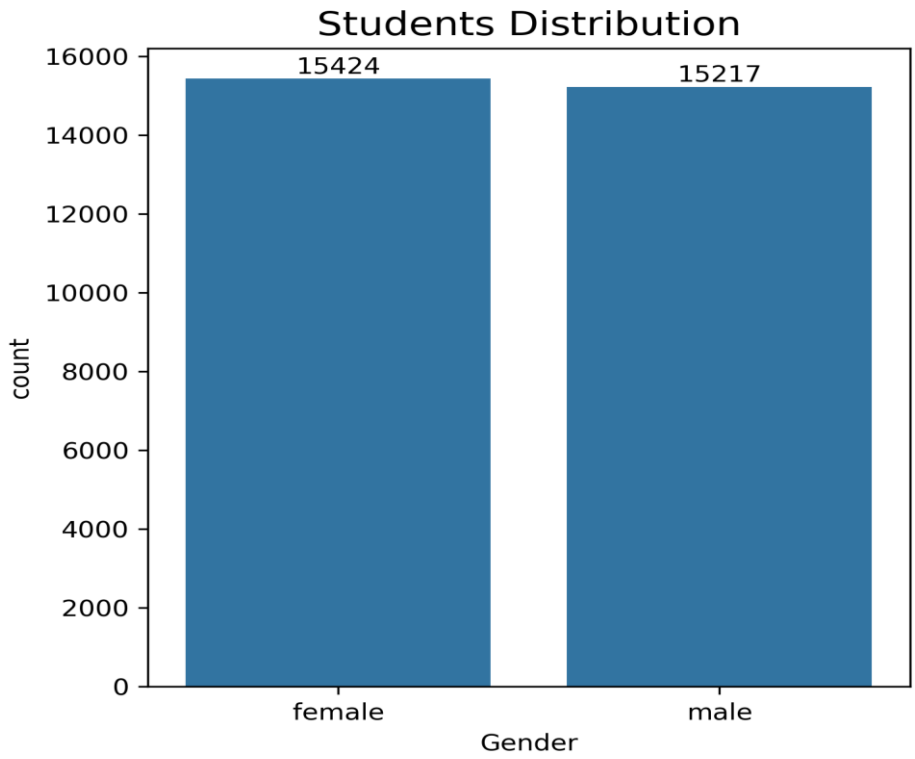
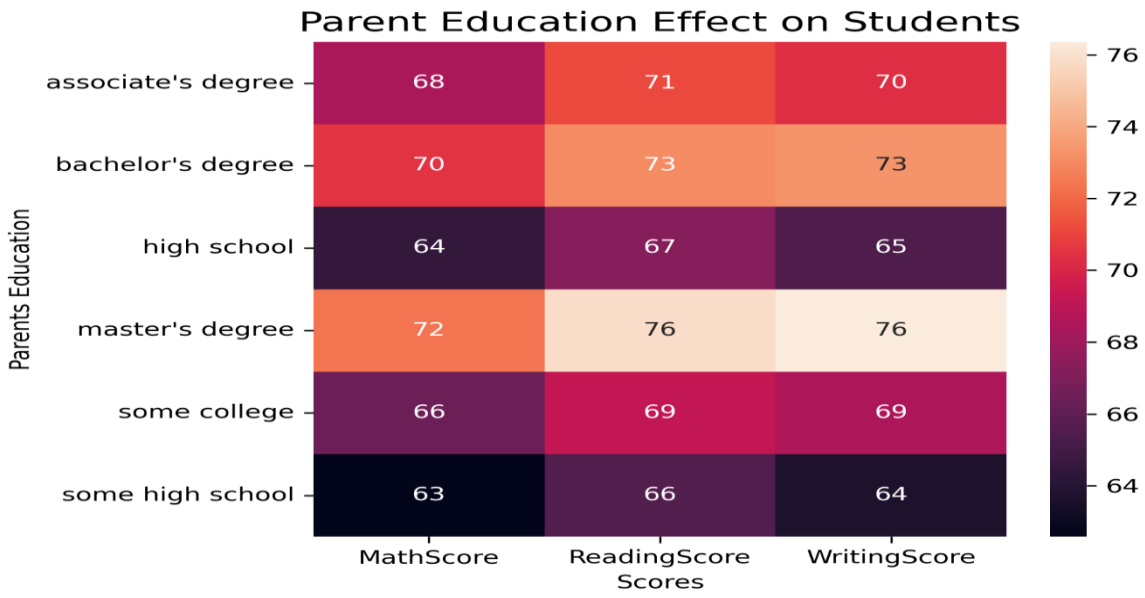
Student Data Project

To analyze which factors effects on Students Marks by using Python and its libraries such as Numpy, Pandas, Matplotlib, Seaborn etc.

Analysis:

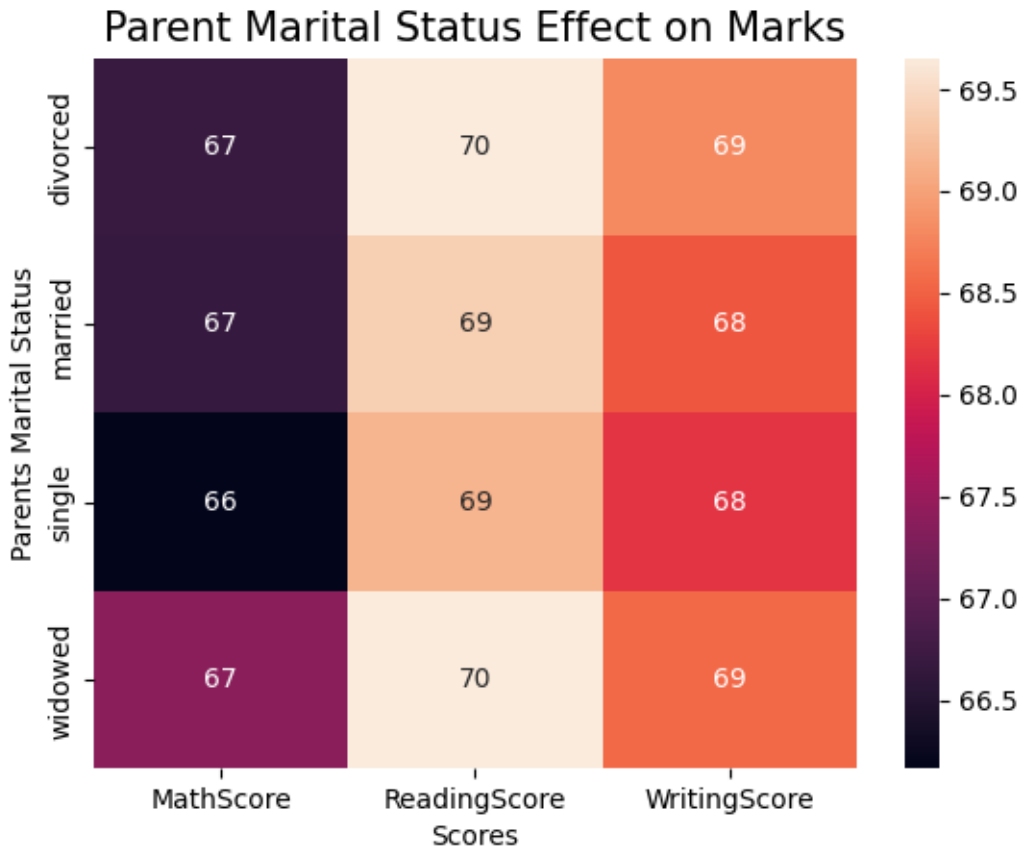


This bar chart shows the gender distribution of students, with a nearly equal number of female and male students. Specifically, there are 15,424 female students and 15,217 male students, indicating a balanced representation between genders in the dataset.

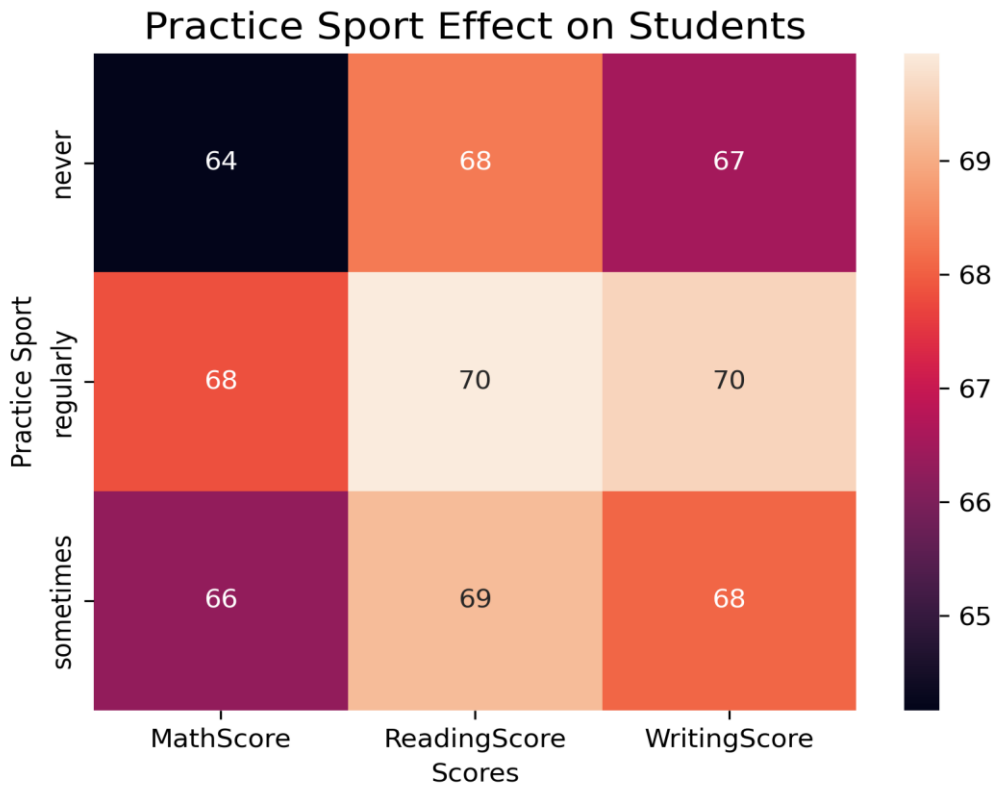


This heatmap titled "Parent Education Effect on Students" shows the relationship between parental education levels and students' scores in Math, Reading, and Writing. Students with parents who have a master's degree or a bachelor's degree tend to score higher across all subjects, with scores in the mid-70s range. Students with parents who have "some high school" or "high school" education tend to have lower scores, generally in the low 60s to high 60s.

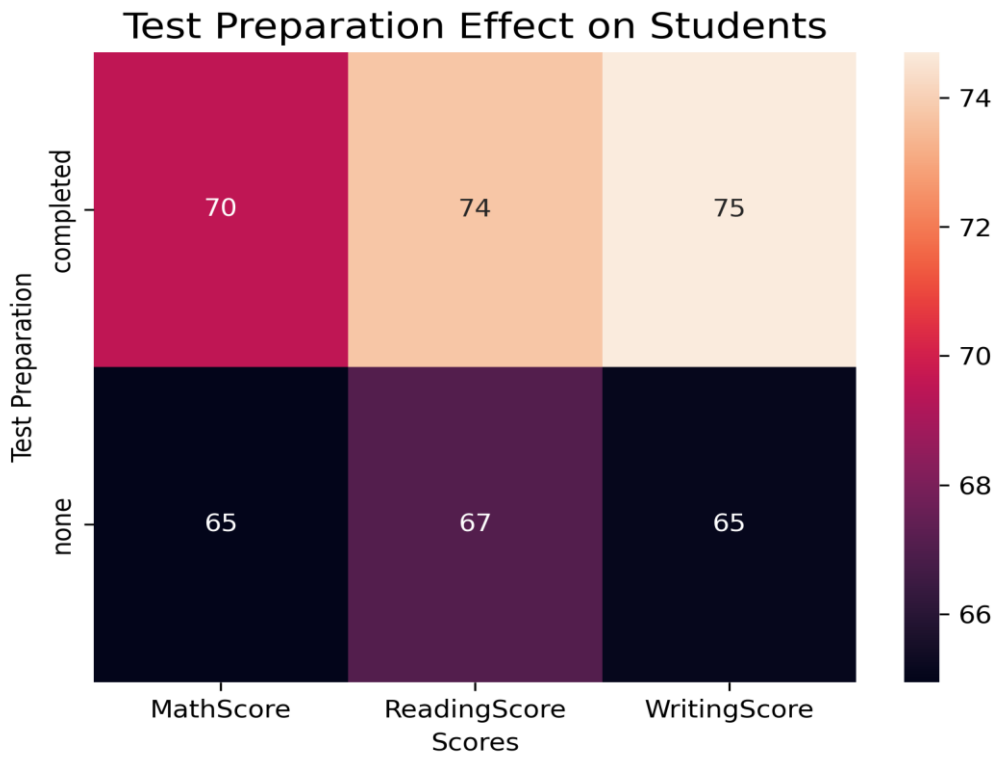
Across all subjects, there’s a noticeable trend where higher parental education correlates with higher student scores.This heatmap suggests that parental education may have a positive influence on students' academic performance across subjects.



This chart visualizes the relationship between parents' marital status and students' average scores in Math, Reading, and Writing.This heatmap suggests that parental marital status has a minimal and approximately no effect on student scores.

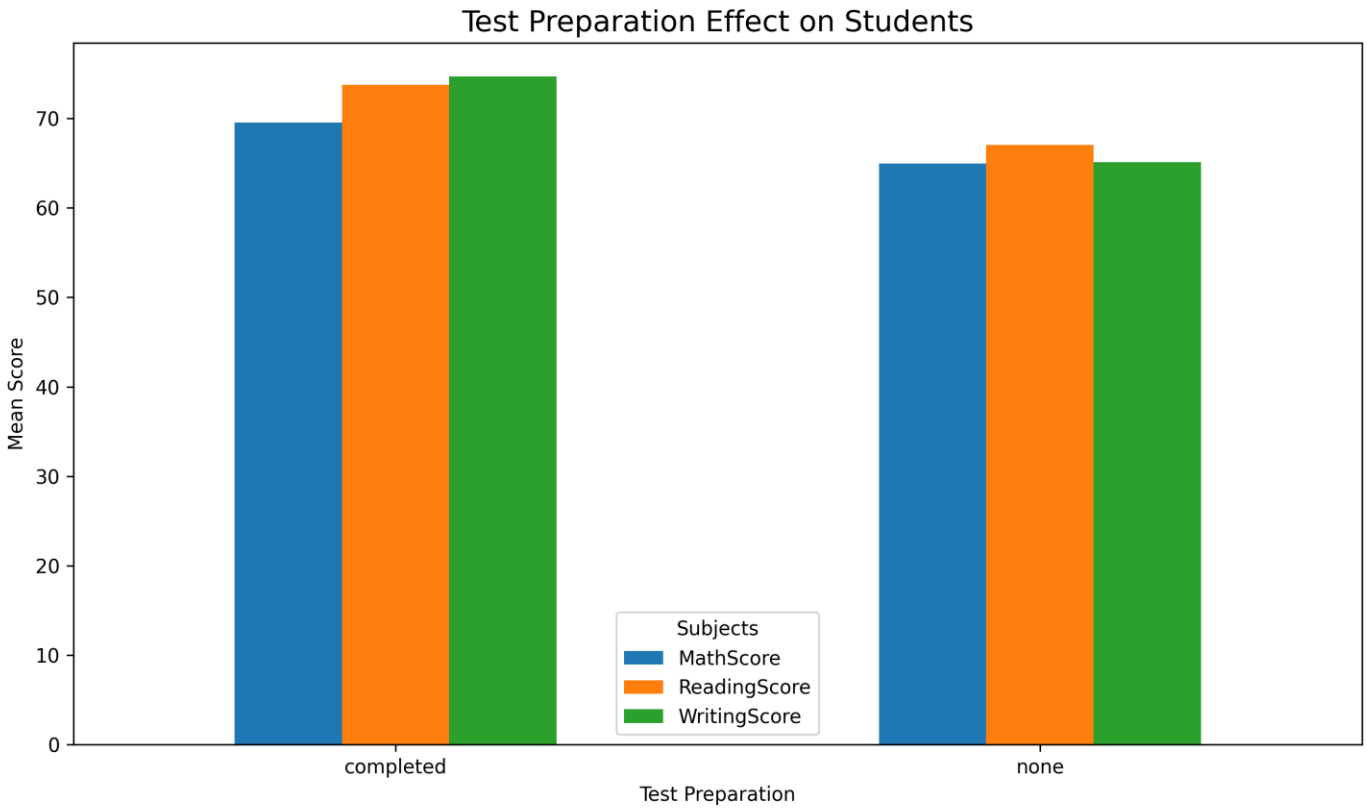


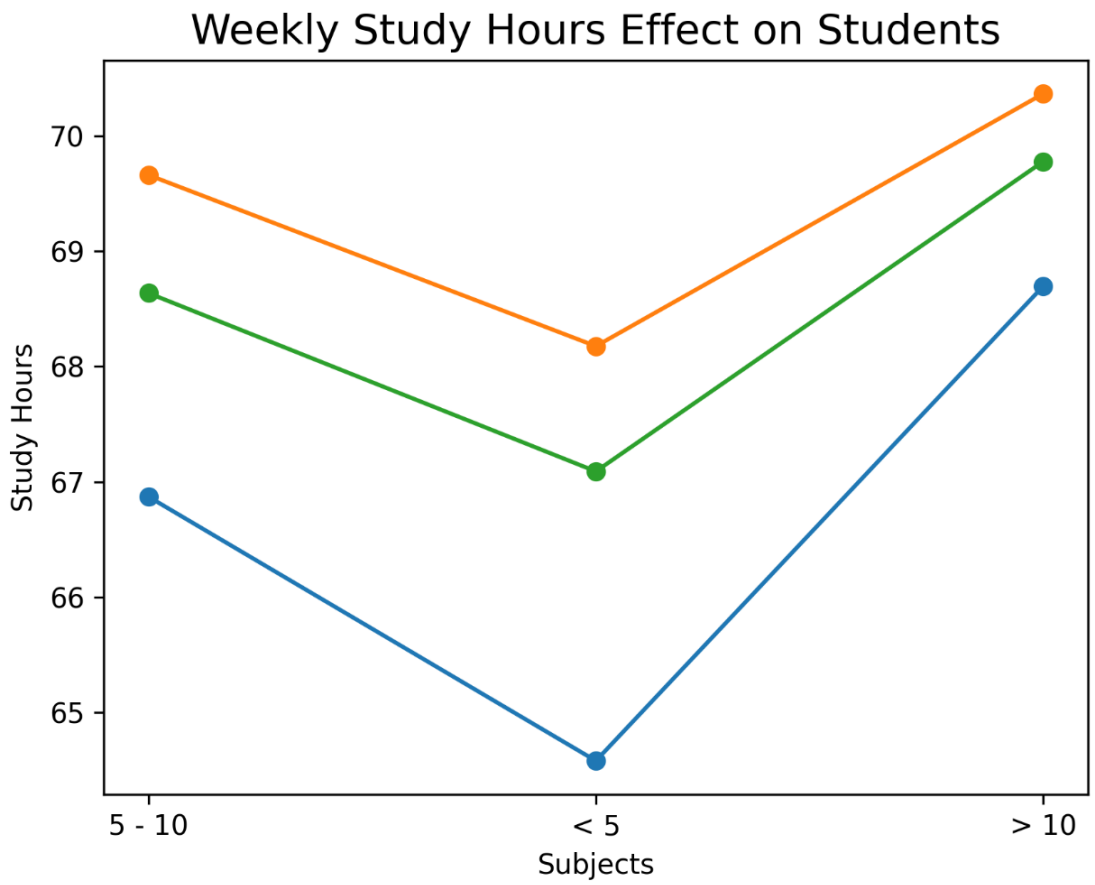
The heatmap chart visually represents the impact of sports practice on students' academic scores in three subjects: Math, Reading, and Writing. The data is categorized based on the frequency of sports practice: "never," "regularly," and "sometimes". We can see that students who practice sports regularly tend to have the highest scores across all three subjects, followed by those who practice sports sometimes, and those who never practice sports tend to have the lowest scores.



The chart illustrates the influence of test preparation on students' academic performance in three subjects: Math, Reading, and Writing. Students who completed test preparation have an average Math, Writing and Reading score of 70,74,75 respectively, who did not complete test preparation have an average Math score of 65, 67, 65 respectively.

In short, students who completed test preparation scored significantly higher in all three subjects compared to those who did not complete test preparation.





In the line graph title “Weekly Study Hours Effect on Students” suggests that students who study a moderate to high number of hours per week (5-10 or more than 10) tend to perform better academically, while those who study fewer than 5 hours per week tend to have lower marks. This indicates a positive correlation between the number of study hours and academic performance.