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# **Mid Term Project Proposal**

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# Wine Quality Check

**Project Idea:** Wine Quality Check is a project that predicts whether a wine's quality is high or low using the previously stated dataset and a supervised learning model. I am going to use Logistic Regression and a Decision Tree model to predict the wine quality and choose the best model for the selected dataset. The dataset contains several variables (features), such as the target variable highlighted in green below:

fixed acidity	volatile acidity	citric acid	residual sugar	chlorides	free sulfur dioxide	total sulfur dioxide	density	pH	sulphates	alcohol	quality
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The steps followed during this project include:

- Getting and importing the dataset
- Data Analysis (getting overall statistics about the datasets and correlation with the targeted variable)
- Data Processing (setting the binary value to the target variable, handling imbalanced dataset)
- Splitting the dataset into training and testing
- Training the model (Logistic Regression and Decision tree)
- Evaluating the best model for the dataset

**Data Set:** The dataset contains independent variables “fixed acidity, volatile acidity, citric acid, residual sugar, chlorides, free sulfur dioxide, total sulfur dioxide, density, pH, sulphates, alcohol” and dependent variable “quality” of red wine. This dataset provides information about the quality of wine.

<http://www3.dsi.uminho.pt/pcortez/wine/>



winequality-red.csv

## Software and Libraries required:

- Jupyter Notebook
- Python
- Numpy
- Pandas
- Matplotlib
- Seaborn
- Sklearn

## References:

[1] *Prediction of Wine Quality*. (2018). Kaggle

<https://www.kaggle.com/code/muammerhuseyinoglu/prediction-of-wine-quality>

[2] *Logistic Regression Wine Quality (~92%)*. (2021). Kaggle

<https://www.kaggle.com/code/abolarinbukola/logistic-regression-wine-quality-92>