EDUCATIONAL PERFORMANCE ANALYSIS USING POWER BI– DASHBOARD [TASK-3]

This Power BI project is about analyzing students' educational performance using visual dashboards. It helps us understand how different factors affect student results. The main focus is on student grades (G1, G2, G3), study time, number of absences, gender, internet access, study support, and parents' education level. By using charts and graphs, the report clearly shows how these factors are connected to students' performance in school.

One important feature of this dashboard is the use of slicers, which are filter buttons. These slicers allow users to explore the data more deeply. For example, users can filter the results by gender (male or female), study time (1 to 4 levels), whether students have internet access, or if they receive extra study support. This makes the dashboard interactive and easy to use.

The visuals show that students who study more usually get better marks and have fewer absences. It also highlights how support from school or family can impact performance. The project is designed in a clean and simple way so that anyone—teachers, parents, or school management—can understand the insights and take better decisions to support students.

Overall, this project is a great example of using data to tell a story. It's impressive because it is both informative and easy to use, making it a useful tool for learning and improving educational outcomes.

FORMULAS USED (MEASURES/CALCULATIONS):

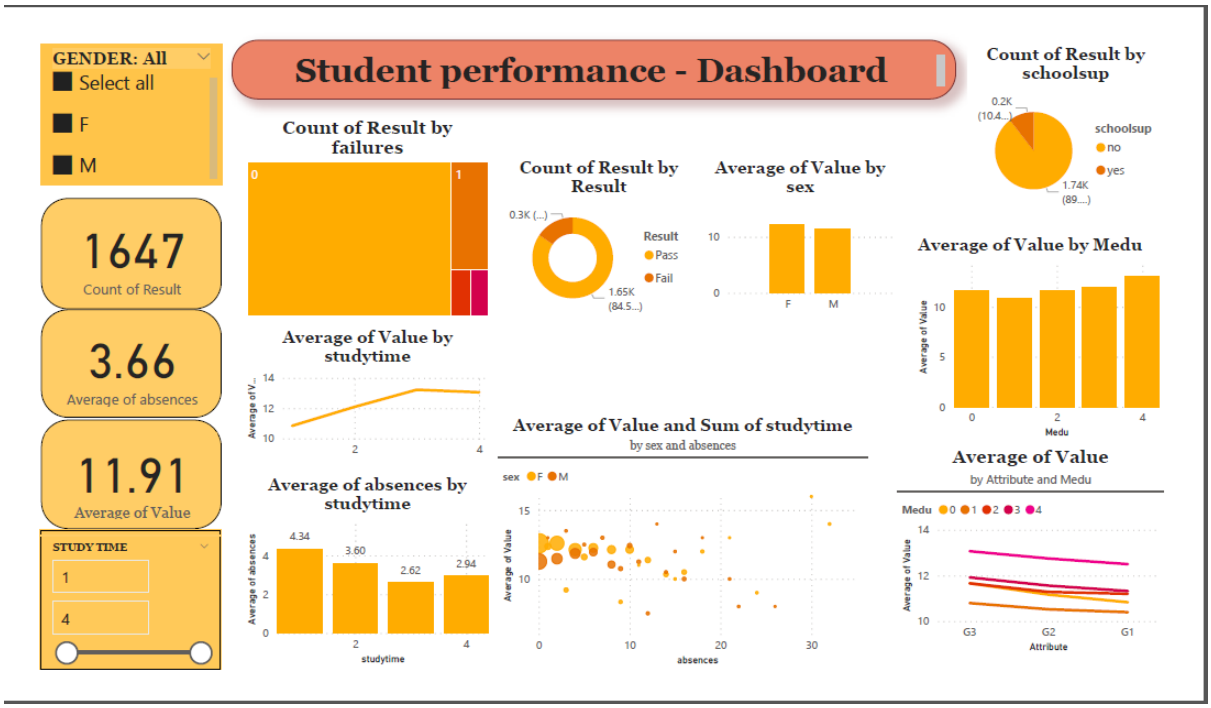
- **Average of absences** – shows average number of days missed
  Average = AVERAGE(StudentData[absences])
- **Average of grades (G1, G2, G3)** – shows average performance
  Average Grade = AVERAGE(StudentData[G1 or G2 or G3])
- **Count of result (Pass/Fail)**
  Count = COUNT(StudentData[result])
- You may have also used simple **SUM** or **COUNTROWS** for totals.

VISUALS CREATED:

- **Bar Charts** – to compare average grades by gender, study time, and education
- **Column Charts** – to show number of students who passed or failed

- **Line Charts** – for trends (optional)
- **Slicers** – to filter by gender, study time, school support, internet, etc.
- Drag fields to **Values**, **Axis**, and use filters to adjust views.

SCREENSHOTS OF DASHBOARD:



This dashboard gives a clear and interactive view of how students are performing in school. It uses visuals and slicers to help analyze the impact of **study time**, **absences**, **gender**, **parental education (Medu)**, and **support services** on student results.

- Students with **more study time** have **better performance** and **fewer absences**.
- **Parental education** positively influences grades.
- **Females and males** perform almost equally.
- Extra **study support** may improve pass rates slightly.

SUMMARY:

This Power BI dashboard gives a clear and interactive view of how students are performing in school. It helps analyze the impact of study time, absences, gender, parental education (Medu), and support services on student results.

Key Highlights:

Slicers on the left let you filter by Gender (F/M) and Study Time (1 to 4) Cards display:

- Total Results Count (1647 students)
- Average Absences (3.66 days)
- Average Grade Value (11.91 out of 20)

Visuals Included:

Bar Chart: Count of Pass/Fail by number of failures.

Donut Charts:

- Pass vs Fail Result
- Result by Study Support (schoolsup) – Most students who didn't receive support still passed.

Bar Chart: Average grades by Gender (F/M).

Bar Chart: Average grades by Parental Education (Medu) – Higher parent education = better performance.

Line Chart: Average grades increase with study time.

Bar Chart: Average absences decrease with more study time.

Scatter Plot: Relationship between grades, absences, and gender.

Line Chart: Grade comparison (G1, G2, G3) with Medu levels.

Main Insights:

- Students with more study time have better performance and fewer absences.
- Parental education positively influences grades.
- Female and male students perform almost equally.
- Extra study support may slightly improve pass rates.