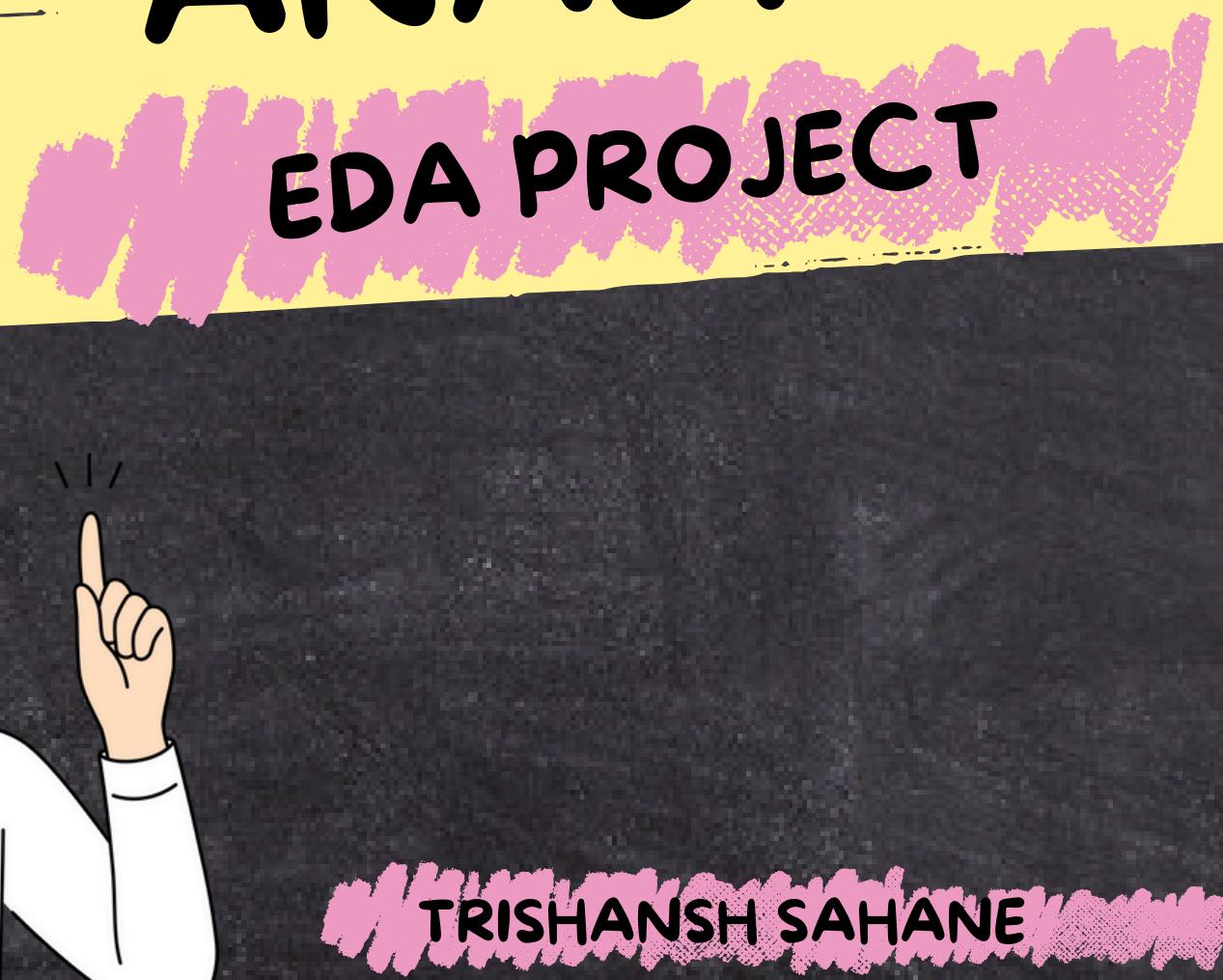


STUDENT MARKS ANALYSIS

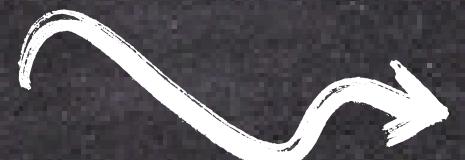
EDA PROJECT



TRISHANSH SAHANE

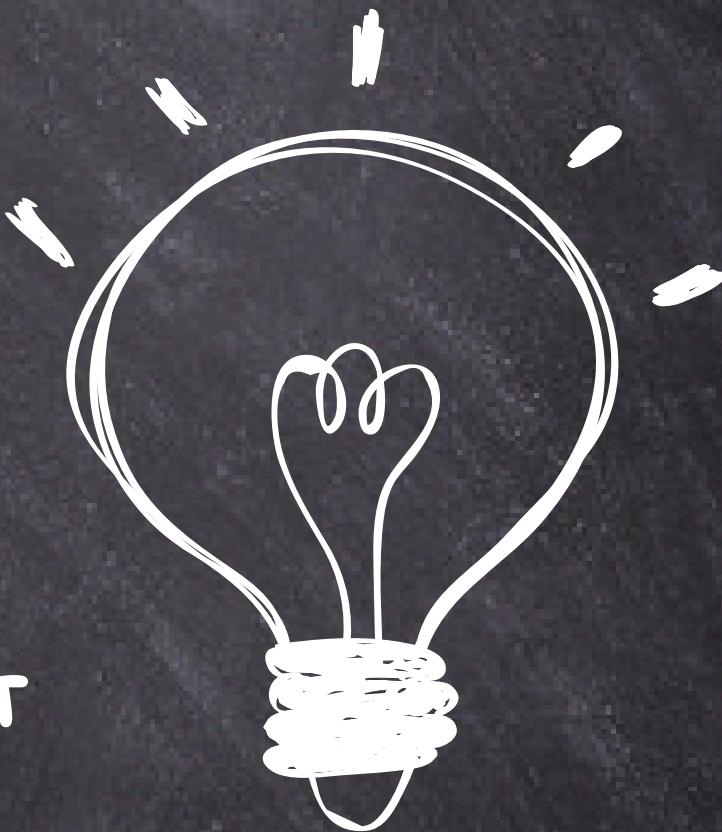


PROBLEM STATEMENT



OBJECTIVE :

THE OBJECTIVE OF THIS EDA IS TO ANALYZE STUDENT PERFORMANCE FROM MULTIPLE PERSPECTIVES, INCLUDING ETHNIC GROUPS, GENDER, SOCIOECONOMIC STATUS (SES), PARENTAL EDUCATION LEVELS, AND PERFORMANCE TRENDS OVER TIME, TO IDENTIFY TRENDS, PATTERNS, AND INSIGHTS THAT COULD HELP IN UNDERSTANDING DISPARITIES AND FACTORS INFLUENCING STUDENT SUCCESS.



DATA VISUALIZATION



STEPS INVOLVED:



DATA LOADING

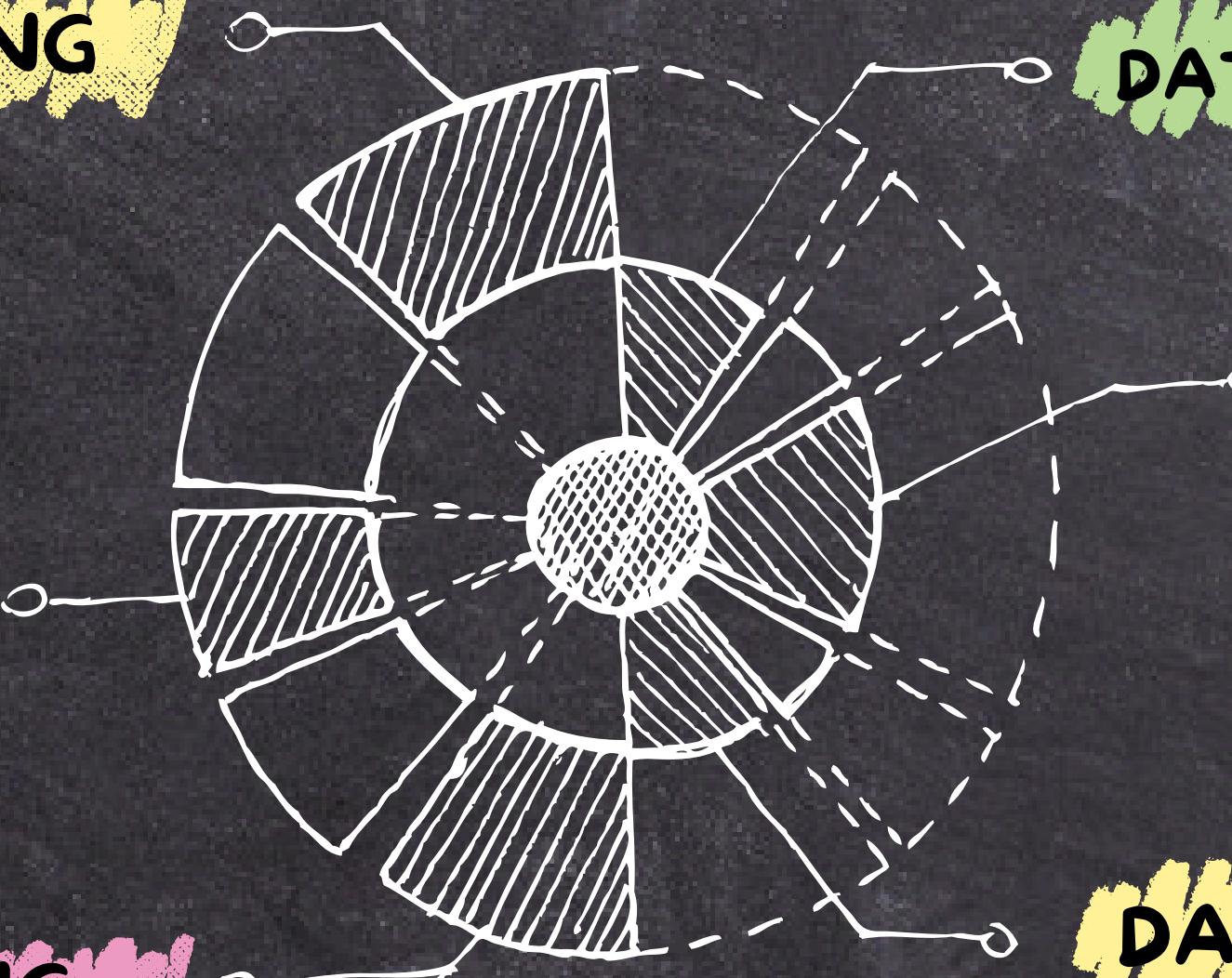
DATA TRANSFORMATION

DATA VISUALIZATION

DATA EXPLORATION

DATA CLEANING

DATA ANALYSIS



GENDER DISTRIBUTION

From given pie chart we analyzed that there is not much difference between the number of male and female students , however the count of female students are more as compared to men , female = 50.3% , male = 49.6%

Gender Distribution Percentage

female

50.3%

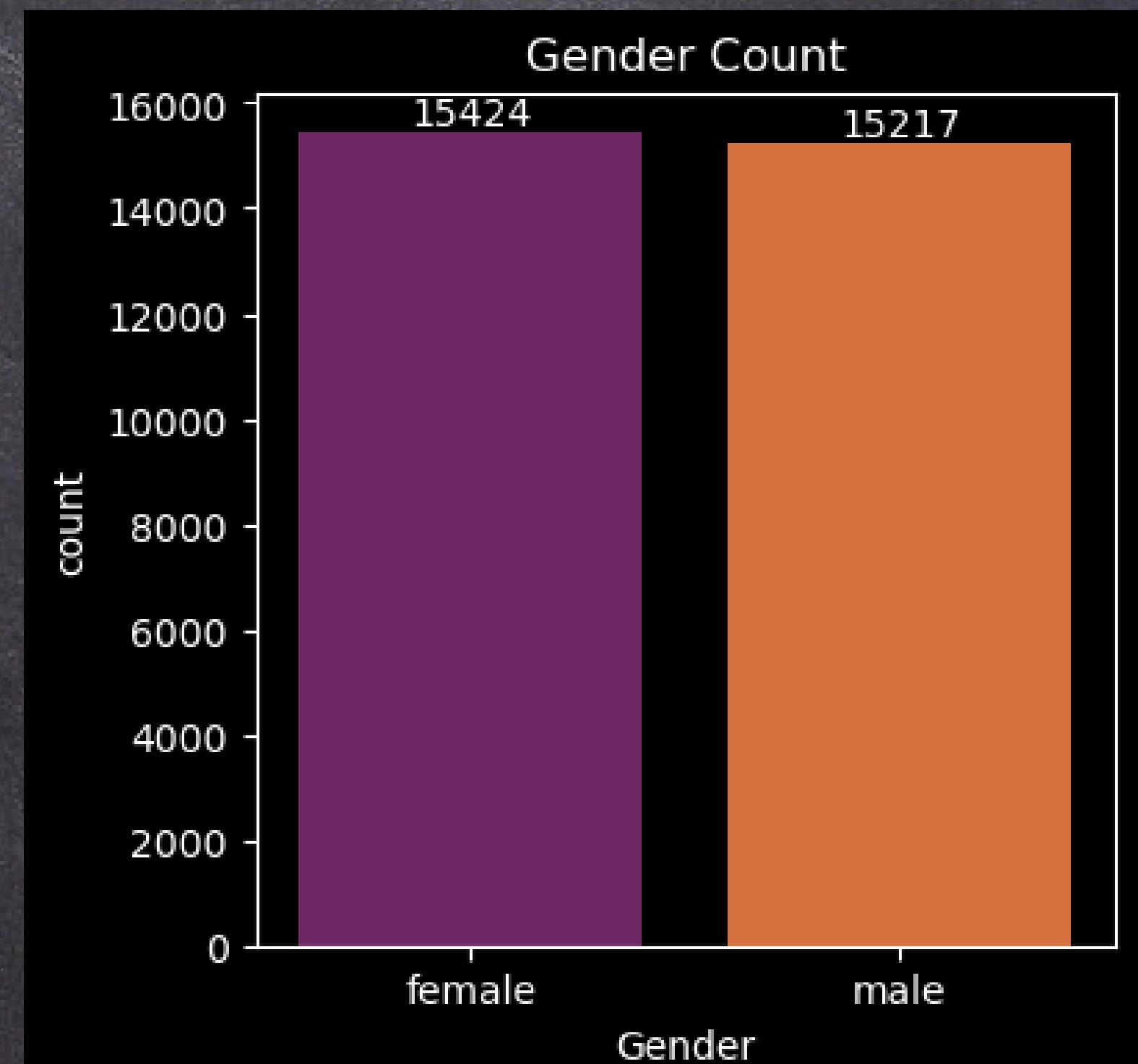
Gender

49.7%

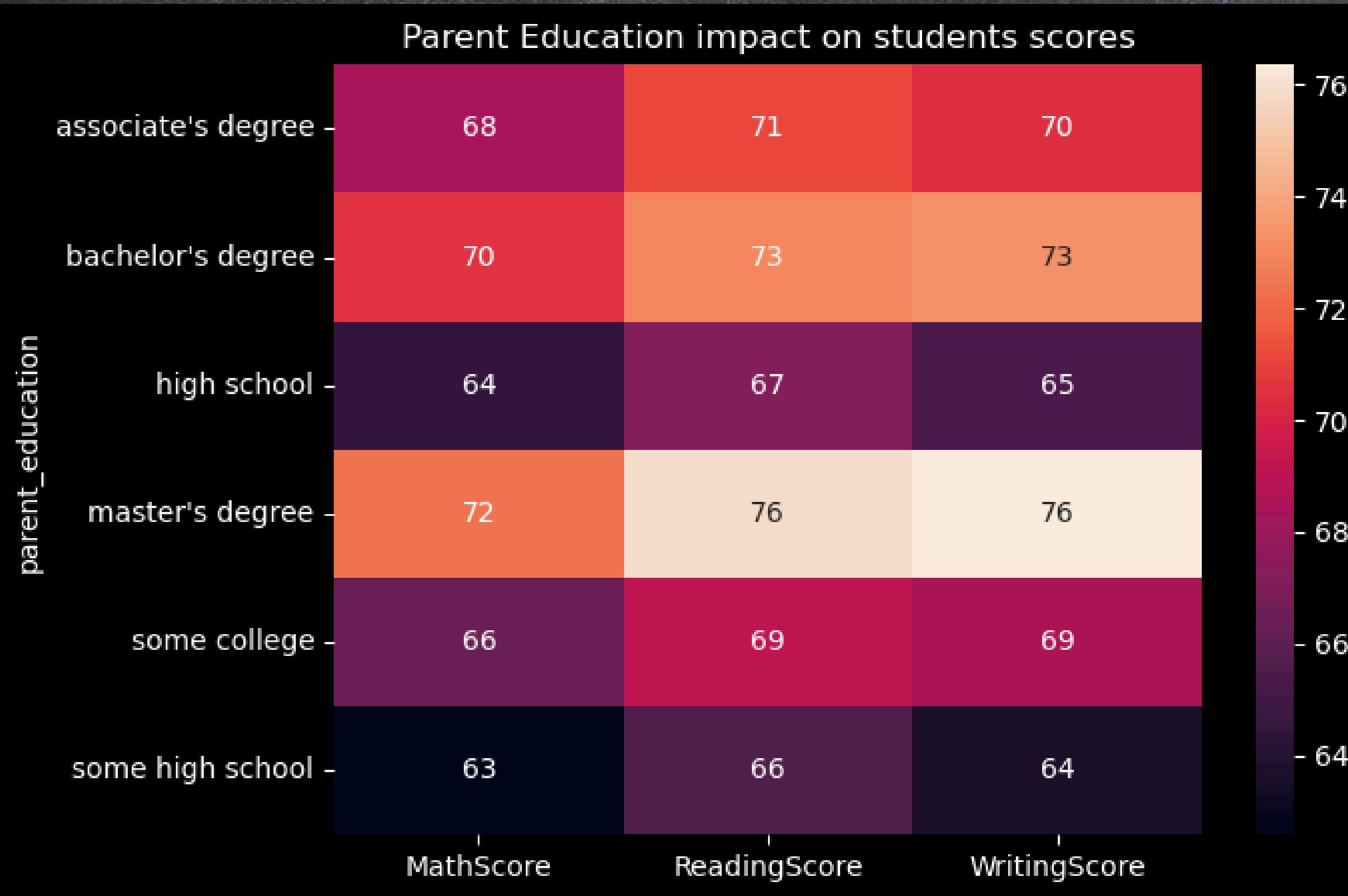
male

GENDER RATIO COUNT

From given countplot we concluded that there is just minor difference between the number of male and female students , female = 15424 , male = 15217



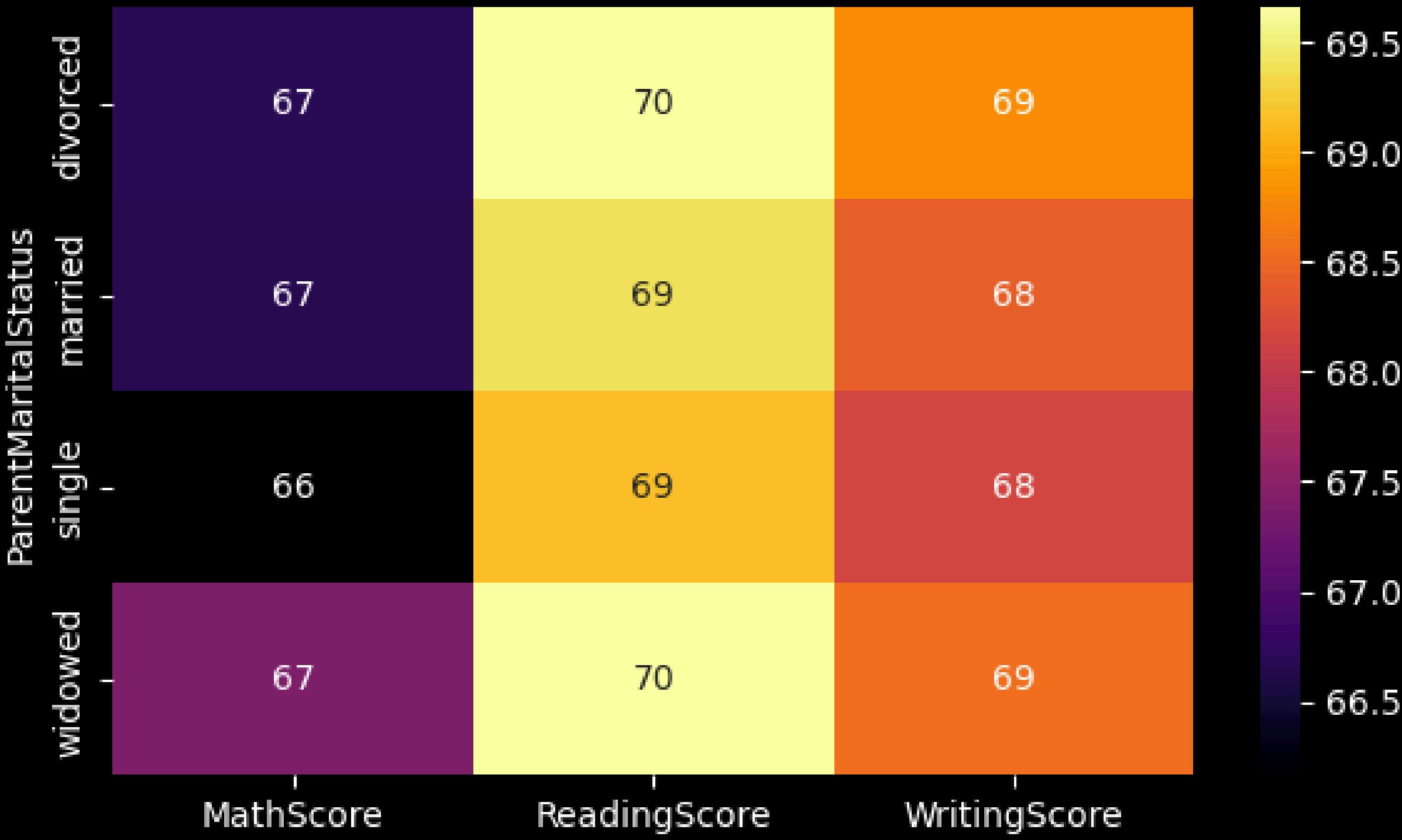
IMPACT OF PARENT'S EDUCATION ON STUDENT MARKS



This heatmap shows that the parent's education has the greater impact on student marks. The parents who have pursued "master's degree" there children average marks are (72,76,76) while the parent's who only studied till "high school" there children average marks are (63,66,64), it shows that higher the parent's education refers to higher the student marks.

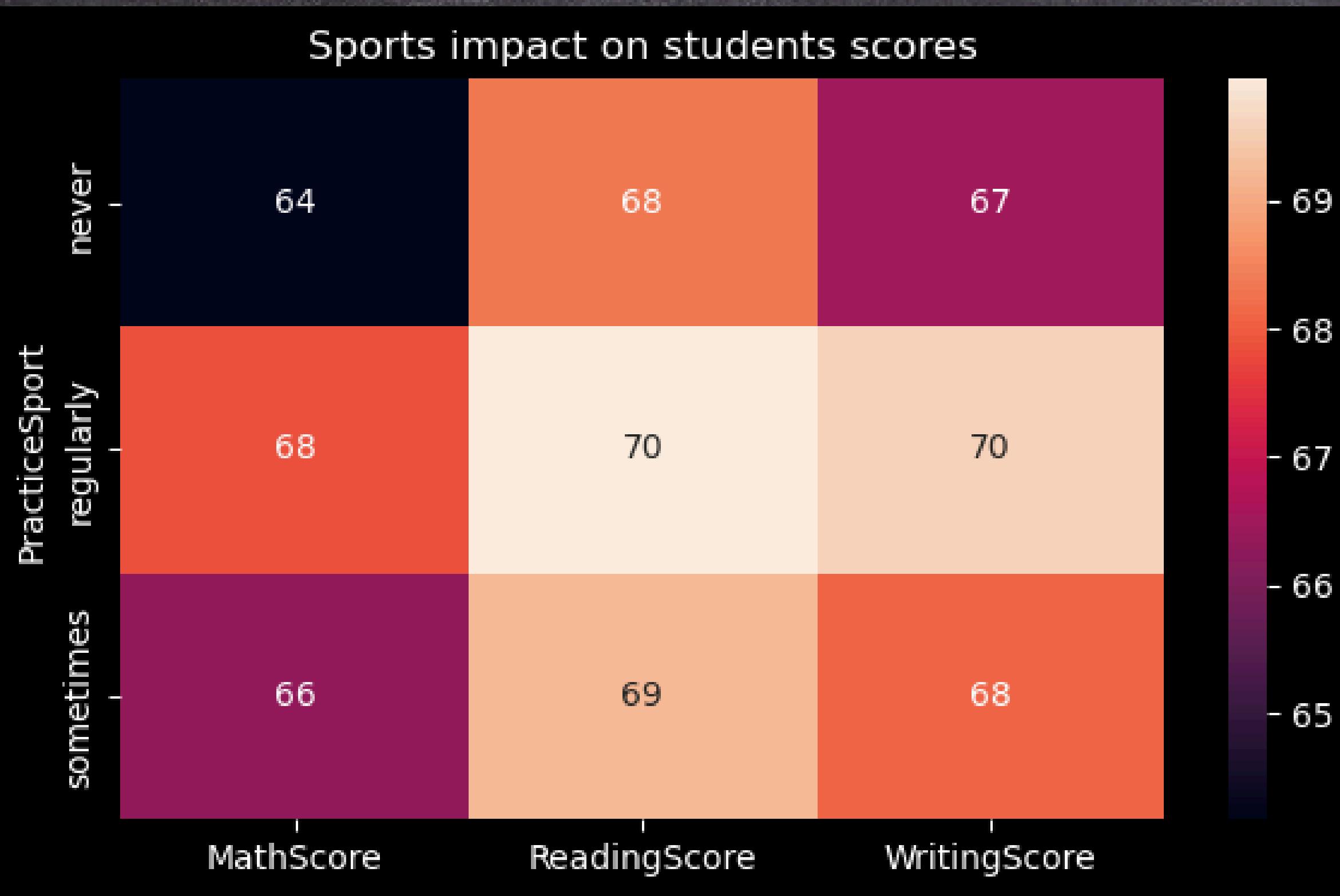
IMPACT OF PARENT'S MARITAL STATUS ON STUDENT MARKS

Parent Marital Status impact on students scores



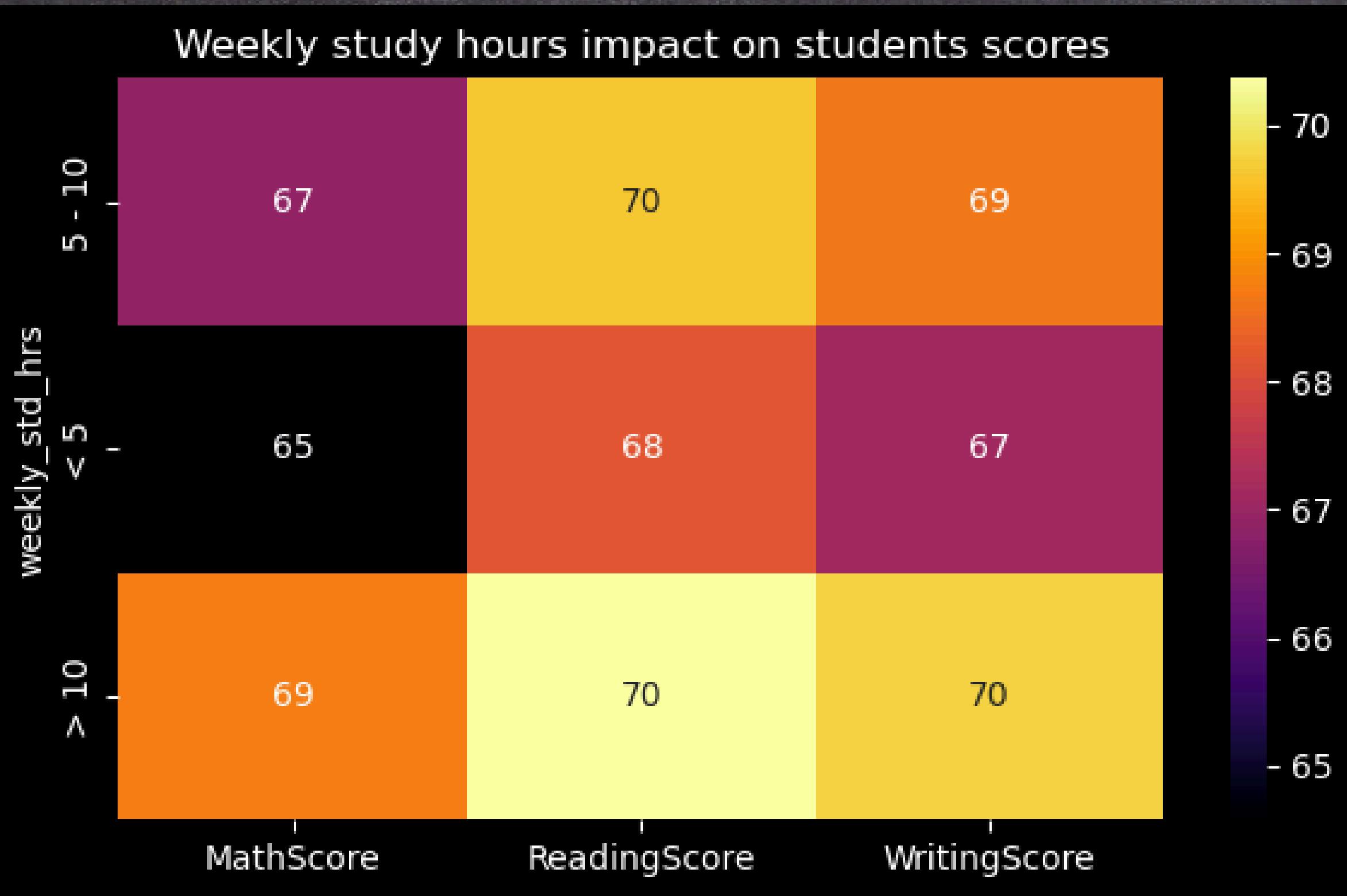
The given heatmap shows that the Parent's Marital status have no (negligible) impact on student's marks.

IMPACT OF SPORTS ON STUDENT MARKS



The heatmap shows that "practice sport" doesn't create a major impact on student marks but from above plot we concluded that the students who play games/sports regularly or sometimes have higher average score in all the subjects as compared to the students who never play any sports. It means playing sports regularly or sometimes keeps them physically fit and helps them achieving good marks in each subject.

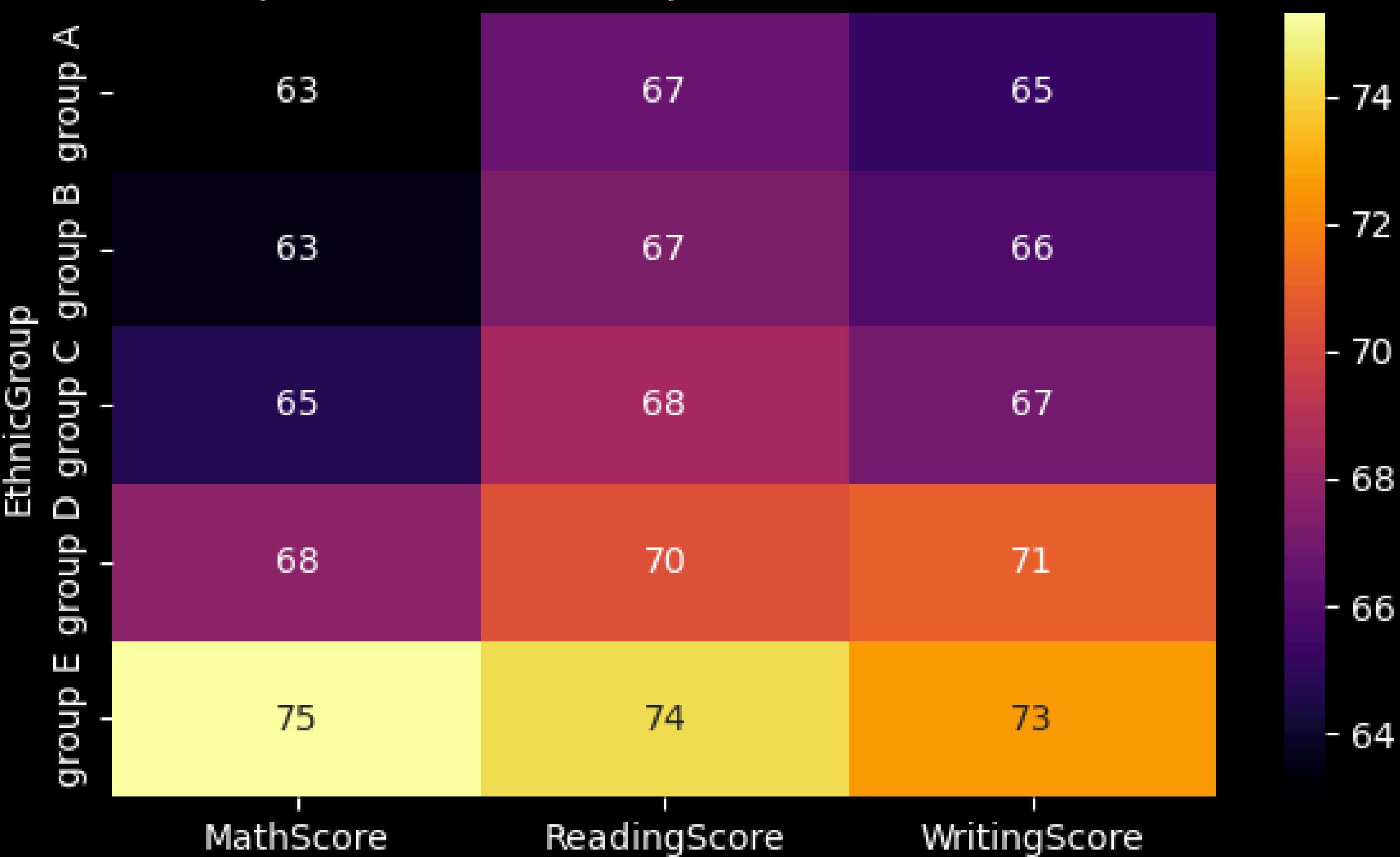
IMPACT OF (WEEKLY STUDY HOURS) STUDYING TIME ON STUDENT MARKS



This heatmap shows that "weekly study hours" doesn't create a major impact on student marks but from above plot we concluded that the students who studies more than 10 hours or studying 5 to 10 hours weekly have higher average score in all the subjects as compared to the students who studies for less than 5 hours weekly. It means studying for 5 to 10 hours weekly is sufficient for achieving good marks.

IMPACT OF ETHNIC GROUPS ON STUDENTS SCORES

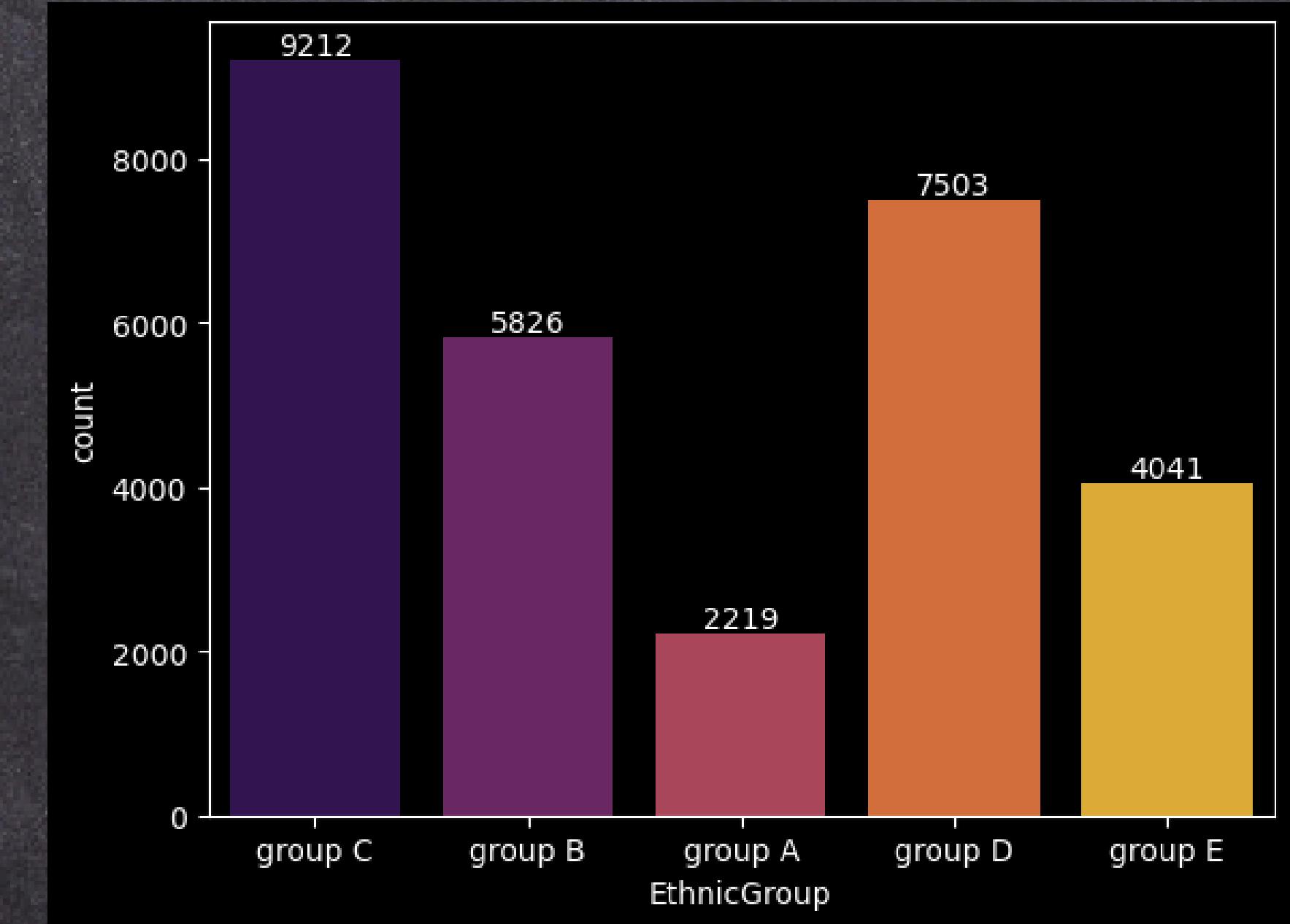
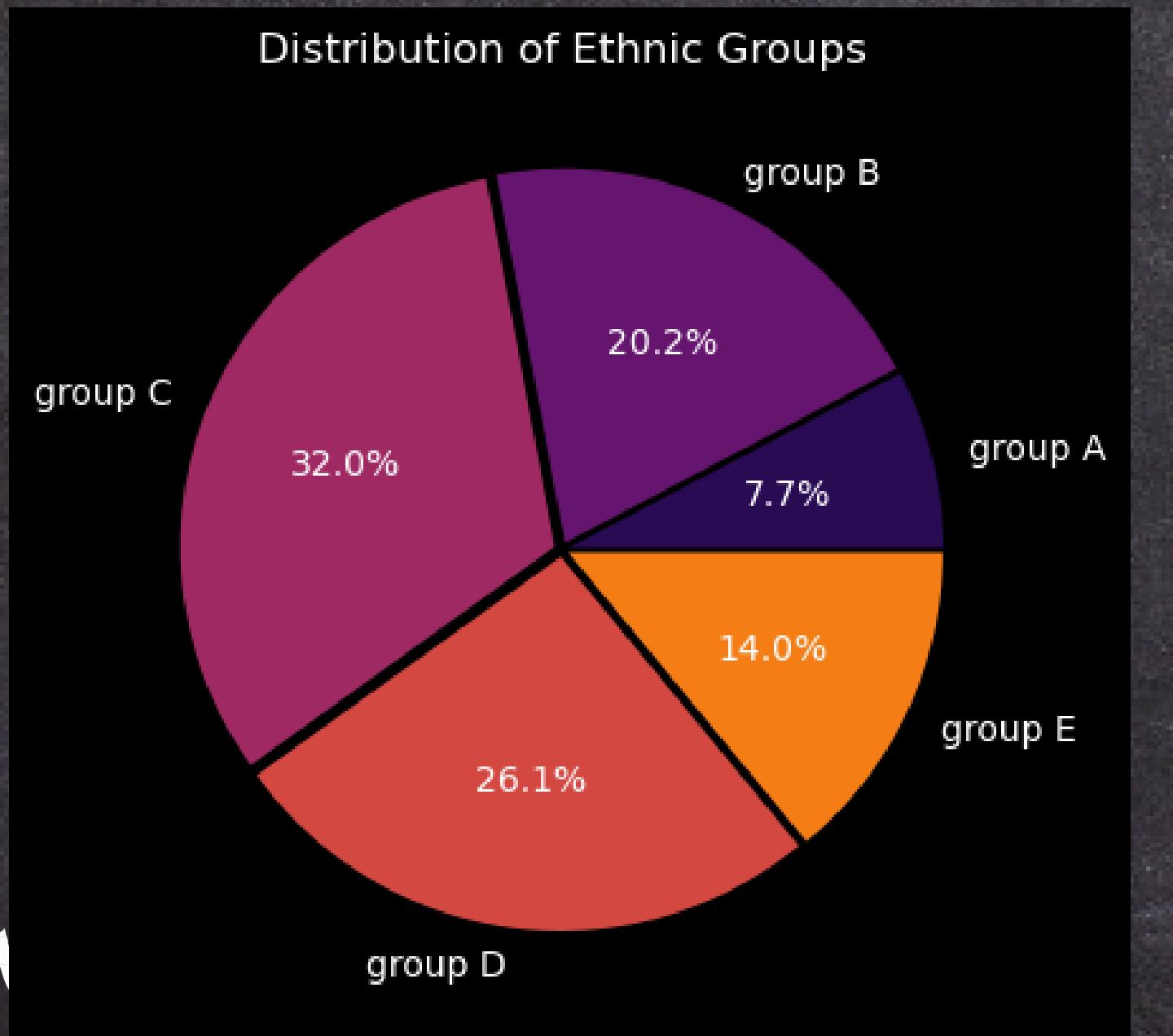
Impact of Ethnic Groups on students scores



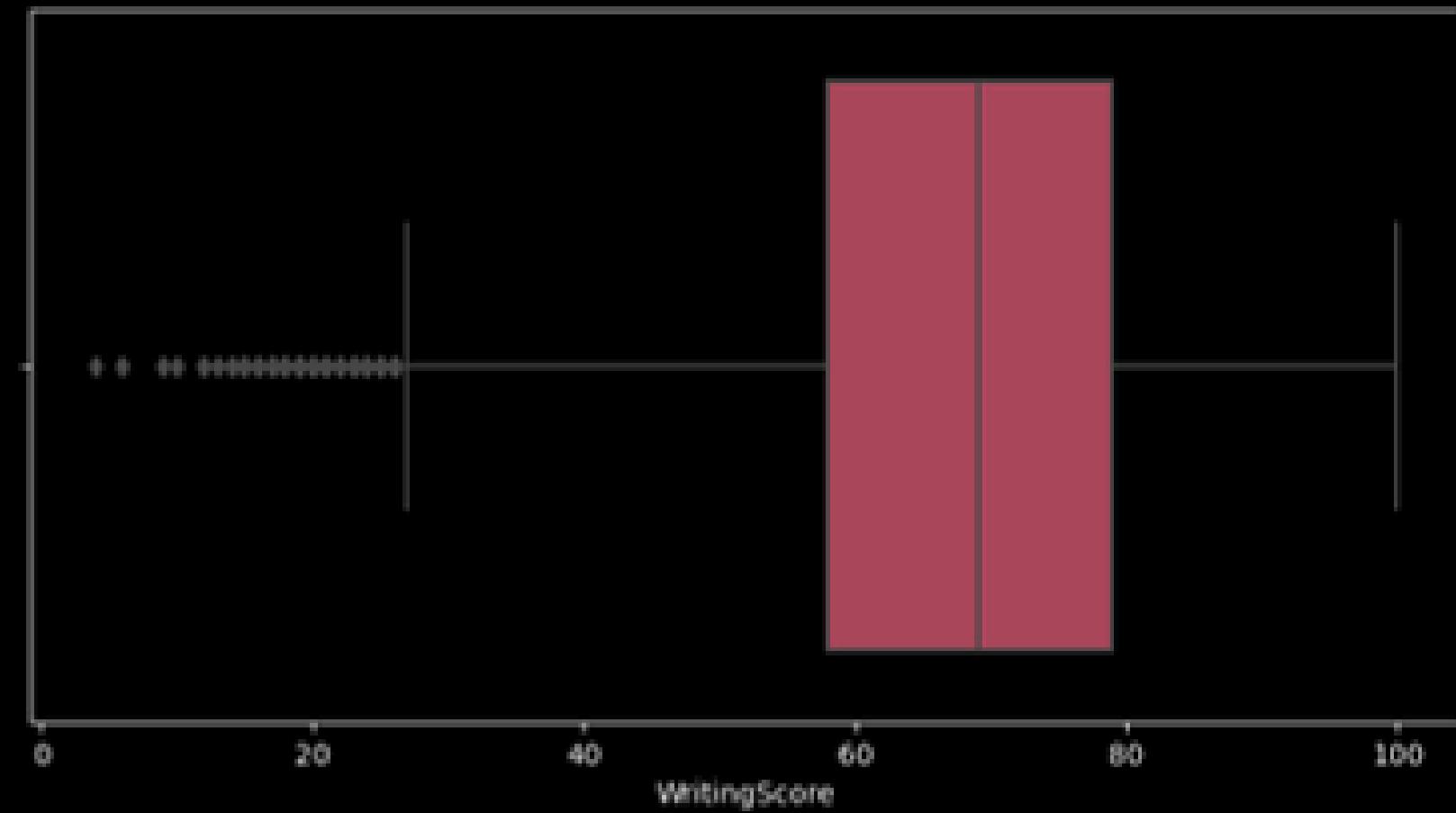
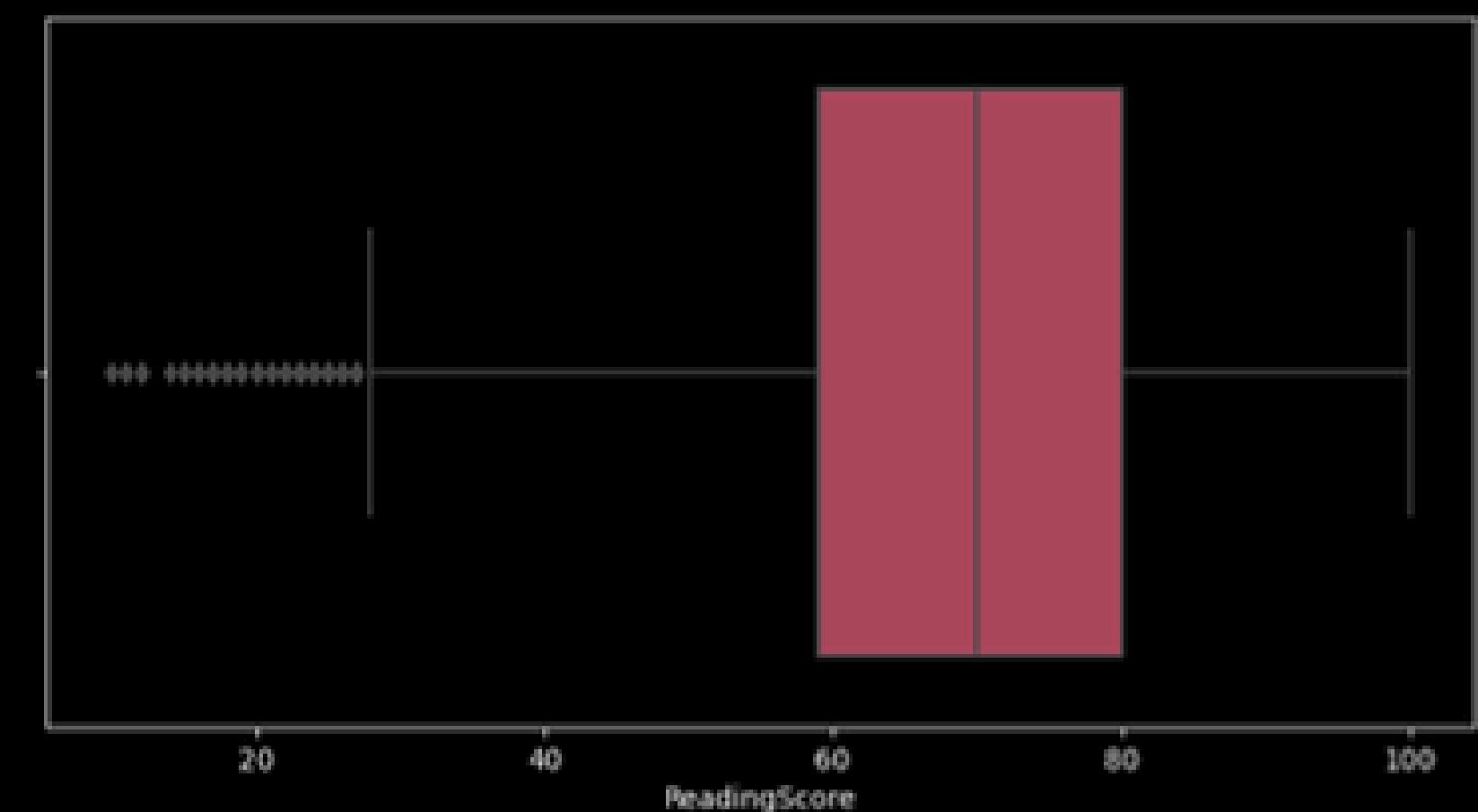
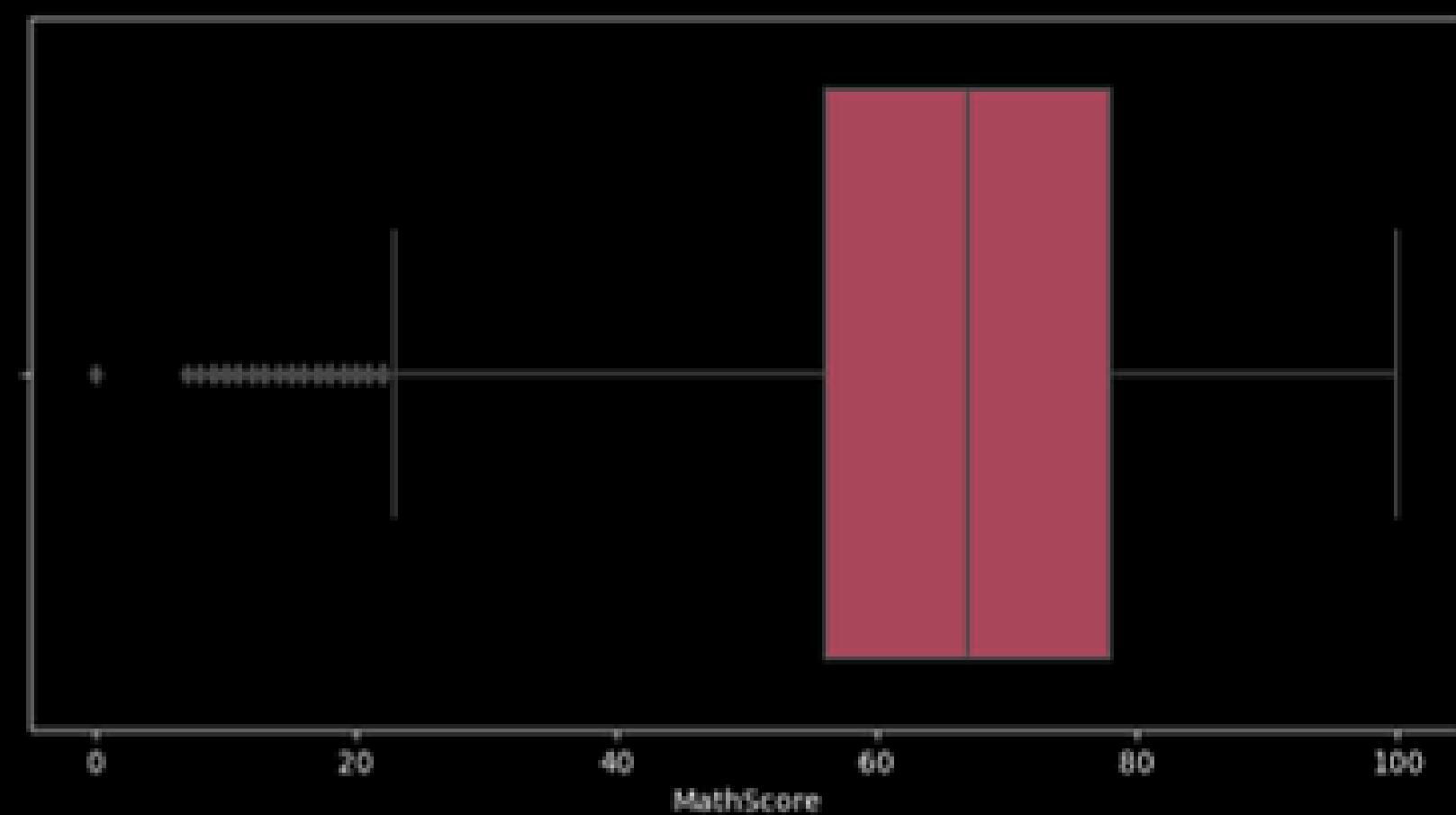
The given heatmap shows that the students of "Ethnic group E" has scored highest marks in all the subjects as compared to other Ethnic group students.



DISTRIBUTION OF ETHNIC GROUPS



Interpretation : Group C has the highest count among all the Ethnic Groups , it means most of the students are from Ethnic group C



DETECTING OUTLIERS AND EXTREME VALUES IN DATASET

From above plot we can interpret
that Maths is comparatively difficult
subject to score as compared to
reading and writing.

CONCLUSION AND SUGGESTIONS

1. Ethnic Groups:

- Certain ethnic groups consistently outperform others in Math, Reading, and Writing scores.
- There are notable disparities in performance among different ethnic groups, suggesting a need for targeted educational support and resources.

2. Gender:

- Gender analysis reveals differences in performance, with one gender typically performing better in certain subjects than the other.
- For example, females may have higher Reading and Writing scores, while males may excel in Math.

3. Socioeconomic Status (SES):

- Students from higher SES backgrounds tend to have better academic performance compared to those from lower SES backgrounds.
- This trend highlights the impact of socioeconomic factors on educational outcomes and the importance of providing additional support to lower SES students.

CONCLUSION AND SUGGESTIONS

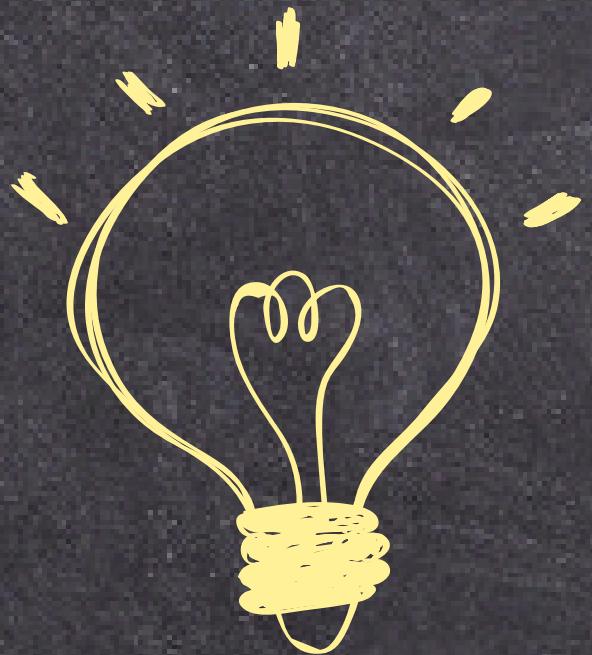
4. Parental Education Levels:

- Higher parental education levels are associated with better student performance across all subjects.
- This suggests that parental involvement and educational background significantly influence student success.

5. Performance Trends Over Time:

- Analysis over different time periods shows trends in student performance, with fluctuations that may be linked to changes in curriculum, teaching methods, or external factors.
- Identifying these trends can help in understanding the effectiveness of educational policies and practices over time.

Overall, the EDA reveals important insights into the factors influencing student performance, highlighting disparities based on ethnicity, gender, SES, and parental education levels. These findings underscore the need for tailored educational strategies to address these disparities and promote equitable student success.



THANK YOU

Kaggle dataset : <https://www.kaggle.com/datasets/desalegngeb/students-exam-scores>