



STUDENT ALCOHOL CONSUMPTION

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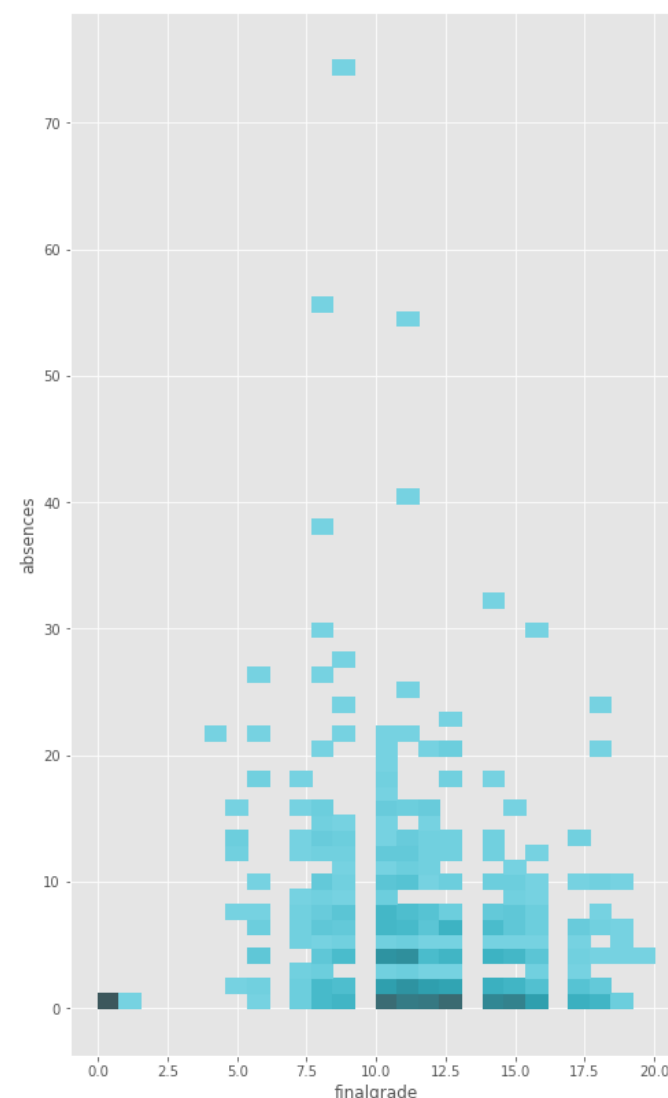
INTRODUCTION

Students from all over the world are affected by their social and economical status as it plays a great role in their academic achievements. One aspect of social life among the students is also social gatherings which often include consuming alcohol. The aim of our project was to analyze if alcohol consumption or other aspects such as absences, family relationships and financial support have an affect on sudents' final grade.

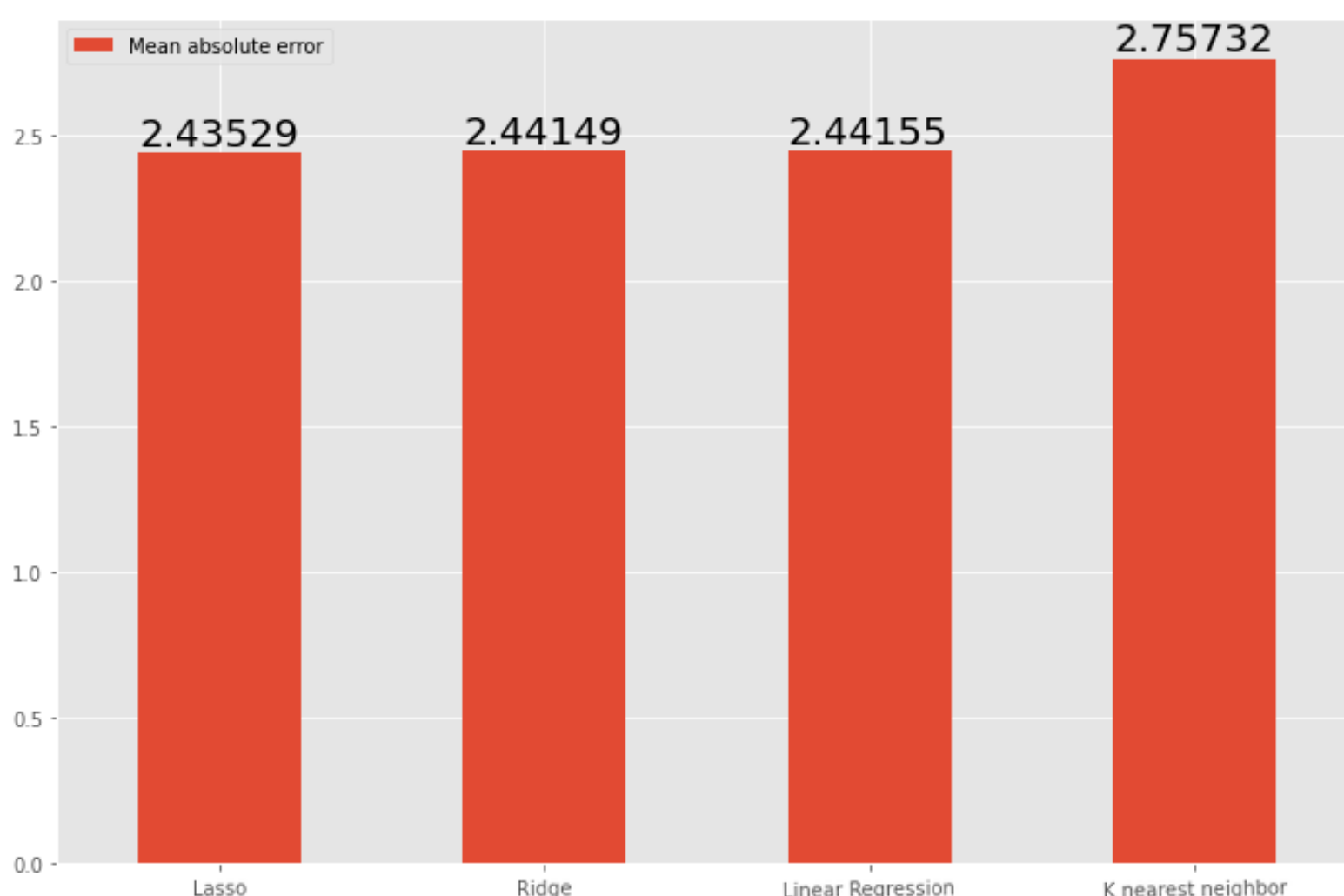
THE DATA

The data in our dataset was obtained in a survey in two Portuguese secondary schools which contains a variety of 1046 students' socio-economic background, school and alcohol consumption related data. Our cleared dataset included selected attributes such as students' weekly alcohol consumption (1-very low to 5-very high), final grades(0-20), family relationships, financial support and extra paid lessons.

We visualized the correlations between final grades and alcohol consumption, absences, family relationships, financial support and paid extra classes by plotting the data.



We created the prediction models by creating training and test sets and used Lasso, Linear, K-Nearest Neighbour and Ridge regressions. After that we compared these methods and their mean absolute errors.



FUN FACTS

- Students who rated their weekly alcohol consumption lowest, as **1/5**, had the highest mean final grade: **11.8**
- Students with the lowest final grade: **9.9** were the ones that rated their weekly alcohol consumption as **3/5**
- Students who took paid extra classes had a lower mean final grade than the ones who did not take paid extra classes (extra classes - **10.97** no extra classes - **11.44**)
- Students who had a bad family relationships with a rating of **1-2/5** had a mean final grade of **10.56**. Those who had good family relationships with a rating of **4-5/5** had a mean final grade of **11.47**
- Family financial support had almost no impact on student's final grade (with family support - **11.38** without family support - **11.28**)



CONCLUSIONS

- It turns out that student's alcohol consumption was the biggest factor affecting their final grade
- Lasso regression method had the lowest mean absolute error for predicting the student's final grades based on their socio-economic factors and alcohol consumption

<https://github.com/ottobrunok/IDS-project>

<https://www.kaggle.com/uciml/student-alcohol-consumption>