

## Coding Project 1

In this project, you will train classifiers based on decision trees to identify types of glass. The dataset consists of 214 instances of glass with the following 9 numerical descriptive features per instance:

- Refractive index
- Sodium
- Magnesium
- Aluminum
- Silicon
- Potassium
- Calcium
- Barium
- Iron

The target class of each glass instance is 1 of 6 glass types:

- Float processed building window
- Non-float processed building window
- Float processed vehicle window
- Container
- Tableware
- Headlamp

The data will be divided into a training set and a validation set. You will start from training the default decision tree classifier in the *Scikit-learn* library and then train a decision tree classifier that is pre-pruned based on depth. You will also train an ensemble of decision tree classifiers using bagging and boosting.

Once you have built these classifiers, you will evaluate them to find the one with the best performance.

Refer to the Jupyter notebook for more details.