Project 2

ME EN 5184 and 6184 Financial markets have used OR for decades.

You work for a stock trading company and are trying to establish a new mutual fund. You are putting together a marketing campaign to try to get people to invest in your mutual fund. Your report should have an executive summary and a technical report.

Your mutual fund will only rely on a limited number of stocks, see the excel file for data. Furthermore, your mutual fund will only buy and sell stocks at the end of the stock trading day. Thus, the prices of the stocks at the end of each trading day are provided.

The premise for your mutual fund is that you are very good at estimating the closing price of every stock. You will use this estimate to set up a linear program to optimize how much money or worth that you have at the end of year by correctly determining when to buy and sell the stocks.

As a proof of concept for your mutual fund you took a year of historical data from your stocks. During the same year, The Dow Jones industrial average was 27,046 at the start of the period. A year later, the Dow Jones was 26,501, for a loss of 2% on people's investment. Your optimized trading methodology using optimization should result in better returns. For simplicity of the model, you can assume that you started the year with 10 million dollars.

Since you work for a major trading company, you can ignore trading fees. You can also assume that any cash that is held for a trading day earns .008% interest per trading day (.00008) as a factor or about 2% annual return for the year. Note: This takes into account weekends and holidays, which avoids a lot of coding.

See class discussion on how stocks work.