Summary and Analysis of the Dataset

# General Observations

1. Gender Distribution: There is a balance between male and female students, with a slight edge towards females.

2. Ethnic Group Distribution: The ethnic groups are diverse, ranging from Group A to Group D, which could represent different demographic categories.

3. Parental Education: The majority of students have parents with a relatively high level of education, including Bachelor's and Master's degrees. However, there are also some students with parents who have a high school or associate's degree.

4. Test Preparation: A significant number of students have completed or are in the process of completing test prep, which might positively influence their scores.

5. Parental Marital Status\* The data shows varied parental marital statuses (married, single, divorced, and widowed). This can impact the home environment and the students' academic performance.

6. Sports and Sibling Data: Many students engage in regular sports, and most are either the first child or have 1 to 3 siblings. This can have a connection with family dynamics and time management.

7. Transport and Study Hours: The majority of students commute via the school bus, with a few using private transport. Weekly study hours vary, with some students studying less than 5 hours and others more than 10 hours.

8. Scores: There is a significant variation in Math, Reading, and Writing scores. Students in higher ethnic groups (Group A, B) tend to have higher scores compared to those in Groups C and D. Students who study more tend to perform better.

# Key Insights

1. High correlation between weekly study hours and scores: Students who study more (e.g., > 10 hours per week) tend to have higher scores in Math, Reading, and Writing.

2.Effect of Test Preparation: Test preparation seems to positively impact scores. Students who have completed test prep tend to score better, especially in writing and reading.

3. Parental Education Level: Students with parents having higher educational qualifications (e.g., Master's or Bachelor's degree) seem to perform better academically, suggesting that parental education level may influence students' academic success.

4. Marital Status Impact: Students from married families tend to have higher scores, possibly indicating more stable home environments.

# Recommendations for Improvement

1. Focus on test preparation: Encourage students who haven't completed test preparation, as it seems to boost their performance.

2. Increase study hours: Students with lower study hours should be encouraged to increase their study time, which can improve their scores across all subjects.

3.rovide support to students from less educated backgrounds: Targeted support and resources could help students whose parents have lower education levels to bridge the performance gap.

4. Promote sports participation: Sports participation could contribute to better time management and overall well-being, which may positively impact academic performance.