Project Proposal: Team Ultra

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Introduction:
For our project, we will be looking at how the different attributes of wine affect the overall quality, and to attempt to classify the types of wine based on their attributes. This topic is interesting to us because we do not know very much about how wine is made / how different things such as acidity and sulfur dioxide affect the quality. Wine has existed for thousands of years, and there are many varieties of red/white wines, yet most people do not know what type of wine would go well with their taste. We will applying our knowledge of R to first analyze the data and then to create recommendations.

Related Work:
We found many other similar data sets, however they all contained different variables of attributes of wine. Most of these other projects were just done looking at the quality of wine. We are making our project different, however, by using rshiny after analyzing the data to create a way to recommend certain types of wine based on individual taste preferences. This idea was inspired by the mobile app Vivino, which "is the world's largest community and the ultimate destination for discovering and buying wines." As stated, this app is community driven, where it recommends new wines based on the reviews of others. Our project will be recommended new wines based on the science behind the quality.

Method:
Some of the R packages will be using include: tidyr, dplyr, ggplot2 and shiny. Right now, we have not started our analysis much. It does not look like will need to do too much cleaning of the data besides removing missing values. Then will look into exploratory data analysis, such as the distributions of each variable, how they interact with each other through their correlations, as well as checking for outliers/influential data points and adjusting the dataset accordingly. Some sketches of our visualizations and interface can be found in the Appendix section below. In addition to all of the work in R, we will doing a decent amount of research into each of variables, as starting the project we know very little about how wine is made.

Feasibility:
This project will be done before the end of the semester by weekly meetings as well as attending office hours with any questions we have for our project. First we need to do research on the chemical makeup of the wine and what makes each classification for the types of wine.

Conclusion:
The goal of our project is to better help people determine a type of wine that they will enjoy. There have been a lot of studies done using similar data sets, but the primary focus of all of these was just to see how the attributes of wine affect the overall quality. We will be doing similar

analysis to this, but then creating a interface using our new knowledge of wine to make recommendations based on a individual's taste preferences.

References:

https://data.world/food/wine-quality   (data from here)

Madeline Puckette. 2015. "Sugar in Wine Chart." Accessed April 13, 2018.
      http://winefolly.com/review/sugar-in-wine-chart/

Madeline Puckette. 2015. "Understanding Acidity in Wine." Accessed April 13, 2018.
      http://winefolly.com/review/understanding-acidity-in-wine/

Morethanorganic. N.d. "Adding Sulphur to Wine." Accessed April 13, 2018.
      http://www.morethanorganic.com/sulphur-in-wine

Appendix: