

# Homework Assignment

1. Using Python and Numpy, write a class named `DecisionTree`, which implements the decision tree model based on information gain.
2. Consider the dataset `lenses.data` (the link is also provided) and use the `DecisionTree` class to build a decision tree for this dataset. The data set is explained below.

列号	列名	特征/类标记	可取值
1	ID	-	-
2	age of the patient	特征	1 (young), 2 (pre-presbyopic), 3 (presbyopic)
3	spectacle prescription	特征	1 (myope), 2 (hypermetrope)
4	astigmatic	特征	1 (no), 2 (yes)
5	tear production rate	特征	1 (reduced), 2 (normal)
6	Class	类标记	1 (hard contact lenses), 2 (soft contact lenses), 3 (no contact lenses)