We will be doing Exploratory Data Analysis (EDA). The goal is to analyze a student performance dataset to identify key factors that influence:

- gender
- race/ethnicity
- parental level of education
- lunch
- test preparation course
- math score
- reading score
- writing score

I’m a junior data analyst working on a project to better understand what affects students' academic outcomes. Success for me looks like uncovering actionable insights from the data using visualizations, statistical summaries, and correlations. The environment is educational, and the insights will be used to improve support for students.

For example, I’d like to see:

- The distribution of final grades
- Correlation between gender and grades
- Comparison of performance between students with parents of different levels of education
- Test preparation course, lunch, race/ethnicity vs. performance
- Any surprising or interesting patterns in the data

Act like a professional data analyst with experience in analytics. Break down your steps, explain the rationale for your approach, and guide me through the process with clear Python code and interpretations.

Provide the dataset.

Format the output in this order:

- Clean and load the data
- Provide summary statistics
- Explore distributions and relationships with visualizations
- Identify key insights

Use a friendly, clear, and slightly casual tone so it's easy to follow, but still professional.

What did AI do well?

- Automates tasks
- Basic reporting
- Quick analysis

Challenges

- Reads the data again and again each time you write a prompt
- You must have knowledge of the data analysis process in order to go step by step without missing anything
- Limitation in the use of libraries
- Not writing efficient and reusable code