**[15-112] Design Proposal part I: Project Proposal**

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1. **Project Description:**

Algo Trading. This term project explores the methodology of reversion to mean (by implementing dynamic moving average) to predict stock prices.

1. **Competitive Analysis:**

There are many projects in regard to algorithmic trading, ranging from beginners using logistic regression models, to expert levels using techniques that require a PhD in statistics. Results also range from high performance to not predicting to the stock at all. Stocks are very volatile. Algo trading is, by no means, a short-term time investment. I’d like my project to act like a stepping stone, a start, a nudge that fuels a long-term trading investment.

My project will be like the simpler regression models online, but I will try to optimize my project and mess around with the parameters as I come close to finishing the TP. The difference between mine and those online is, instead of implementing a traditional MA, I’m proposing a *dynamic* moving average model that has many variable factors (range, window size, evaluation factors, etc.).

1. **Structural Plan:**

Starter screen, web scraping, actual prediction function(s), and back testing would be in different files for better visualization and implementation.

1. **Timeline Plan:**

My project consists of 5 steps:

* 1. Web scraping
  2. Prediction (main part of the project)
  3. Back testing
  4. Optimization
  5. (Implementation (paper trading)) 🡨 big maybe

By TP1: (i) and setting up user interface. Start sketching outline/pseudocode for (ii)

By TP2: finish (ii), the core part of the project! Start planning out how to back test

By TP3: execute (iii), include graphs, optimize parameters, etc. Start paper trading online

1. **Version Control Plan:**

I’m emailing the code to myself (constantly) as well as my TP mentor, and try to learn how to use Github. See below for picture of email draft (to mentor). Emails for sure.

1. **Module List:**

Pandas.

