Report for Project: **Term Deposit Marketing**

This project is a binary classification problem. After several experiments, I decided to use the GaussianNB classifier to obtain the required accuracy.

I obtained **%88** accuracy by evaluating my model with 5-fold cross-validation. (The corresponding codes can be found in: MainCode.py)

Bonus(es):

1) We are also interested in finding customers who are more likely to buy the investment product. Determine the segment(s) of customers our client should prioritize.

Solution: This problem can be solved by unsupervised labeling of customers. I used K-mean clustering to determine the segment of customers (instances) who are more likely to buy the investment product. Customers with the same label are more likely to show the same behavior.
(The corresponding codes can be found in: Unsupervised_Learning.py)

2) What makes the customers buy? Tell us which feature we should be focusing more on.

Solution: This problem can be solved based on Information Theory. I calculated the Normalized Mutual Information between feature vectors (attributes) and the target vector. The most important feature (attribute) is **duration**. (The corresponding codes can be found in: Normlized Mutual Information.py)