Key Problems

Problem 1.
We consider the optimal portfolio problems using the following data: Monthly continuous returns for the companies with tickers UNH, GS, HD, MSFT, CRM for the period Jan 2016 - Dec 2020. Use Python to:

a) Find the minimum variance portfolio ω_M, its expected return μ_M and standard deviation σ_M.

b) Find the portfolio ω with minimal variance among portfolios with $\mu = 0.025$, and its standard deviation.

Answers to Key Problems

Problem 1.

a) We find $\omega_M = (0.37, -0.05, 0.26, 0.50, -0.08)$, $\mu_M = 0.0217$ and $\sigma_M = 0.0422$.

b) We find $\omega = (0.396, -0.165, 0.117, 0.764, -0.112)$ and $\sigma = 0.0445$.