



Worksheet #4 S1E9 All Parts: “Using AI for Data Analysis and Visualization”

Objective: Students will learn how to use AI tools to organize, analyze, and visualize data. They will practice inputting data into AI platforms, generating visualizations, and interpreting the results to draw meaningful insights.

Part 1: Understanding the Dataset

1. **Review the dataset:** Below is a sample dataset about student performance in different subjects.

Student	Math Score	Science Score	English Score	History Score
Alice	85	92	78	88
Bob	76	85	84	75
Carol	90	91	87	92
Dave	70	78	75	80
Eve	88	90	82	85

2. **Analyze the data:**

- Look at the dataset and write down any trends or observations you can identify just by looking at the numbers.
- Which student has the highest overall score? Which subject has the highest average score?

**Task:**

- Write down two observations about the data without using any AI tools yet.

Reflection:

- What patterns did you notice from your initial look at the dataset?
 - Were there any areas where the data seemed unclear or hard to interpret without further analysis?
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Part 2: Analyzing Data with AI

1. **Use an AI tool:** Input the data from the table into an AI tool (such as ChatGPT, Google Sheets, or another AI-based data analysis platform). Ask the AI to analyze the dataset and provide insights.

Task:

- Ask the AI the following questions:
 - Which student has the highest overall average score across all subjects?
 - What is the average score for each subject?
 - Which subject has the most consistent scores across students?

AI Output:

- Write down the AI-generated answers to the questions above.

Reflection:

- How did the AI's analysis compare to your own observations?
 - Did the AI identify any trends or patterns you missed?
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Part 3: Visualizing Data with AI

1. **Creating visualizations:** Ask the AI tool to generate graphs or charts based on the dataset. You can request the following types of visualizations:
 - A bar graph showing the scores of each student in each subject.
 - A pie chart or bar graph comparing the average scores of the subjects (Math, Science, English, History).

Task:

- Insert or describe the graphs created by the AI tool below.

Reflection:

- How do the graphs help you better understand the data?
 - Which visualization was the most helpful in identifying trends or patterns?
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Part 4: Interpreting the Results

1. **Understanding trends:** Based on the AI-generated analysis and the visualizations, answer the following questions:
 - Which subject do students tend to perform best in overall?
 - Is there any student who excels in one subject but struggles in another? If so, explain.
 - Are there any significant differences between students' scores in different subjects?

**Task:**

- Write a short summary of the trends you've identified from the AI's analysis and visualization.

Reflection:

- How did the AI's analysis and graphs help you understand the data more clearly?
 - Were there any surprising insights that you hadn't noticed during your initial observation?
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Part 5: Final Evaluation and Discussion**Task:**

- Write a paragraph reflecting on your experience using AI for data analysis and visualization.

Questions to Consider:

- How does using AI help make sense of complex data?
 - In what ways do visualizations make it easier to understand trends compared to looking at raw data?
 - How might you use AI for future data analysis projects in subjects like science, math, or social studies?
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Teacher's Notes:

- Encourage students to think critically about how AI tools can provide insights but also how they should verify and interpret those results themselves.
- Discuss the importance of using different types of visualizations to highlight specific aspects of the data.
- Highlight the role of AI in handling large datasets quickly, especially for identifying trends that may not be immediately obvious.

This worksheet will guide students through the process of using AI for data analysis and visualization, helping them develop both technical and analytical skills.