Self-Assessment

My Part in this project was as a project manager where I initially created the readme file and organize the resources of the team, along with make sure that before we submitted the segments each week that everything was completed by each team member for the task that they were responsible for. I was also in charge of setting up meetings to get the group together to go over issues that may have raised and our next steps for each of the segments. As the project progressed my part evolved from a project manager role to the person that would be responsible for part of the creation of the visualization for this project.

The greatest challenge that I had was time, it was my greatest enemy. To help elevate this issue I had to set aside more time like during my lunch hours, or setting more time on weekends to work on the project.

Team Assessment

Our team analysis:

* **Communication protocol:** For the duration of this project, Slack was the primary communication platform, with email and text message as secondary options, and Zoom technology supported twice weekly and adhoc meetings.
* **Challenge 1 and resolution:** During the initial stage of the project, we struggled to find the right data set, but as a team we came together to figure out what would make a good data set to explore, which brought us to wine quality.
* **Challenge 2 and resolution:** Another issue we had was when we would submit our segment, the feedback was slow especially at the beginning we lost two class periods as we did not get the feedback until the start of the second class which meant we missed out on valuable TA help and guidance. To resolve this, we had to have additional meeting over the weekend to get caught up and be able to turn the segment in on time.
* **What would you do differently:** If I had to do this over I would have asked “how do you know how to find a good data set” right away before we did any work on a data set that we found which turn out not to work for our group, hance why we changed data sets from our original data set.

Summary of Project

Our final project focused on predicting the Quality of Red and White Wine using Machine Learning Classification Algorithm to predict the quality of the wine based on their 11 attributes (chemical components) which contributed to the final quality score (1-10) and quality grade (Low, medium, High)

**The Models we explored:**

* Decision Tree Classifier
* Radom Forest Classifier
* Balanced Random Forest
* Gradient Boosting Classifier

The Results based on our Analysis:

* We can predict Quality of wine based on its chemical composition
* Alcohol content and sulfur dioxide plays key role in wine quality
* Random Forest Model fits best to predict the quality of the wine
* Bonus: We extended our model to predict the color of wine

Our Dashboard: <https://winequalityprediction.wpcomstaging.com/>



