Project Proposal

# Idea One - Buy/Sell/Hold Recommendation

**Team: Michael Roth, Demi Gao, Diego Favela, Jonny Cruz**

Description: Code will allow the user to enter a stock ticker and get general trend and market comparison information. The stock will be analyzed and checked against the users return criteria.

Stock data will be generated using APIs

Inputs – Questionary:

1. What stock are you interested in trading?
2. How long would you like to hold the stock?
   1. Select:
      1. Days
      2. Months
      3. Years
   2. Enter numeric value
3. Are you looking for a specific rate of return (annualized)?

Outputs:

1. Line Plot:
   1. Stock Values
   2. Boiler Bands
      1. Bands set based on time period, anything over 1 year is annualized
      2. High Band (Red)
      3. Low Band (Green)
2. Recommendation based on trend
   1. Buy (stock is below lower band)
   2. Sell (Stock is above upper band)
   3. Hold (stock is between bands)
3. Market Comparison (SP500)
   1. Stock Beta
   2. Stock Sharpe Ratio
   3. Stock Sortino Ratio
4. Market Prediction
   1. Estimated Period Return based on Monte Carlo Simulation
   2. 98% confidence upside
   3. 98% confidence downside
   4. Meets goals/doesn’t met goals

Required Portion:

1. Questionary and stock checker
2. Graph Plot & Rolling Standard Deviation
3. Metric Calculation
4. Monte Carlo Simulation