

# Assignment

In this assignment, you will write a generic script to trade your stock depending on the labels (computed from classifiers or assigned). Recall that for each week labels mean the following:

1. green label: it was a good week to be invested in the stock
2. red label: it was better to remain in cash

You will implement a trading strategy based on your labels:

- you will start with \$100 dollars. You will not be given any additional money and will trade only with what you have accumulated so far.
- assume that you are making a decision on Friday in week  $n$  just before the market closes and you know the (adjusted) closing price  $P_n$  for your stock on that day
- if next week  $n + 1$  is predicted with a "green" label:
  1. if you have no position then buy your stock (with all the money you have so far) at the price  $P_n$
  2. if you have a position, do nothing - stay in the market for next week  $n + 1$  and re-examine your decision next week

- if week  $n + 1$  is predicted with a "red" label:
  1. if you have no position, do nothing - stay in cash for next week  $n + 1$  and re-examine your decision next week
  2. if you have a position then sell it at the end of the day (at price  $P_n$ ) and stay in cash for next week  $n + 1$
- no short positions are to be taken

For both years you will carry the same analysis separately:

1. What is the average and volatility of weekly balances?
2. plot the "growth" of your account. Week numbers on  $x$ , account balance on  $y$
3. what (and when) was the min & max of the account?
4. what was the final value of the account?
5. what was the maximum duration (in weeks) that your account was growing and what was the maximum duration (in weeks) that your account was decreasing in value?