.9682 1263.4598 0.4 Medium Margin

13 48 U 747.9682 1263.4598 0.4 Medium Margin

14 52 U 747.9682 1263.4598 0.4 Medium Margin

15 56 U 747.9682 1263.4598 0.4 Medium Margin

16 58 U 176.1997 297.6346 0.4 Medium Margin

17 60 U 176.1997 297.6346 0.4 Medium Margin

18 62 U 176.1997 297.6346 0.4 Medium Margin

19 44 U 181.4857 306.5636 0.4 Medium Margin

20 48 U 181.4857 306.5636 0.4 Medium Margin

21 52 U 181.4857 306.5636 0.4 Medium Margin

22 58 U 181.4857 306.5636 0.4 Medium Margin

23 60 U 181.4857 306.5636 0.4 Medium Margin

24

13 COLUMNS, 293 ROWS Column profiling based on top 1000 rows

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Query Settings

Name products

ALL PROPERTIES

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Removed Blank Rows

Removed Columns

Added Custom

Rounded Off

Added Conditional Column

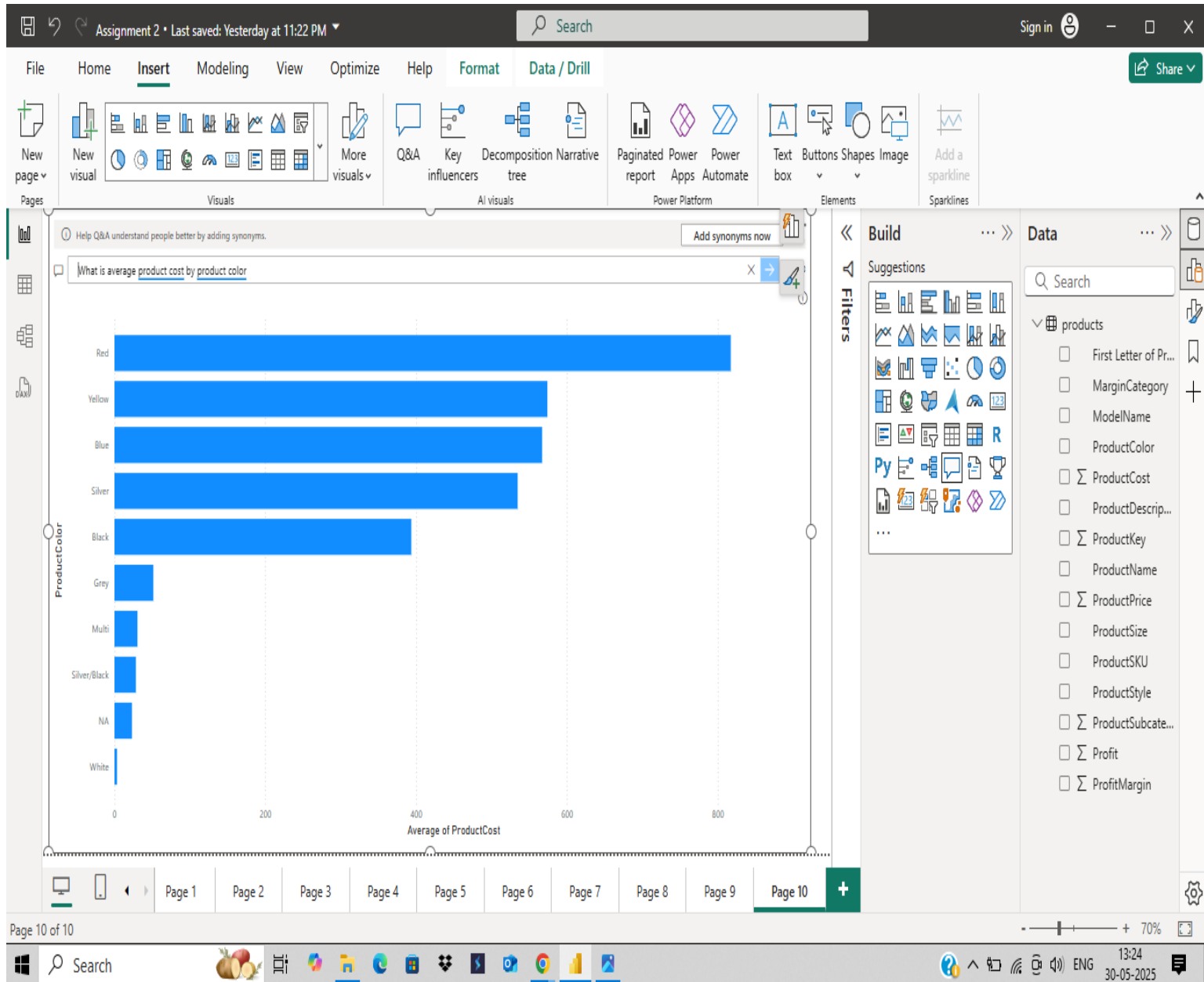
To perform this task:

- Click Transform data > Power Query
- Select Add Column > Custom Column
- Name- ProfitMargin
- Then Formula- $(\text{ProductPrice} - \text{ProductCost}) / \text{ProductPrice}$

To Perform Conditional Column:

- Select Add Column > Conditional Column
- Name- MarginCategory
- Condition- If ProfitMargin > 0.5 ->High margin
- If ProfitMargin > 0.2 -> Medium Margin
- Else Low Margin

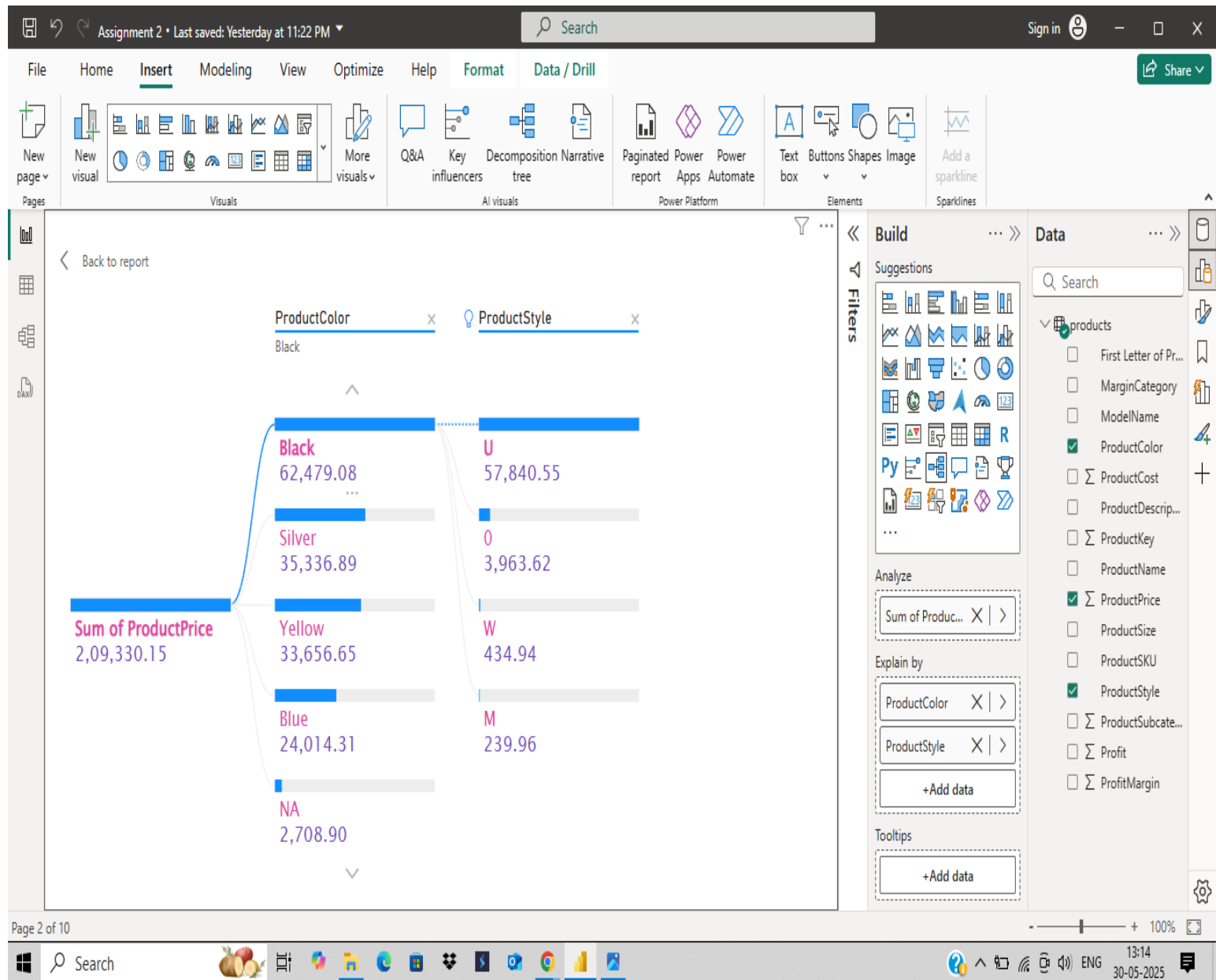
Task 2: Use the Q&A feature to find out "What is the average product cost by product color?" and display the results as a bar chart.



To Perform this task:

- In Report View > Build pane > Q/A visual
- Then in Q/A box write:
 - What is average product cost by product color
- Enter and it will show the query in bar chart

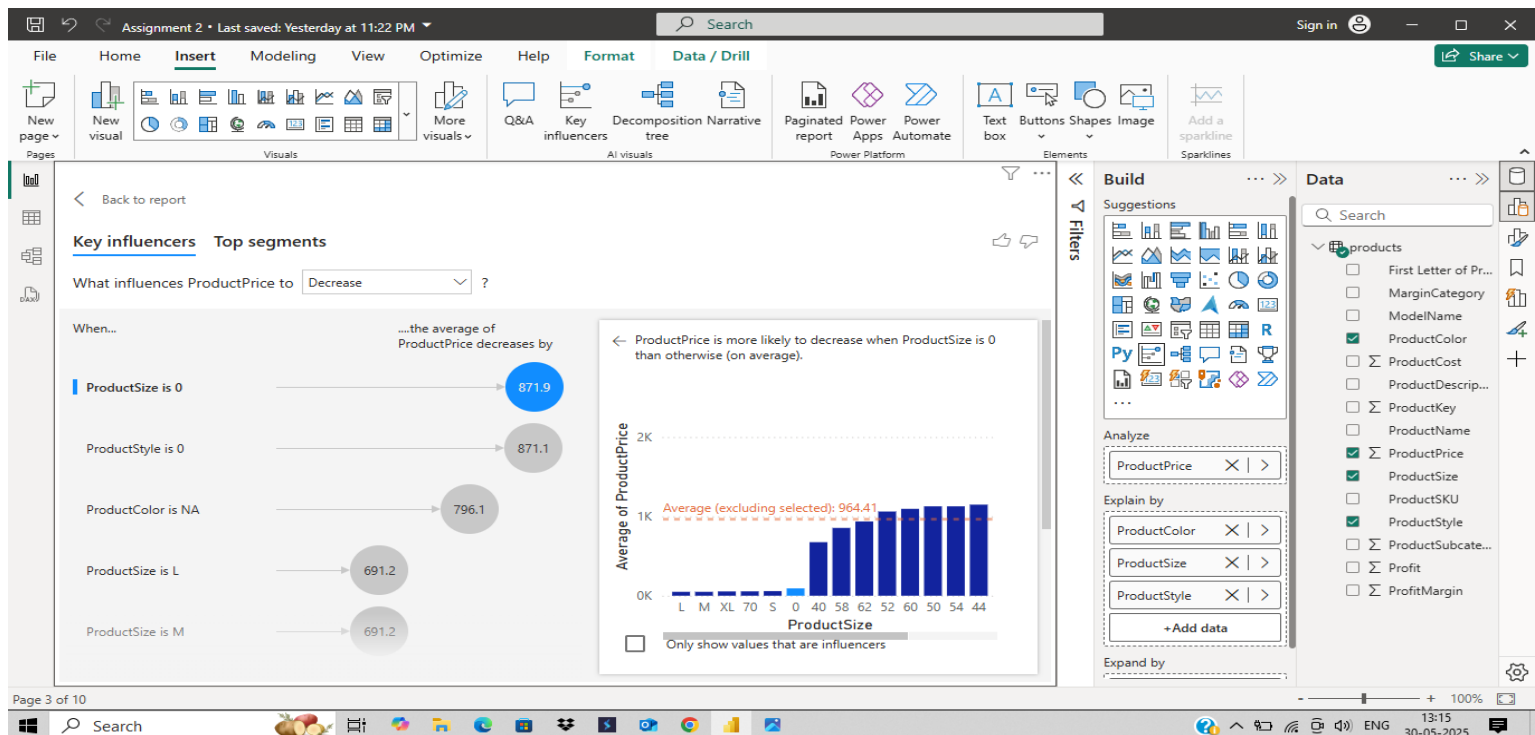
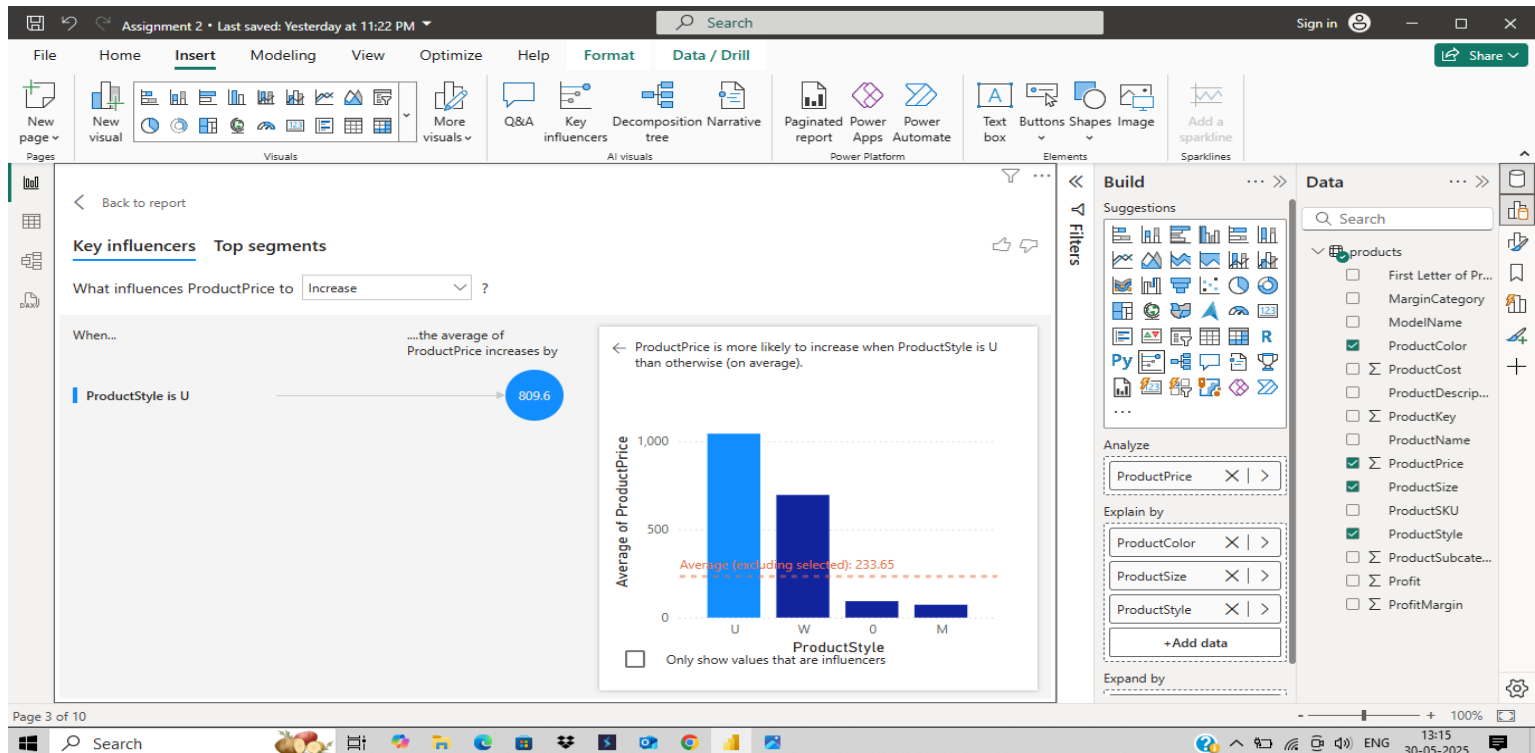
Task 3: Create a decomposition tree to analyze ProductPrice by ProductColor and further by ProductStyle. Identify key drivers for high prices.



To perform this task:

- In the report view > Build pane > Decomposition visual
- In analyze add ProductPrice
- In explain by add ProductColor followed by ProductStyle
- Then select from ProductPrice higher prices and then from ProductColor
- It will show the above output

Task 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.



To Perform this task:

- In Report view > Build pane > Key Influencers visual
- Add ProductPrice in Analyze
- Add ProductColor, ProductSize, ProductStyle in Explain By
- Then in what influences ProductPrice to first put **increase** then **decrease**.

Task 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)

Query: products

| | ProductColor | First Letter of ProductColor | ProductSize | ProductStyle | ProductCost |
|----|--------------|------------------------------|-------------|--------------|-------------|
| 1 | Red | R | | | 13.086 |
| 2 | Black | B | | | 12.027 |
| 3 | White | W | M | U | 3.396 |
| 4 | White | W | L | U | 3.396 |
| 5 | Blue | B | | | 12.027 |
| 6 | Multi | M | | U | 5.705 |
| 7 | Multi | M | S | U | 31.724 |
| 8 | Multi | M | M | U | 31.724 |
| 9 | Multi | M | L | U | 31.724 |
| 10 | Multi | M | XL | U | 31.724 |
| 11 | Red | R | 62 | U | 747.968 |
| 12 | Red | R | 44 | U | 747.968 |
| 13 | Red | R | 48 | U | 747.968 |
| 14 | Red | R | 52 | U | 747.968 |
| 15 | Red | R | 56 | U | 747.968 |
| 16 | Black | B | 58 | U | 176.199 |
| 17 | Black | B | 60 | U | 176.199 |
| 18 | Black | B | 62 | U | 176.199 |
| 19 | Red | R | 44 | U | 181.485 |
| 20 | Red | R | 48 | U | 181.485 |
| 21 | Red | R | 52 | U | 181.485 |
| 22 | Red | R | 58 | U | 181.485 |
| 23 | Red | R | 60 | U | 181.485 |

Table Visual: ProductColor vs Sum of ProductCost

| 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 |

To Perform this task:

First to extract first letter from ProductColor column:

- Go to Power Query editor
- Select the ProductColor column

- Then Add Column > Column From Example > From Selection
- Type first letter of color > press Ctrl+Enter > do it for one more color > Press Ctrl+Enter
- Click ok

Create Table visual with conditional formatting:

- Load the data > In report view > Visualization pane > Table visual
- Add ProductColor, ProductCost
- Then Go to Format pane > Cell Elements > Select ProductCost column > Background Color
- Select color scale- Low as white, Middle as light pink, High as Dark pink.

Task 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

The screenshot displays the Microsoft Power BI Desktop interface. The main canvas shows a report titled "Sum of Profit by ProductStyle" with a pie chart. The pie chart has three segments: a large orange segment (75.45K, 94.13%), a small blue segment (4.4K, 5.5%), and a very small dark blue segment (0.3K, 0.37%). To the right of the pie chart is a legend for ProductStyle with three items: U (orange), O (blue), and M (dark blue).

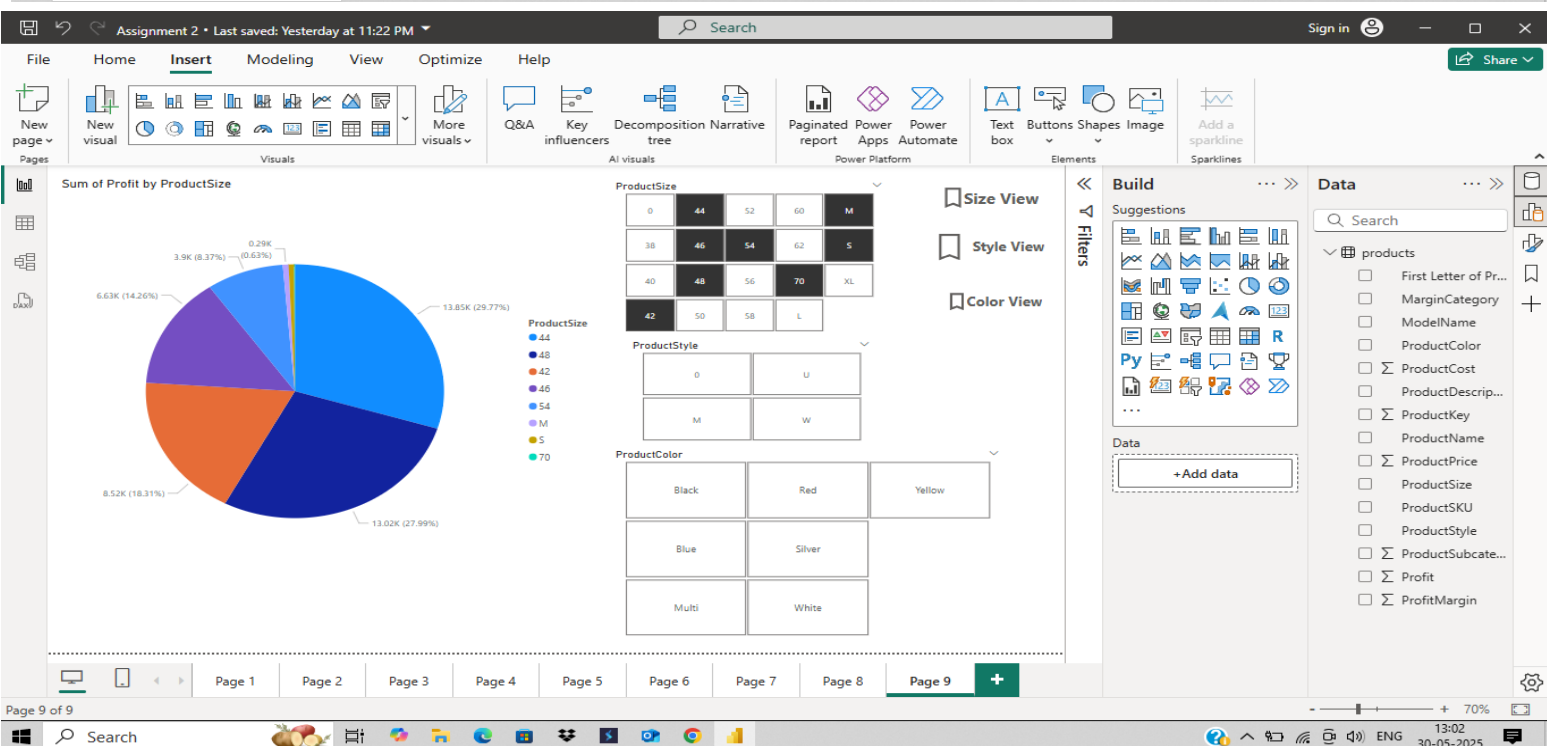
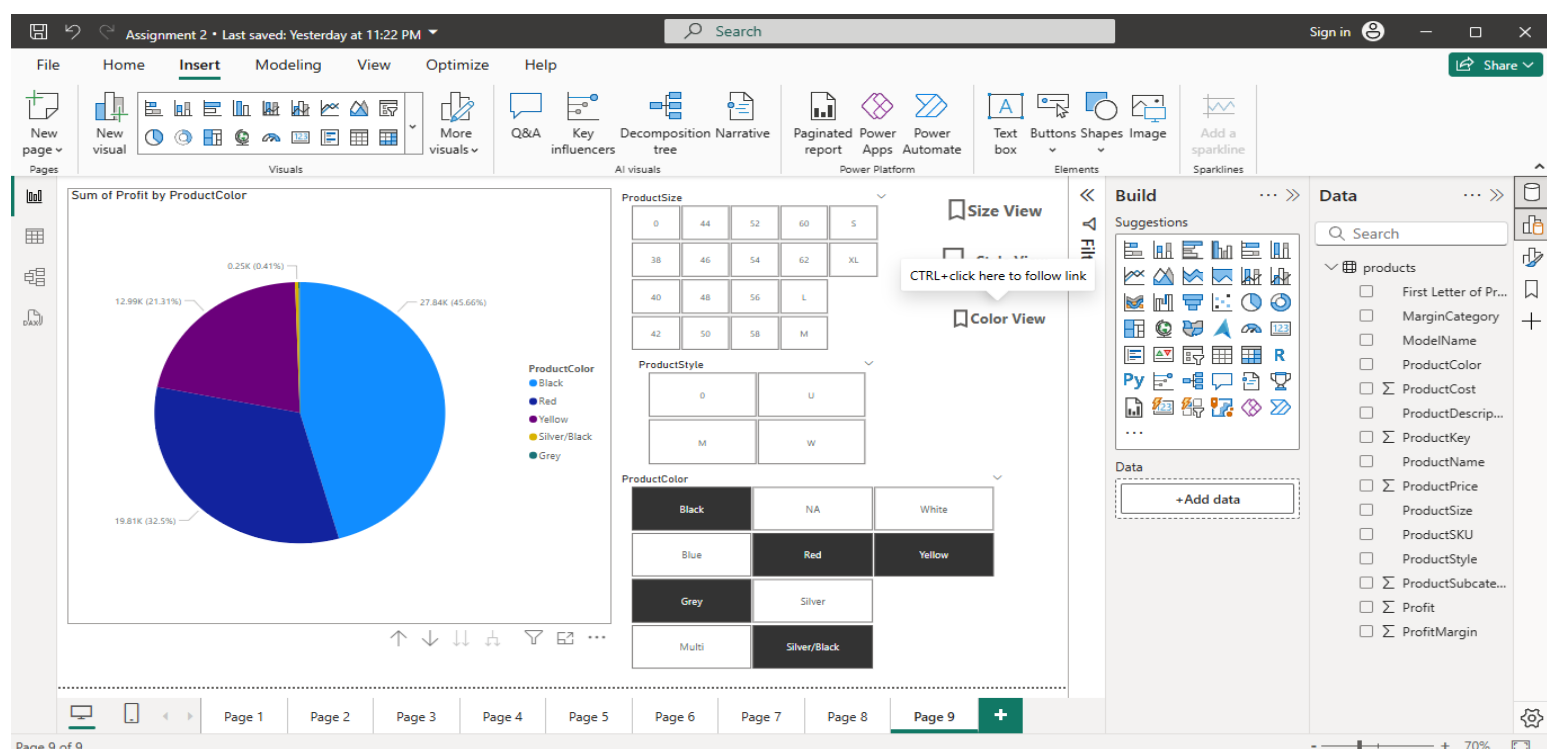
Below the pie chart are three table visuals:

- ProductSize**: A 5x5 grid table with values ranging from 0 to 70.
- ProductStyle**: A 2x2 grid table with values U, O, M, and W.
- ProductColor**: A 4x3 grid table with values: Black, NA, White, Blue, Red, Yellow, Grey, Silver, Multi, and Silver/Black.

On the right side of the interface, there are three panes:

- Build**: Contains a "Suggestions" section with various visual icons and a "Data" section with a "+Add data" button.
- Filters**: Contains a "CTRL+click here to follow link" button and two bookmark buttons labeled "Style View" and "Color View".
- Data**: Contains a search bar and a list of fields under the "products" category, including First Letter of Pr..., MarginCategory, ModelName, ProductColor, ProductCost, ProductDescrip..., ProductKey, ProductName, ProductPrice, ProductSize, ProductSKU, ProductStyle, ProductSubcate..., Profit, and ProfitMargin.

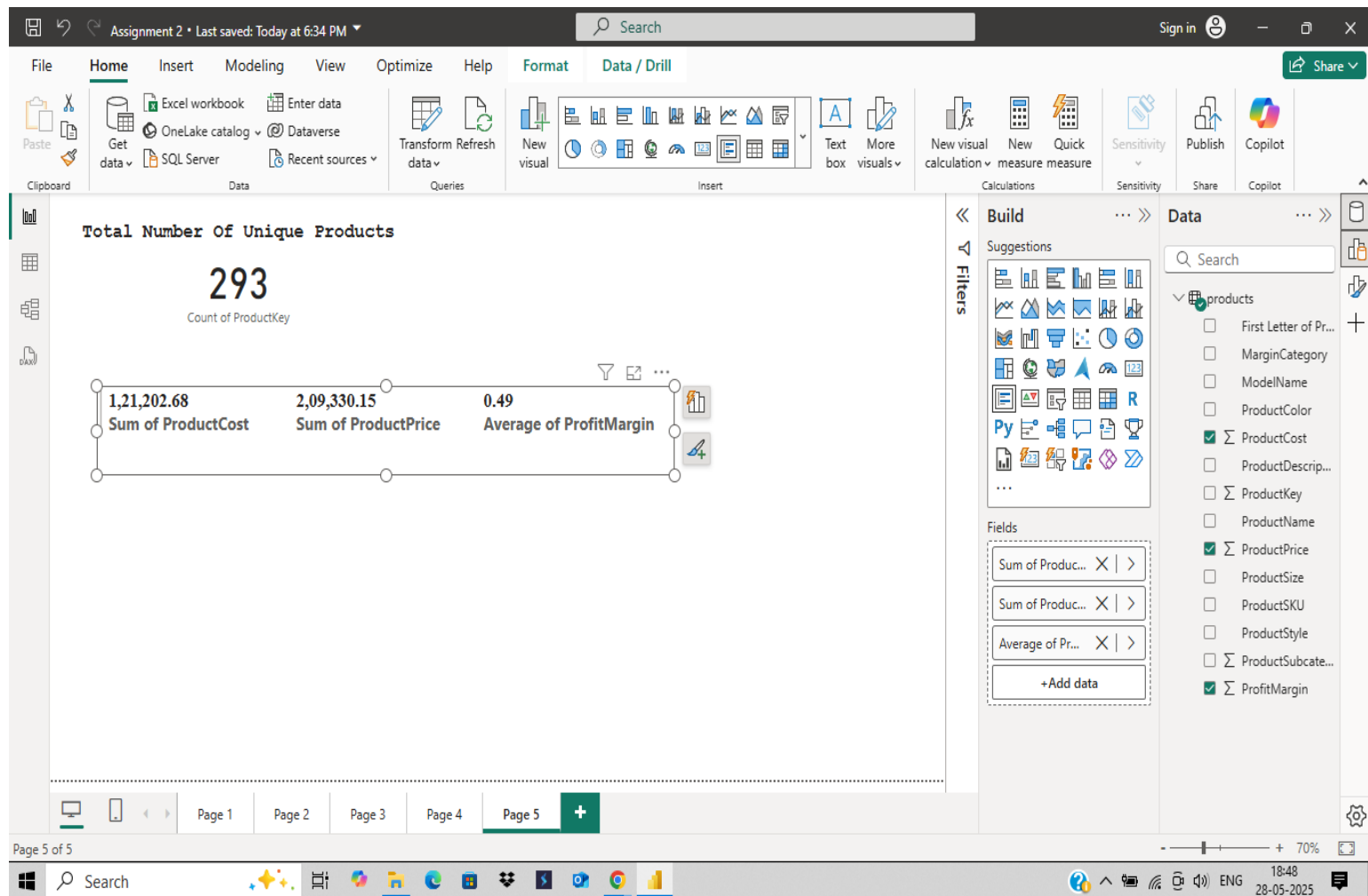
The bottom of the interface shows a page navigation bar with tabs for Page 1 through Page 9, with Page 9 currently selected. The status bar at the very bottom indicates "Page 9 of 9", a search bar, and system information including the date "30-05-2025" and time "13:02".



To perform this task:

- Create a pie chart visual in report view
- Then Insert slicers of ProductSize, ProductColor, ProductStyle
- Create Visual using these slicers
- Then Click on View > Bookmark Pane
- Then Add to save each filtered task as a bookmark
- Rename them as Size view, Style view, Color view
- Then Insert > Buttons > Bookmark
- Assign each bookmark to these buttons.

Task 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



To perform this task:

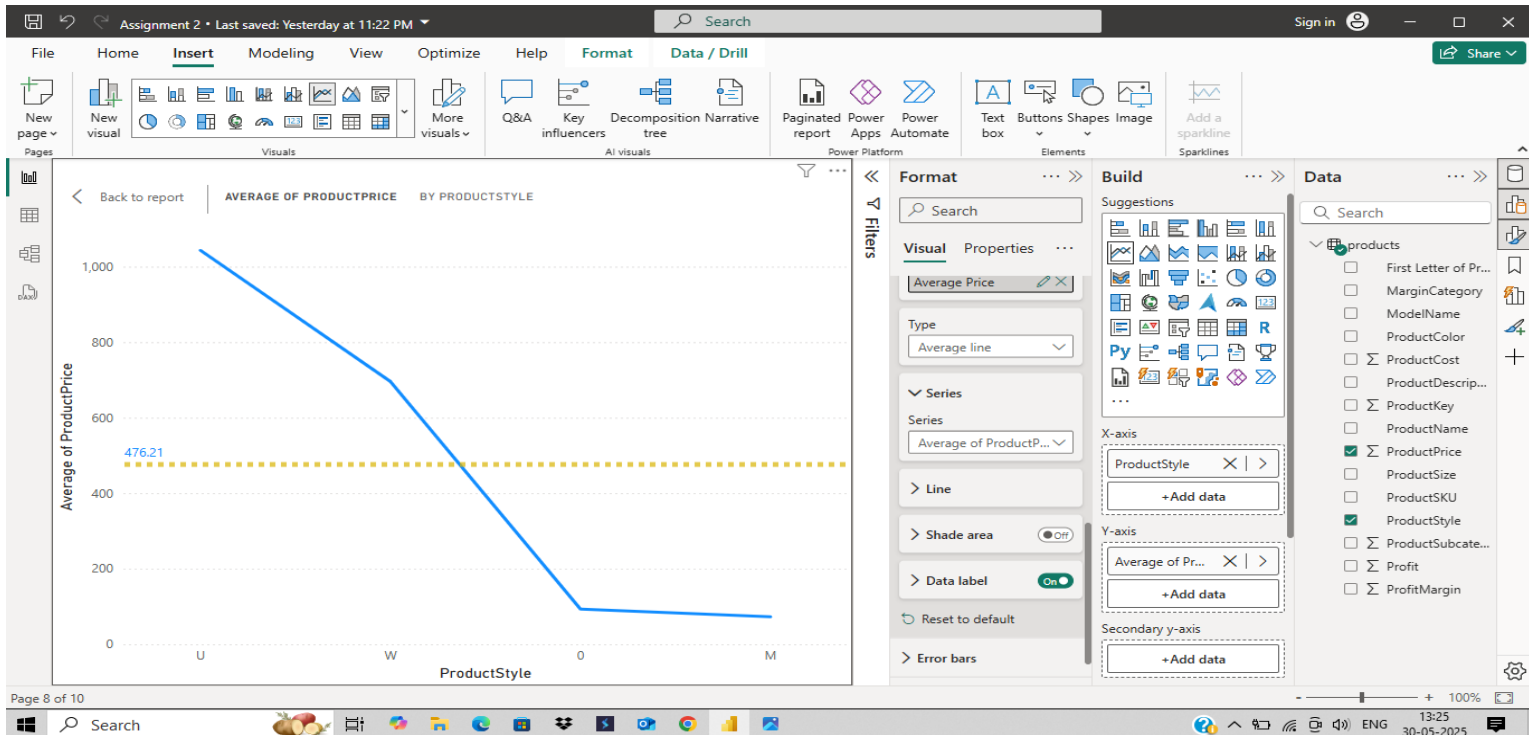
Unique Products in Single row card:

- In report view > Visualization pane > Single row card
- Add ProductKey
- Then click ProductKey in visualization pane and set aggregation to Count(Distinct).

Multi Row card:

- In Report view > Visualization pane > Multi row card
- Add ProductCost as SUM
- Add ProductPrice as SUM
- Add ProfitMargin and set its aggregation as Average.

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



To perform this task:

- In Report view > Visualization pane > Line Chart
- Add ProductStyle in x-axis
- Add ProductPrice in y-axis and set aggregation as average
- Then go to Format pane > Reference Line > Add Average Line

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

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

Close & Apply New Source Recent Sources Enter Data Data source settings Manage Parameters Refresh Preview Advanced Editor Properties Choose Columns Remove Columns Keep Rows Remove Rows Split Column Group By Data Type: Any Use First Row as Headers Replace Values Merge Queries Append Queries Combine Files Text Analytics Vision Azure Machine Learning

Queries [1] = Table.Distinct(#"Reordered Columns")

| | ProductKey | ProductSubcategoryKey | ProductSKU | ProductName | ModelName | ProductPrice |
|----|------------|-----------------------|------------|-----------------------------|-------------------------|--------------|
| 1 | 214 | 31 | HL-U509-R | Sport-100 Helmet, Red | Sport-100 | Uni |
| 2 | 215 | 31 | HL-U509 | Sport-100 Helmet, Black | Sport-100 | Uni |
| 3 | 218 | 23 | SO-B909-M | Mountain Bike Socks, M | Mountain Bike Socks | Con |
| 4 | 219 | 23 | SO-B909-L | Mountain Bike Socks, L | Mountain Bike Socks | Con |
| 5 | 220 | 31 | HL-U509-B | Sport-100 Helmet, Blue | Sport-100 | Uni |
| 6 | 223 | 19 | CA-1098 | AWC Logo Cap | Cycling Cap | Trac |
| 7 | 226 | 21 | UJ-0192-S | Long-Sleeve Logo Jersey, S | Long-Sleeve Logo Jersey | Uni |
| 8 | 229 | 21 | UJ-0192-M | Long-Sleeve Logo Jersey, M | Long-Sleeve Logo Jersey | Uni |
| 9 | 232 | 21 | UJ-0192-L | Long-Sleeve Logo Jersey, L | Long-Sleeve Logo Jersey | Uni |
| 10 | 235 | 21 | UJ-0192-X | Long-Sleeve Logo Jersey, XL | Long-Sleeve Logo Jersey | Uni |
| 11 | 238 | 14 | FR-R92R-62 | HL Road Frame - Red, 62 | HL Road Frame | Our |
| 12 | 241 | 14 | FR-R92R-44 | HL Road Frame - Red, 44 | HL Road Frame | Our |
| 13 | 244 | 14 | FR-R92R-48 | HL Road Frame - Red, 48 | HL Road Frame | Our |
| 14 | 247 | 14 | FR-R92R-52 | HL Road Frame - Red, 52 | HL Road Frame | Our |
| 15 | 250 | 14 | FR-R92R-56 | HL Road Frame - Red, 56 | HL Road Frame | Our |
| 16 | 253 | 14 | FR-R38B-58 | LL Road Frame - Black, 58 | LL Road Frame | The |
| 17 | 256 | 14 | FR-R38B-60 | LL Road Frame - Black, 60 | LL Road Frame | The |
| 18 | 259 | 14 | FR-R38B-62 | LL Road Frame - Black, 62 | LL Road Frame | The |
| 19 | 262 | 14 | FR-R38R-44 | LL Road Frame - Red, 44 | LL Road Frame | The |
| 20 | 264 | 14 | FR-R38R-48 | LL Road Frame - Red, 48 | LL Road Frame | The |
| 21 | 266 | 14 | FR-R38R-52 | LL Road Frame - Red, 52 | LL Road Frame | The |
| 22 | 268 | 14 | FR-R38R-58 | LL Road Frame - Red, 58 | LL Road Frame | The |
| 23 | 270 | 14 | FR-R38R-60 | LL Road Frame - Red, 60 | LL Road Frame | The |
| 24 | ... | ... | ... | ... | ... | ... |

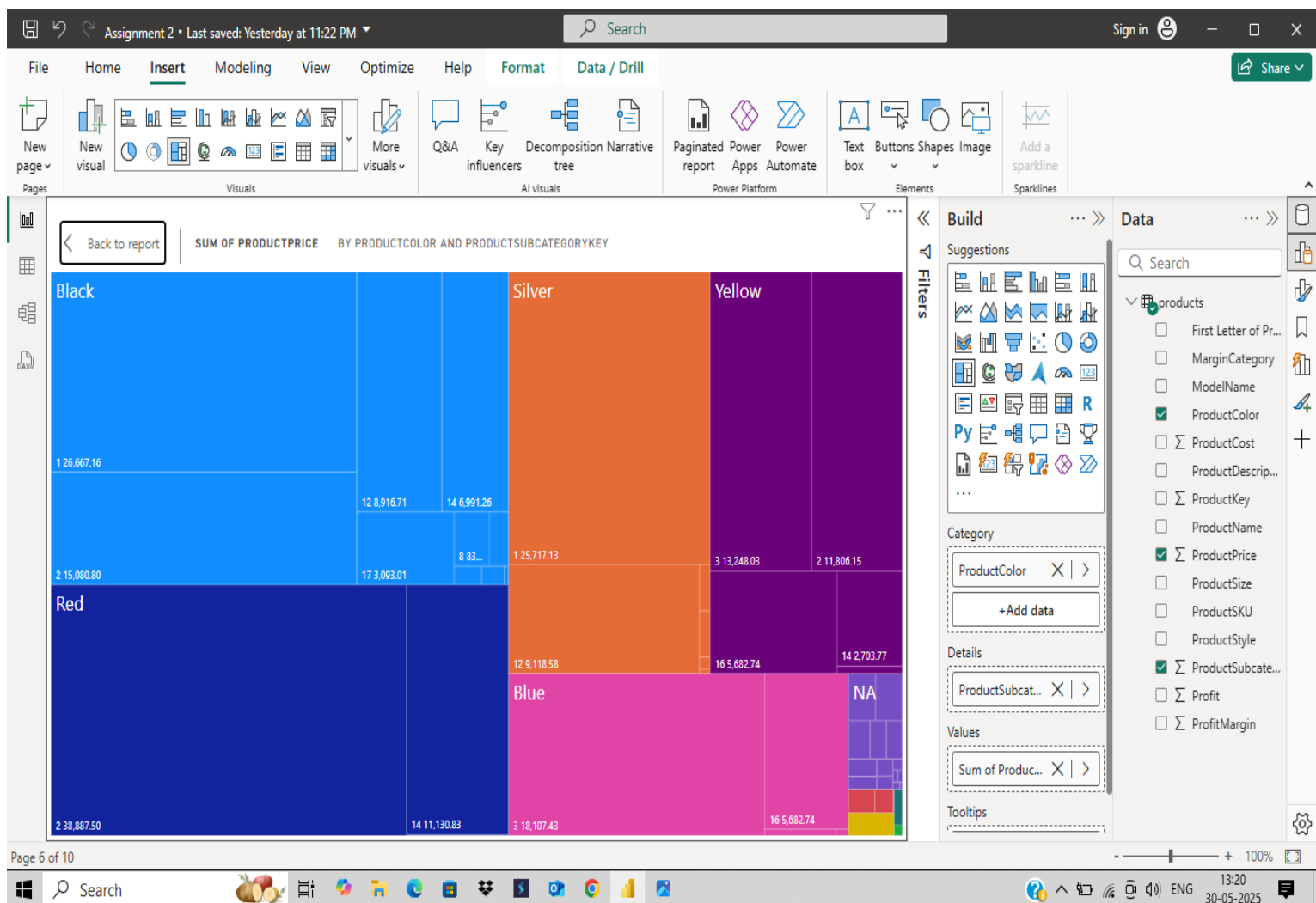
14 COLUMNS, 293 ROWS Column profiling based on top 1000 rows

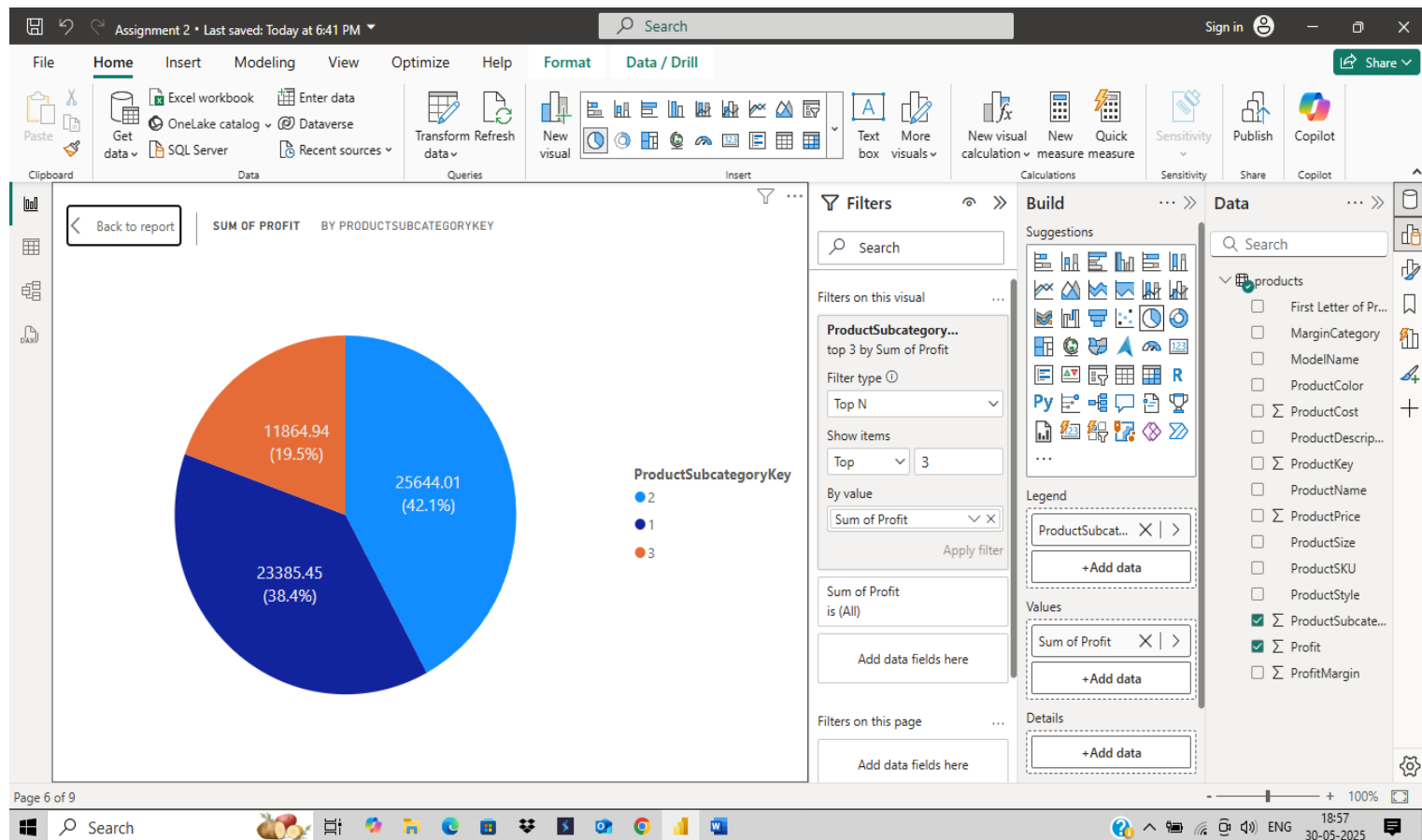
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To perform this task:

- Go to transform data in Power BI
- Select all the columns in the query
- Then Home > Remove Rows > Remove Duplicates
- Click close and apply to load the data for creating visuals

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





To perform this task:

For Treemap by ProductColor and ProductSubCategory:

- In Report View > Visualization pane > Treemap visual
- Add Category-> ProductColor
- Add Details -> ProductSubCategory
- In Values -> ProductPrice as SUM

For Top 3 ProductSubCategories by Profit:

- First Go to Power Query editor
- Add Column > Custom Column
- Name-> Profit, Formula -> (ProductPrice – ProductCost)
- Then Close and apply
- In Report view > Visualization pane > Pie Chart
- Add ProductSubCategory, Profit
- Then In Filter pane > ProductSubCategory> Add Filter > Top N
- Top 3 By Sum Of Profit