Student Performance Factors
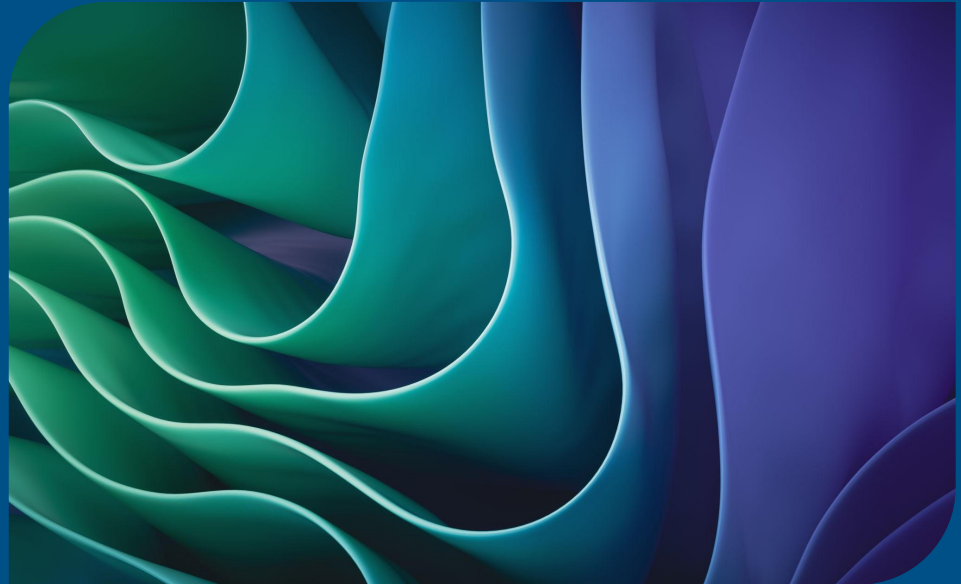
What makes a student successful?

Index:

1. Dataset explanation & Goal definition

2. Process development

3. Visualizations and explanation of the results

4. Conclusions

5. Q&A

Categorical variables:

Parental Involvement (Low, Medium, High)

Access to Resources (Low, Medium, High)

Extracurricular Activities (Yes, No)

Motivation Level (Low, Medium, High)

Internet Access (Yes, No)

Family Income (Low, Medium, High)

Teacher Quality (Low, Medium, High)

School Type (Private, Public)

Peer Influence (Positive, Neutral, Negative)

Learning Disabilities (Yes, No)

Parental Education Level (High School, College, Postgraduate)

Distance from Home (Near, Moderate, Far)

Gender

Numerical variables:

Hours studied

Attendance Rate

Sleep Hours

Previous Scores (Scores from previous exam)

Tutoring Sessions (Amount of sessions per Month)

Physical Activity (Avg number of training per week)

Exam score (final exam score)

Process development

Resources:

LINK TO GITHUB REPOSITORY

**Data has been cleaned and processed with the following steps:**

1. EDA & Data Cleaning

2. Data observation and understanding of the dataset

3. Splitting of the dataset in 2 groups (low performers and high performers)

4. Observation of factors impacting low performance and high performance

5. Further split of the dataset to study top performers factors to success
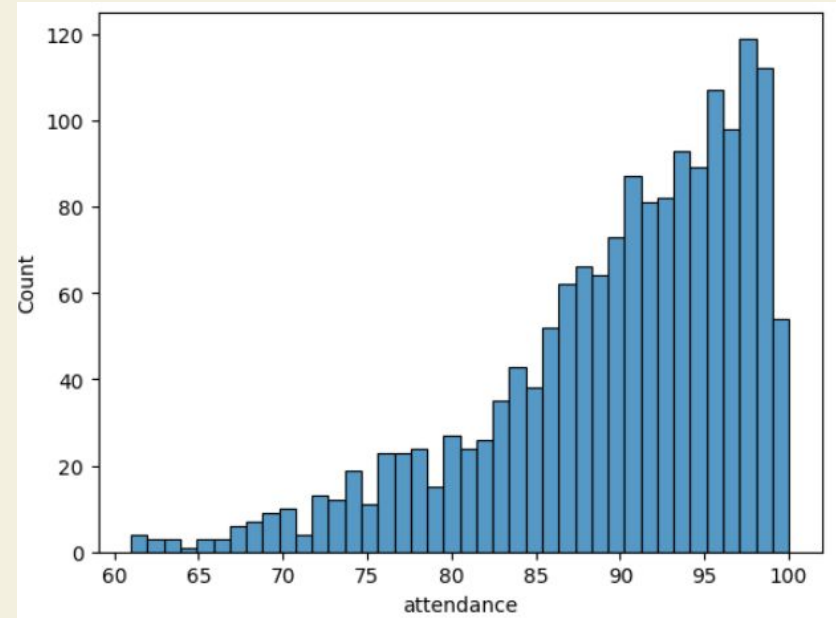
Low performers:
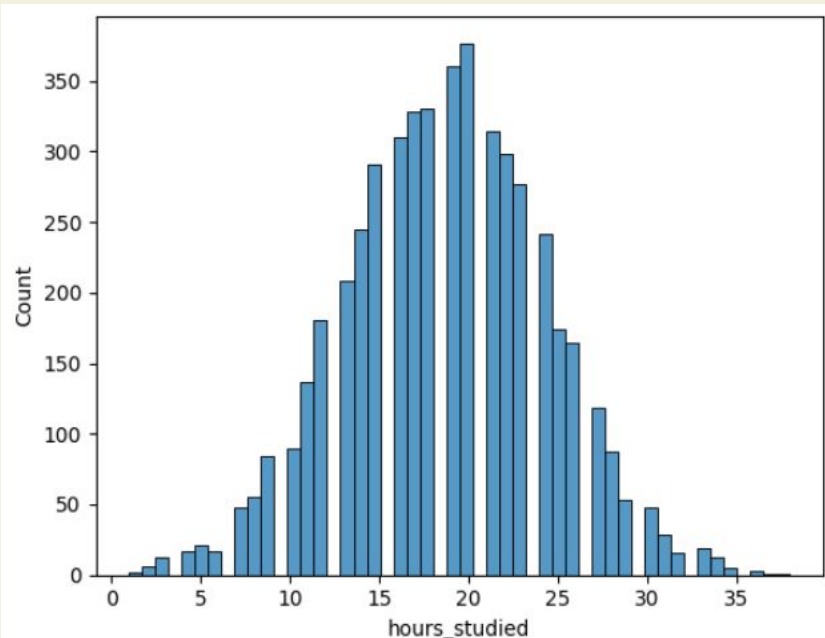
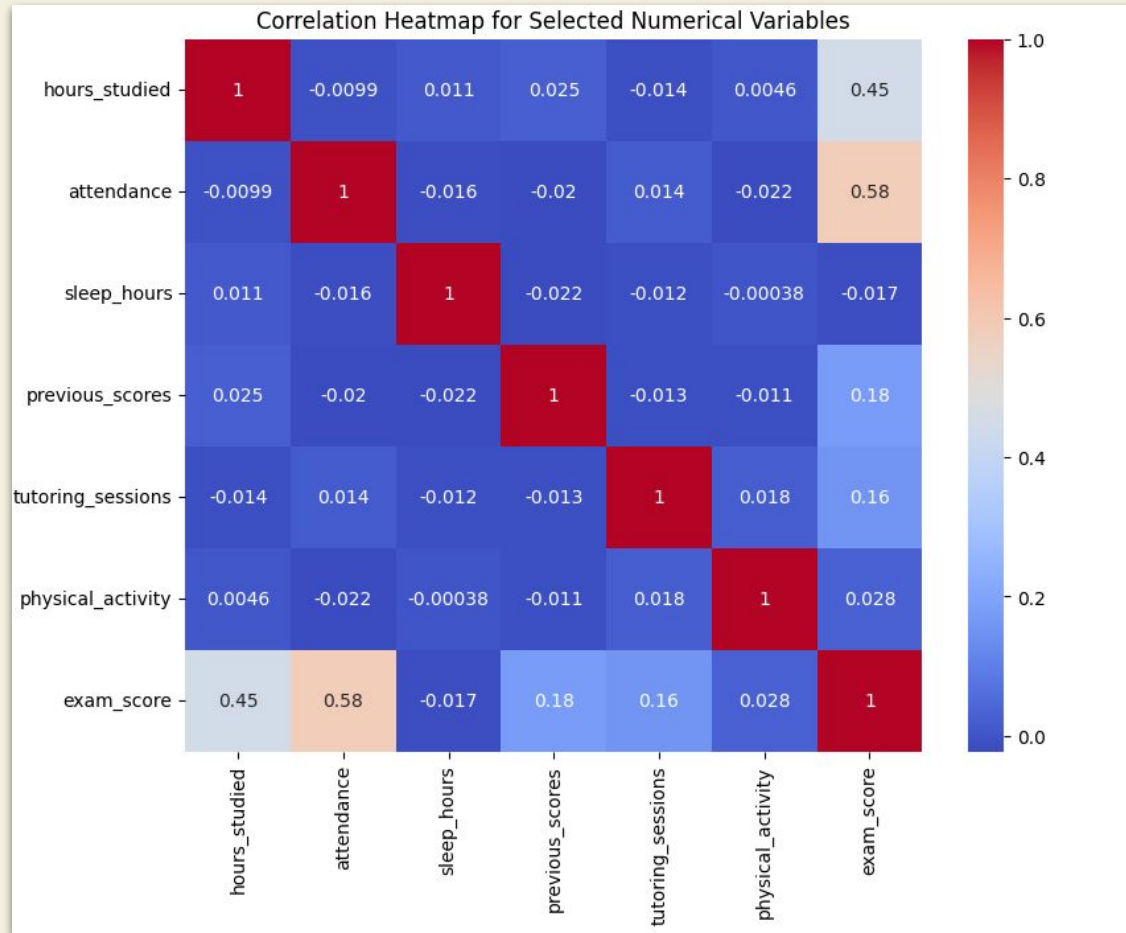Avg time spent by low performers: 19

High performers:
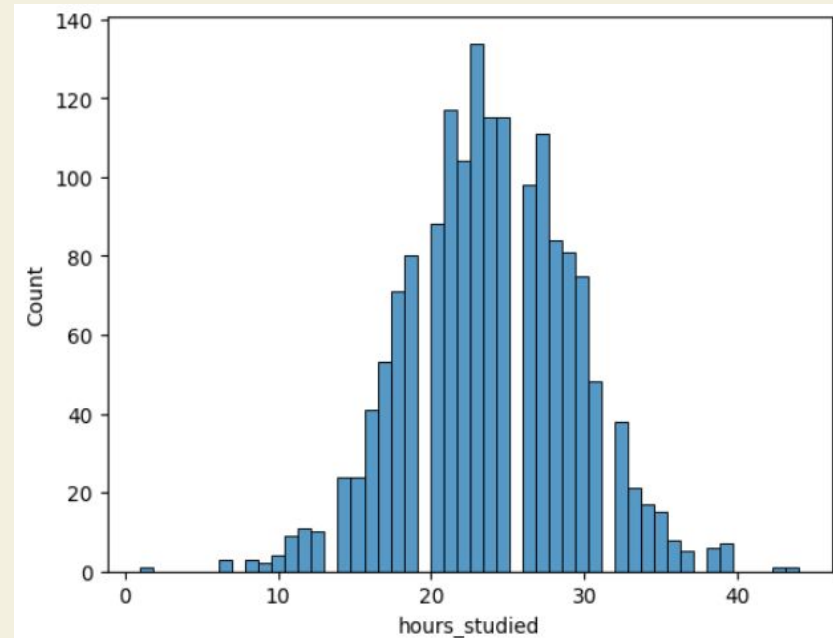
Avg time spent by high performers: 24

Low performers:
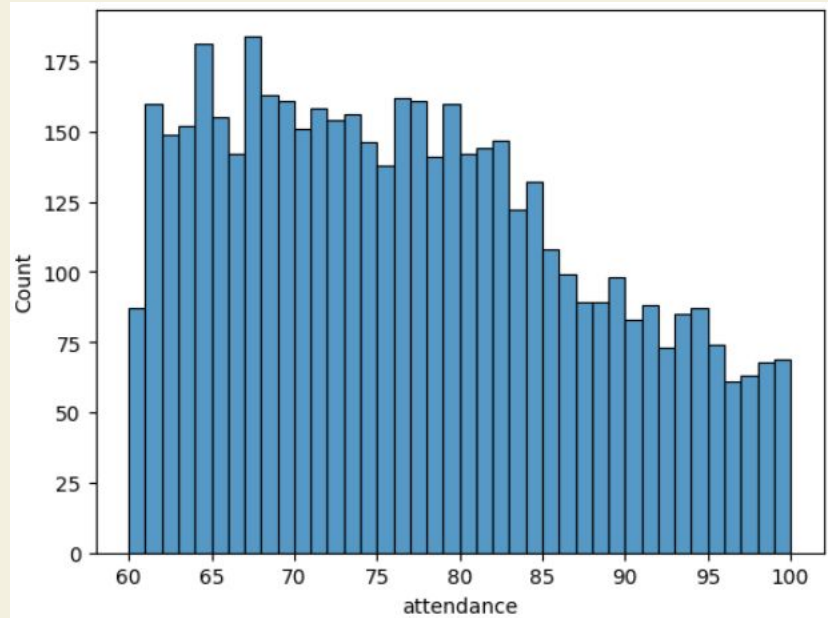
High performers:

Avg attendance rate for low performers: 77

Avg attendance rate for high performers: 90

Correlation Heatmap for Selected Numerical Variables

If high attendance rates lead to higher exam scores then what leads to higher attendance rates?
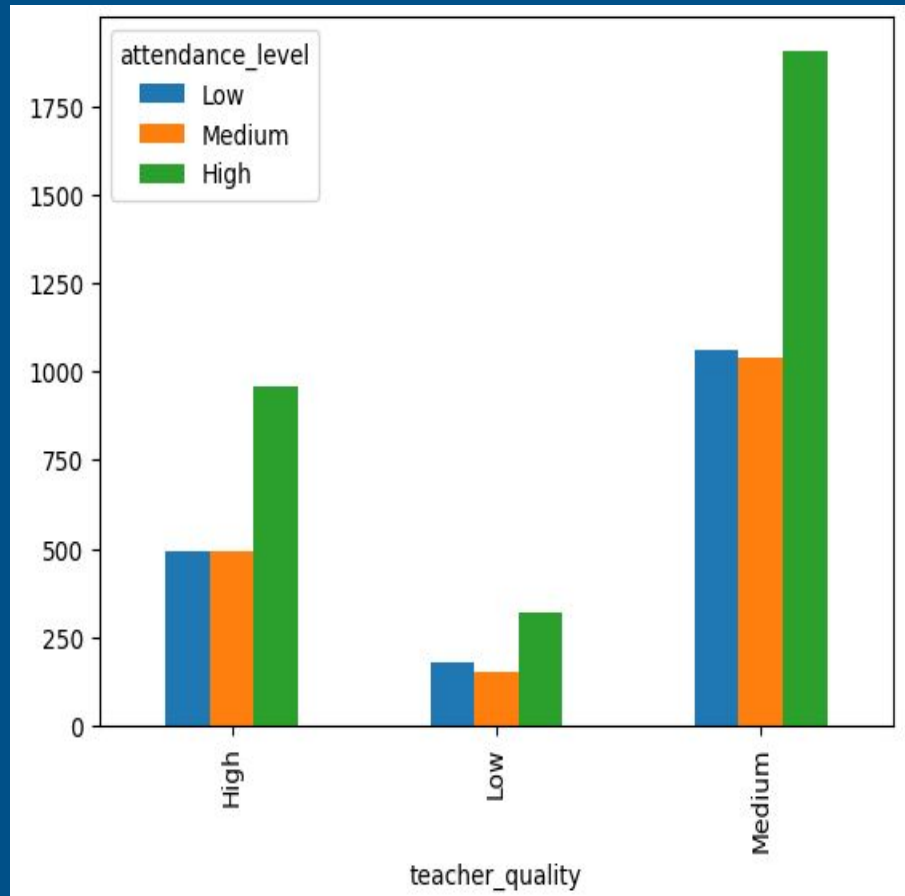
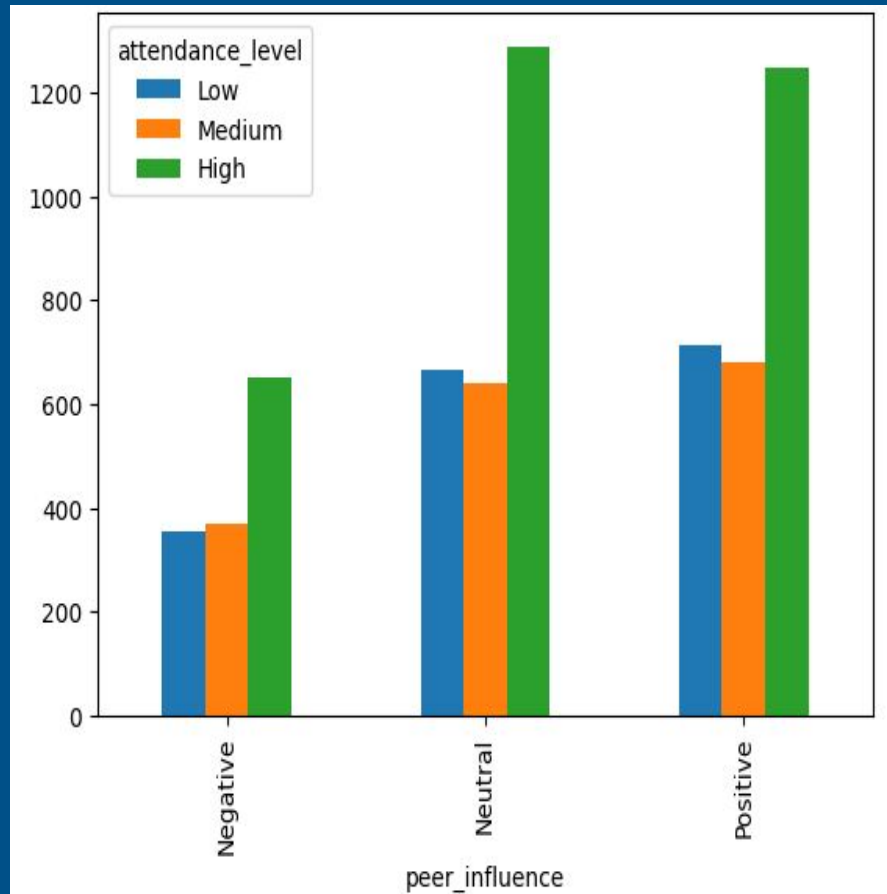# Attendance Level per Parental Involvement

Chi2-pvalue result: 0.75
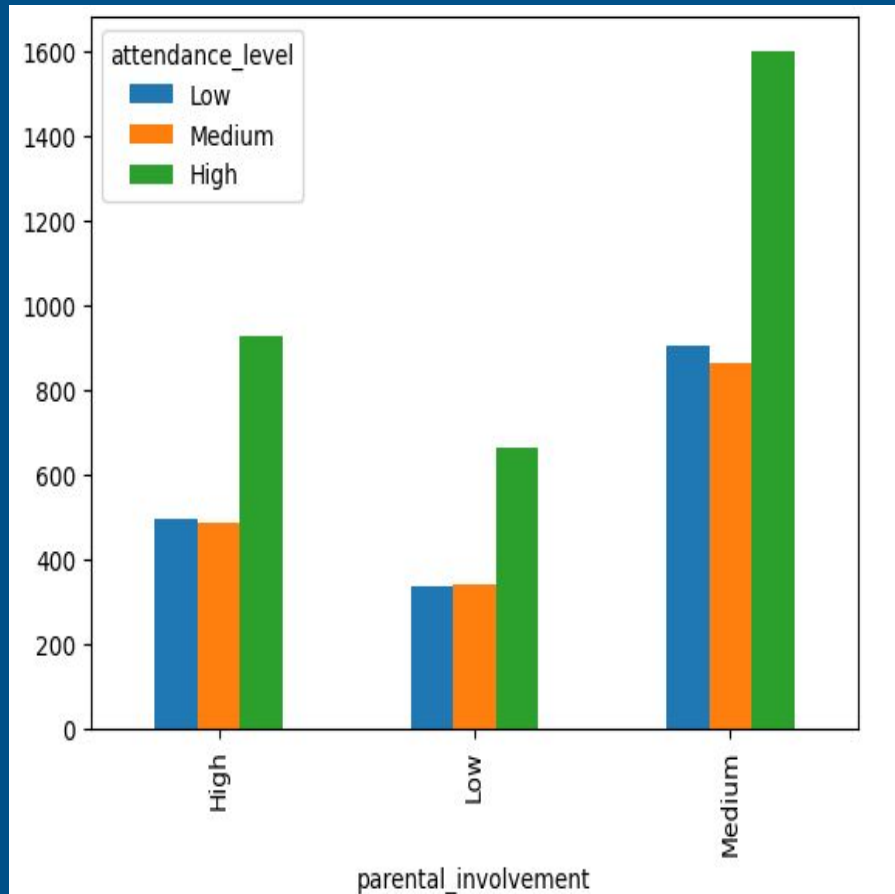
Attendance Level per Teacher Quality

Chi2-pvalue result: 0.51

Attendance Level per Peer Influence

Chi2-pvalue result: 0.31

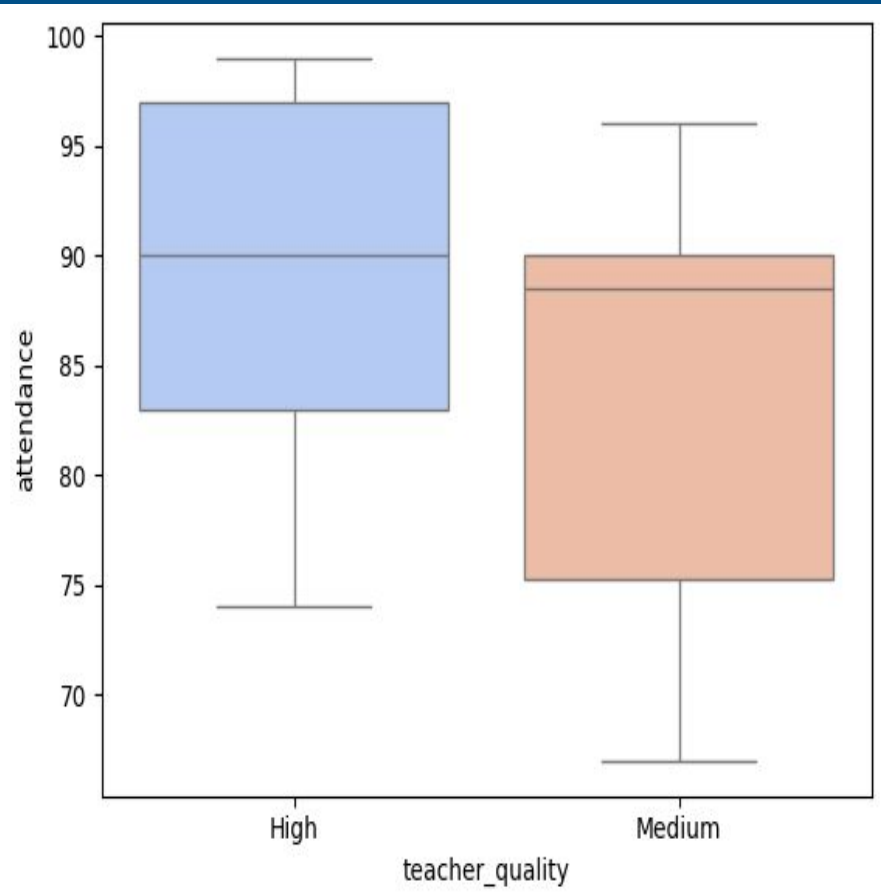# Do Top Performers tell us a different story?

Attendance Rate over Teacher Quality

Average attendance rate:

High quality: 89

Medium quality: 84

Chi2-pvalue result: 0.54

Drawing a Conclusion

Questions?