

Enter Dashboard

## Two Options

### 1. Univariate (Single) Stock Analysis

- a. Enter Ticker and Start and End Dates (End Date should be most recent)
  - i. On Python, imports data from yfinance library
- b. Run Time Plots should be pulled into the R package (yfinance in Python) and will create Price and Log Returns over time (using matplotlib library, can use seaborn)
- c. Switch Tabs to Summary Statistics, will produce Min, Max, etc. (describe function in Python); complemented with a box plot of the log returns
  - i. Maybe add something to explain the box plots in layman terms
  - ii. Beyond 3 STD = extreme values
  - iii. The more negative skew the more negative returns, vice versa
  - iv. The higher the excess kurtosis, the more likely extreme returns will happen
- d. Extreme Value Analysis
  - i. Show histograms with shaded areas to show likelihood of any returns beyond a certain point occurring
    1. Maybe add options for what plot should be plotted
  - ii. Explain what the QQ plots say, then explain what the fit means
- e. Run Risk Table
  - i. See which distribution captures the returns the best, show rVaR, rES

### 2. Multivariate (Multiple) Stock Analysis

- a. Tangent Portfolio Short Sell
  - i. Short Sell if number is negative
  - ii. Shows best portfolio where you're able to sell your asset
- b. Minimum Variance Short Sell Portfolio When you're able to short sell
  - i. Portfolio with least risk
  - ii. Portfolio that enables you to sell the assets
- c. Tangent without short sell portfolio
  - i. For maximum returns
- d. Minimum Variance without short sell
  - i. Does not allow you to short sell but gives least risk
- e. Current Portfolio
  - i. Exact weight calculated originally
- f. Green point means Min Variance port w short sell
- g. Any point on red line achieves best return with every unit of risk
- h. Curved line shows what level of return u get for each unit of risk
- i.