Predicting Final grade of the student

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Introduction

- The main aim is to predict the final grade of the student based on various attributes which include the student grades, demographic, social and school related features

Materials/Methods

- Features:
  - First subject Grade
  - Second subject Grade
  - Mother's education
  - Father's education

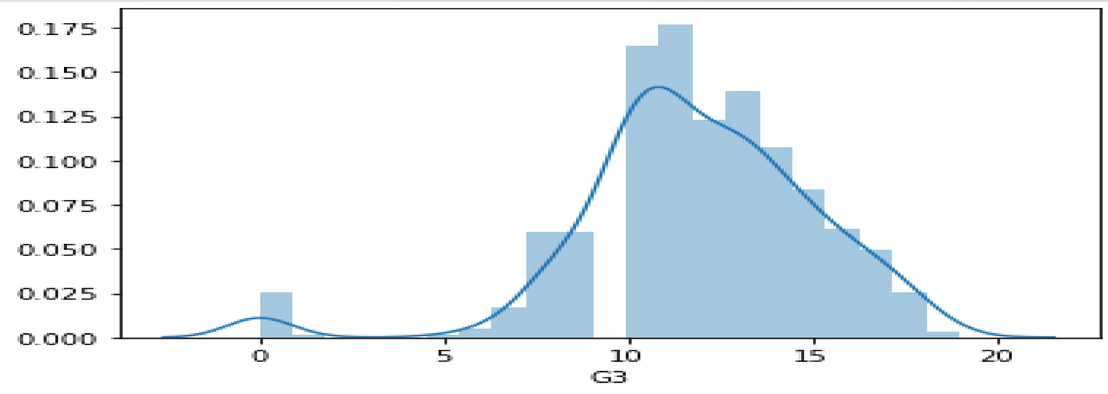
Performed data cleaning

Performed Linear regression to train the model.

Used Decision Tree Classifier to implicitly perform feature selection.

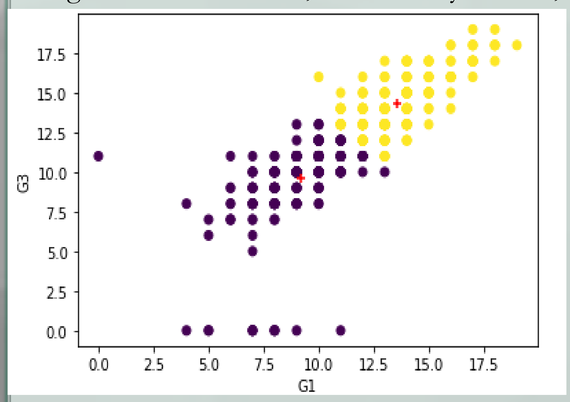
Evaluate

Results

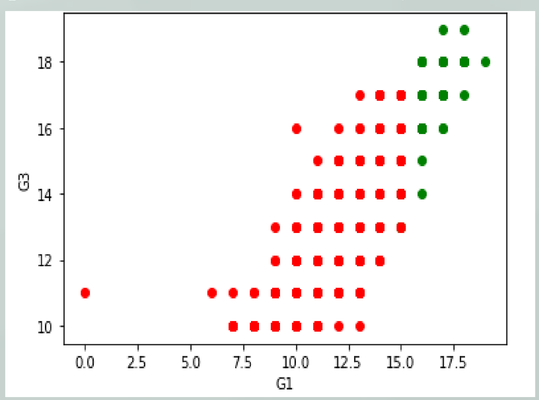


Using SVC

Using the above classifier, the accuracy is 86% ,the precision is 86% and the sensitivity is 86%



Based on the clustering I would say that the student gets higher grade whose G1(first subject grade) is closer to the top of the centroid of the top cluster rather than the bottom cluster



From the above graph it is clear that the student who gets a grade greater than 15 have a higher chance of getting a grade higher than 15

Conclusions

- Evaluating the final grade of the student based on the other grades G1 and G2
- The data I have chosen is continuous so I performed linear regression to predict the final grade with an accuracy of 86%
- I have classified the grades of the students into 4 groups and performed decision tree classifier to determine if a student grade belongs to a particular group or not
- I have performed clustering to determine if the student gets a good grade based on the other grade

Additional Resources

- https://archive.ics.uci.edu/ml/datasets/Student+Performance
- https://scikit-learn.org/stable/modules/generated/sklearn.tree.DecisionTreeClassifier.html
- https://www.kaggle.com/sultanmkhan/datamining

Acknowledgements

Mentor: Dr. Charles Hoot

Poster Repository

GitHub

https://github.com/Abhinaykaitha/MLPoster