Capstone Project Proposal

**Project Goals**

My goal in the Capstone Project is to use R to create a simple, short term, stock market trading strategy.

The strategy is to consist of 5 different investment products. I will use funds that cover Developed Market Equity (foreign and domestic), Emerging Market Equity, Gold, and Bonds. This should be well diversified, as these asset classes should not be highly correlated, simultaneously, for an extended period of time.

**Clients**

The potential clients are individuals wishing to employ technical trading strategies. These individuals are likely focused on reducing risk for themselves or their clients rather than maximizing returns. They would likely measure the success of the strategy as producing a risk adjusted return that is superior to a blended benchmark of the same funds. It is assumed that the client is directly invested in real estate, as demonstrated by its absence in the strategy.

**Yahoo Finance**

VOO Vanguard S&P 500 ETF

VEA Vanguard Europe Pacific

VWO Vanguard Emerging Markets ETF

VGLT Vanguard Long-Term Government Bond Index Fund

GLD SPDR Gold Shares

**Approach (Time-series “Absolute” Momentum)**

The strategy will be run with 1-12 month look back periods.

When any of the securities outperform Long-Term Government Bonds, over the given look back period, they are held for the subsequent month. If they underperform, the Long-Term Government Bond fund is held for the subsequent month.

I will start by making a new dataset that has the dates and all of the adjusted close prices for each fund.

I will then convert that dataset from daily to monthly

I will then create a function that returns the compound annual growth rates for the given look back period and assign them to a new datset

I will then create a function to determine which funds CAGRs are greater than Gov Bonds for their look back periods.

I will then create a function that calculates the change in value for each monthly holding period, including monthly rebalancing.

I will start at the furthest back date the data allows.

I will create a blended benchmark for comparison.

I will plot the strategy’s performance over time vs. its benchmark.

I will plot the strategy’s risk adjust performance over time vs. its benchmark.

**Deliverables**

I will include a report that briefly cover the methods. It will focus mainly on the results and a discussion of the figures. I will include all the written code.