Home Assignment 3

1. Choose a *unique equity* ETF, say from https://www.etf.com/channels/spdr-etfs

2. Form portfolio with top 10 ETF constituents and download their daily closing adjusted prices from finance.yahoo.com for the last five years.

3. Estimate the maximum Sharpe MVP weights using returns for the first three years (lookback period) and the script MVP.r

4. Calculate returns, volatility, and Sharpe ratio for the month that follows the three-year period (look-ahead period) and compare them with that of EWP.

5. Move the look-back and look-ahead periods by one month and repeat #4.

Note: Consider 252 and 21 days as proxies to one year and one month.

6. Continue #5 as long as you have data in the sample.

7. Draw the distributions of Sharpe ratios for MVP and EWP and compare their means and medians using t.test() and wilcox.test(), respectively.

8. Write report: compare performance of EWP and MVP and describe how many portfolio weights are significant (greater than 5%) and how they evolve with time (use charts for illustration).