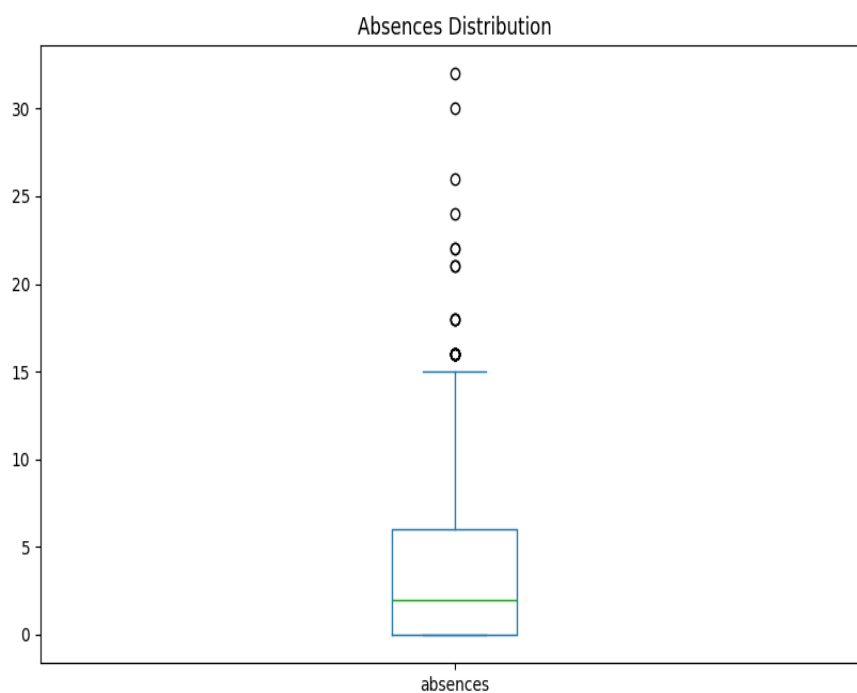


# Student Performance Analysis Report

## Dataset Overview:

- 649 records with 33 features
- No missing values detected
- Key metrics: age (15-22), absences (0-32), final grades (0-20)

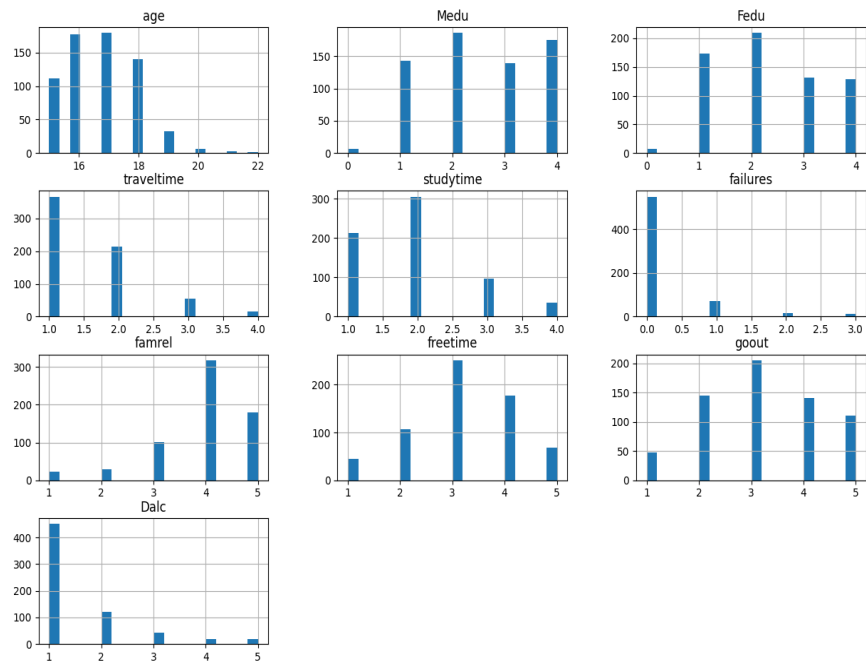
## Absence Patterns:



Key finding: 75% of students had  $\leq 6$  absences, with one extreme outlier at 32 days

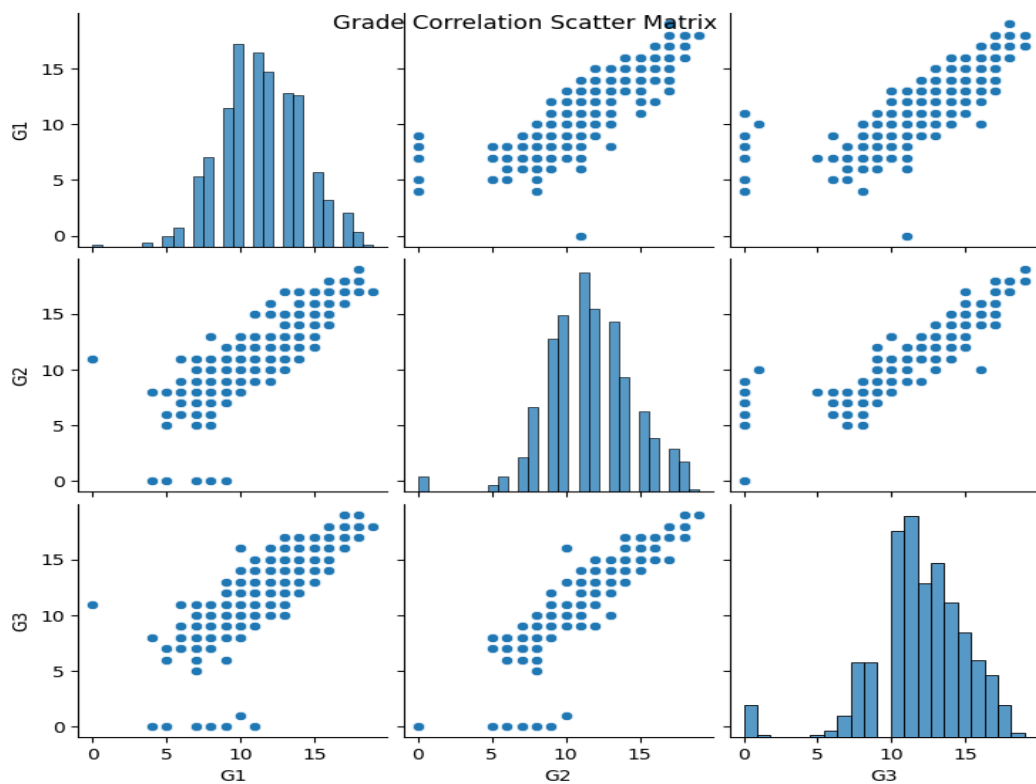
## Demographic Distribution:

Top 10 Numerical Features Distribution



Key finding: Age distribution peaks at 17-18 years, with family relationship scores averaging 4.2

## Grade Progression:



Key finding: Strong positive correlation between consecutive grades (G1-G2: 0.865, G2-G3: 0.919)

## **Recommendations:**

1. Implement targeted academic support for students with 10+ absences
2. Monitor students with declining grade trajectories ( $G1 > G2 > G3$ )
3. Investigate outlier cases with extreme absence values (e.g., 32 days)