

# Student's Performance Factors



**Business Problem:** This dataset provides a comprehensive overview of various factors affecting student performance in exams. It includes information on study habits, attendance, parental involvement, and other aspects influencing academic success.

**Scenario:** The board has collected a range of data from various sources, including demographic information, study habits, school attendance, parental involvement, and students' academic records. The goal is to understand the key factors influencing student performance, identify at-risk students, and provide actionable insights for improving outcomes.

**Problem Statement:** Using the provided dataset (StudentPerformanceFactors.csv), your task is to analyze the key factors that influence student performance and develop a predictive model to identify students who are at risk of underperforming. Your findings will help the school district take proactive measures to improve student success.

## Objective:

1. Identify the most important factors that affect student performance
2. Provide a data-driven strategy to enhance academic outcomes.
3. Develop visualizations and summary statistics to communicate findings effectively.
4. Analyze the distribution of key variables and detect any correlations between them.

## Actionable Insights:

- Based on your analysis, suggest targeted interventions that could improve student performance, such as additional tutoring, better parental engagement, or changes in school policies.
- Recommend actions the school district could take to address disparities in student performance based on demographic factors.

## Deliverables:

- A detailed report or presentation summarizing your findings, including visualizations (charts, graphs, etc.) that highlight key insights.
- A list of actionable recommendations for improving student outcomes.



## Column Description

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Hours studied : Number of hours spent studying per week

Attendance : Percentage of classes attended.

Parental Involvement : level of parental involvement in the student's education (Low,Medium,High)

Access\_to\_Resource : Availability of educational resources (Low, Medium, High)

Extracurricular Activities : Participation in extracurricular activities (Yes, No)

Sleep Hours : Average number of hours of sleep per night.

Previous Scores : Score from previous exams.

Motivational level : Student's level of motivation (Low, Medium, High).

Internet access : Availability of internet access.

Tutoring Sessions : Number of tutoring sessions attended per month.

Family Income : Family income level (Low,Medium,High)

Teacher Quality : Quality of the teachers.(Low,Medium,High)

School Type : Type of school attended (Public, Private)

Peer Influence : Influence of peers on academic performance (Positive, Neutral, Negative)

Physical\_Activity : Average number of hours of physical activity per week.

Learning Disabilities : Presence of learning disabilities (Yes, No)

Parental\_Education\_Level : Highest education level of parents (High school,College,Postgraduate).

Distance\_From\_Home : Distance from home to school (Near,Moderate,Far).

Gender : Gender of the student (Male, Female)

Exam Score : Final Exam Score