

A winery wants to optimize their business and improve quality assurance by DS&ML solution. The ultimate goal is to fire all sommeliers and replace them by a series of chemical tests. Currently sommeliers marks are used for wine marketing and distribution to distinguish elite wines out of average and poor ones regardless of region and year of production.

Our data is in **WINE.csv**. There is information about wine and chemical tests results:

- **Index** - item ID
- **Target** - target value to predict - expert assessment (median out of marks from several sommeliers)
- **Type** - type of wine
- **Alcohol** - alcohol level
- **Density** - density of wine
- **Nitrogen** - total level of nitrogen-containing compounds
- **pH** - pH-level
- **Sugar** - total level of sugar components

They did not provide information about the meaning of other tests.

**Goal:** provide a system to automatically assess the wine quality.

**TEST.csv** has the test-part of our data. Your task is to provide predictions for wines in this file in a simple form: just item ID (Index) and predicted final mark. Take a look on **Sample\_submission.csv**.

**Your tasks are:**

- Build and train 2 different models suitable for the problem.
- Propose a metric to evaluate your system.
- Pick the best solution out of those 2 and explain your choice.
- Provide Jupyter Notebook with your investigation, training and conclusions. Please use Python.

**Side comments:**

- **EDA is the most essential for this task. Please make sure to explore data as deep as possible.**
- Models should have different approaches, not just changed hyperparameters.
- There are some solutions published for a similar problem. We ask you to provide your own.
- You can't use any other data source to expand your dataset.