Genztechs
Data Science Internship Program
Assignment 6

Task 1: Tool installation and Tutorial

https://powerbi.microsoft.com/en-us/downloads/

Power Bi Tutorial

https://youtu.be/kSmcQiO7z4Y?si=BmdmeYRmAJkC_mXw

https://youtu.be/3u7MQz1EyPY?si=URjB4H8Pwt54QxjM

Task 2: Connecting to Data Sources

I. How can you import data from a CSV file into Power BI?
II. Explain the process of connecting Power BI to a website as a data source, specifically using an Excel file hosted on the website.
III. What are the steps to connect Power BI to Google Analytics and retrieve data from it?

Task 3: Data Transformation and Modeling

I. Perform the following functions on a specific column: calculate the average, find the maximum value, and count the number of unique values.
II. Add a new column to the dataset that calculates the total sales by multiplying the quantity and price columns.
III. Sort the data based on the length of a specific column and display the first three letters of that column. Concatenate these letters with another column and display the result.

Task 4: Creating Visualizations

I. Explore the Format tab in Power BI and change the format of a specific column to currency. Set the decimal places to two and the symbol to dollar.
II. Format a column as a whole percentage and adjust the display options to show it as a rounded value.
III. Change the format of a date column to display only the month and year.

Task 5: Extracting Specific Information

I. Extract information from a text column to create a new column that contains only the email domain (e.g., extracting "example.com" from "ahmadhassan@example.com").
II. Extract the day of the week from a date column and create a new column showing the extracted information.

Task 6: Merging and Appending Data

I. Merge two columns together to create a new column that combines the first and last name.

Task 7: Data Pivoting

I. Perform a pivot operation on a data table to transform the rows into columns based on a specific column's values.

Task 8: Conditional Columns

I. Create a conditional column that assigns a specific value based on a condition. For example, assign "High" if the sales amount is greater than 1000, otherwise assign "Low".

Task 9: Creating Relationships

I. Create a one-to-many relationship between the "Orders" table and the "Customers" table based on the "CustomerID" column.

Task 10: Creating Measures (Visualization)

I. Create a bar chart to represent the total sales by product category. What category has the highest sales?
II. Build a line chart to display the trend of monthly revenue over a specific time period. Identify any significant fluctuations or patterns in the data.
III. Create a scatter plot to visualize the relationship between customer age and their purchase amount. Is there any correlation between these variables?
IV. Design a stacked column chart to compare the sales performance of different regions. Which region has the highest overall sales?
V. Construct a pie chart to represent the distribution of product sales across different departments. Which department contributes the most to the total sales?
VI. Utilize a tree map visualization to display the market share of different product brands. Identify the brand with the largest market share.
VII. Develop a funnel chart to visualize the conversion rates at different stages of a sales process. Identify any significant drop-offs or bottlenecks in the conversion funnel.
VIII. Create a map visualization to display the geographical distribution of sales. Which region or country has the highest sales volume?
IX. Design a gauge chart to represent the progress towards a sales target. How close are you to achieving the target?
X. Construct a combination chart with both a line and a bar chart to compare actual sales with the target sales for each month. Identify any deviations from the target.