#Overview of Project

The purpose of this project is to refactor the code to analyze the stock market dataset more efficiently. Instead of running the codes line by line, for 3012 lines, through the dataset, the refactored codes loop through all the data at once in order collect the same information within a shorter time.

#Results

##Stock Performance

In general, the stock market performed better in 2017 than in 2018. Referencing the results, most stocks had a positive return rate in 2017 except TERP [GitHub Pages] (<https://github.com/dorahauyee/VBA_Challenge/blob/main/VBA_Challenge_2017_results.PNG>). Whereas in 2018, most stocks had dropped in market value, with the exceptions of ENPH and RUN [GitHub Pages] (<https://github.com/dorahauyee/VBA_Challenge/blob/main/VBA_Challenge_2018_results.PNG>). Given the consistently poor performance in 2018, it was likely a bad year for the stock market. However, contrary to the market trend, ENPH had performed fairly well for both 2017 (+129.5%) and 2018 (+81.9%). It would, therefore, be a good stock to study and investigate if someone is considering investing in the stock market.

##Execution Times

The refactored script had significantly reduced the execution time. Originally, it took 6.015625 seconds to run through the 2017 dataset [GitHub Pages] (<https://github.com/dorahauyee/VBA_Challenge/blob/main/VBA_Challenge_2017_original%20time.PNG>) and 7.148438 seconds to run through the 2018 dataset [GitHub Pages]( <https://github.com/dorahauyee/VBA_Challenge/blob/main/VBA_Challenge_2018_original%20time.PNG>). The refactored scripts only took 0.984375 seconds to run through the 2017 dataset [GitHub Pages]( <https://github.com/dorahauyee/VBA_Challenge/blob/main/VBA_Challenge_2017.png>) and 0.9375 seconds to run through the 2018 dataset [GitHub Pages (<https://github.com/dorahauyee/VBA_Challenge/blob/main/VBA_Challenge_2018.png>).

#Summary

Refactoring codes can significantly reduce the execution time needed to analyze a dataset, particularly if the dataset is large. However, it is also more time consuming to develop as we would need to start by developing the original script/logic and subsequently simplify and debug in order to achieve the refactored script.

As demonstrated in this project, the refactored VBA codes had significantly reduced the execution time needed to analyze the stock market (from 6/7 seconds needed in the original VBA codes to less than 1 second needed in the refactored VBA codes). The refactored codes would be particularly helpful if we need to analyze more stocks over longer periods of time, looping over a larger dataset. On the other hand, an original VBA script/logic was written prior to refactoring the codes. It was time consuming and challenging to simply/debug in order to achieve the refactored VBA codes.