OptiHW report

The timing and function evaluations reveal standard curves when plotted against the number of symbols. The python code was modified to include variables from the large set of symbol data included with the project and a python list was created from the text list provided. With this setup, several input parameters were used to create the different points in the graphs below. Both graphs have a standard structure, the symbols vs. time is polynomial (with an x^2 relationship), and the symbols vs. function evaluations looks very linear. While it does deviate partially at the higher symbol parameters, it could be possible some other factor is involved, but at 477 stocks evaluated, a new set of stock symbols and data would be needed to evaluate a much larger data set.
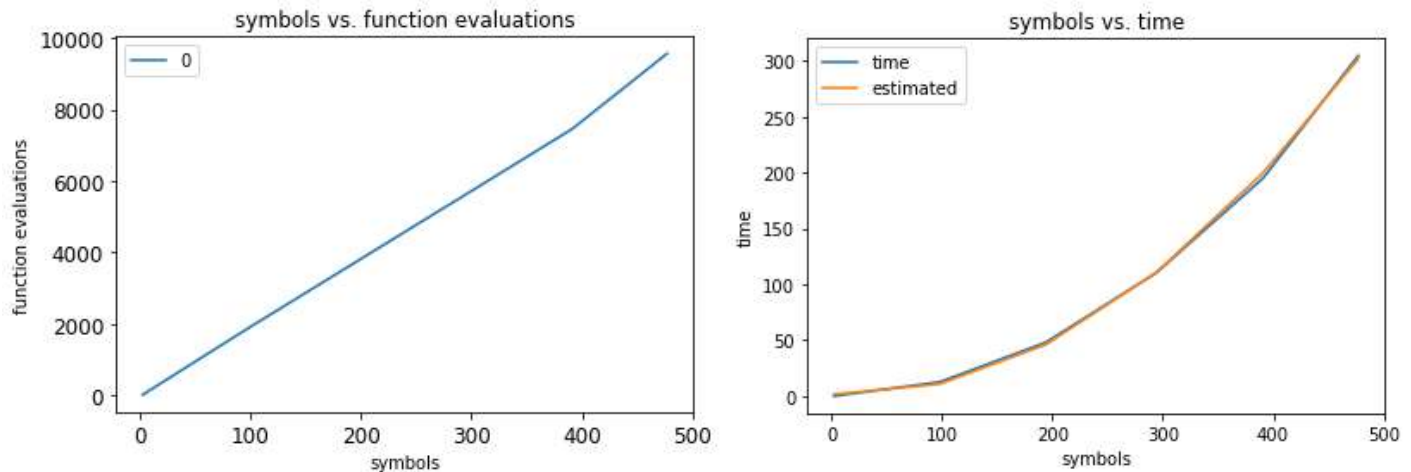
The symbols vs. time function was estimated as 0.001414 x^2 - 0.04575 x + 1.791 using numpy.

The symbols vs. function evaluations was estimated at 19.76 x - 94.25 using numpy

The raw data is below. The time was estimated using total time, but there is very little difference between the total and minima only time (total time included data fetch, min only used only the time to go through the minimization function module)

symbols	total time	min only time	function evaluations
2	0.030999	0.003965855	12
98	12.72817	11.91016912	1881
194	48.11938	46.37677431	3705
294	110.3595	107.6139262	5605
391	195.3433	190.8205066	7448
477	299.5277	304.7220731	9560