BBD UNIVERSITY

DISCRIPTIVE ANALYTICS

(BCADSN13201)

GROUP 16

PROJECT

SUBMITTED TO:
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Class: BCADS25

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Practical: 1

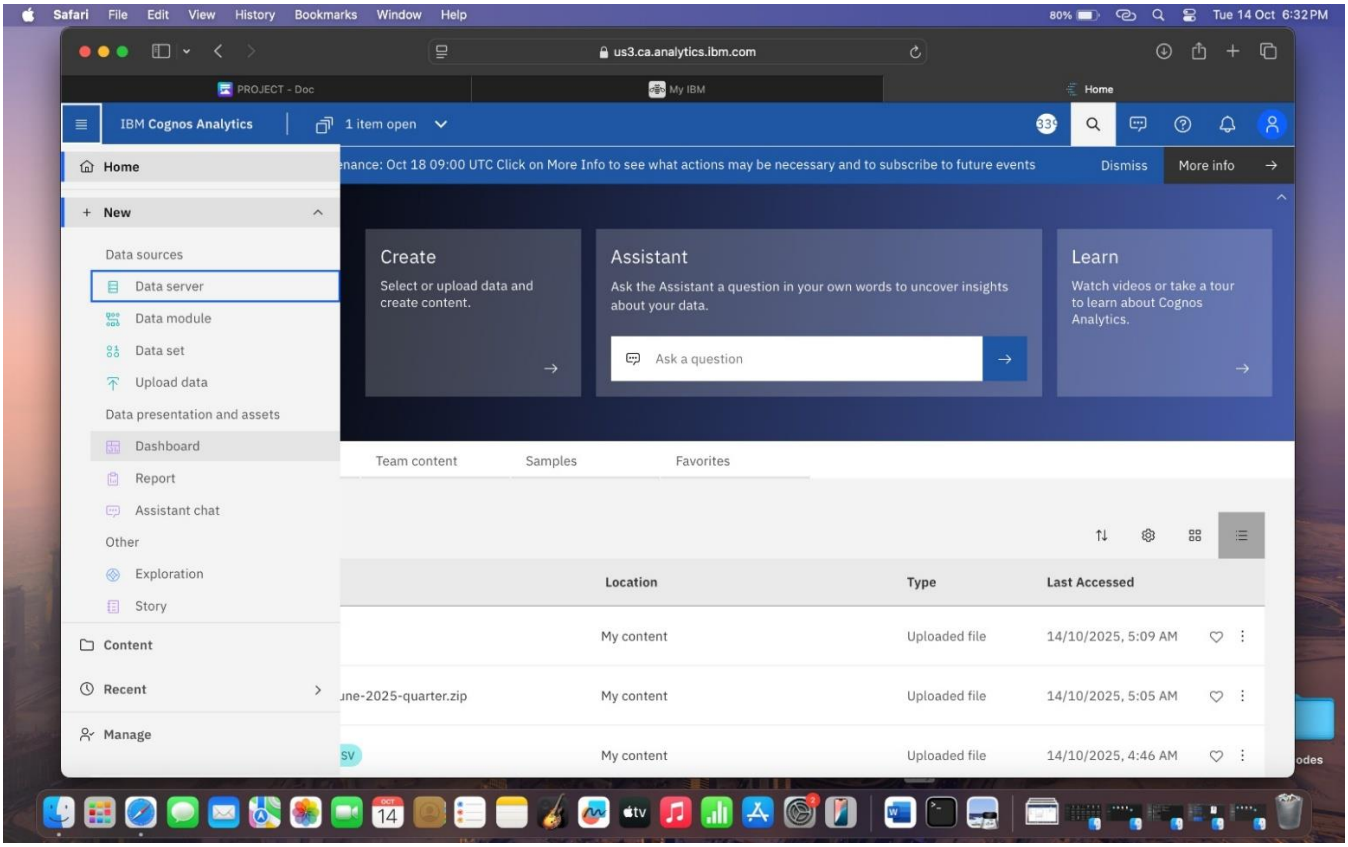
Definition: A bar graph is a chart used to represent data using rectangular bars. The length of each bar is proportional to the value it represents.

Outcomes/Learning: Learned how to create and visualize product values using a bar graph.

Required Tool: MS Excel (or any data visualization tool such as Power BI or Python Matplotlib).

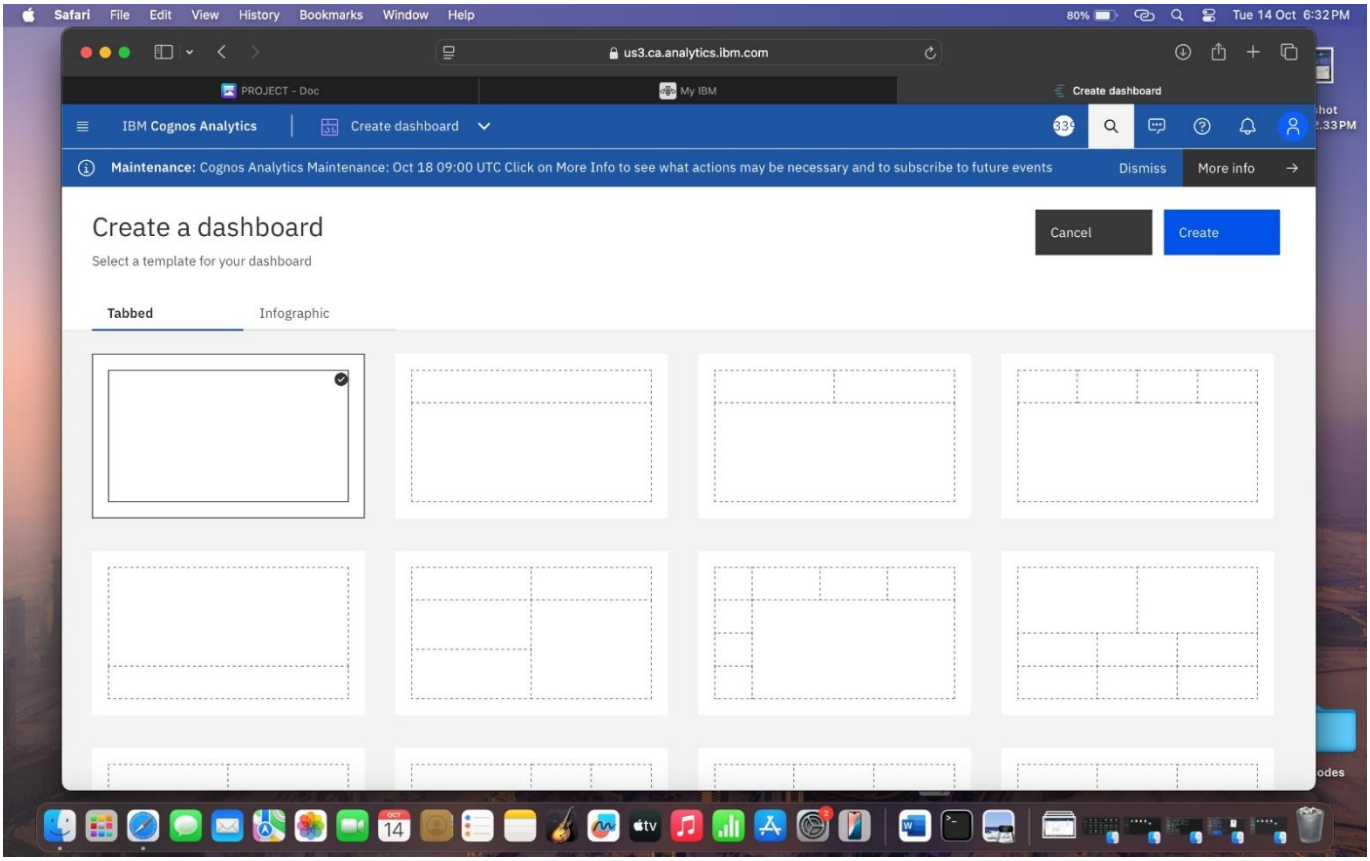
Working: We entered product names and their corresponding values into a spreadsheet and used the "Insert → Bar Chart" option to create a graphical representation.

Step 1:
Screenshot 1:



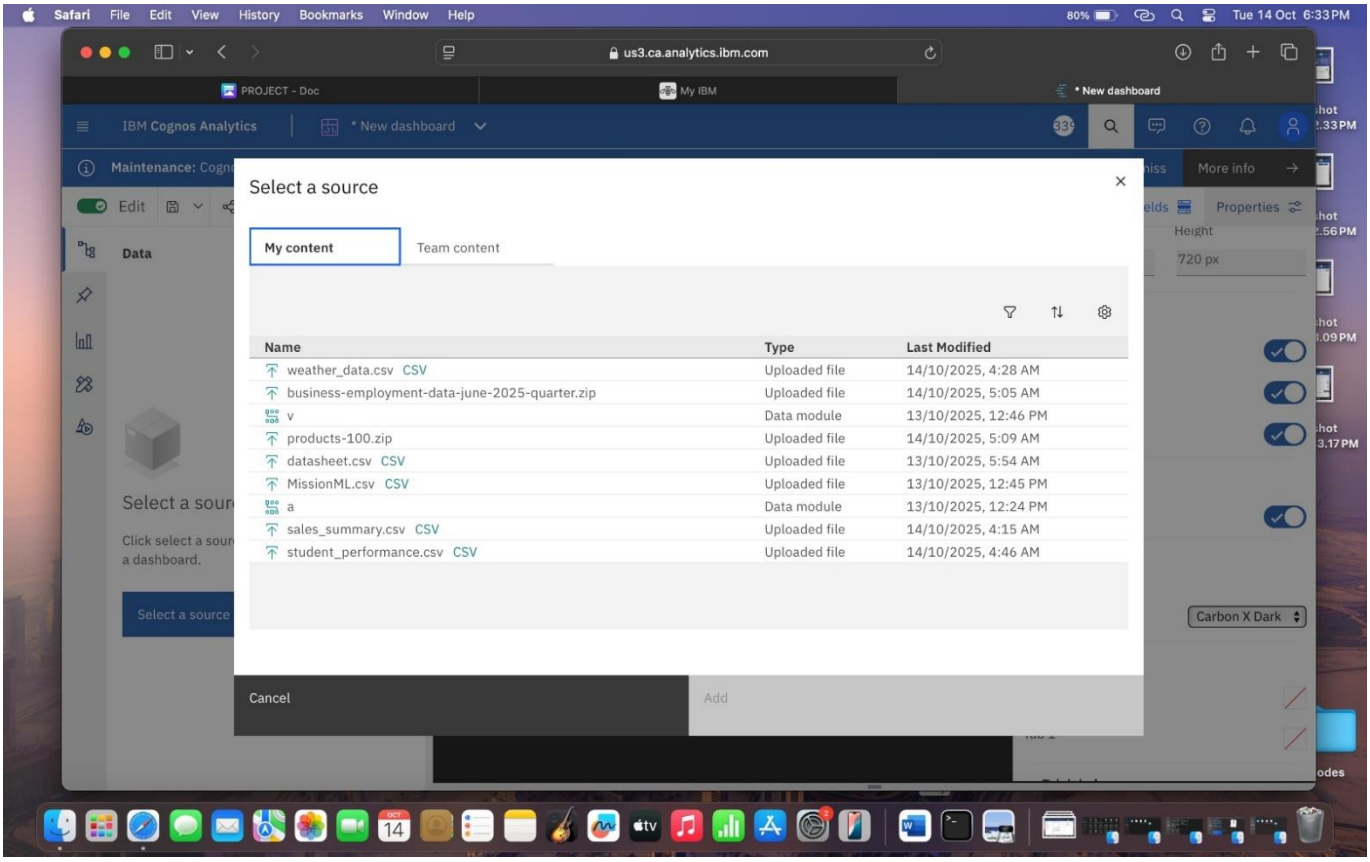
Description: The dataset of products and their values was entered into Excel.

Step 2:
Screenshot 2:



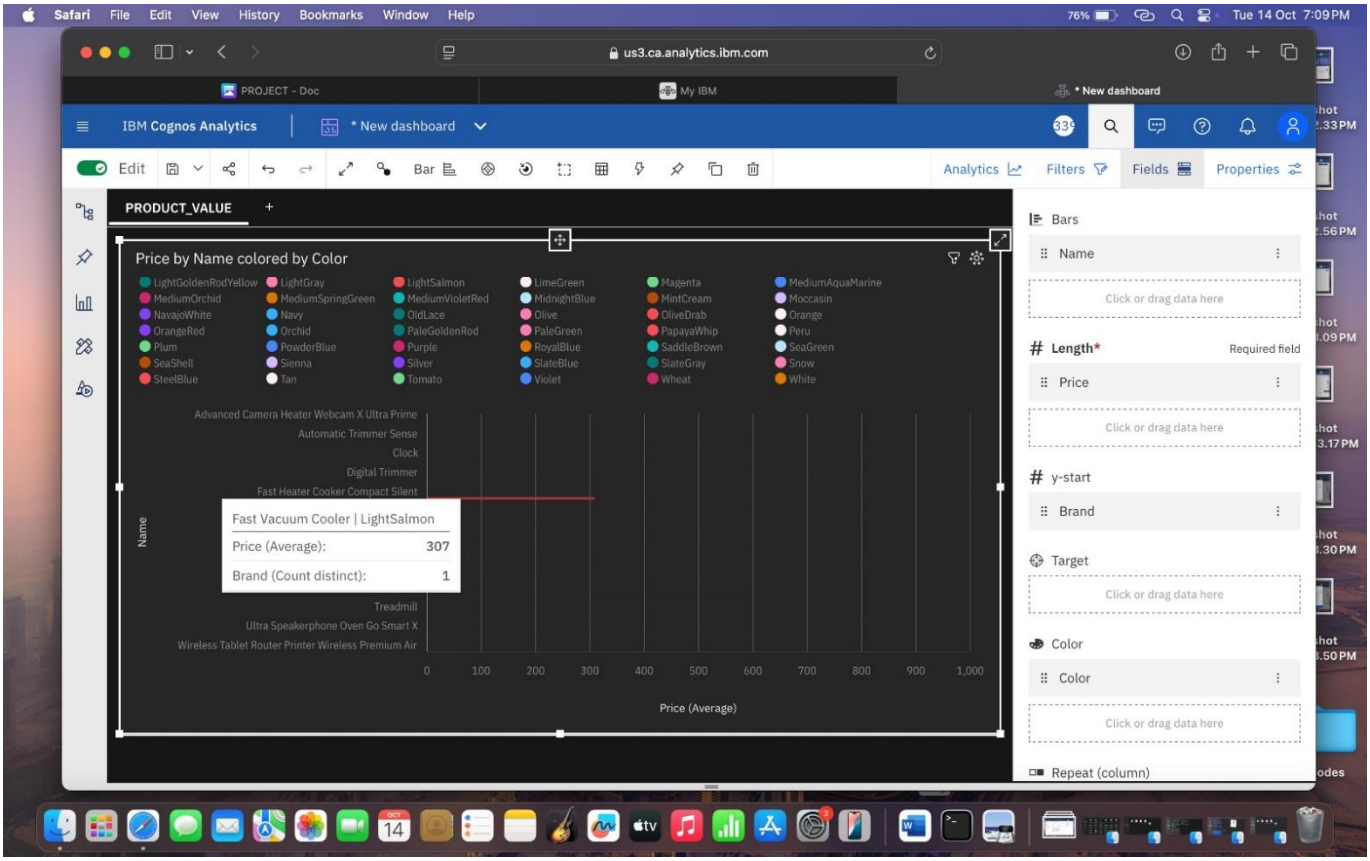
Description: The product names and their values were selected for chart creation.

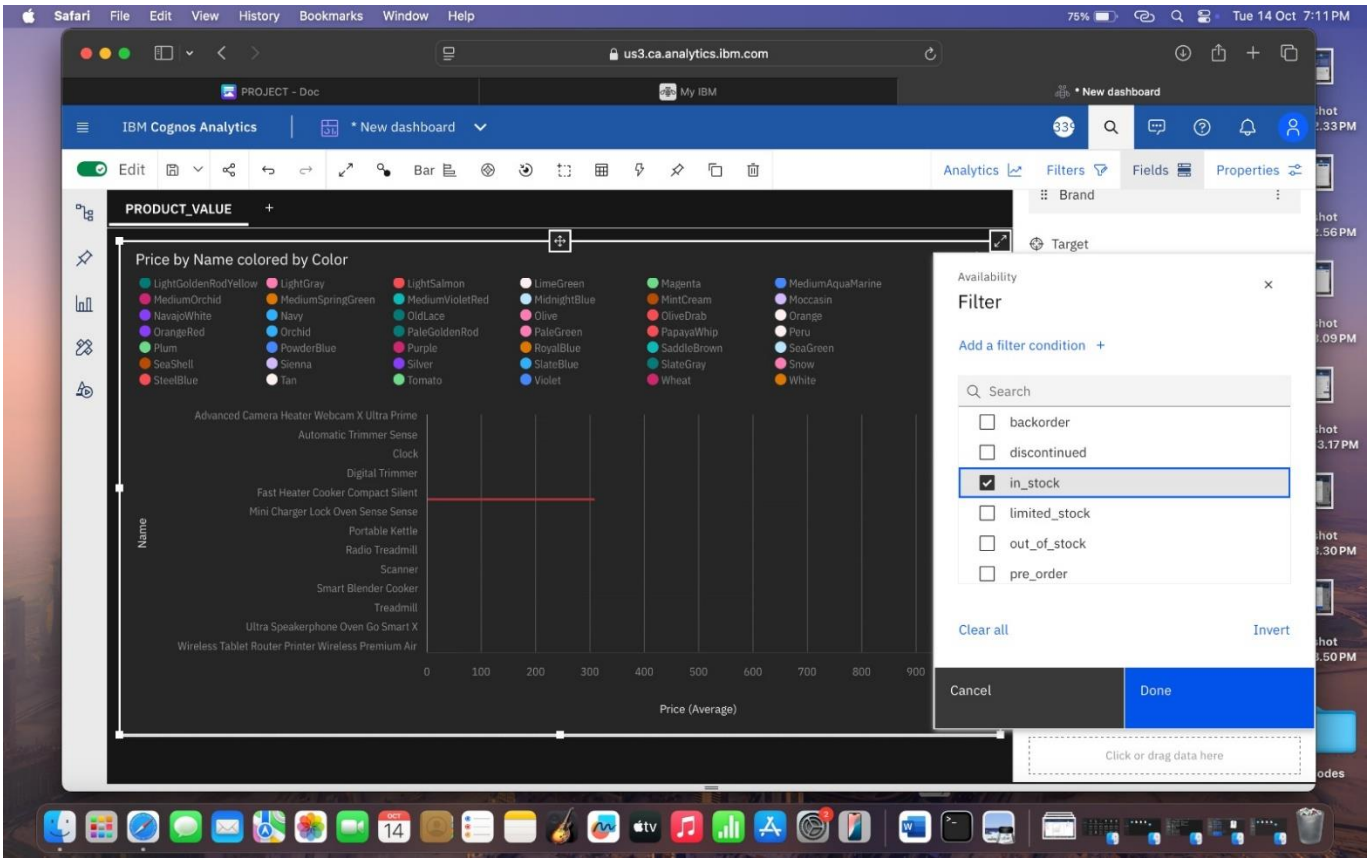
Step 3:
Screenshot 3:



Description: The bar chart option was selected from the “Insert” tab.

Step 4:
Screenshot 4:





Practical: 2

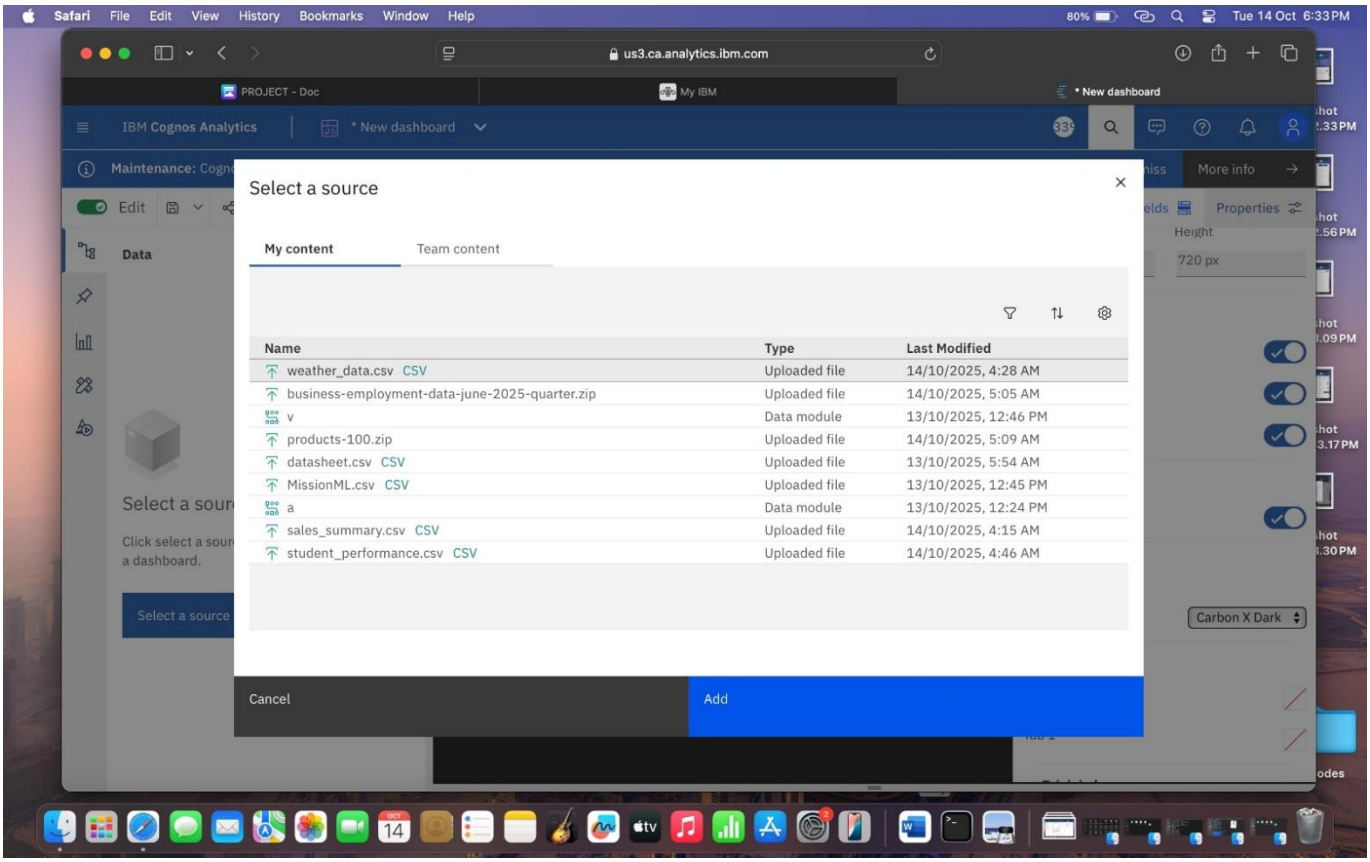
Definition: Data visualization is the process of representing data in graphical or visual formats such as charts, graphs, and dashboards to make information easier to understand.

Outcomes / Learning: Learned how to create and represent data using visualization tools for better analysis and decision-making.

Required Tool: Power BI / MS Excel / Tableau (any suitable visualization tool).

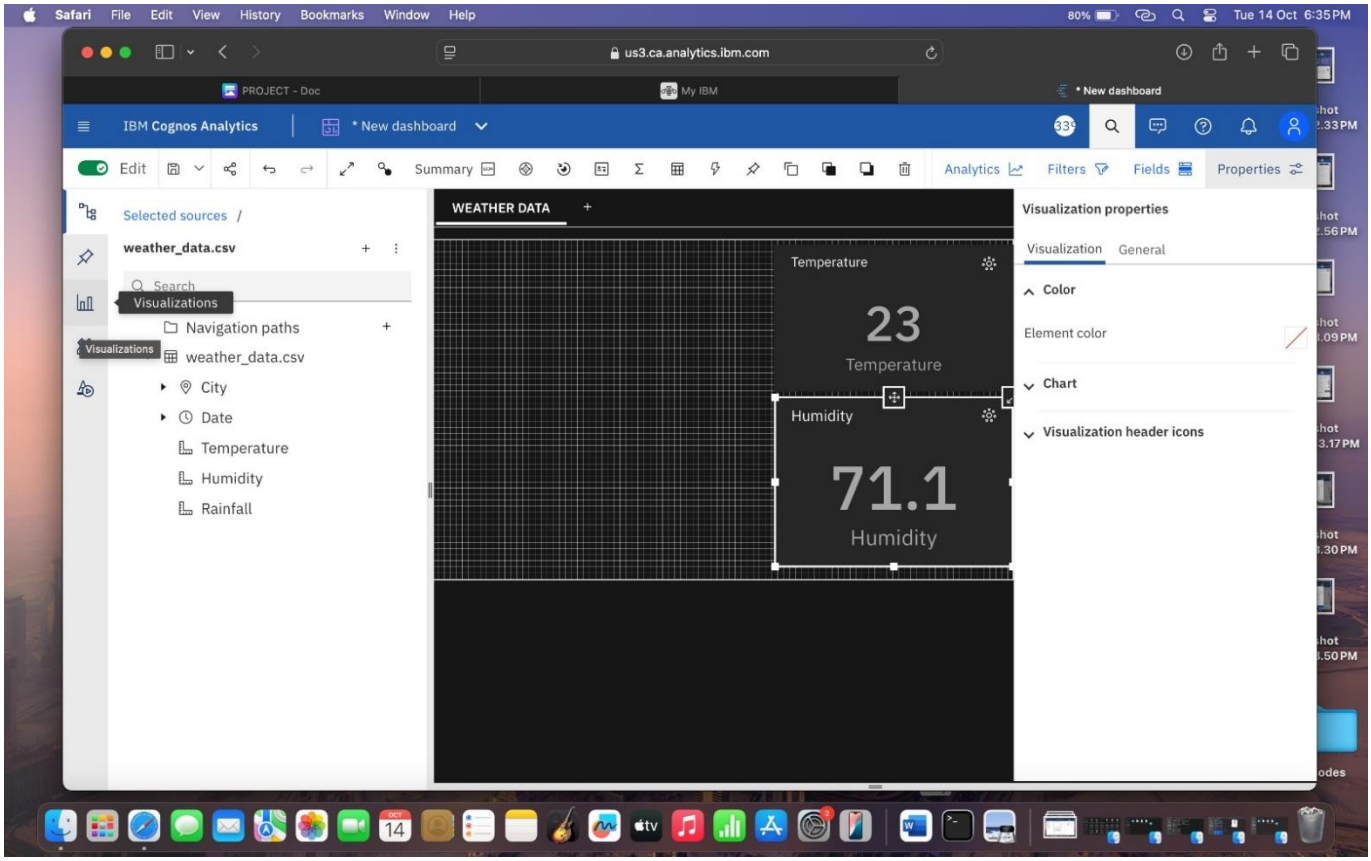
Working: We created a dataset, imported it into the visualization tool, and used built-in features to create charts and graphs for better insight into the data.

Step 1:
Screenshot 1:



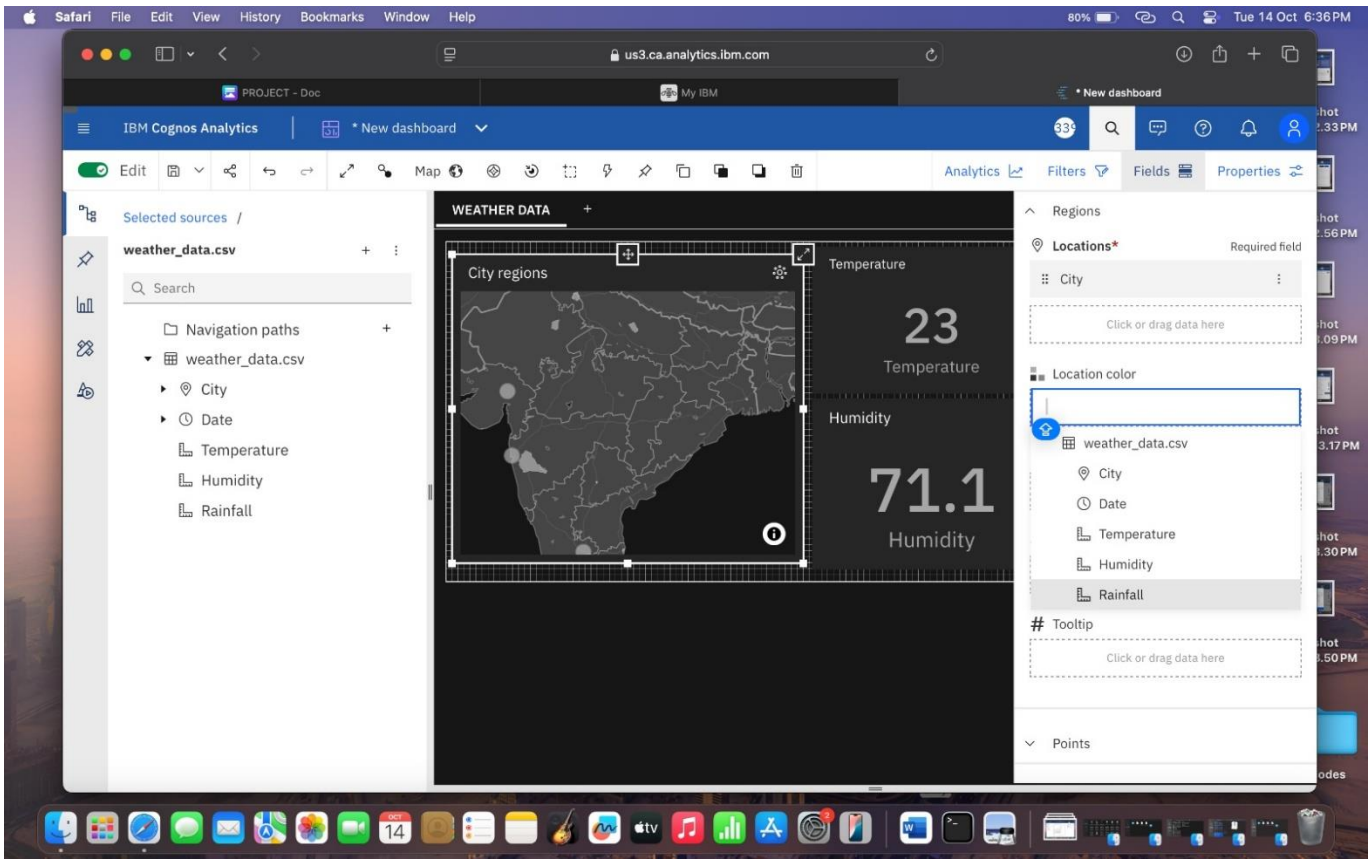
Description: The dataset was created and entered into the tool for visualization.

Step 2:
Screenshot 2:



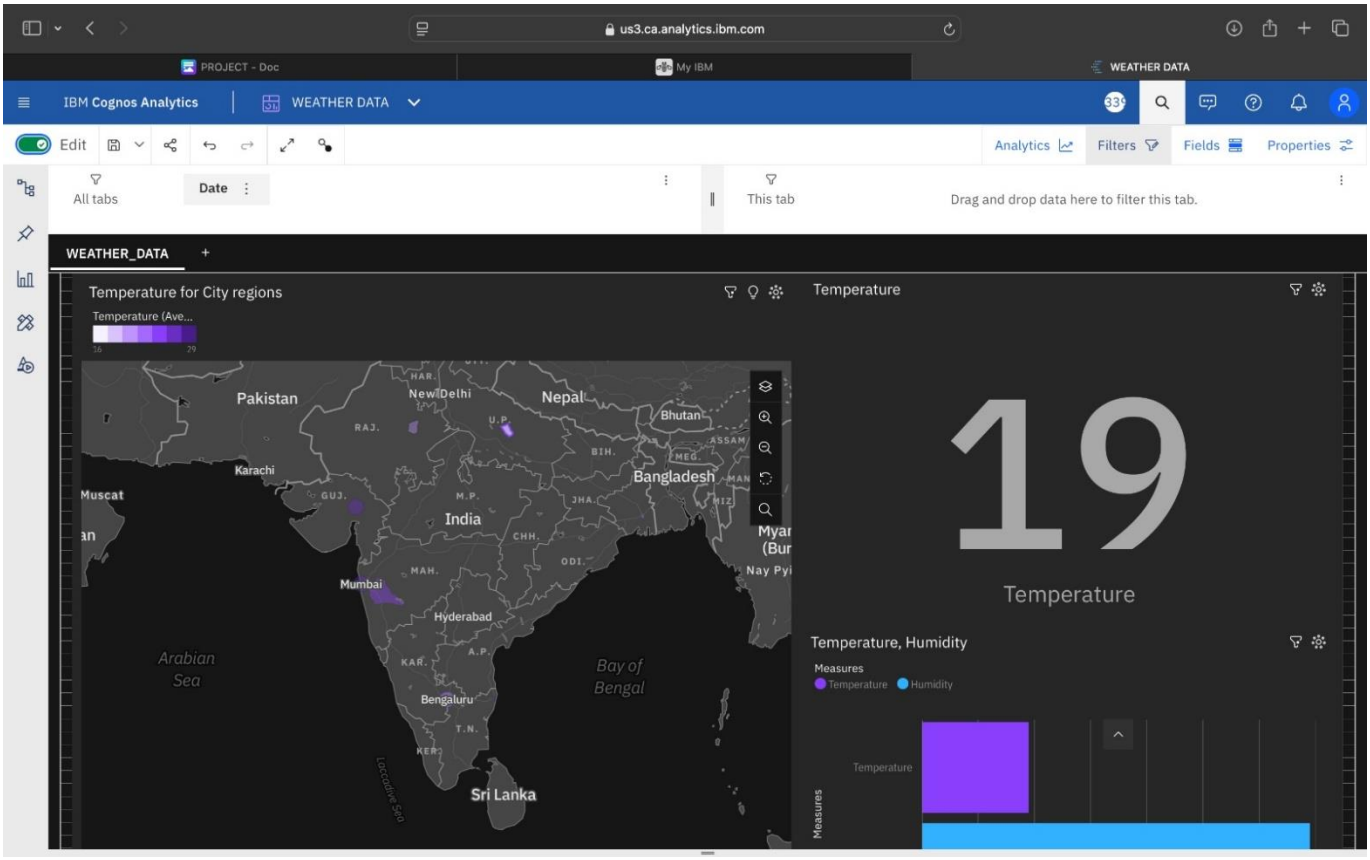
Description: The data was uploaded/imported into Power BI (or Excel/Tableau).

Step 3:
Screenshot 3:



Description: The desired visualization type (bar, pie, or line chart) was selected.

Step 4:
Screenshot 4:



Description: The final visualization displayed the data in an easy-to-understand graphical form.

Practical: 3

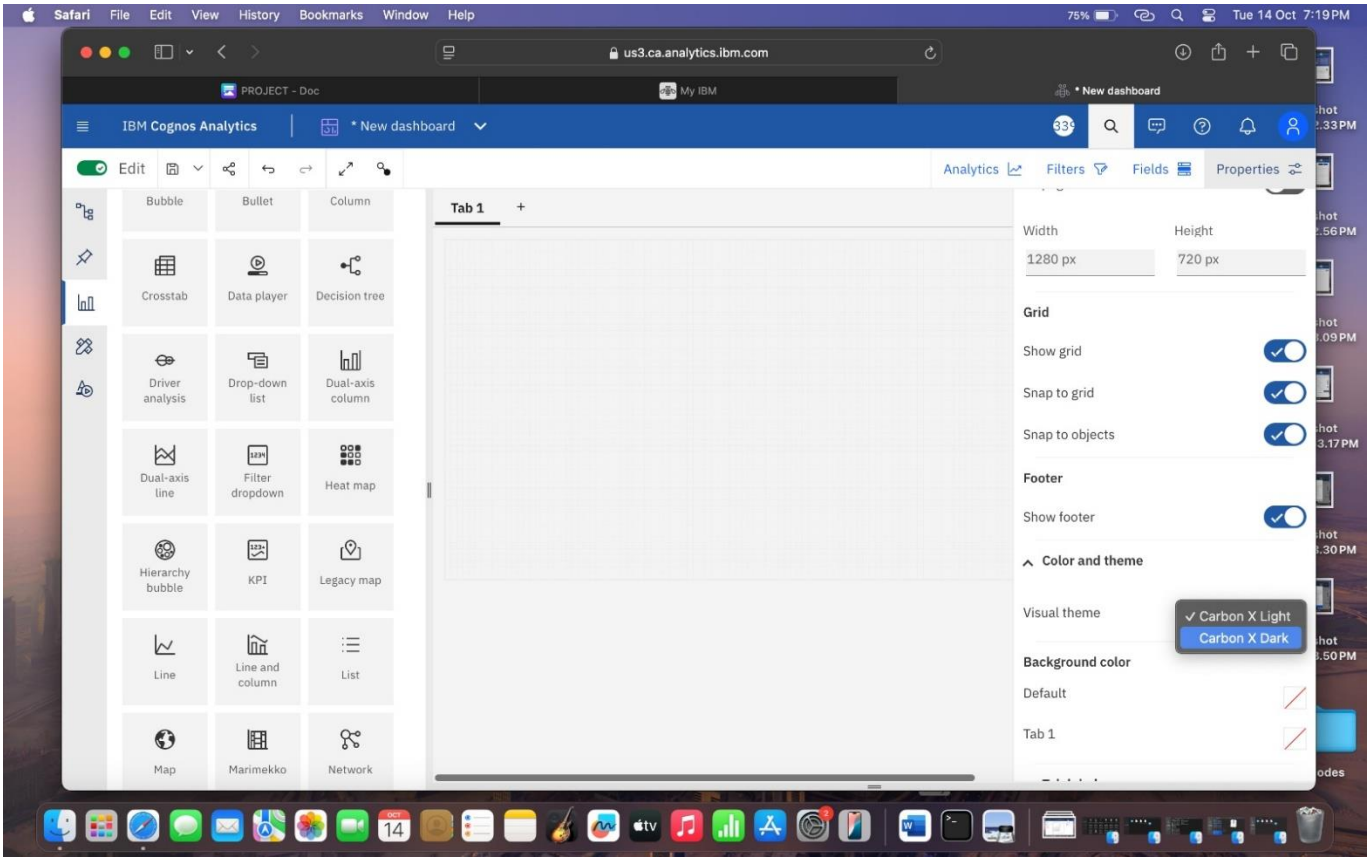
Definition: A stacked bar chart displays multiple data series stacked vertically or horizontally in one bar, showing part-to-whole relationships.
A heat map represents data values using color intensity, making it easier to identify patterns and trends.

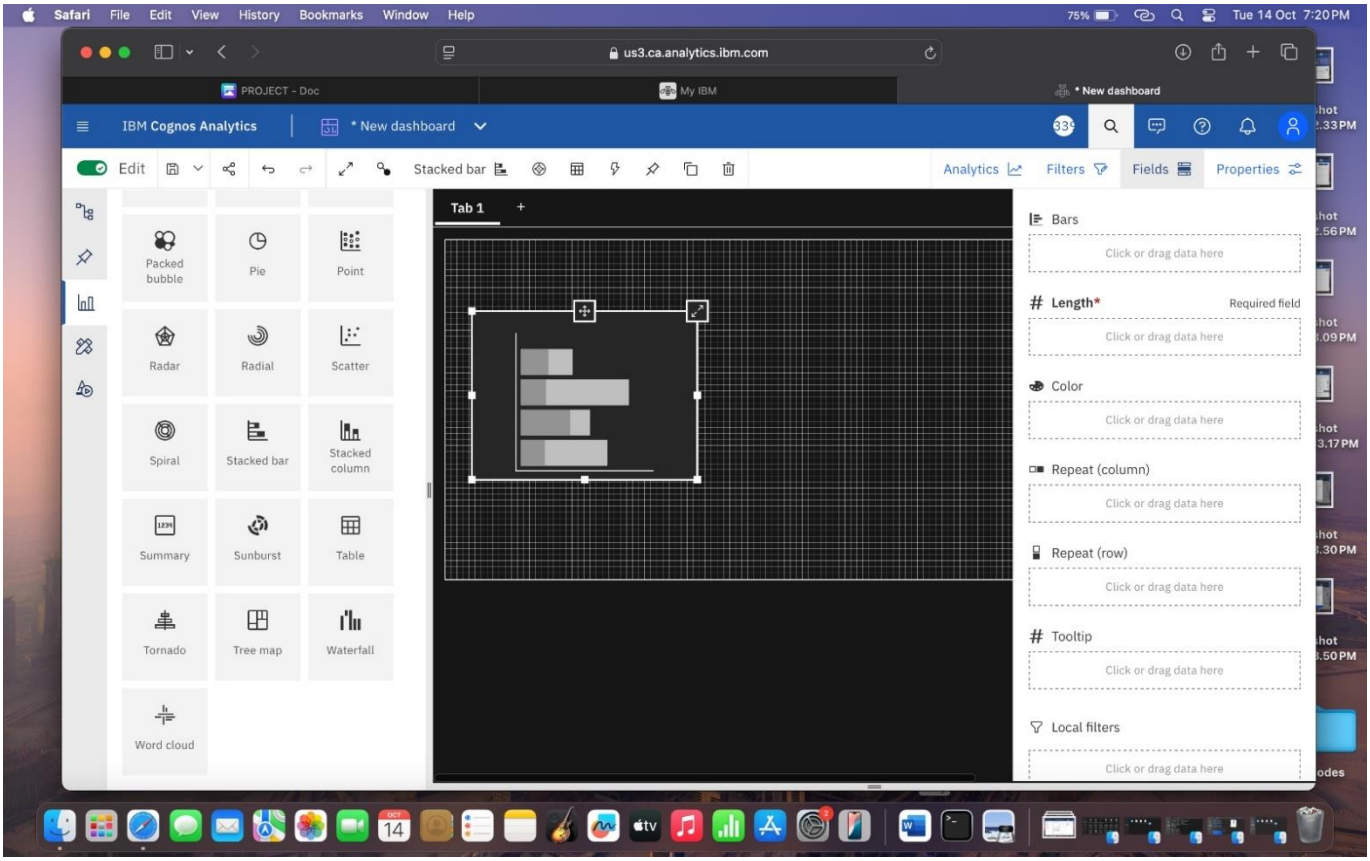
Outcomes / Learning: Learned how to visualize multiple data categories together using stacked bar charts and color-based heat maps.

Required Tool: Power BI / MS Excel / Tableau.

Working:
We used the dataset and selected the “Stacked Bar Chart” and “Heat Map” options to display values and variations effectively.

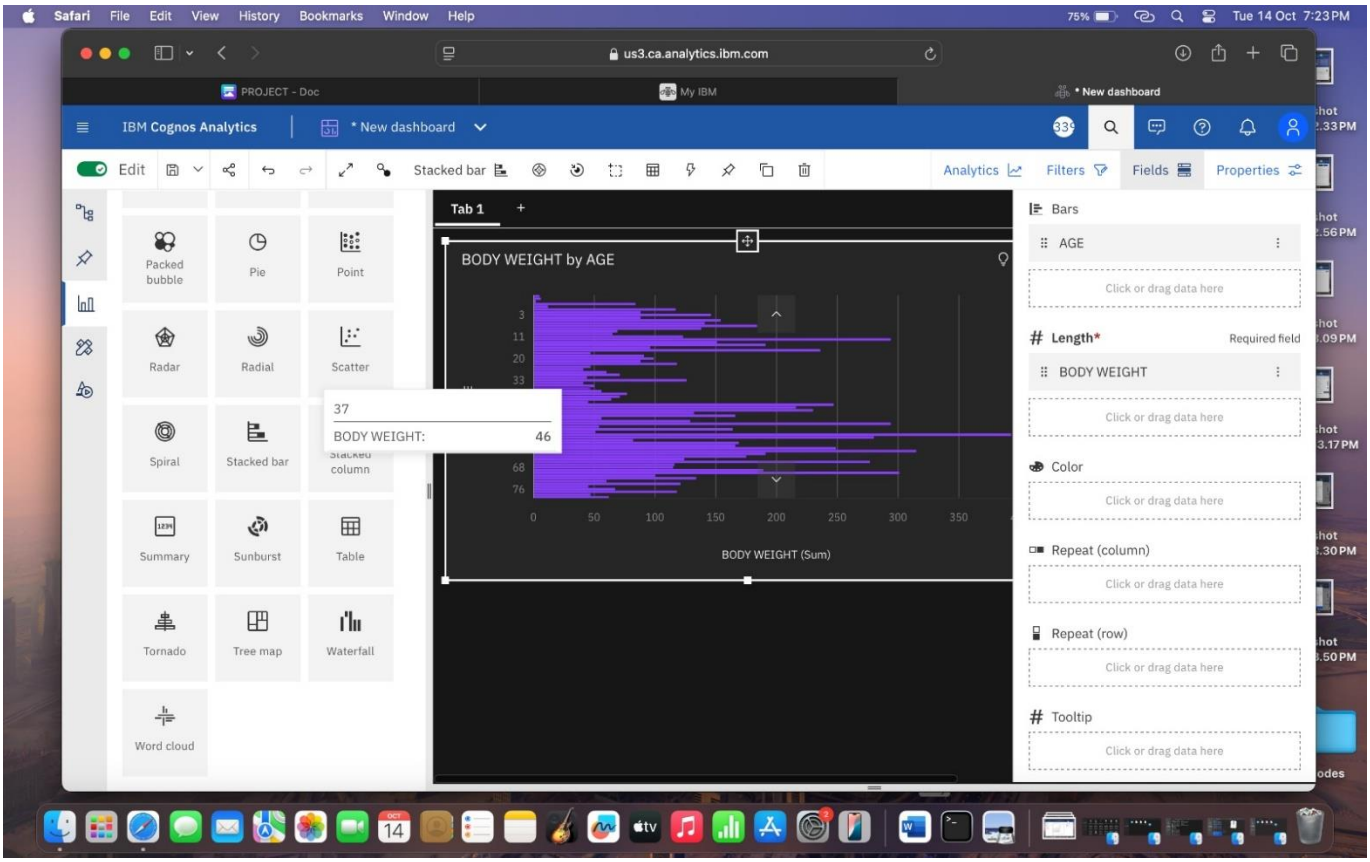
Step 1:
Screenshot 1:

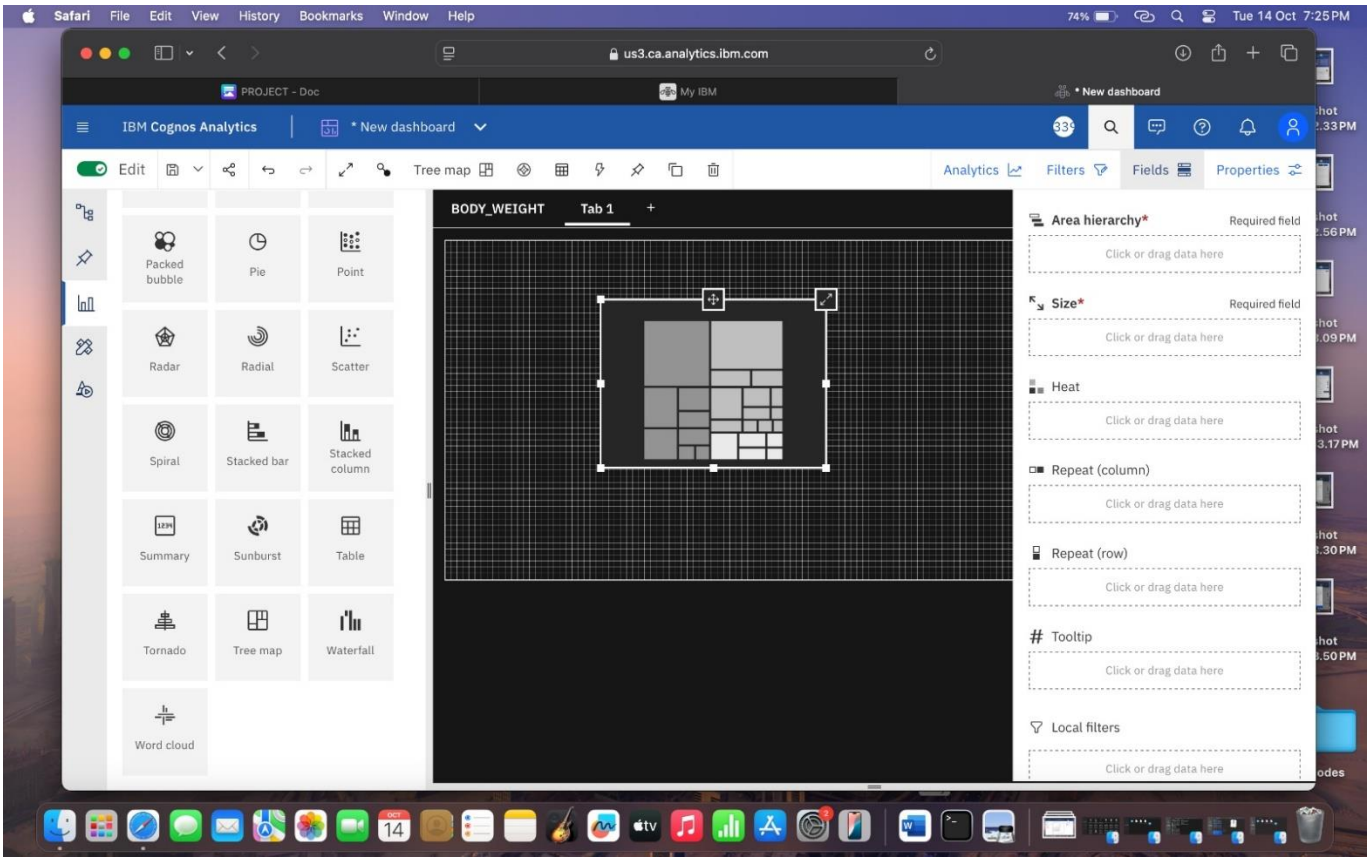




Description: The dataset was prepared and imported for visualization.

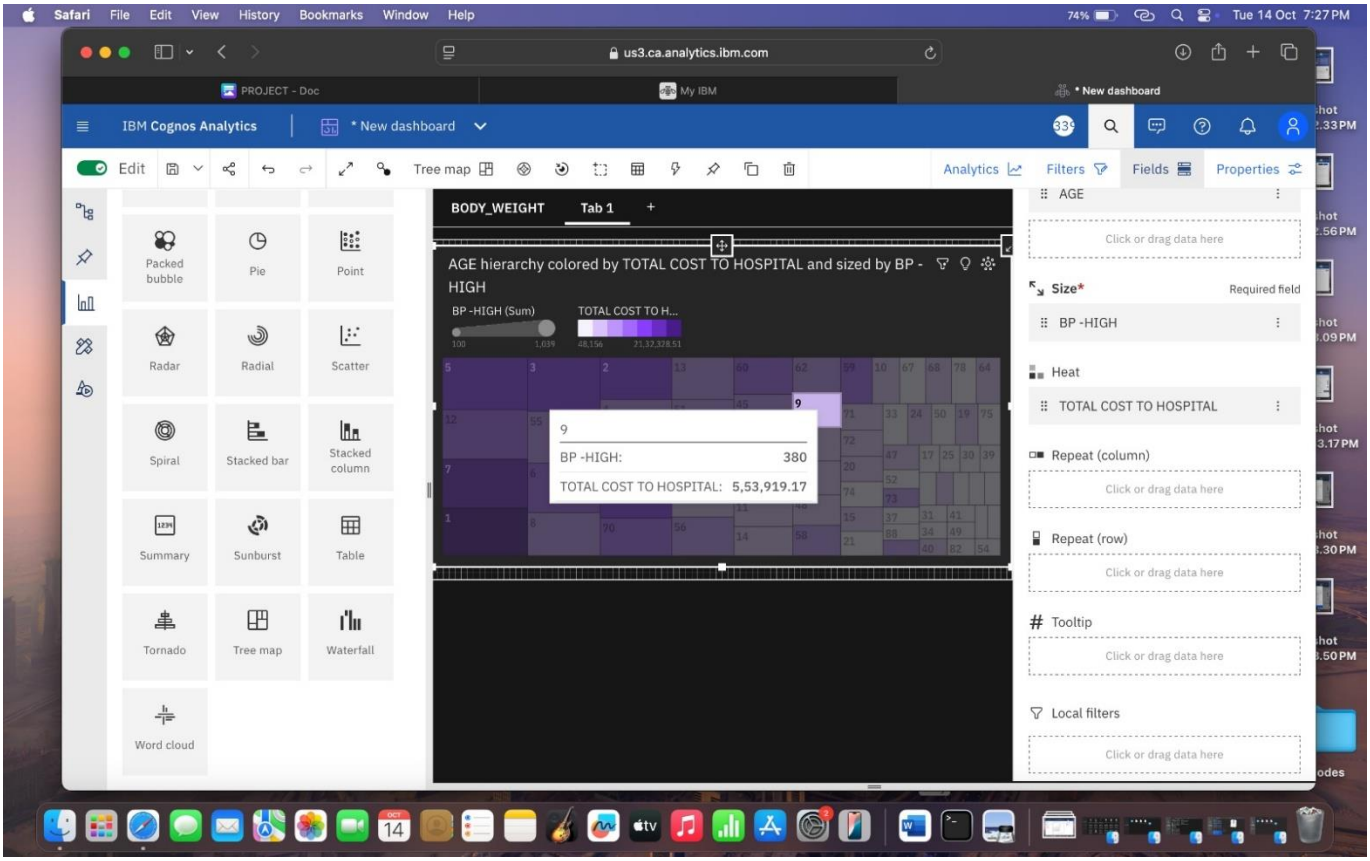
Step 2:
Screenshot 2:





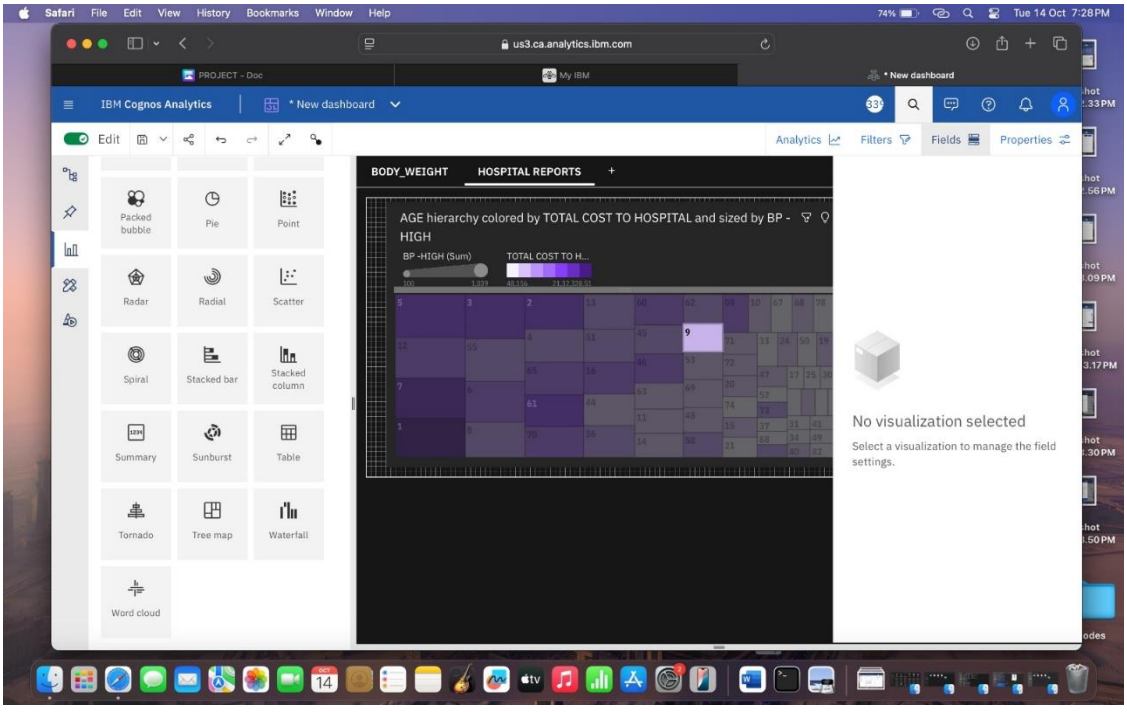
Description: The stacked bar chart option was chosen to compare product categories and values.

Step 3:
Screenshot 3:



Description: The stacked bar chart displays category-wise contributions in a single bar.

Step 4:
Screenshot 4:



Description: The heat map was created to represent data intensity through color variation.

Practical: 4

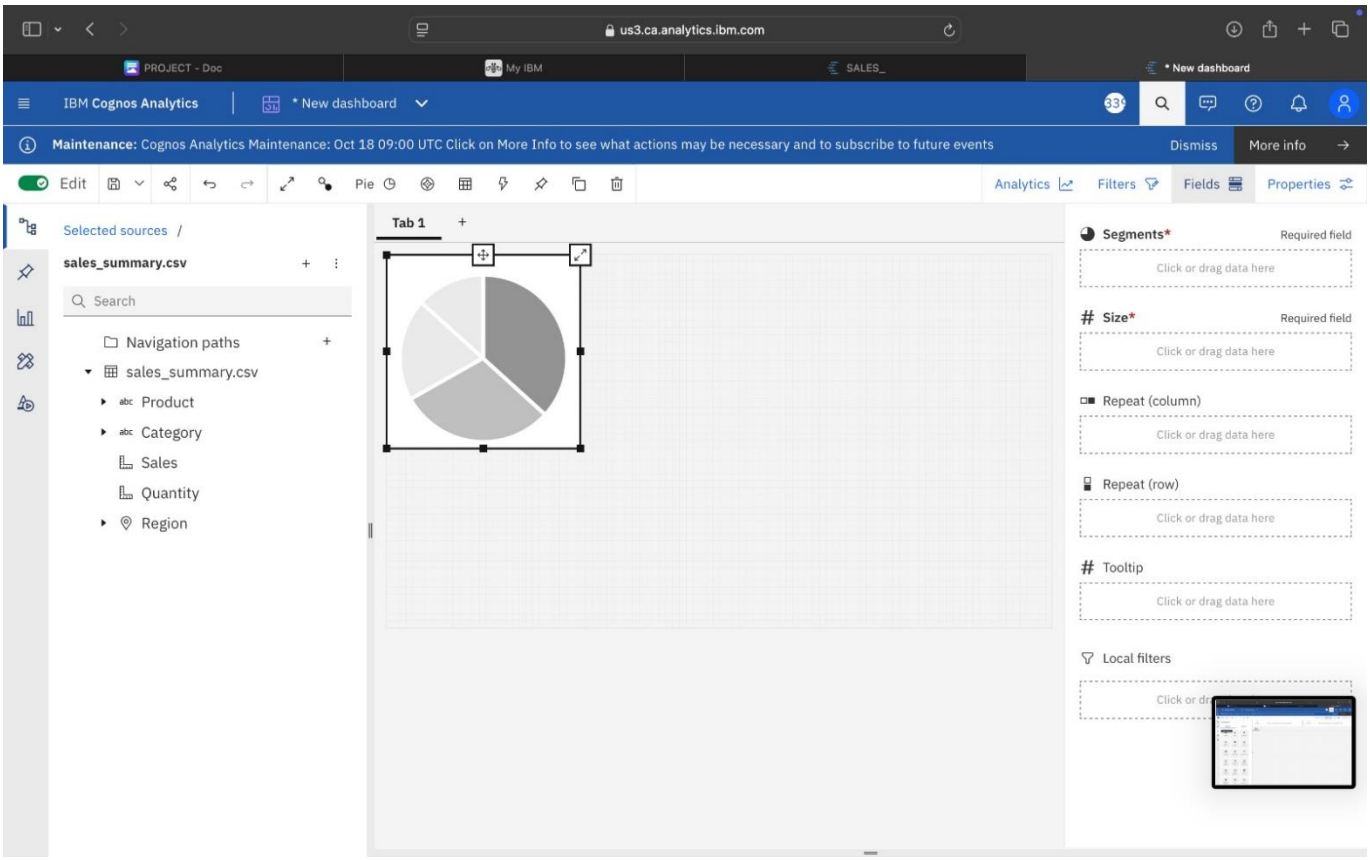
Definition: A pie chart is a circular graph divided into slices to illustrate numerical proportions. Each slice represents a category's contribution to the whole dataset.

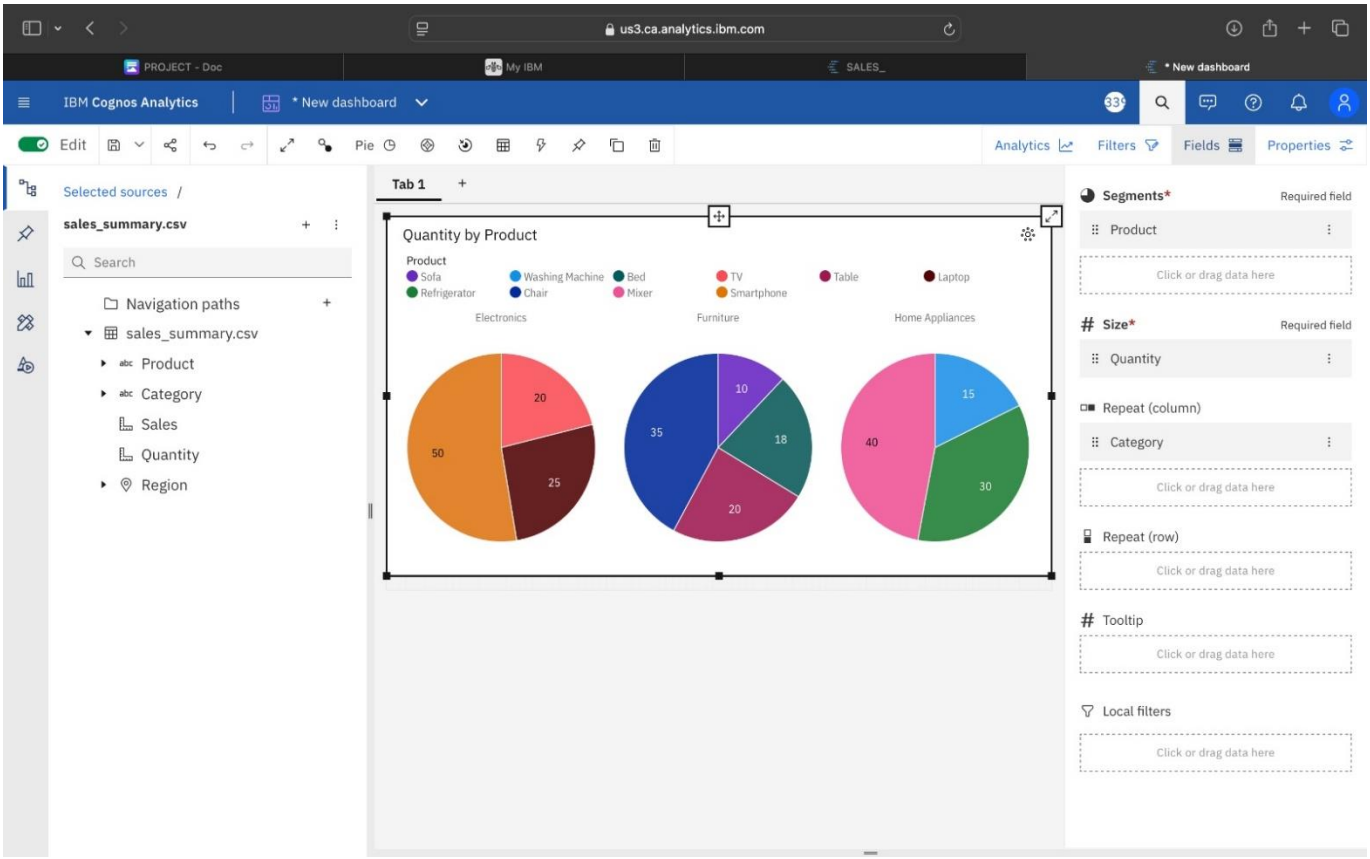
Outcomes / Learning: Learned how to create and interpret a pie chart for visualizing data distribution using a visualization tool.

Required Tool: Power BI / MS Excel / Tableau.

Working: We used the dataset and selected the "Pie Chart" visualization type to display data in percentage form for easy comparison.

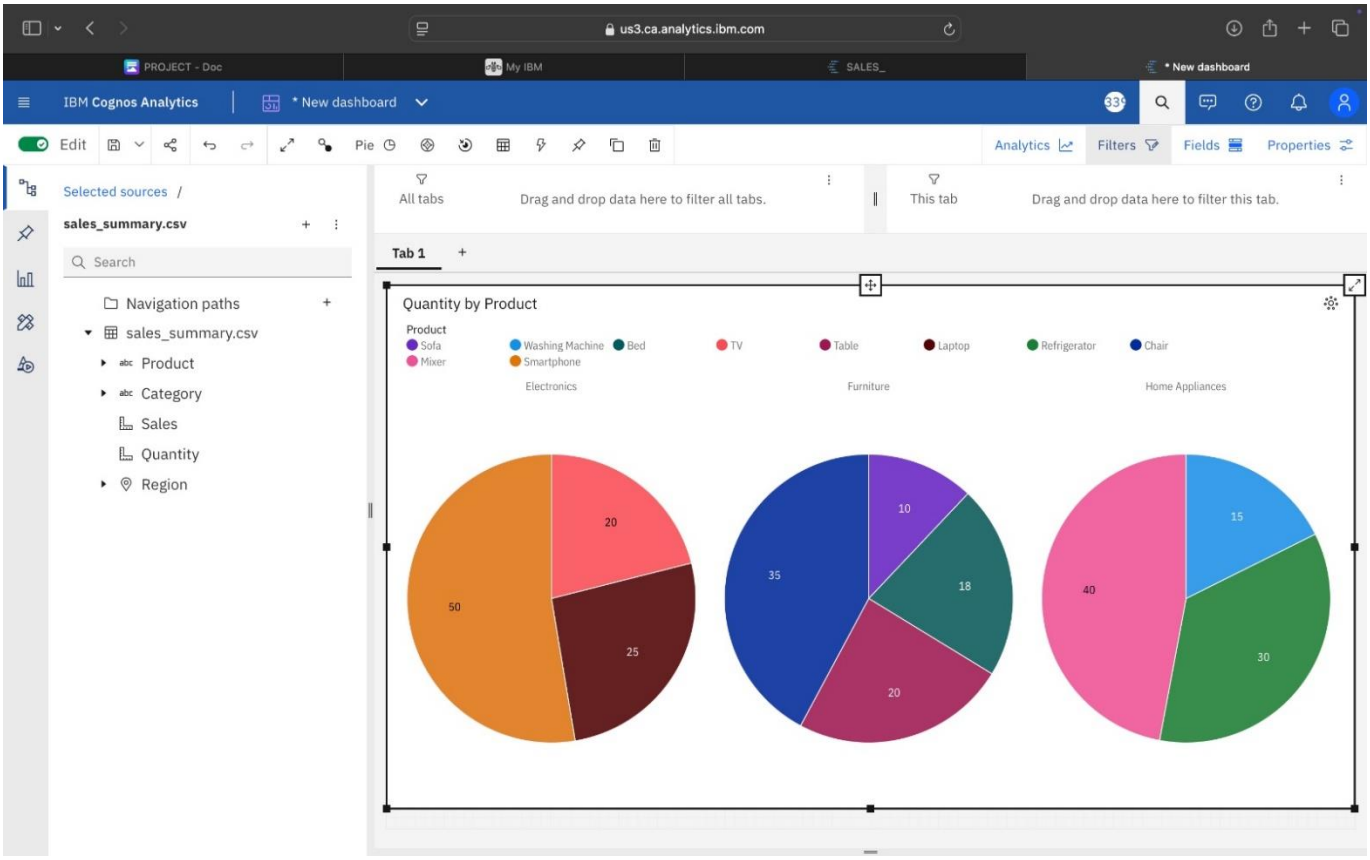
Step 1:
Screenshot 1:





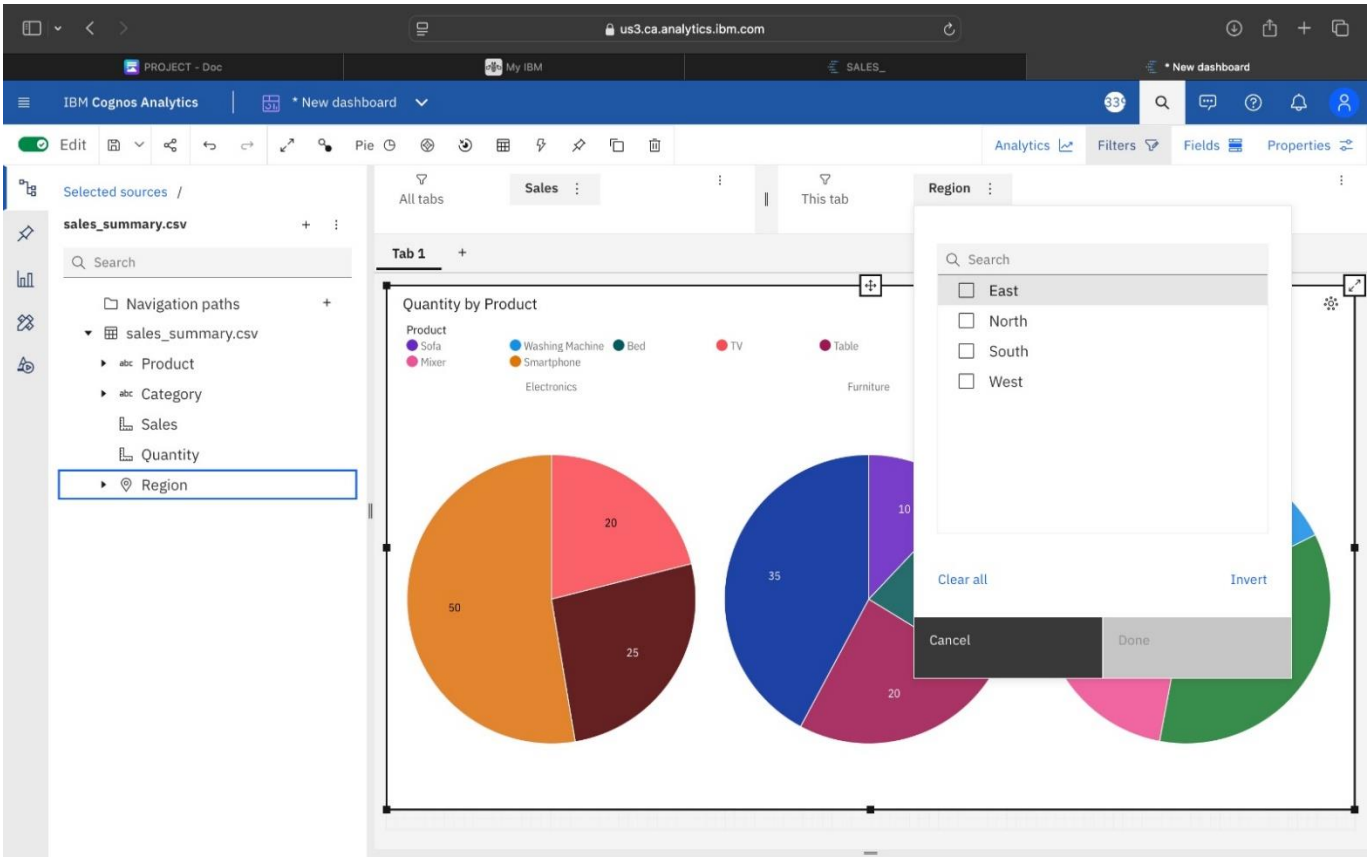
Description: The dataset was entered or imported into the visualization tool.

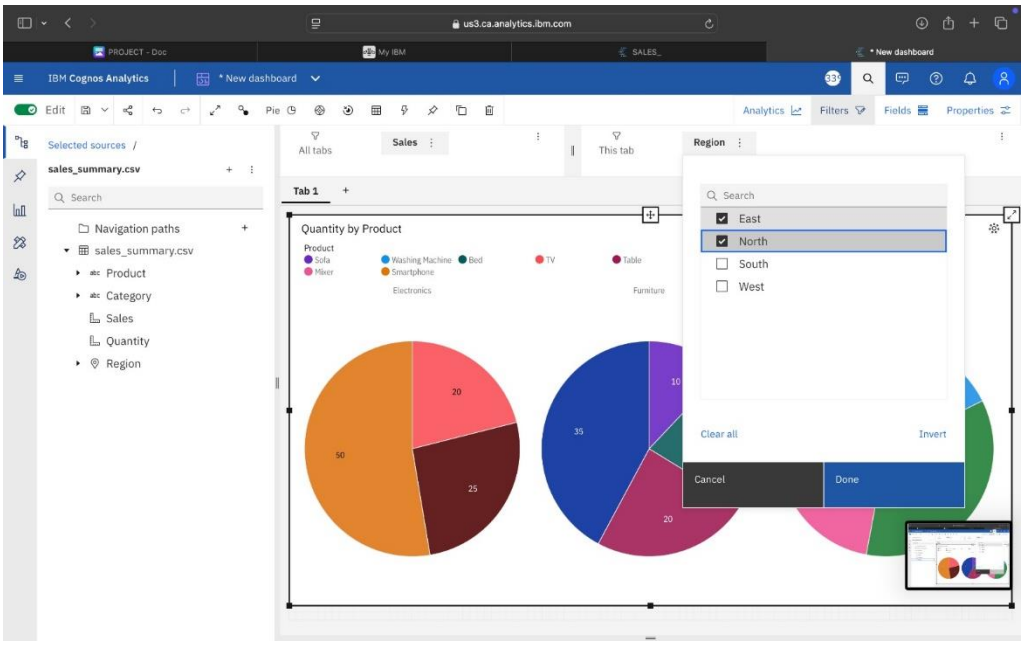
Step 2:
Screenshot 2:



Description: The pie chart option was selected from the available visualization options.

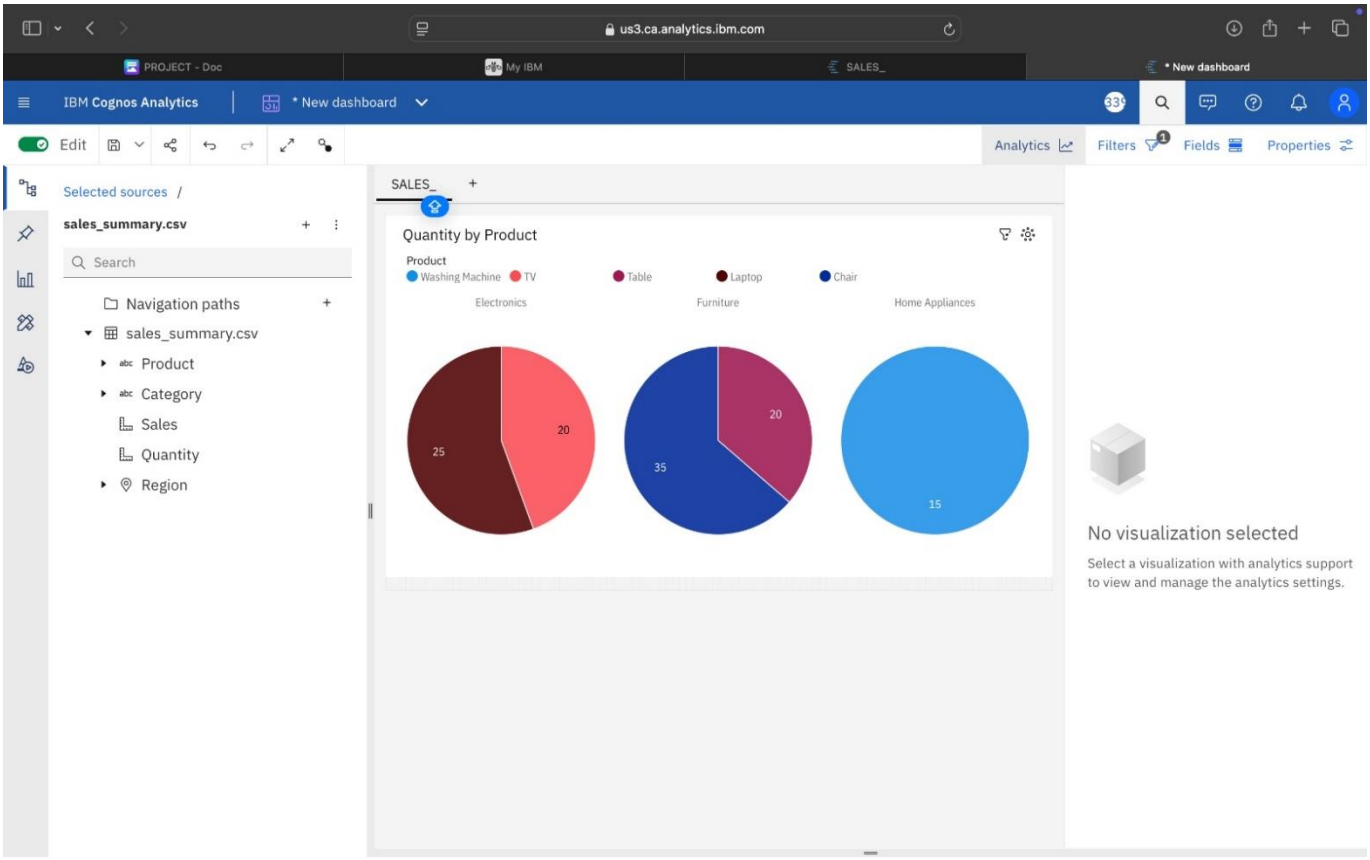
Step 3:
Screenshot 3:





Description: The pie chart shows category-wise percentage contributions to the total value.

Step 4:
Screenshot 4:



Description: Data labels and colors were customized for better readability.

Practical: 5

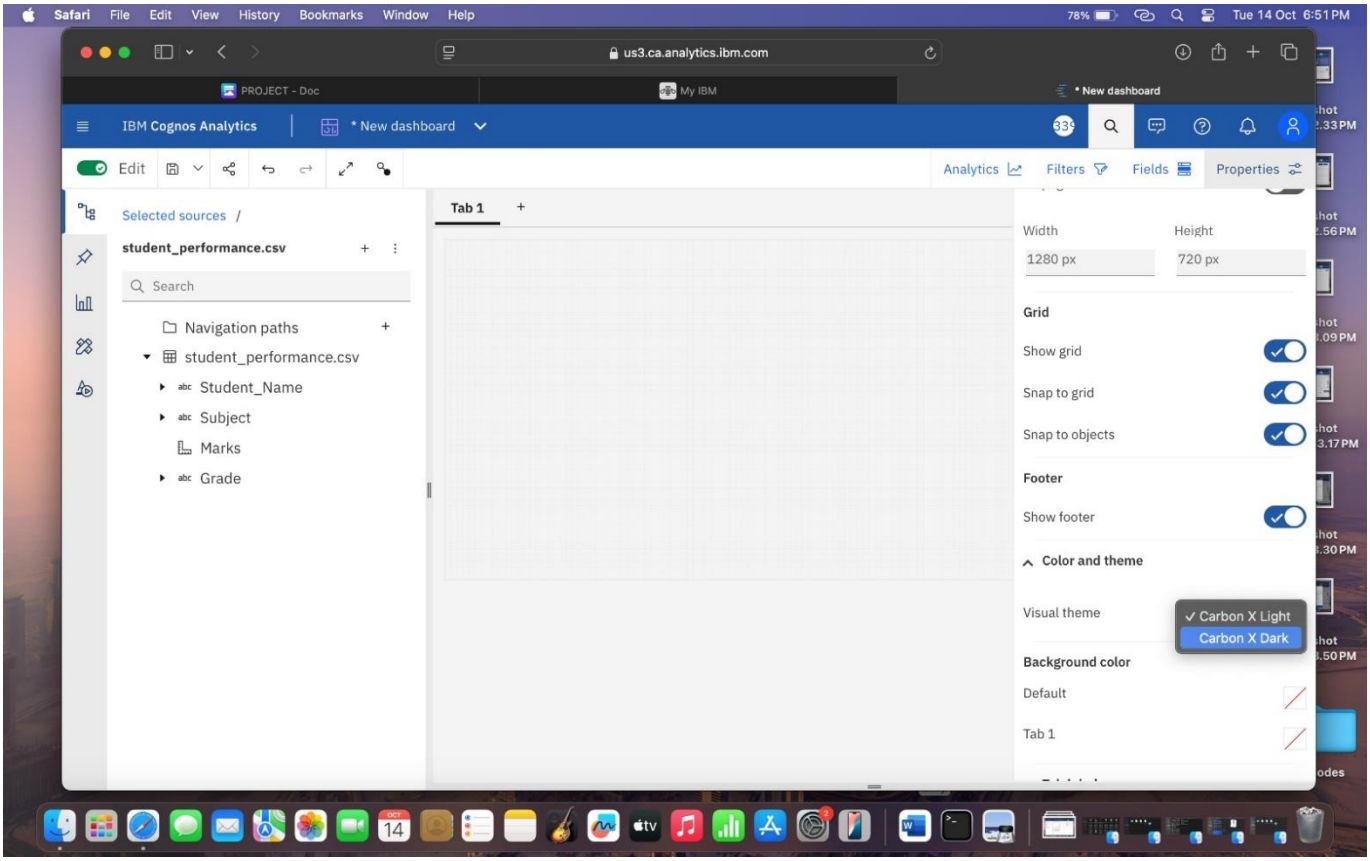
Definition: Data filtering is the process of displaying only the data that meets specific criteria. Columns are used to organize data attributes such as Name, Roll Number, Marks, and Grade.

Outcomes / Learning: Learned how to create structured student data using columns and apply filters to extract specific information.

Required Tool: MS Excel / Power BI / Google Sheets.

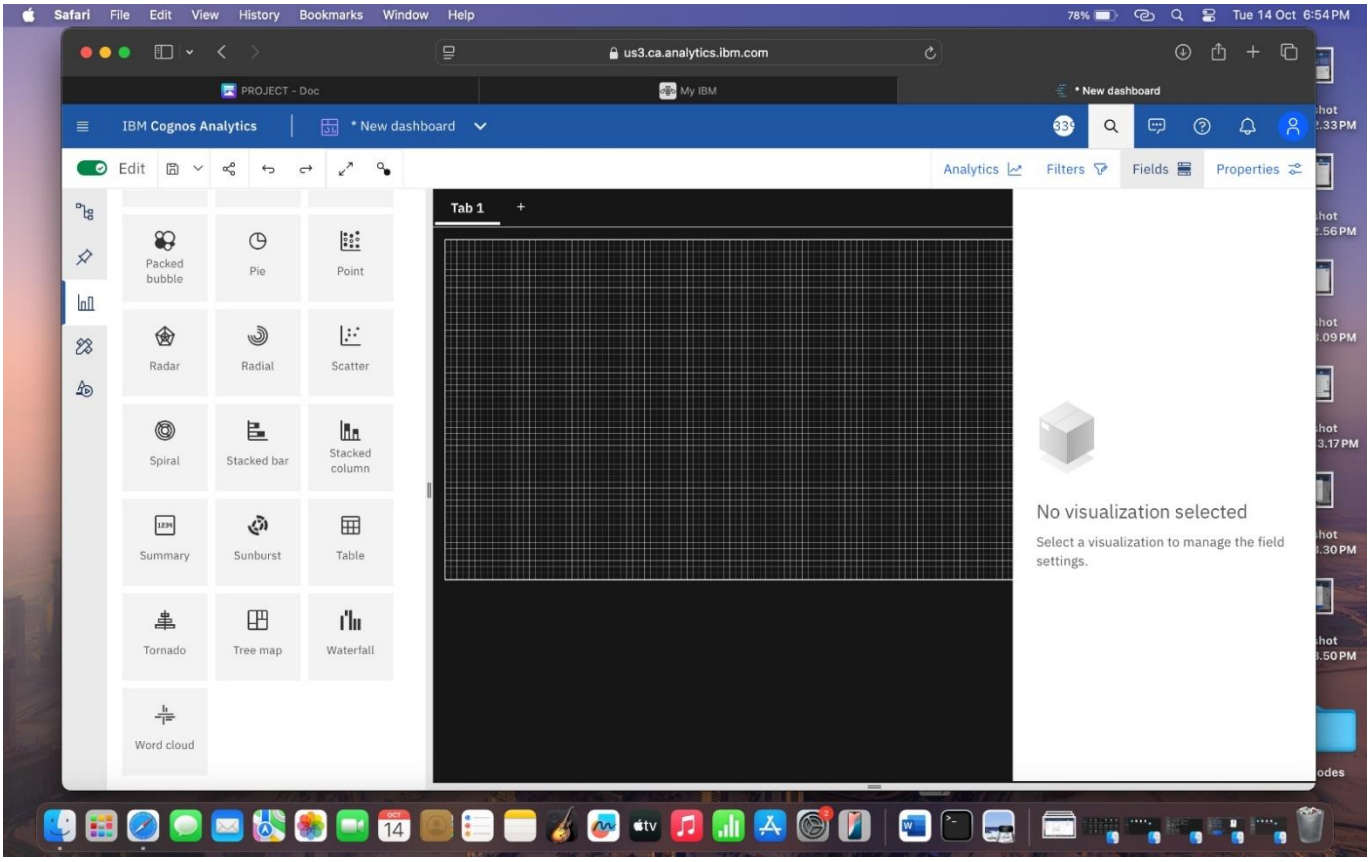
Working: We created a student database using columns for various attributes and applied filters to view specific data such as top scorers or particular subjects.

Step 1:
Screenshot 1:



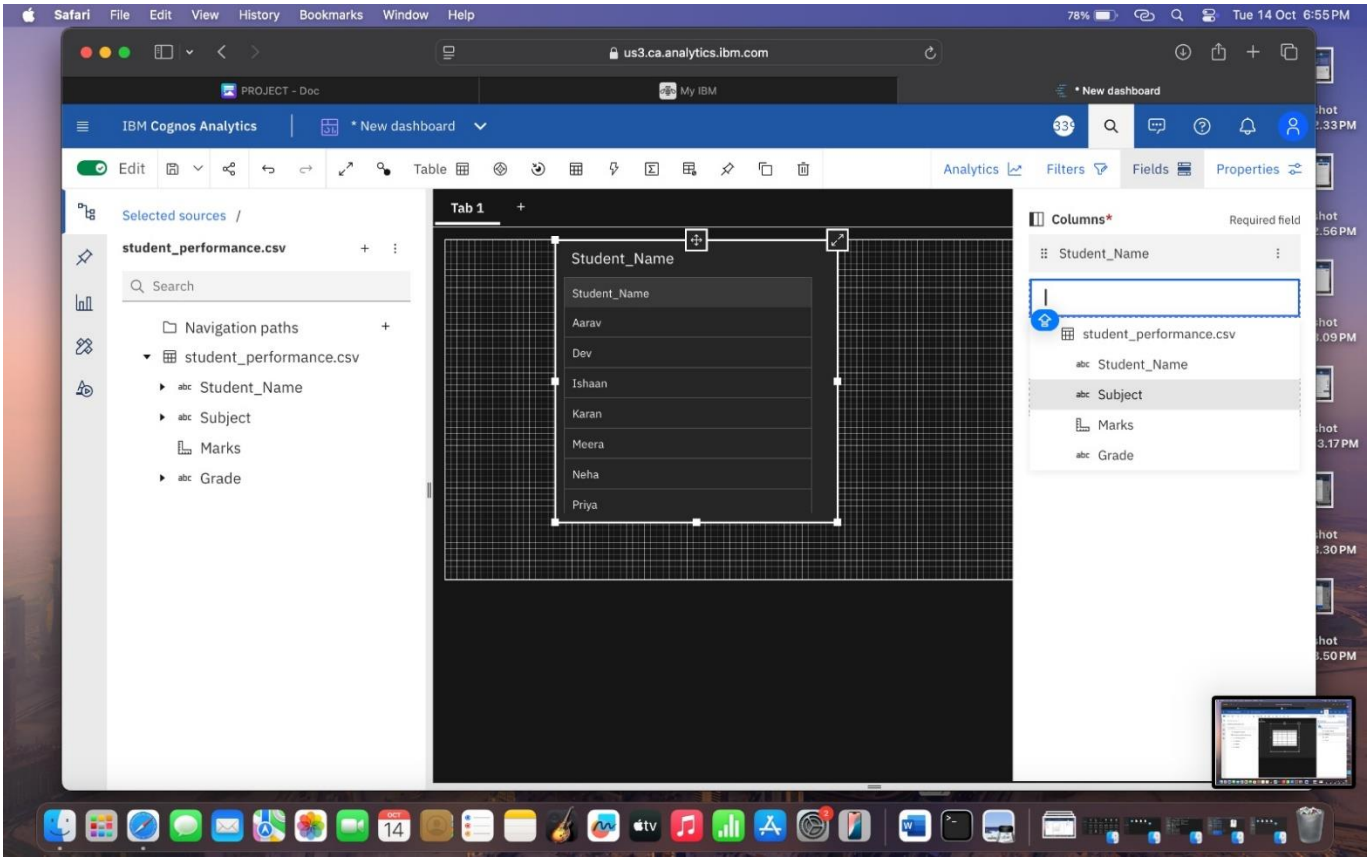
Description: The student data was entered using columns like Name, Roll No, and Marks.

Step 2:
Screenshot 2:



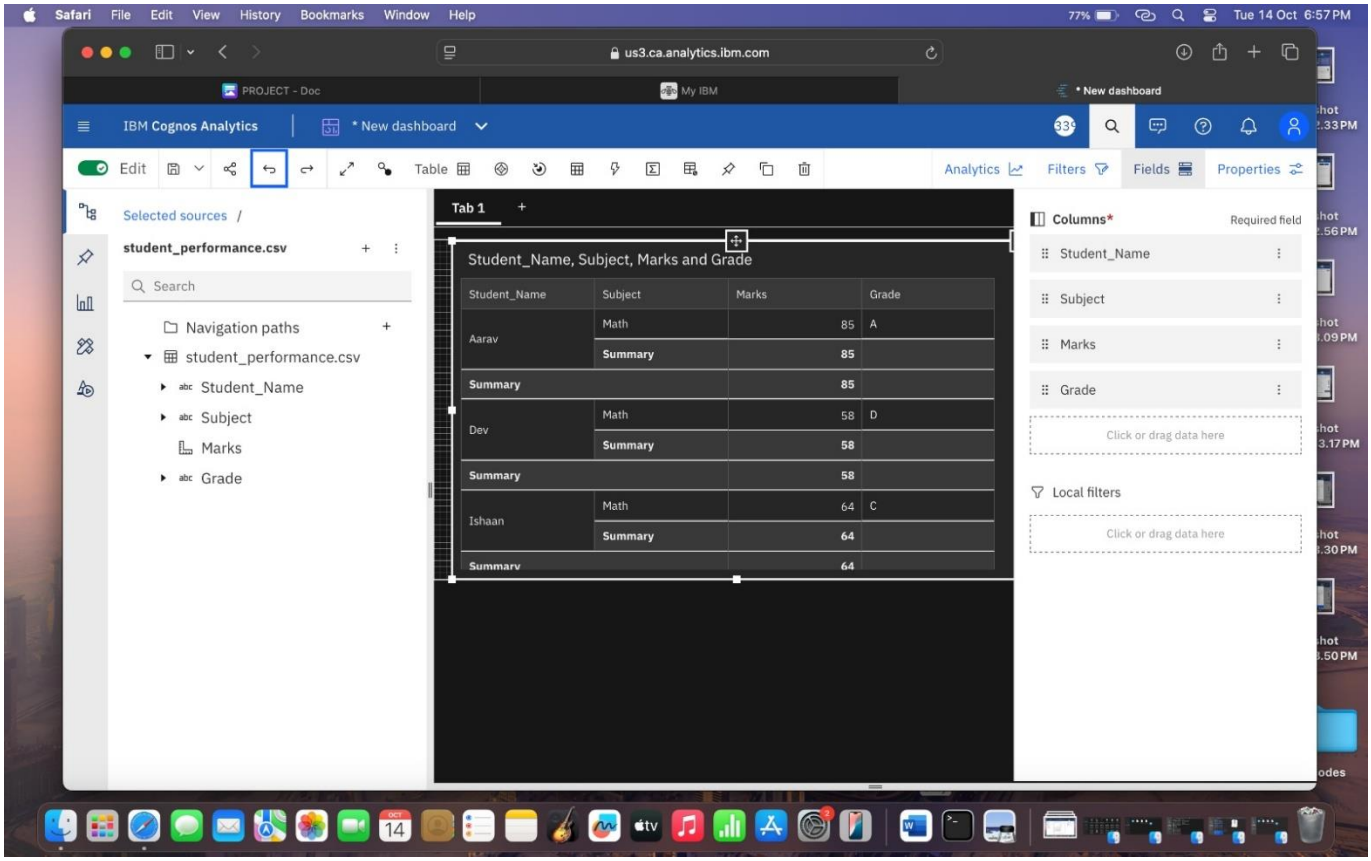
Description: Filters were added to each column to enable sorting and filtering.

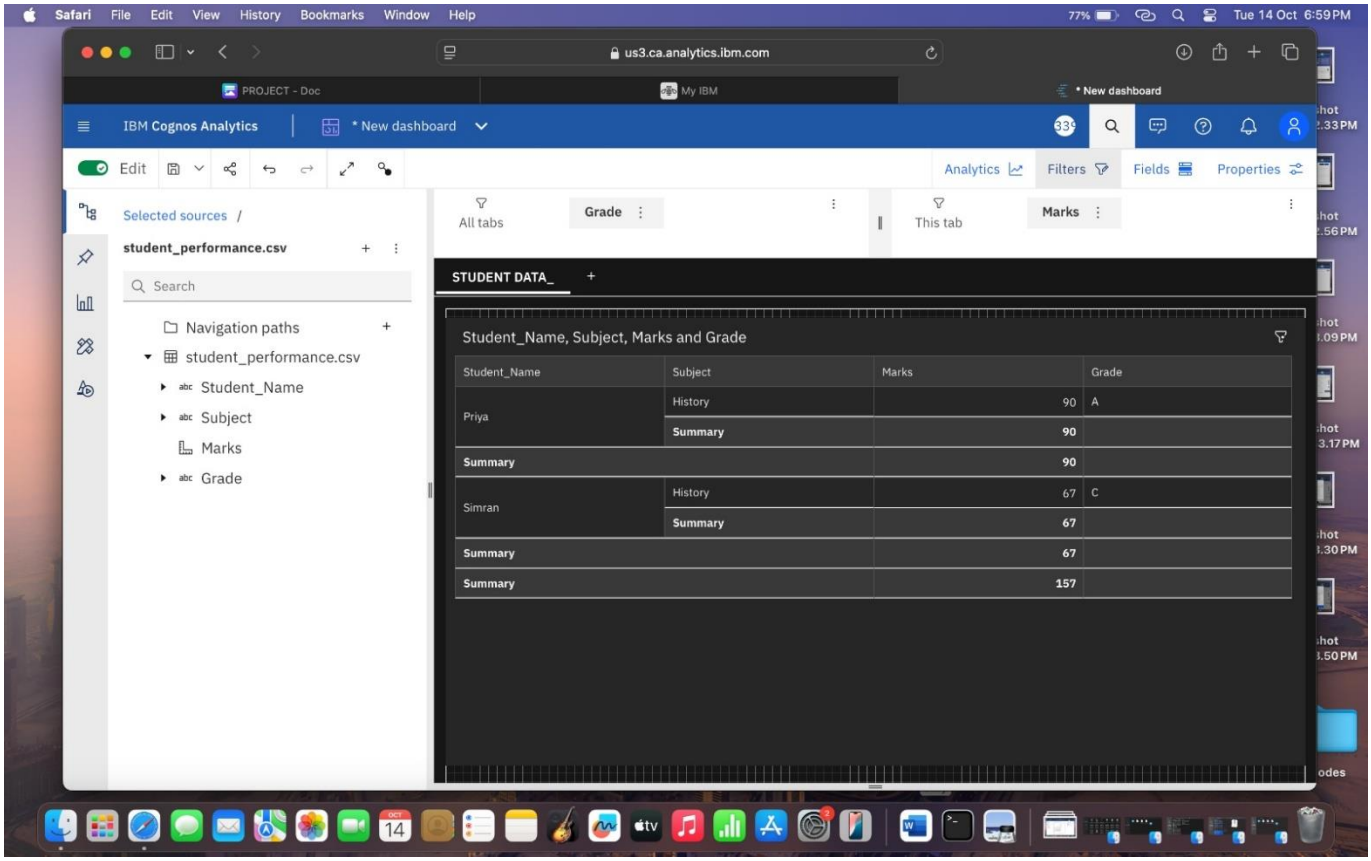
Step 3:
Screenshot 3:



Description: The data was filtered to show only students with marks above a certain threshold.

Step 4:
Screenshot 4:





Description: The final filtered data displays only the selected records as per the filter condition.

Practical: 6

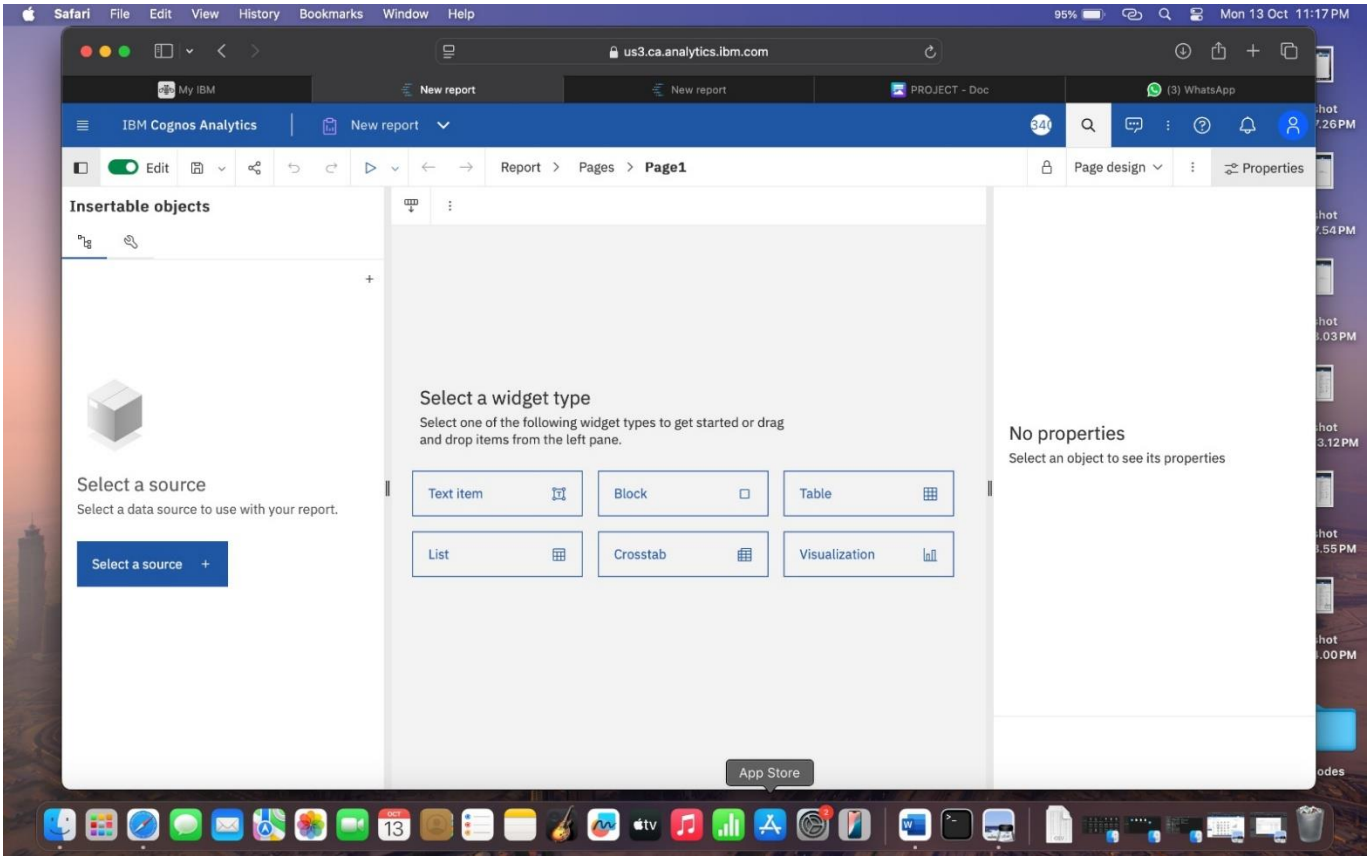
Definition: A box plot (also known as a box-and-whisker plot) is a graphical representation that shows the distribution of data based on minimum, first quartile, median, third quartile, and maximum values. It helps identify outliers and variation in data.

Outcomes / Learning: Learned how to visualize hospital data using a box plot to understand data distribution, trends, and outliers.

Required Tool: Power BI / MS Excel / Tableau / Python (Matplotlib or Seaborn).

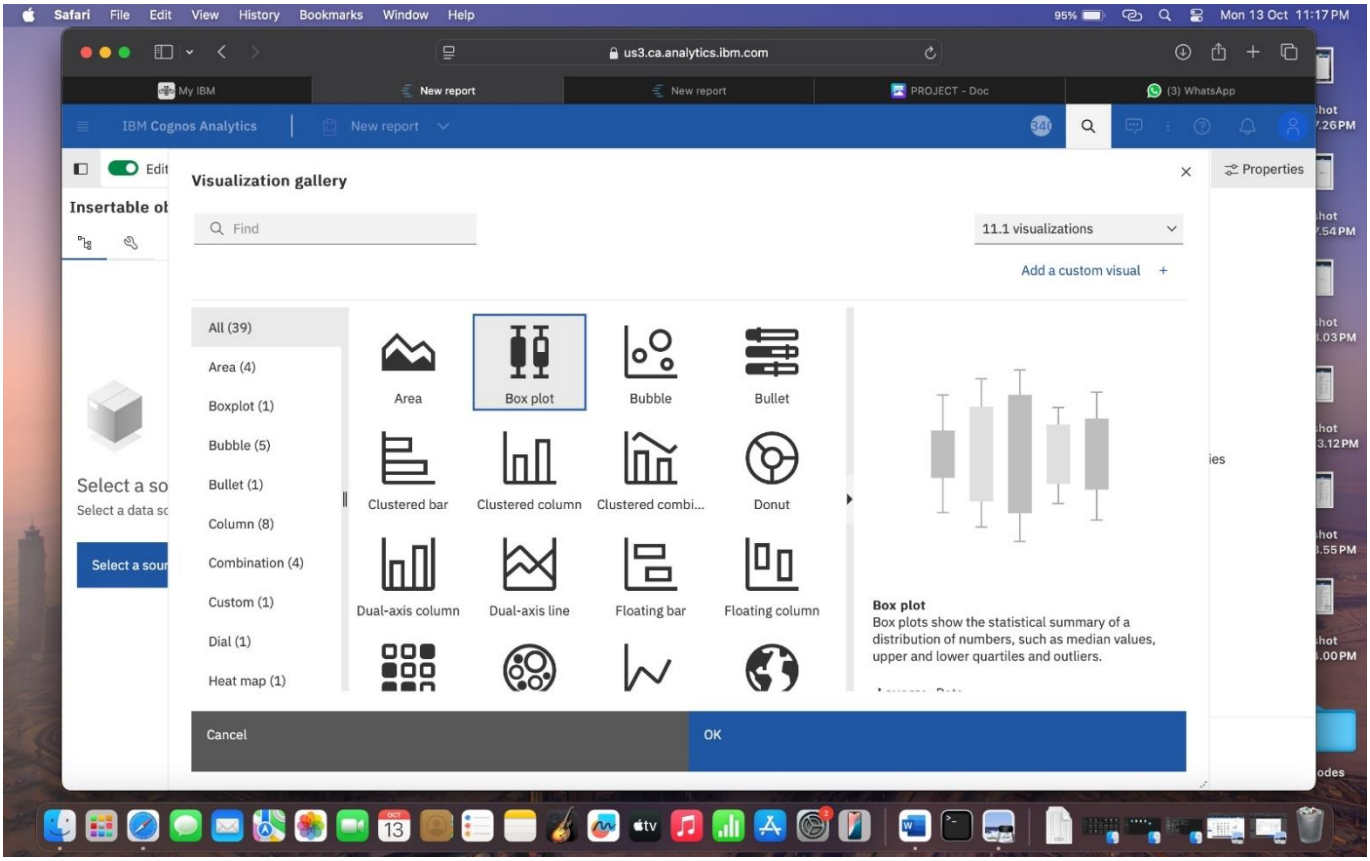
Working: We collected hospital data such as patient count, treatment cost, or recovery days, and used visualization tools to create a box plot that summarizes data spread and detects anomalies.

Step 1:
Screenshot 1:



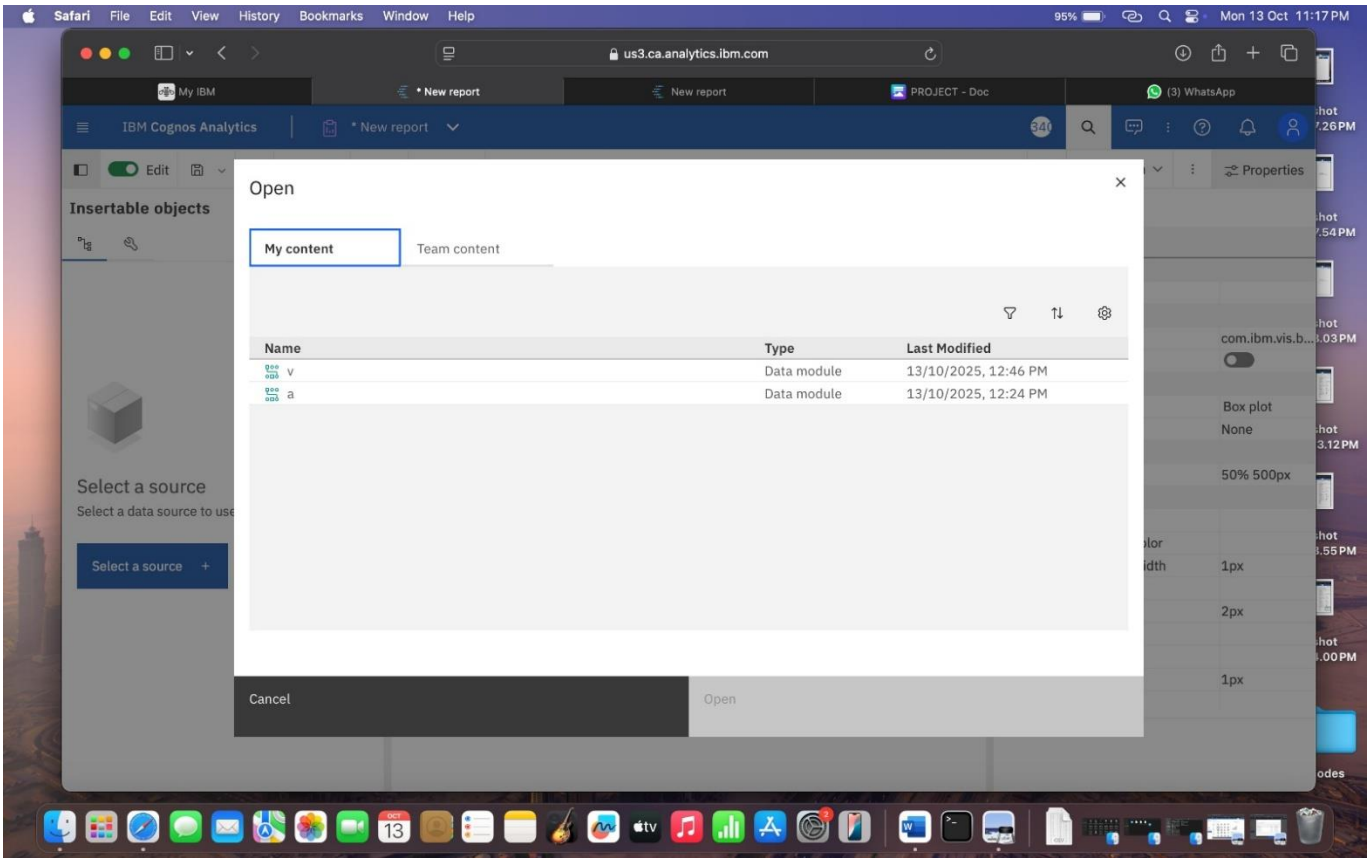
Description: The hospital dataset was created or imported for analysis.

Step 2:
Screenshot 2:



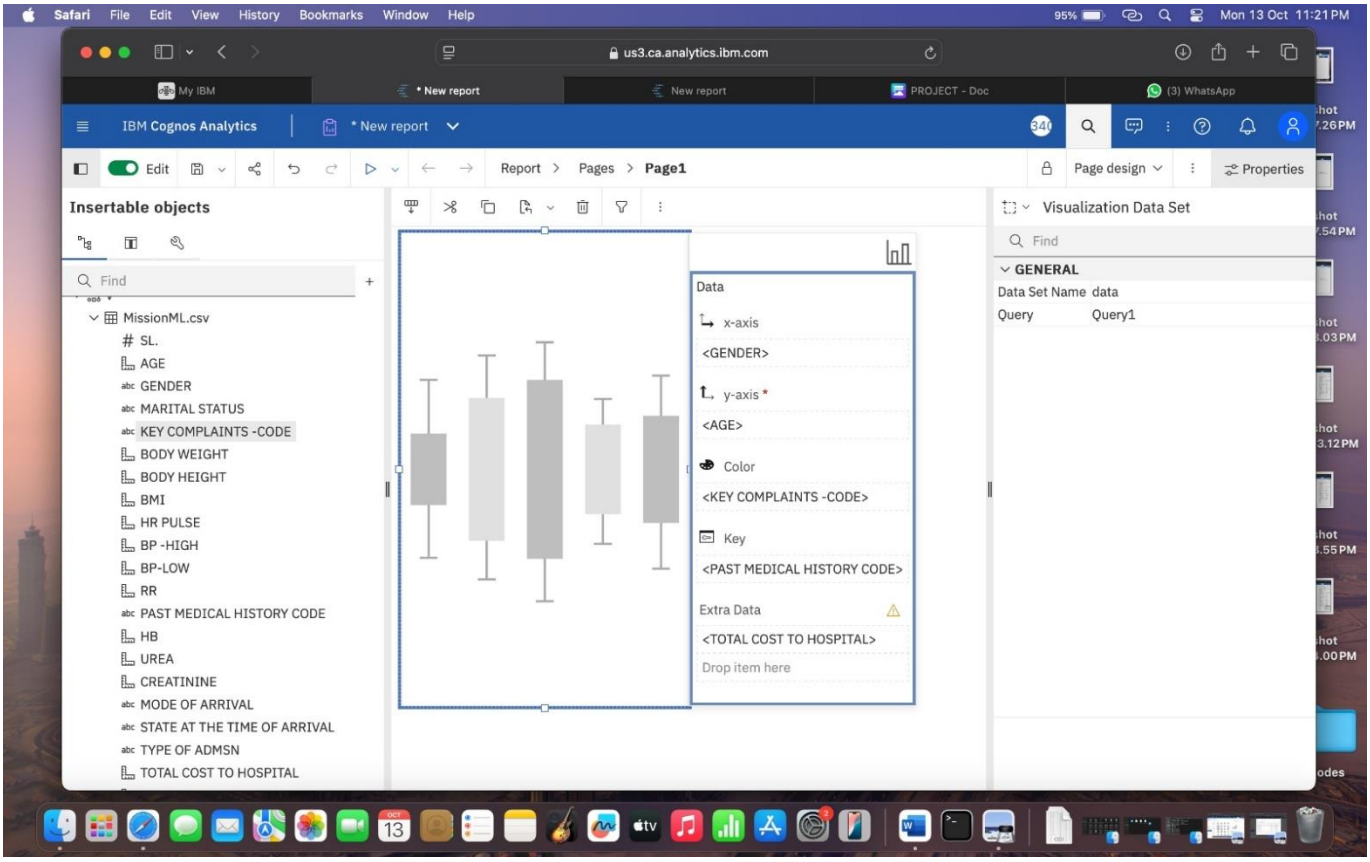
Description: The box plot visualization type was selected from the tool's chart options.

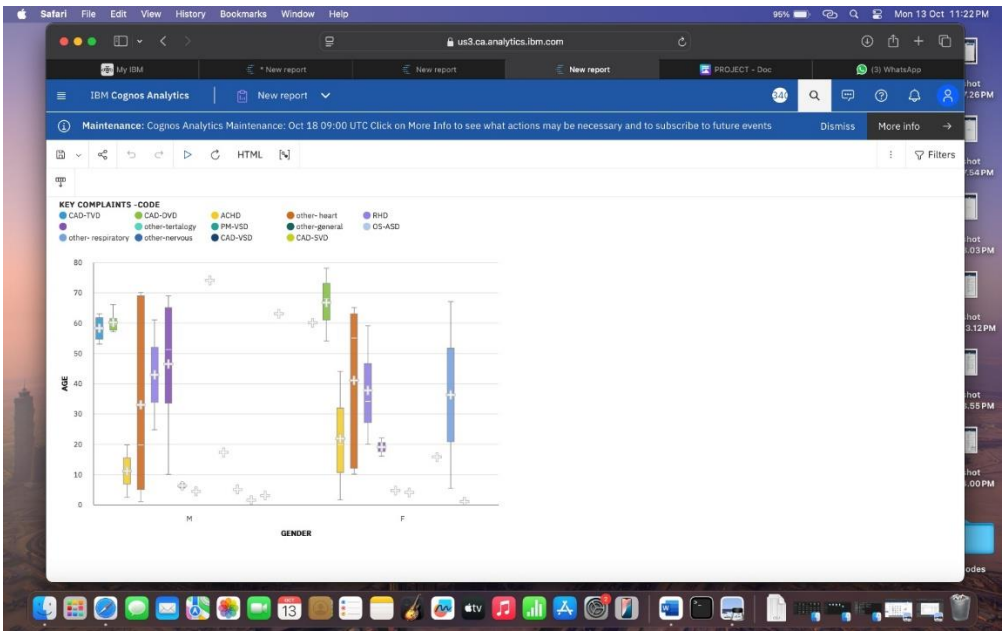
Step 3:
Screenshot 3:



Description: The box plot shows the distribution of hospital data, including median and quartile values.

Step 4:
Screenshot 4:





Description: The final report presents hospital data insights through the box plot visualization.

Practical: 7

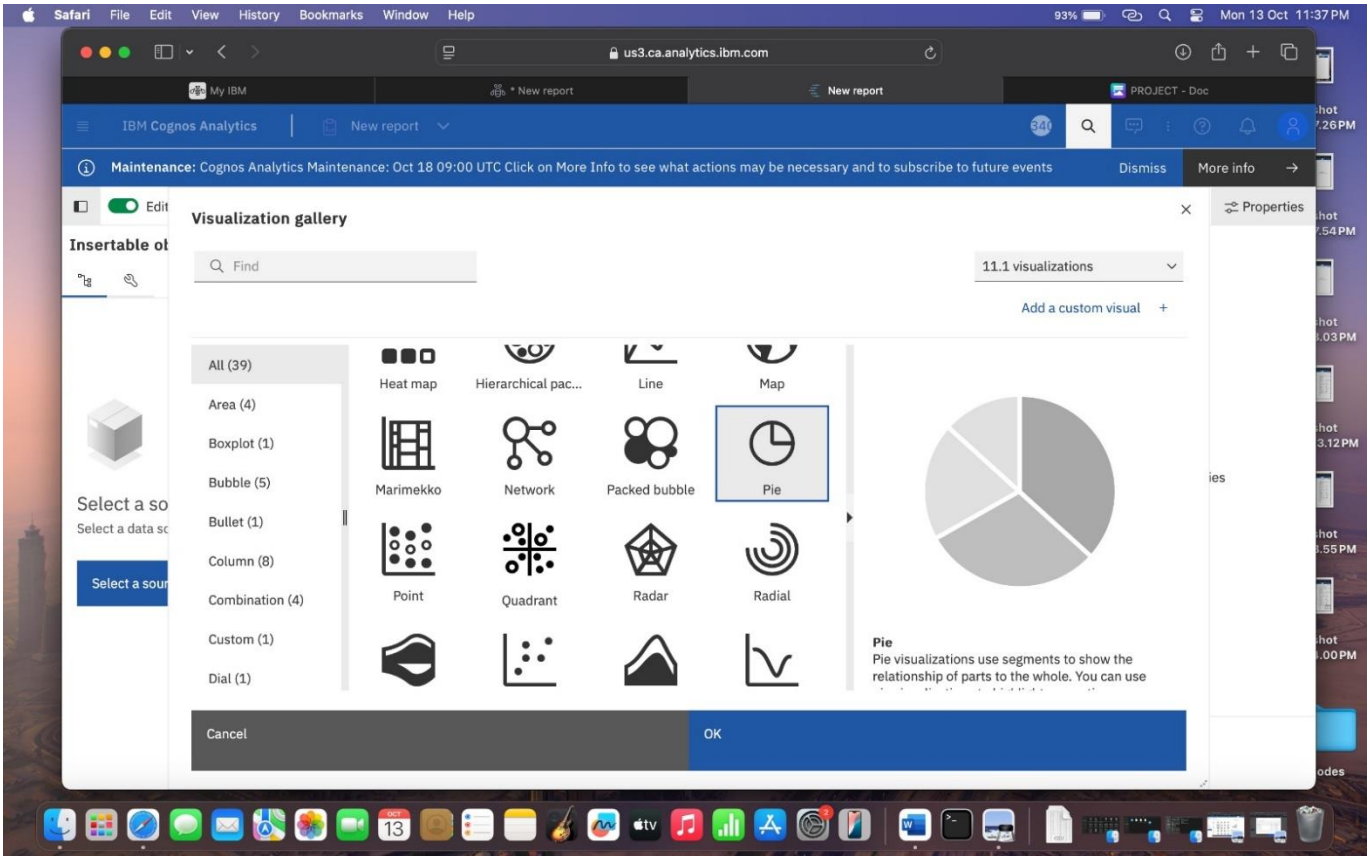
Definition: A pie chart is a circular statistical graphic divided into slices to illustrate numerical proportions. It helps in comparing categories based on their percentage contribution to a total.

Outcomes / Learning: Learned how to create a report using a pie chart to represent the literacy rate and compare literate and illiterate populations visually.

Required Tool: Power BI / MS Excel / Tableau.

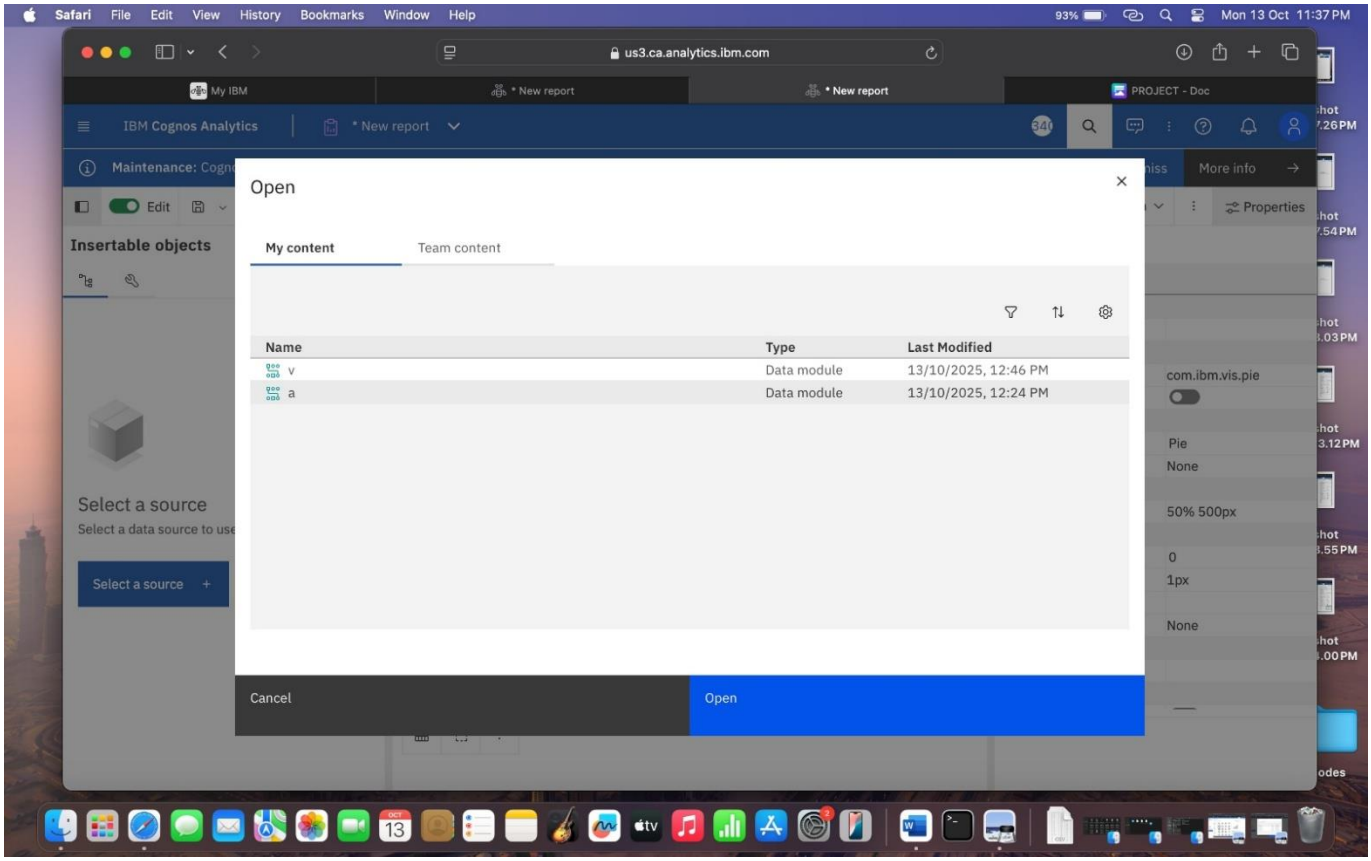
Working: We collected literacy data (literate vs. illiterate population) and represented it using a pie chart to show the percentage distribution of literacy in the population.

Step 1:
Screenshot 1:



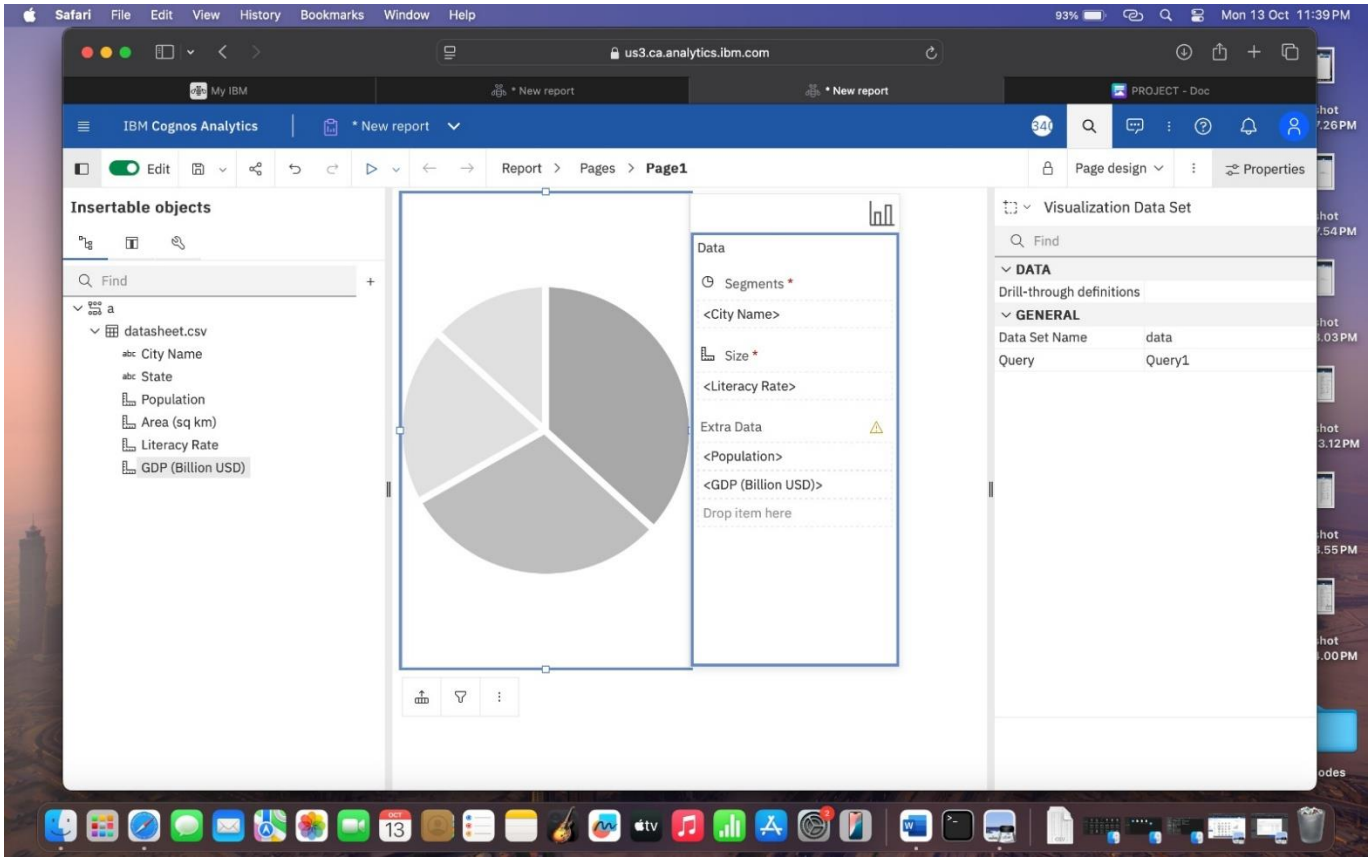
Description: The literacy dataset was entered, including literate and illiterate categories.

Step 2:
Screenshot 2:



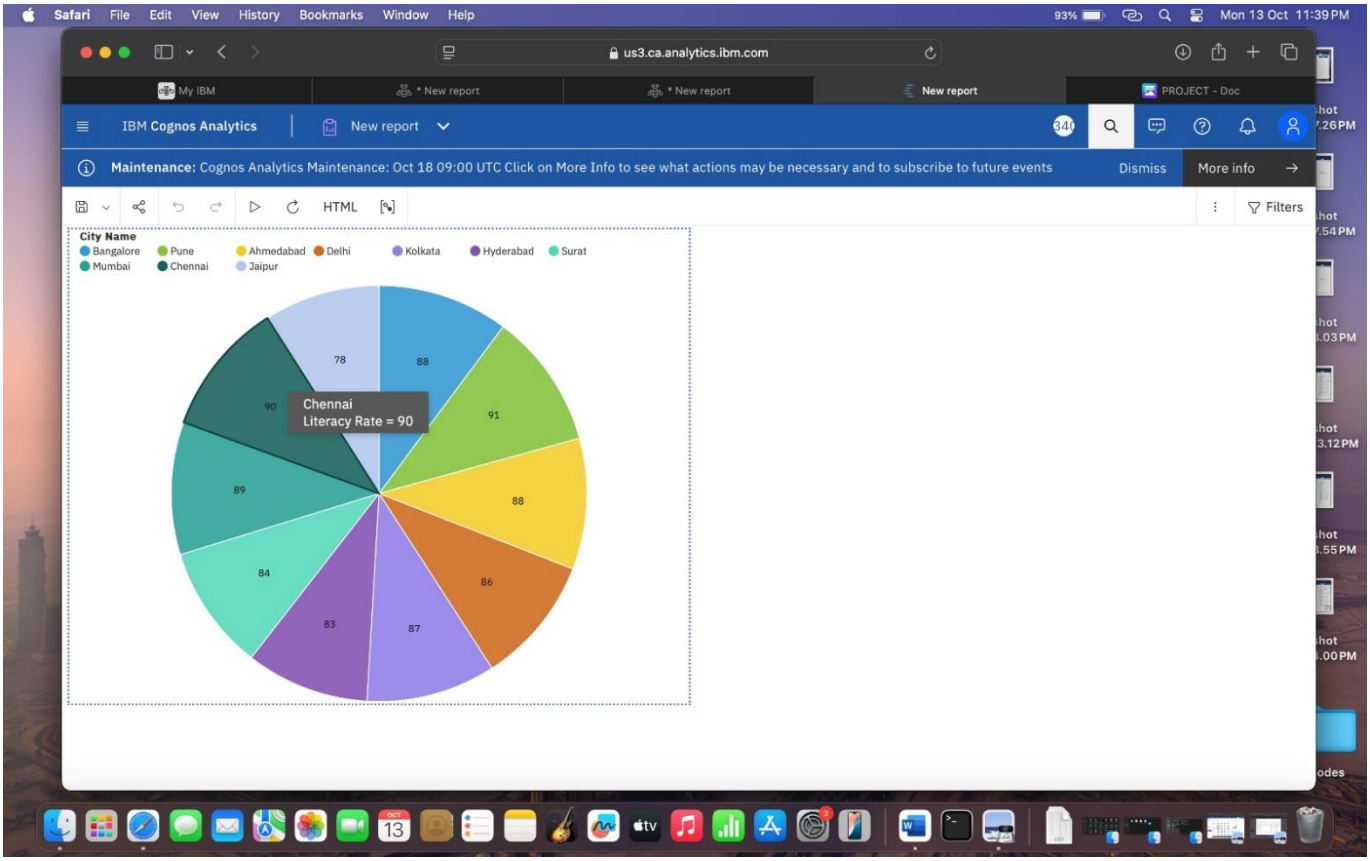
Description: The pie chart option was selected to visualize literacy rate percentages.

Step 3:
Screenshot 3:



Description: The pie chart displays the proportion of literate and illiterate populations.

Step 4:
Screenshot 4:



Description: The final report presents the literacy rate clearly through a labeled and colored pie chart.

Practical: 8

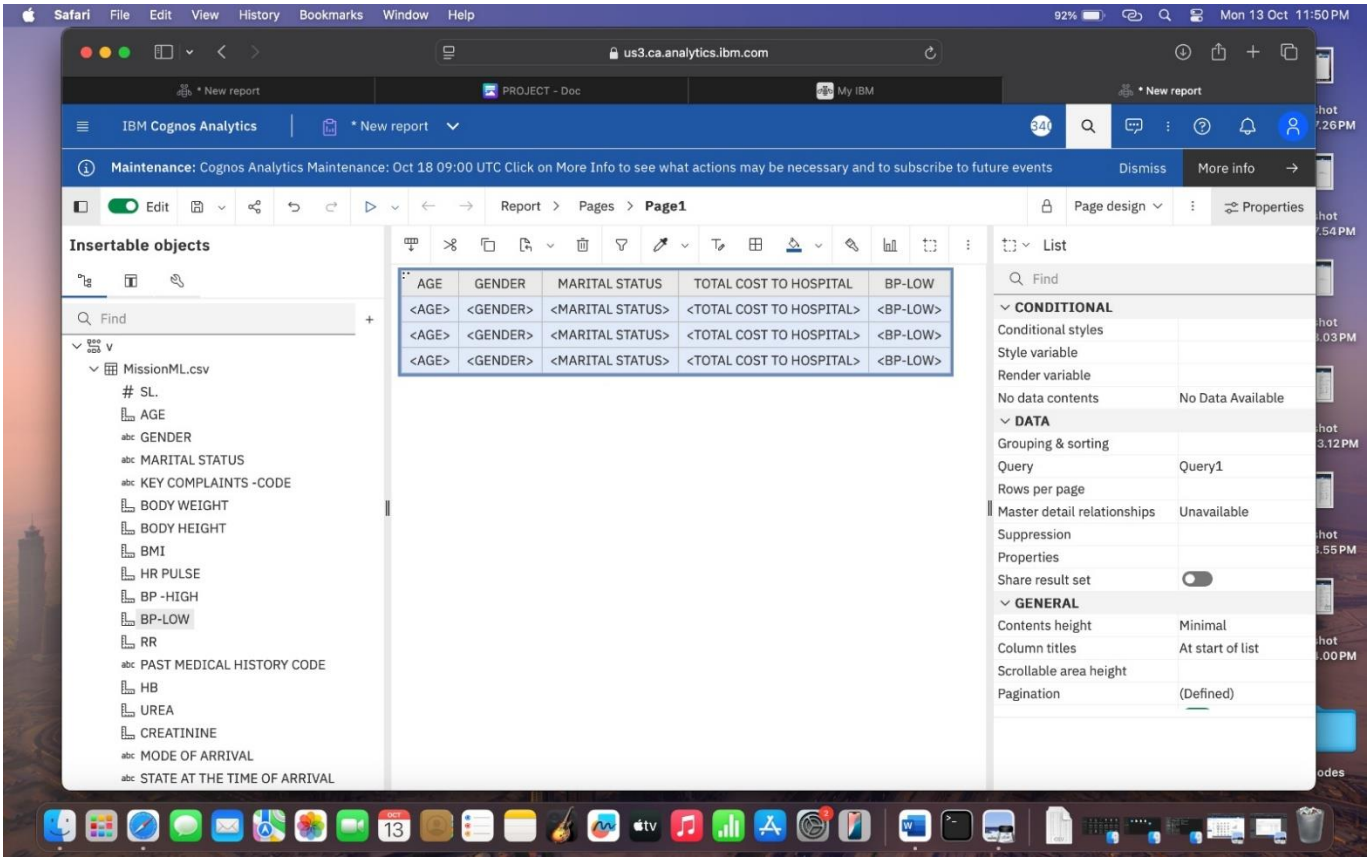
Definition: A list report is a simple and structured way to present information in tabular or sequential form. It displays data in rows and columns, making it easy to read, compare, and analyze.

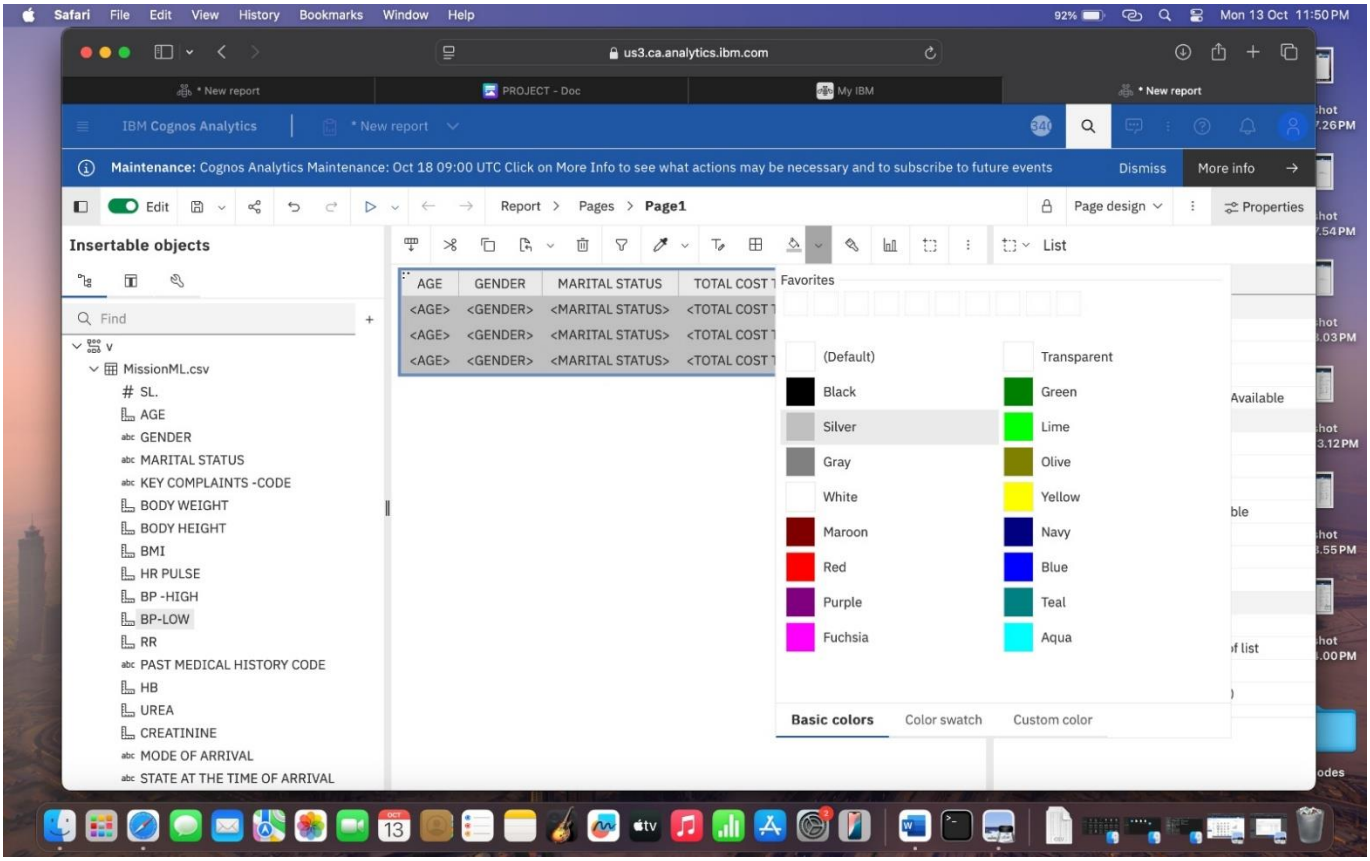
Outcomes / Learning: Learned how to create a report in list format to organize and present data systematically.

Required Tool: MS Excel / Power BI / Google Sheets / Tableau.

Working: We prepared a dataset and displayed it as a list report showing important fields such as Name, ID, Category, and Value to summarize the information clearly.

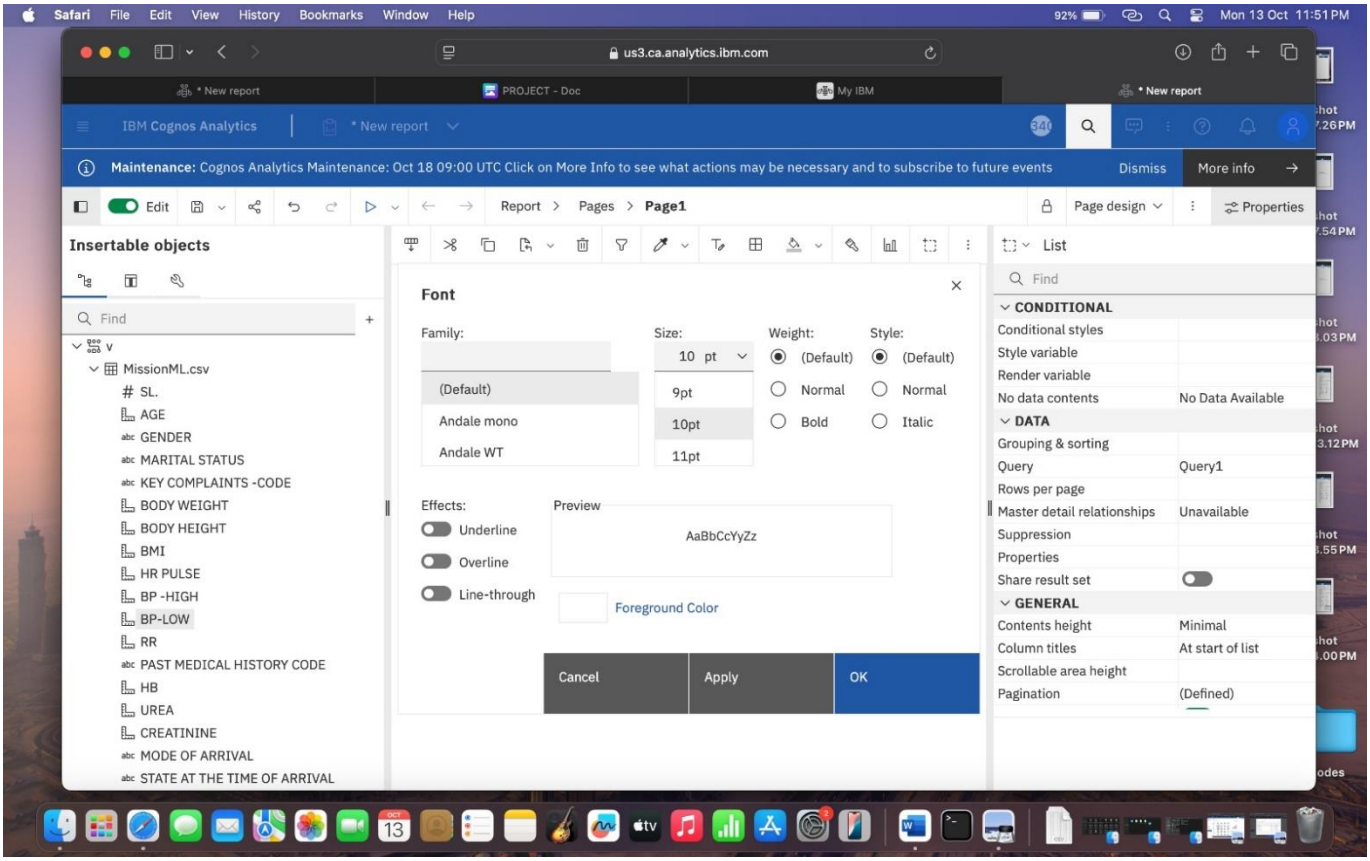
Step 1:
Screenshot 1:





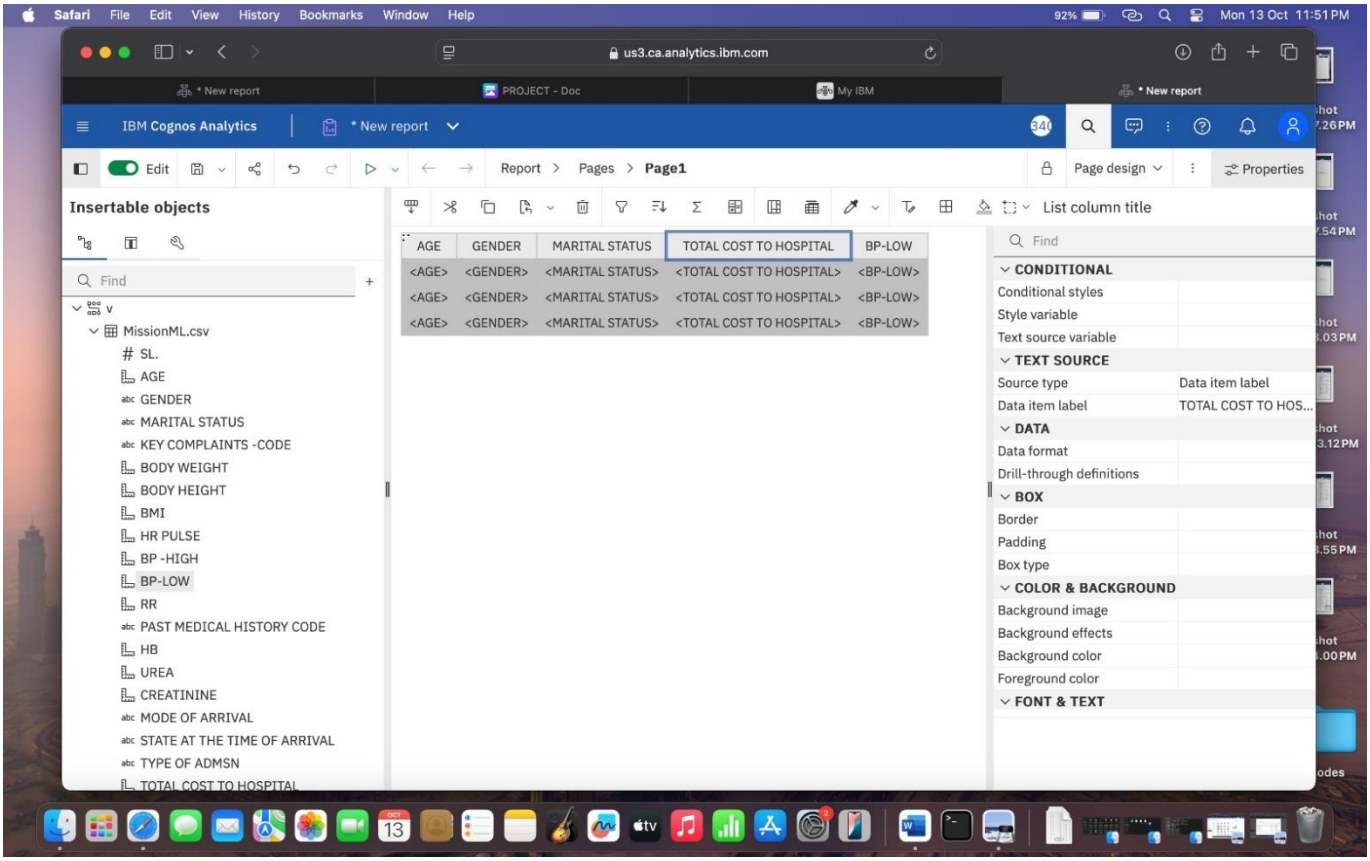
Description: The dataset was created and organized into columns for report generation.

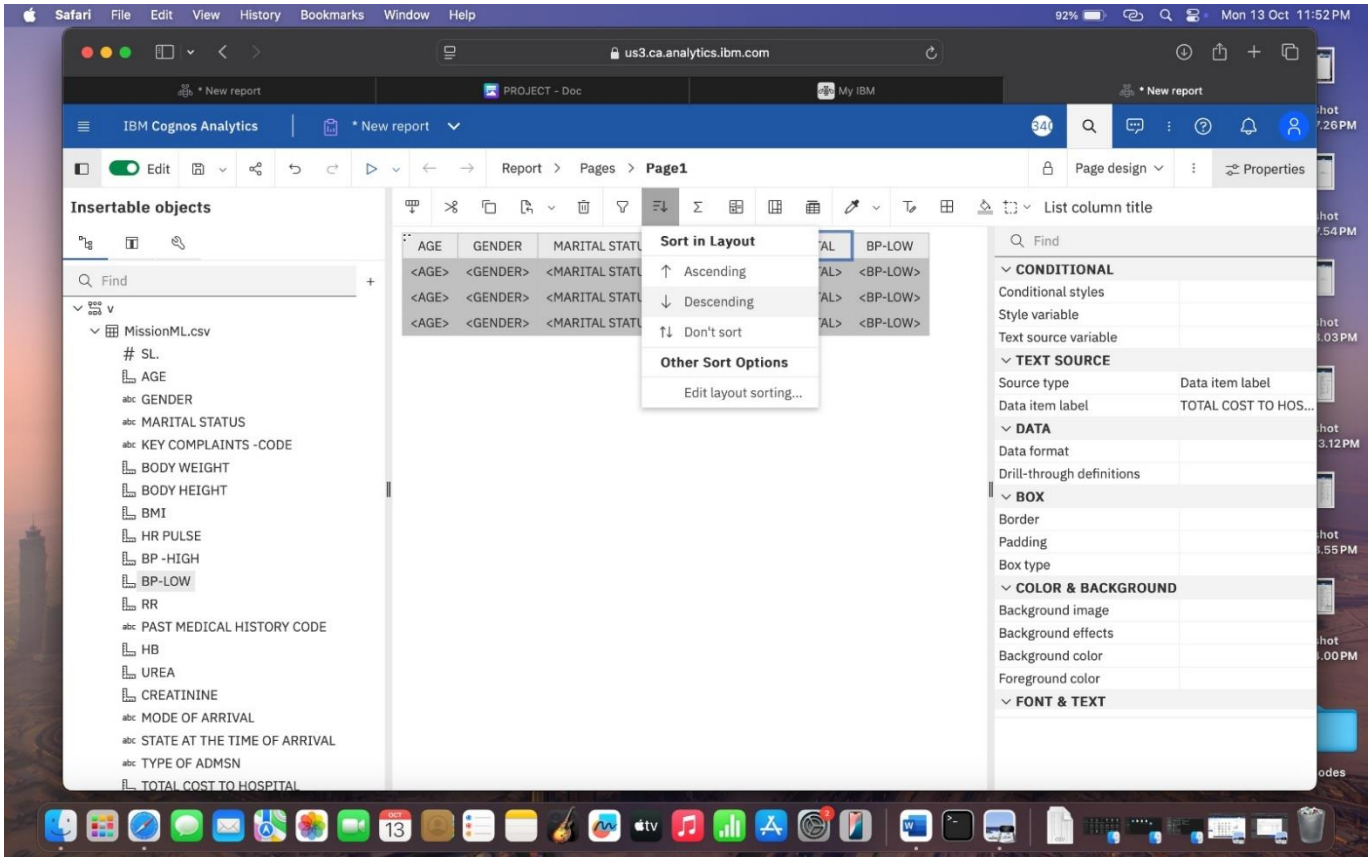
Step 2:
Screenshot 2:



Description: The data was displayed as a structured list for easy comparison and reference.

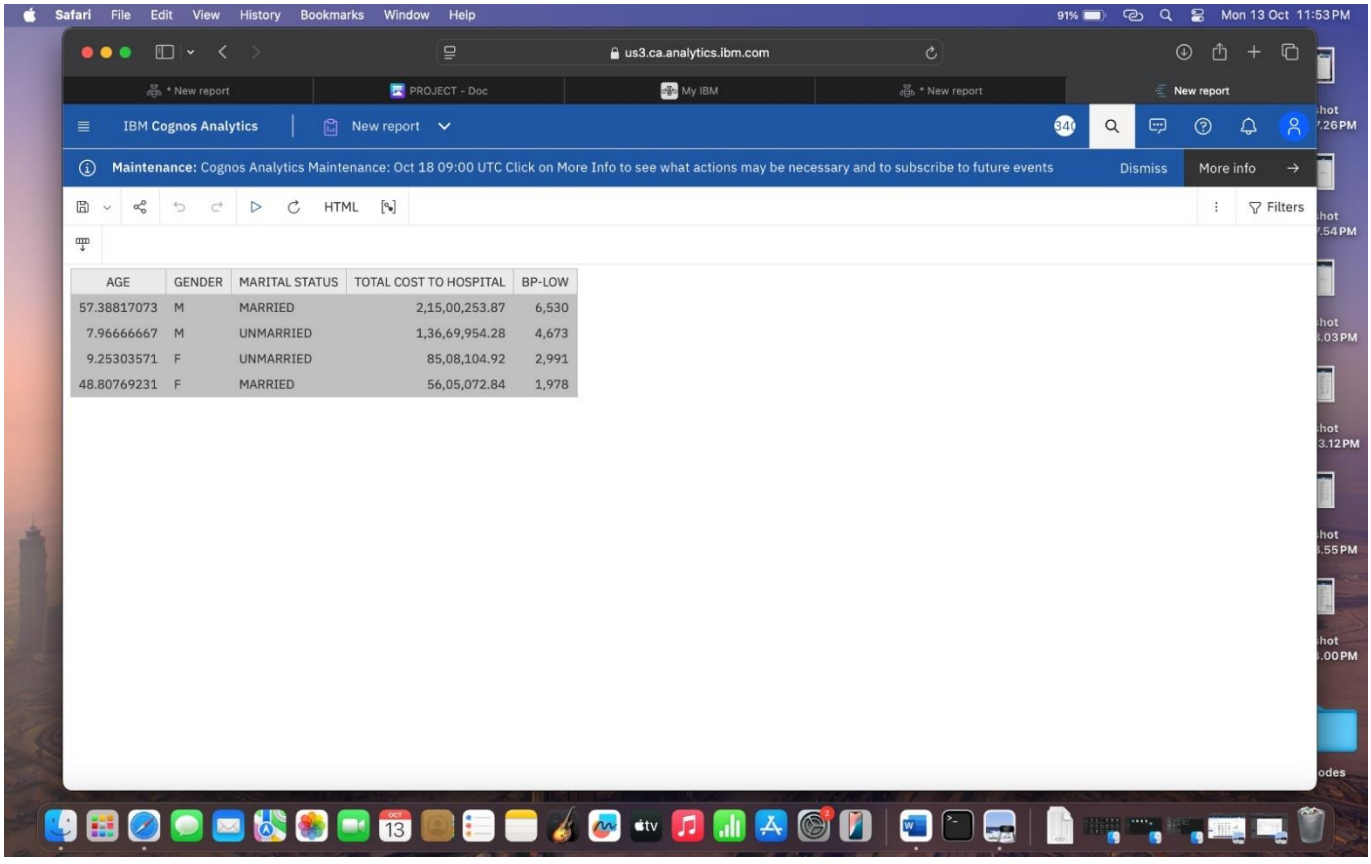
Step 3:
Screenshot 3:





Description: The list report was formatted to improve readability and presentation.

Step 4:
Screenshot 4:



Description: The final list report summarizes the dataset in an organized tabular format.

Practical: 9

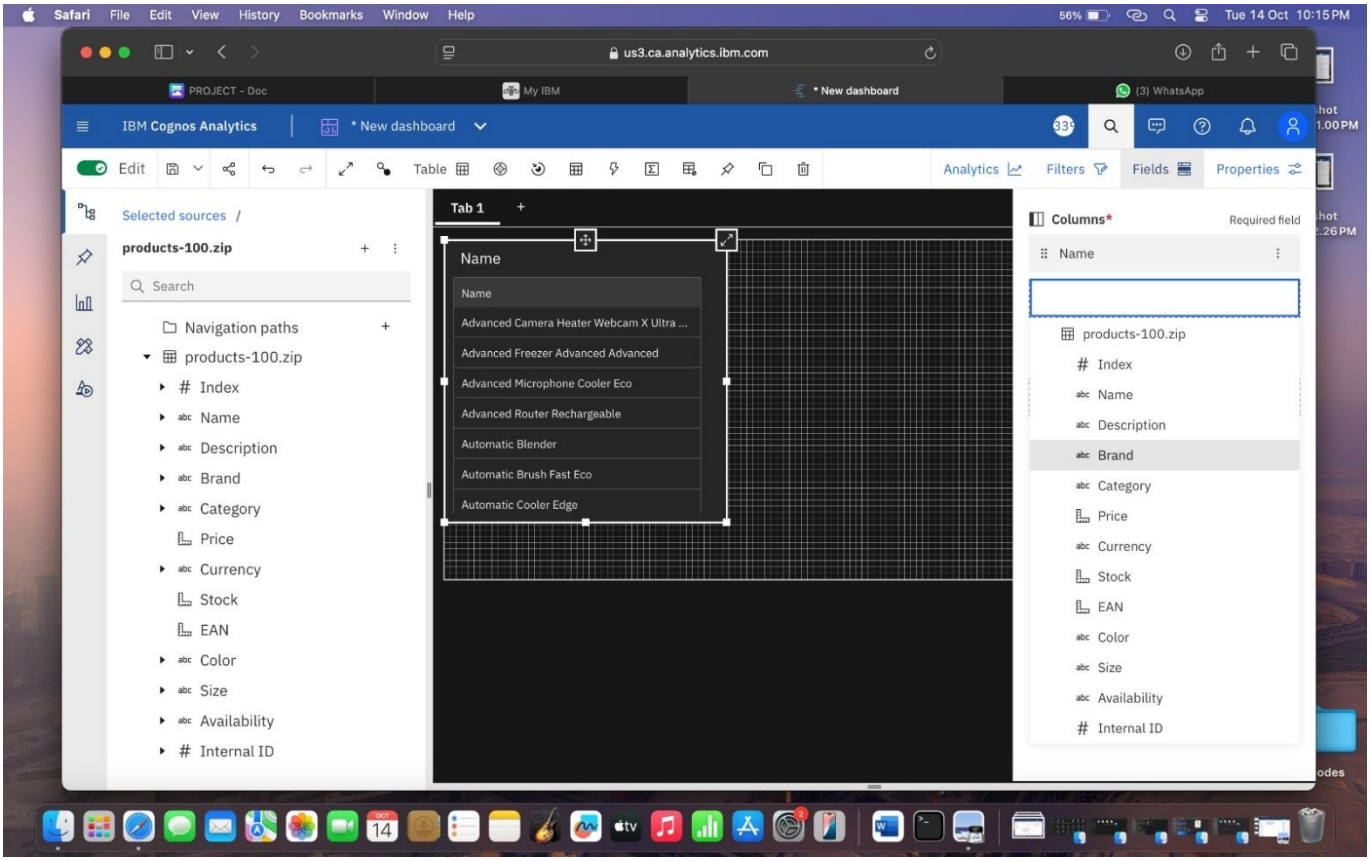
Definition: A table is a structured arrangement of data in rows and columns that helps in organizing and displaying information clearly for easy understanding and analysis.

Outcomes / Learning: Learned how to create and format a table to organize and present data systematically.

Required Tool: MS Excel / Power BI / Google Sheets / MS Word.

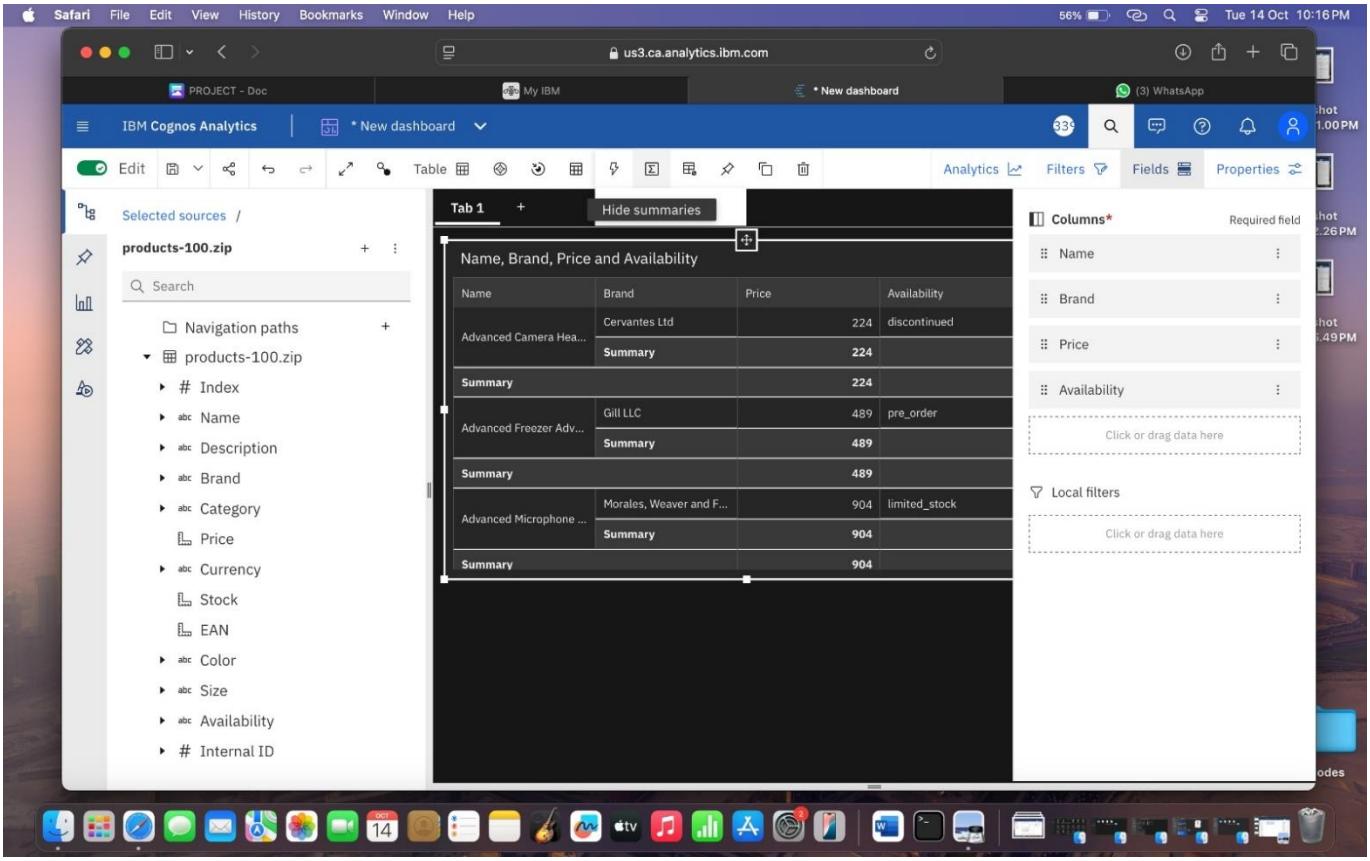
Working: We created a table by defining columns and rows for different data fields, then formatted it to enhance clarity and readability.

Step 1:
Screenshot 1:



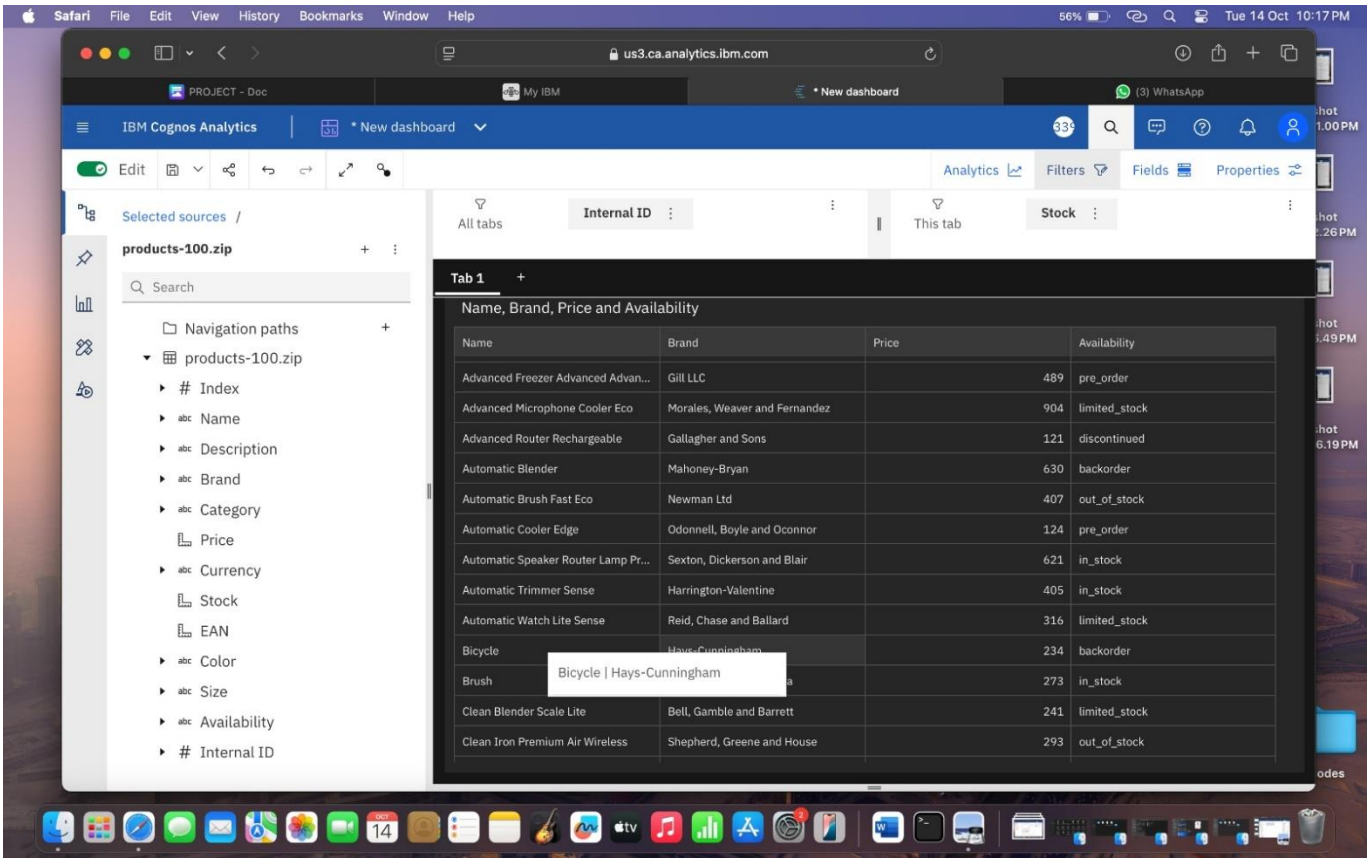
Description: A new worksheet/document was opened to create a data table.

Step 2:
Screenshot 2:



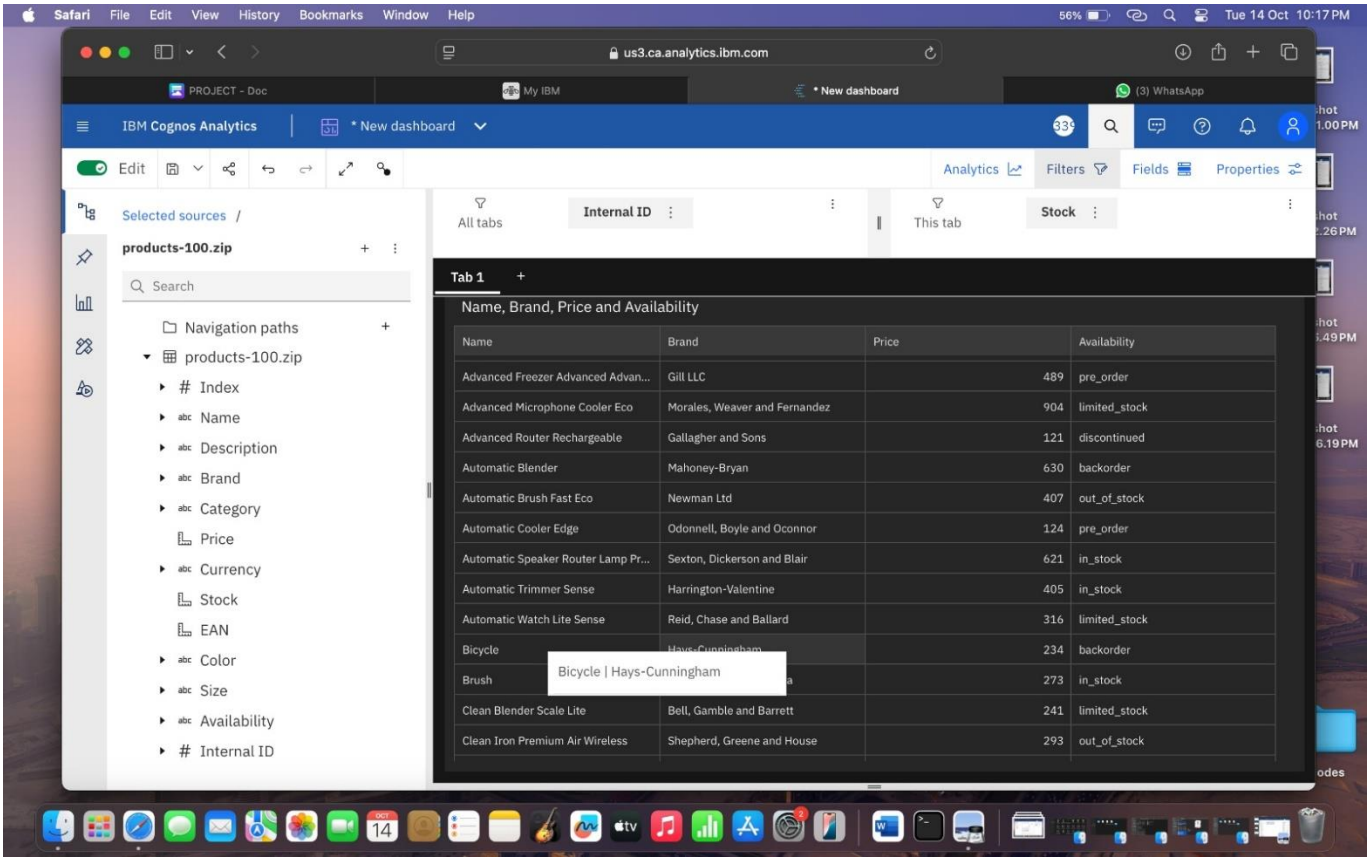
Description: Column headers such as Name, ID, and Marks were added to define the structure of the table.

Step 3:
Screenshot 3:



Description: Data values were entered under each column to complete the table.

Step 4:
Screenshot 4:



Description: The table was formatted with borders, alignment, and headings for a professional look.

Practical: 10

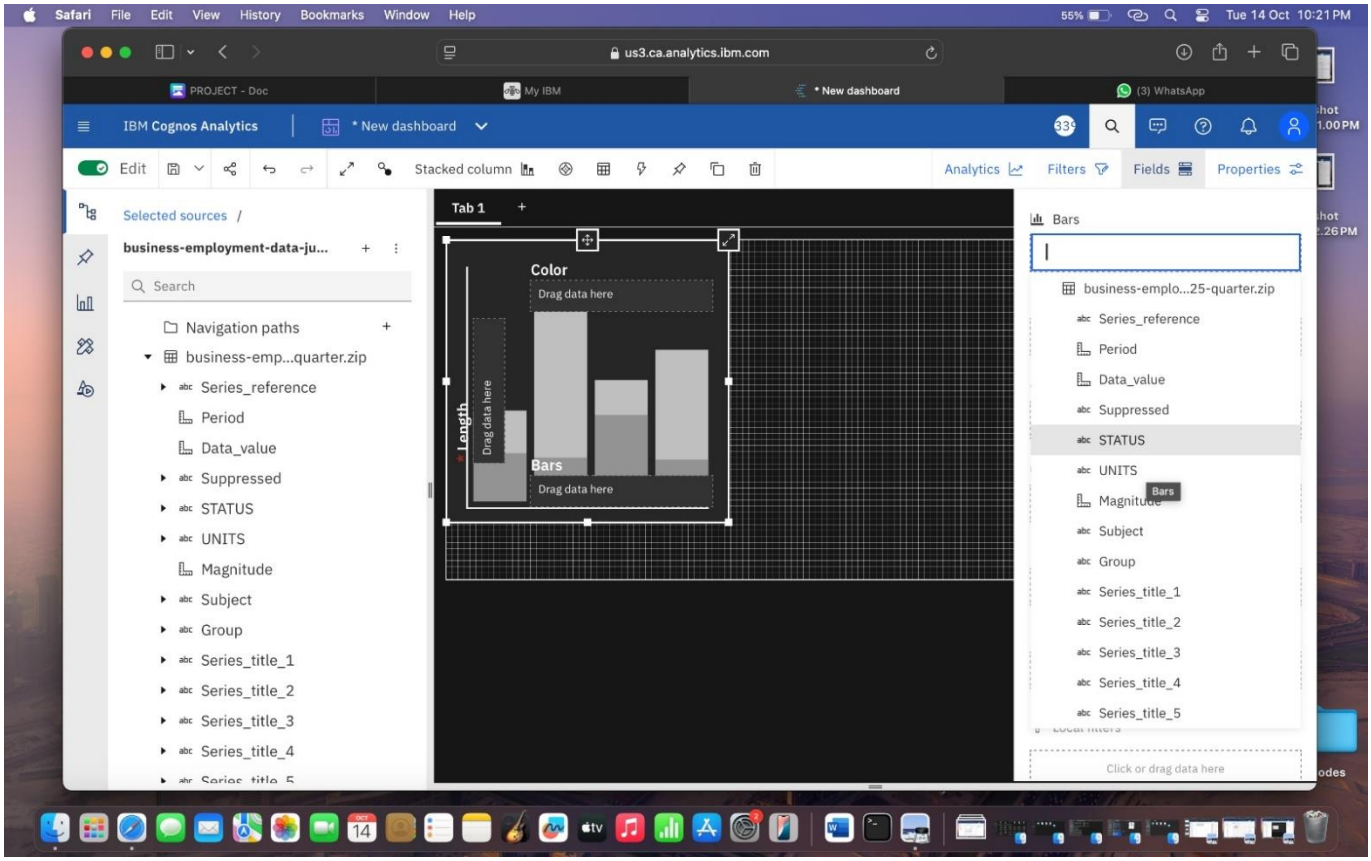
Definition: A column chart represents data using vertical bars, where the height of each bar indicates the value of the category it represents. It helps in comparing values across different categories.

Outcomes / Learning: Learned how to create column data and visualize it through a column chart for easy comparison of values.

Required Tool: MS Excel / Power BI / Tableau.

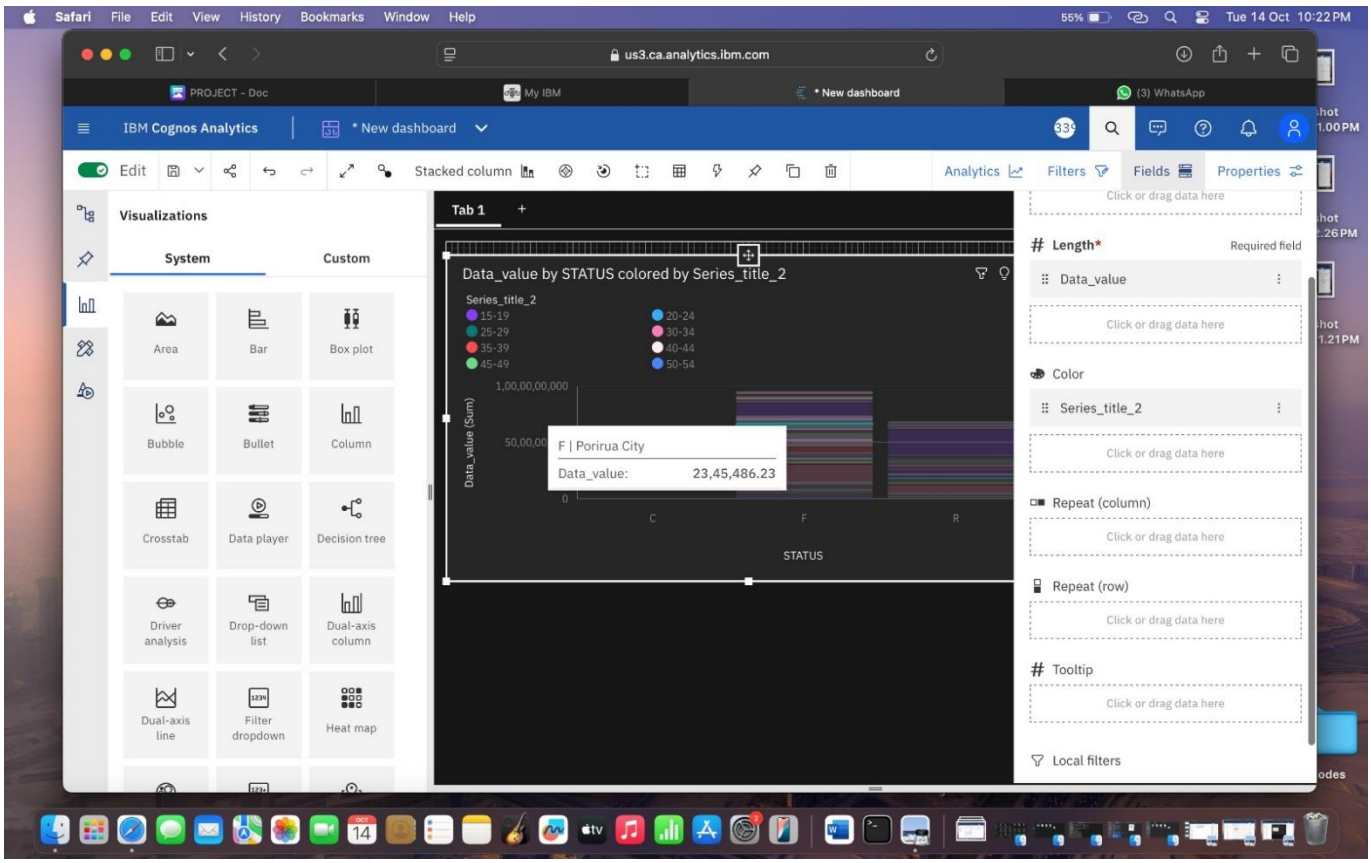
Working: We entered data in columns (for example, Product and Sales Value) and used the column chart feature to visualize and compare the data effectively.

Step 1:
Screenshot 1:



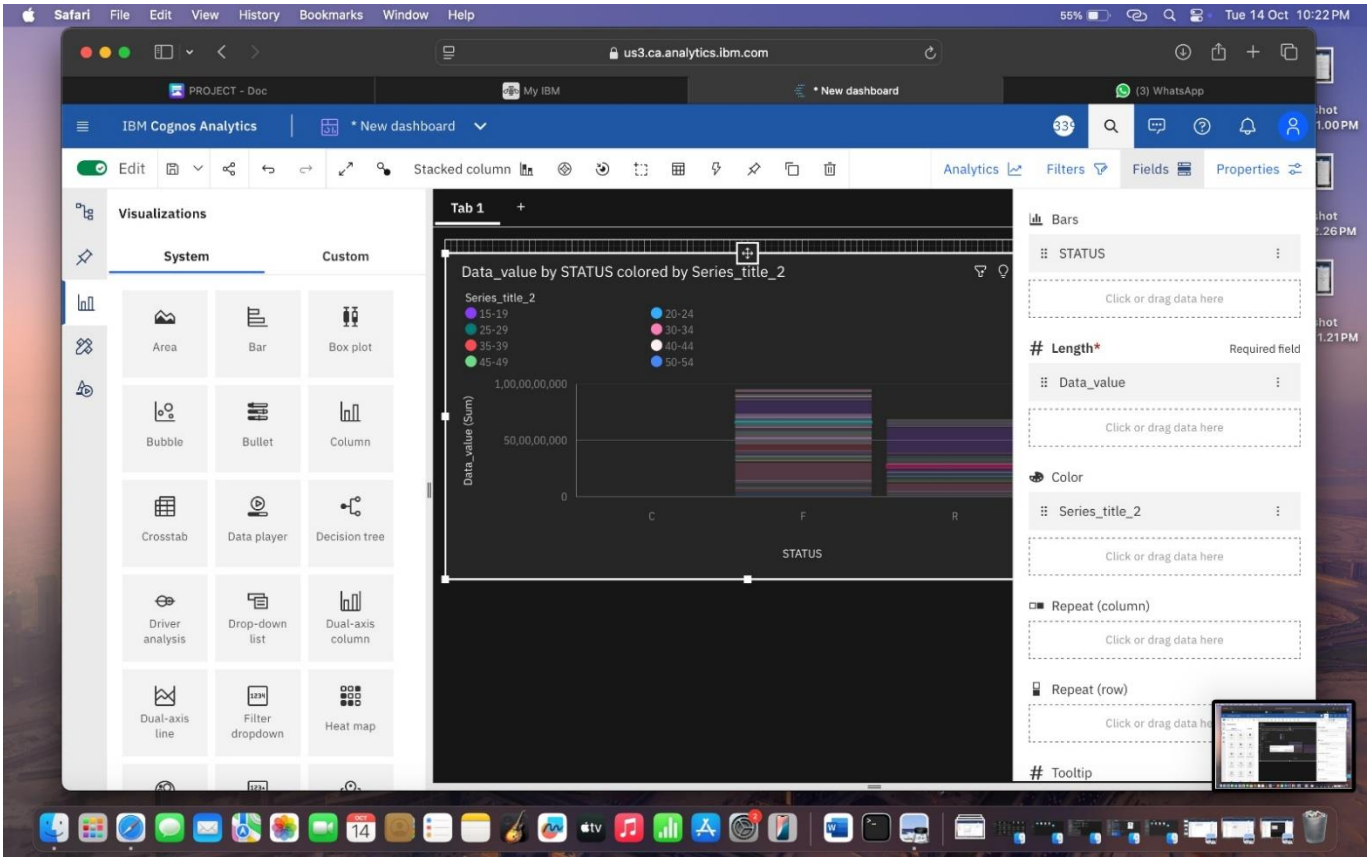
Description: The dataset was entered with columns such as Product and Sales Value.

Step 2:
Screenshot 2:



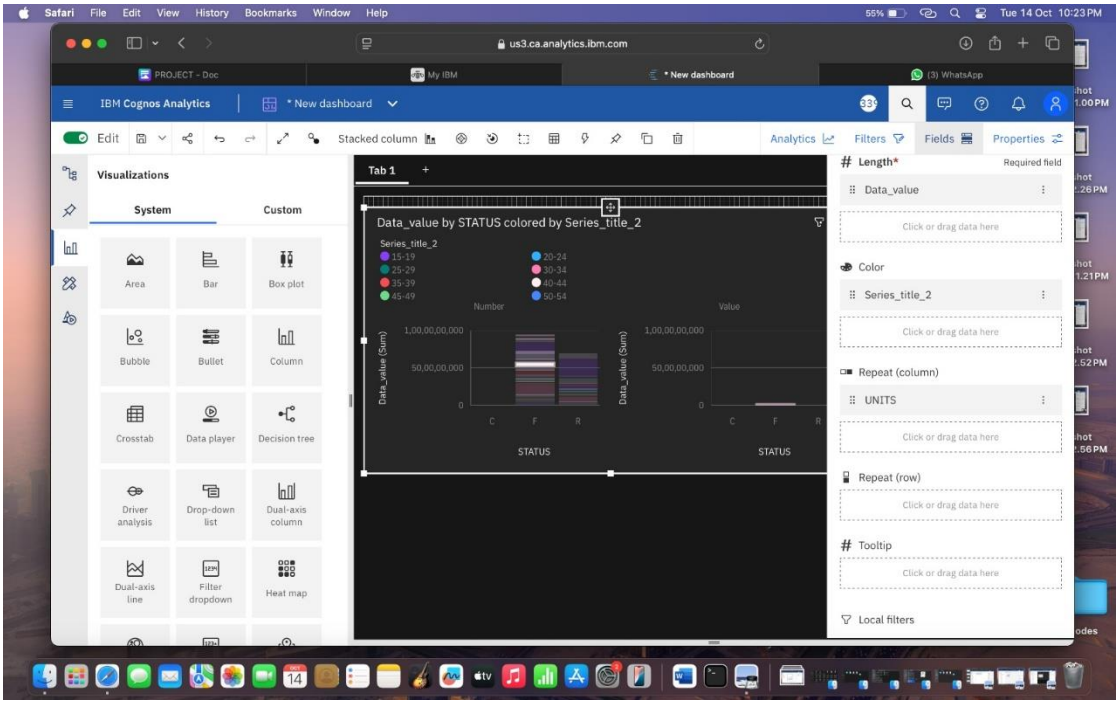
Description: The column chart option was selected from the “Insert” or “Visualizations” menu.

Step 3:
Screenshot 3:



Description: The column chart displays data values for each product category.

Step 4:
Screenshot 4:



Description: The column chart was formatted with titles, data labels, and colors for better presentation.