**Related file: XU\_YUHAN\_Assign\_10\_NB.py**

**Assignment 10 NB(Student-T)**

## **1. implement a Student-t Naive Bayesian classifier (df = 0.5, 1, 5) and compute its accuracy for year 2**

| **df** | **Accuracy (%)** | **ScreenShot** |
| --- | --- | --- |
| **0.5** | **57.69** |  |
| **1** | **57.69** |  |
| **5** | **61.54** |  |

## **2. compute the confusion matrices for year 2**

| **df** | **Confusion Matrix** |
| --- | --- |
| **0.5** |  |
| **1** |  |
| **5** |  |

## **3. what is true positive rate and true negative rate for year 2**

| **df** | **TPR and TNR** |
| --- | --- |
| **0.5** |  |
| **1** |  |
| **5** |  |

## **4. what is the best value of df? Is it better than normal Naive bayesian**

The Best Value of df is 5, it is better than normal Naive Bayesian, because its accuracy is 61.54% which higher than the accuracy of normal one, which accuracy is 50%.

## **5. for the best value of df, implement a trading strategy based on your labels for year 2 and compare the performance with the ”buy-and-hold” strategy. Which strategy results in a larger amount at the end of the year?**

Because the second year is a big drop compared to the first year,it is impossible to hold for a long time.

Therefore, the strategies we can take are simple, all short-term actions.Buy when it falls compared to the previous day,

and sell when it rises compared to the previous day,so as to maximize the benefits.

Compared to buy-and-hold, my strategy will results in a larger amount at the end of the year.