

LIUDMILA LEVITINA

# VISUALISING TECH STOCKS

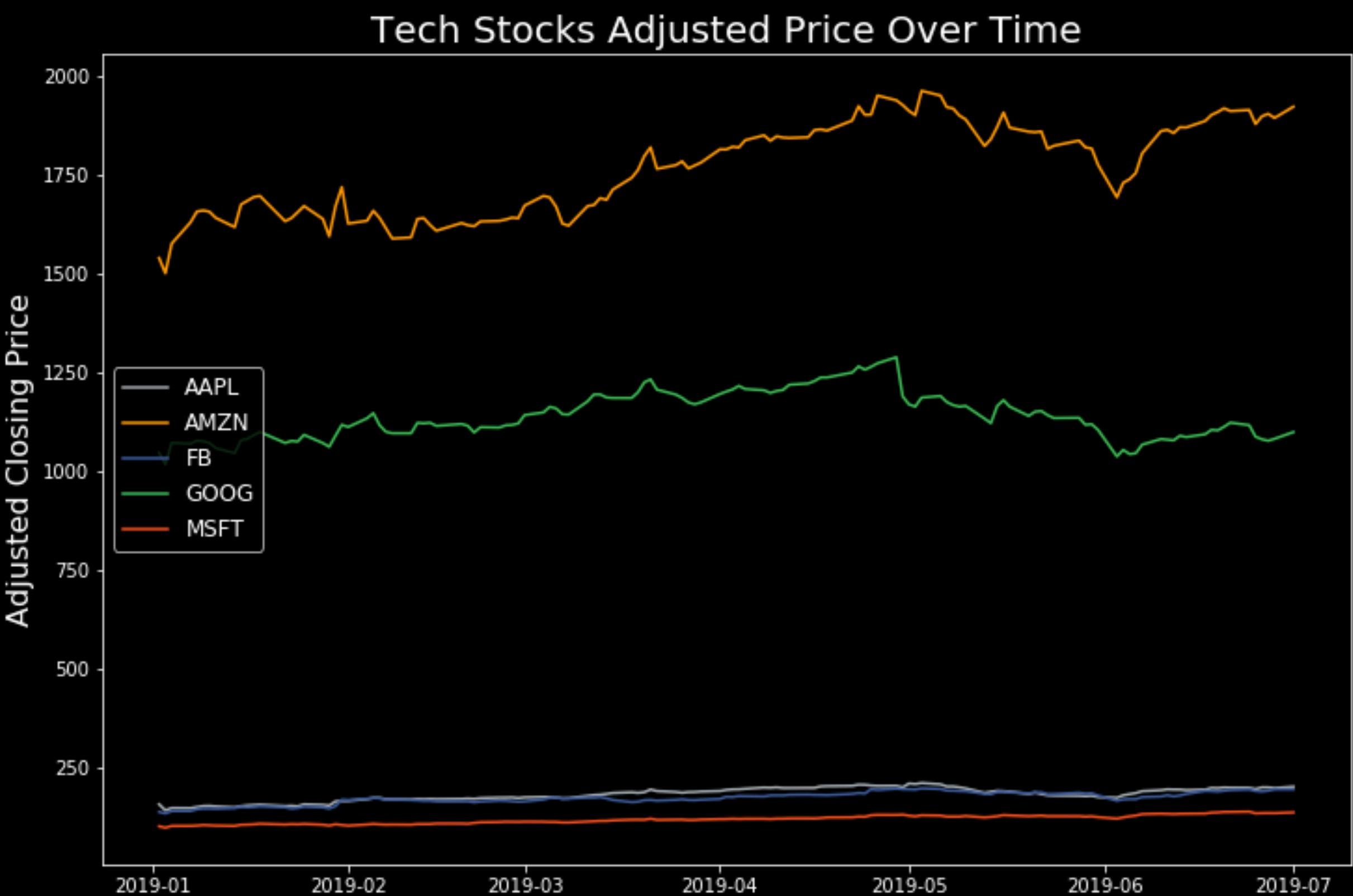
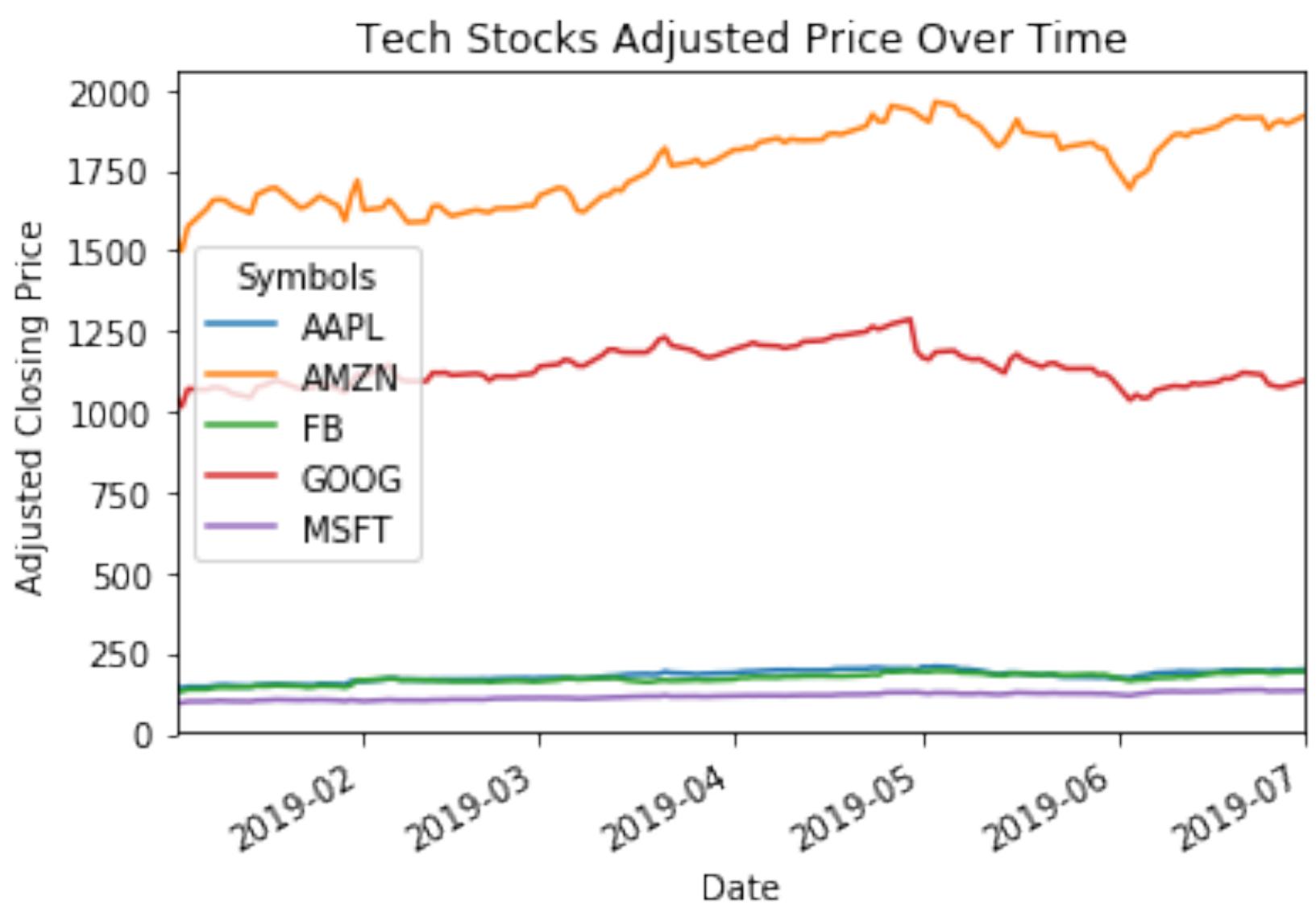
Codecademy Off-Platform Project

# STUDY PROJECT OBJECTIVES

- Load the adjusted closings for the top 5 tech stocks using Pandas-Datader
- With Matplotlib, Seaborn and Pandas:
  - Visualize the stock prices
  - Calculate and visualize the daily simple rate of return
  - Calculate and visualize the mean rates of return
  - Calculate and visualize the variances of the returns
  - Calculate and visualize the standard deviations of the returns
  - Calculate and visualize the correlation between stocks
- Write a short thesis based on the correlations between the tech stocks

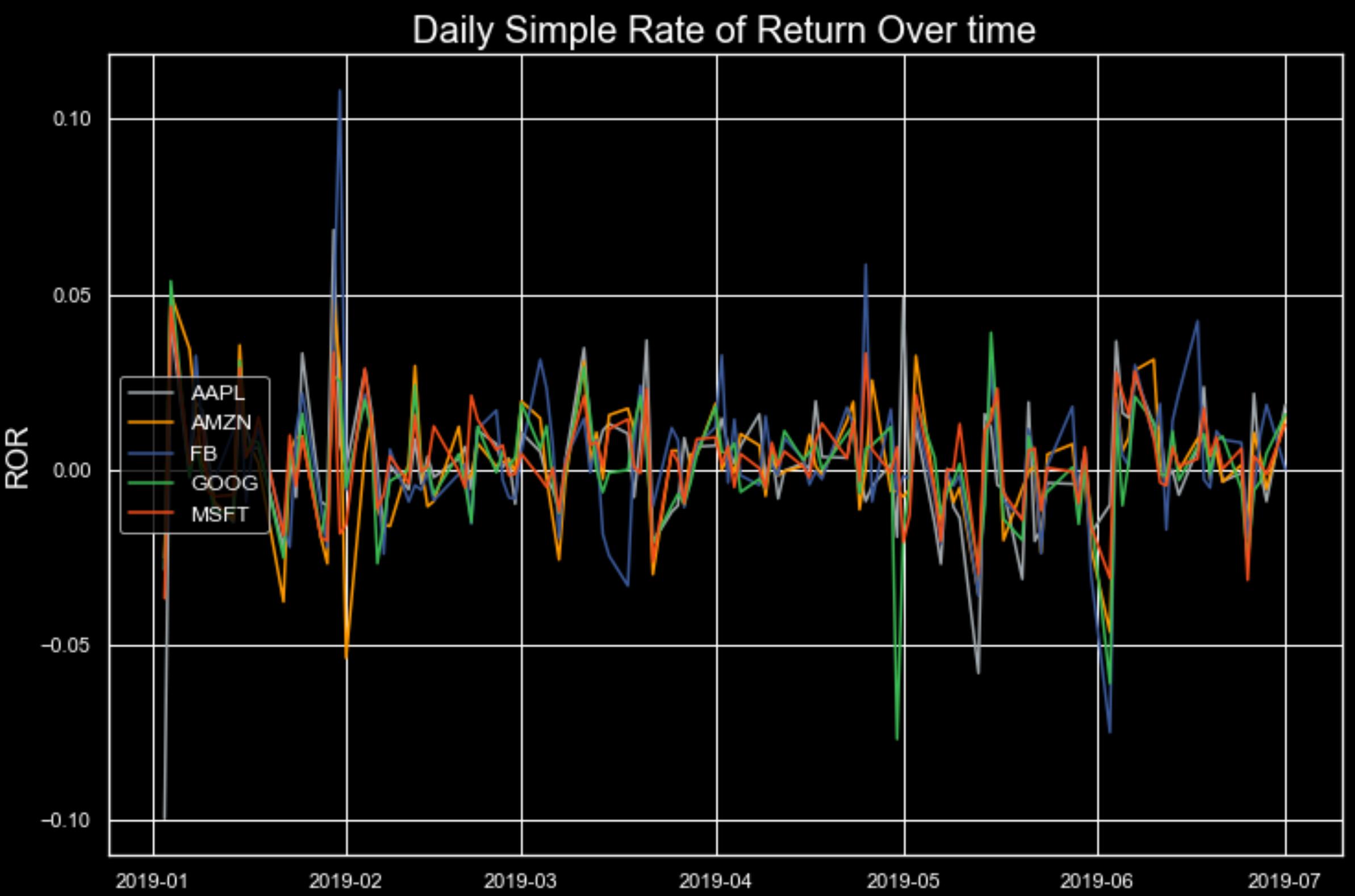
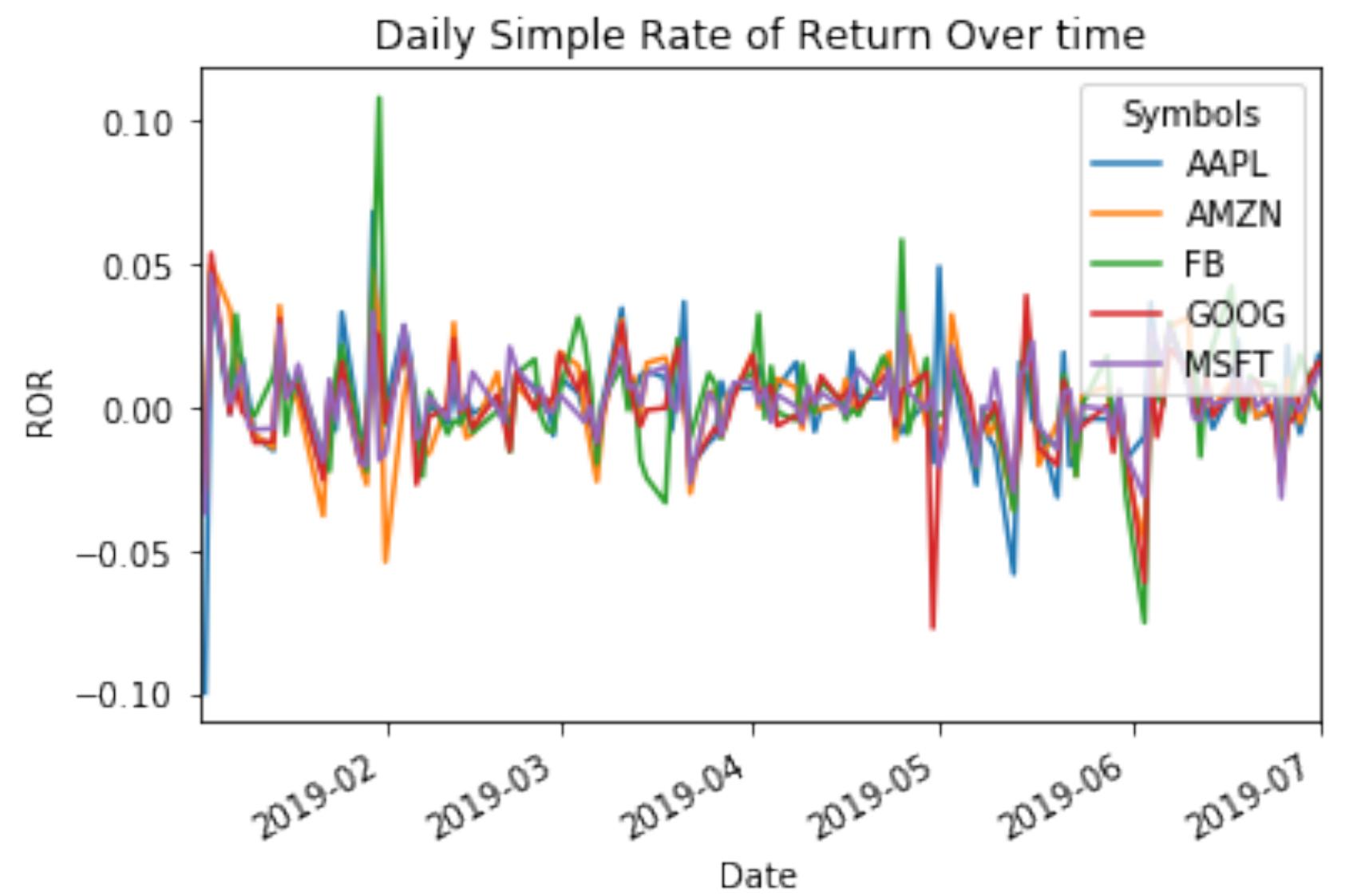
## STYLING

# TECH STOCKS ADJUSTED PRICE OVER TIME



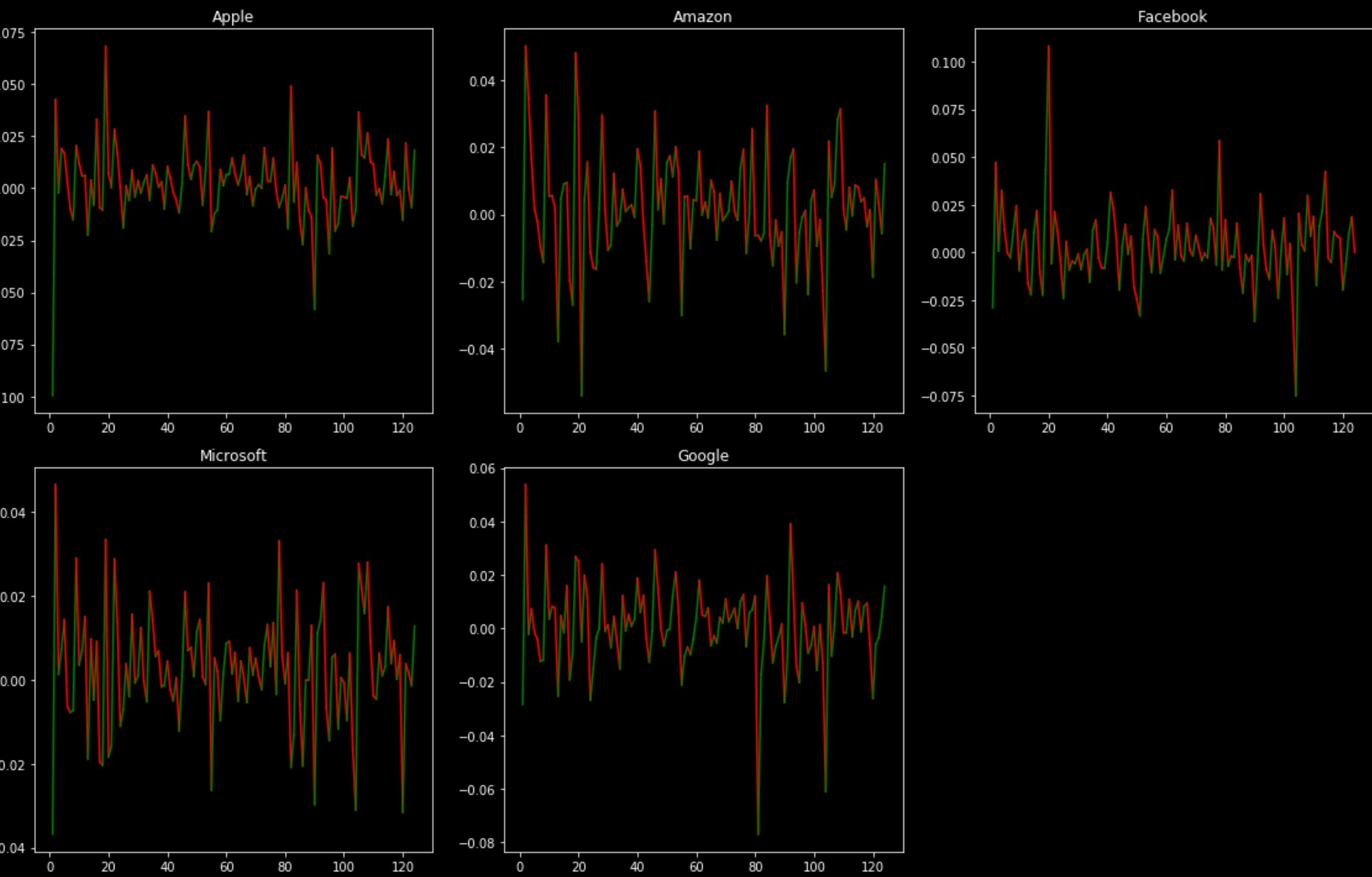
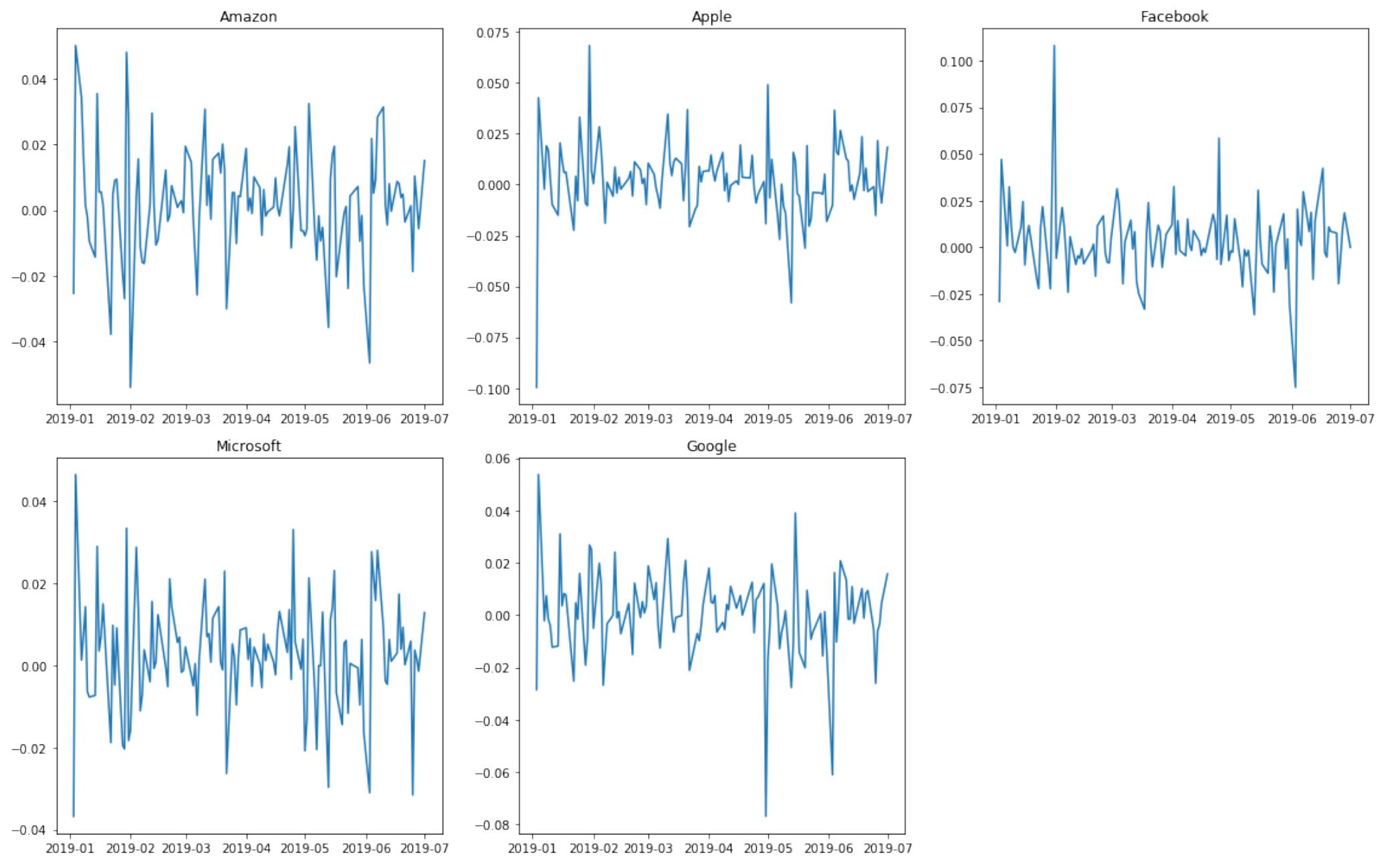
## STYLING

# DAILY SIMPLE RATE OF RETURN OVER TIME



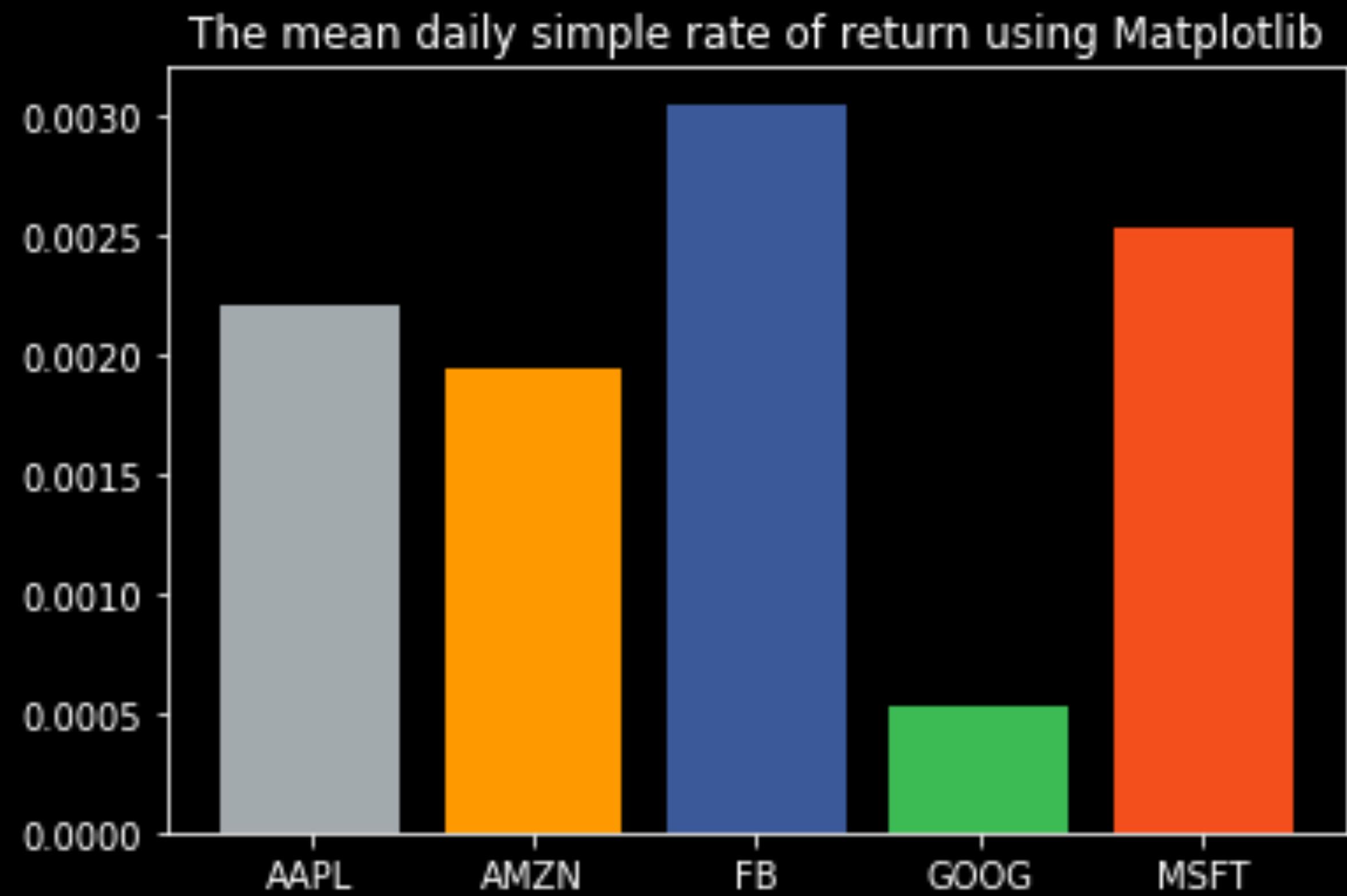
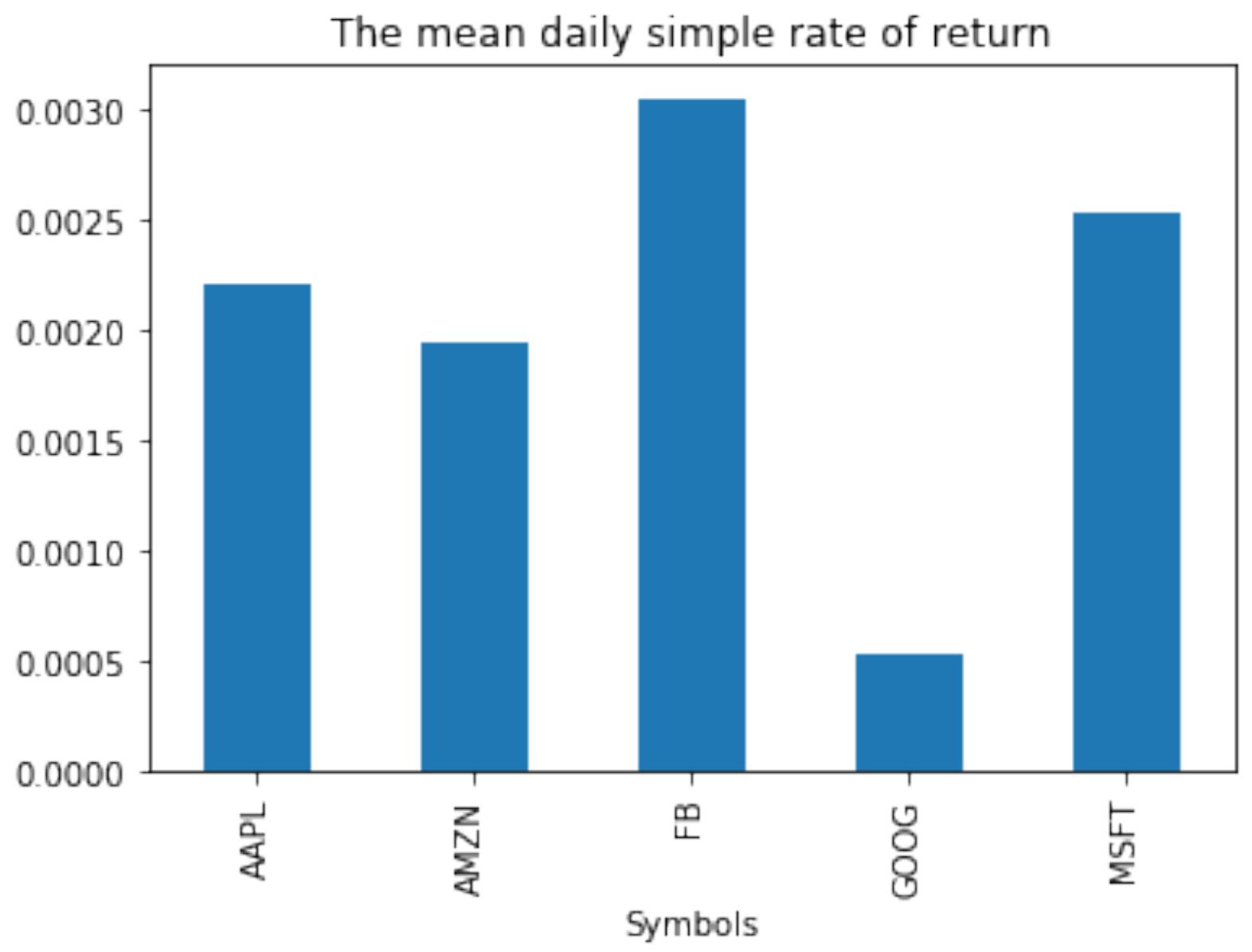
## STYLING

# SUBPLOTS OF DAILY SIMPLE RATE OF RETURN



## STYLING

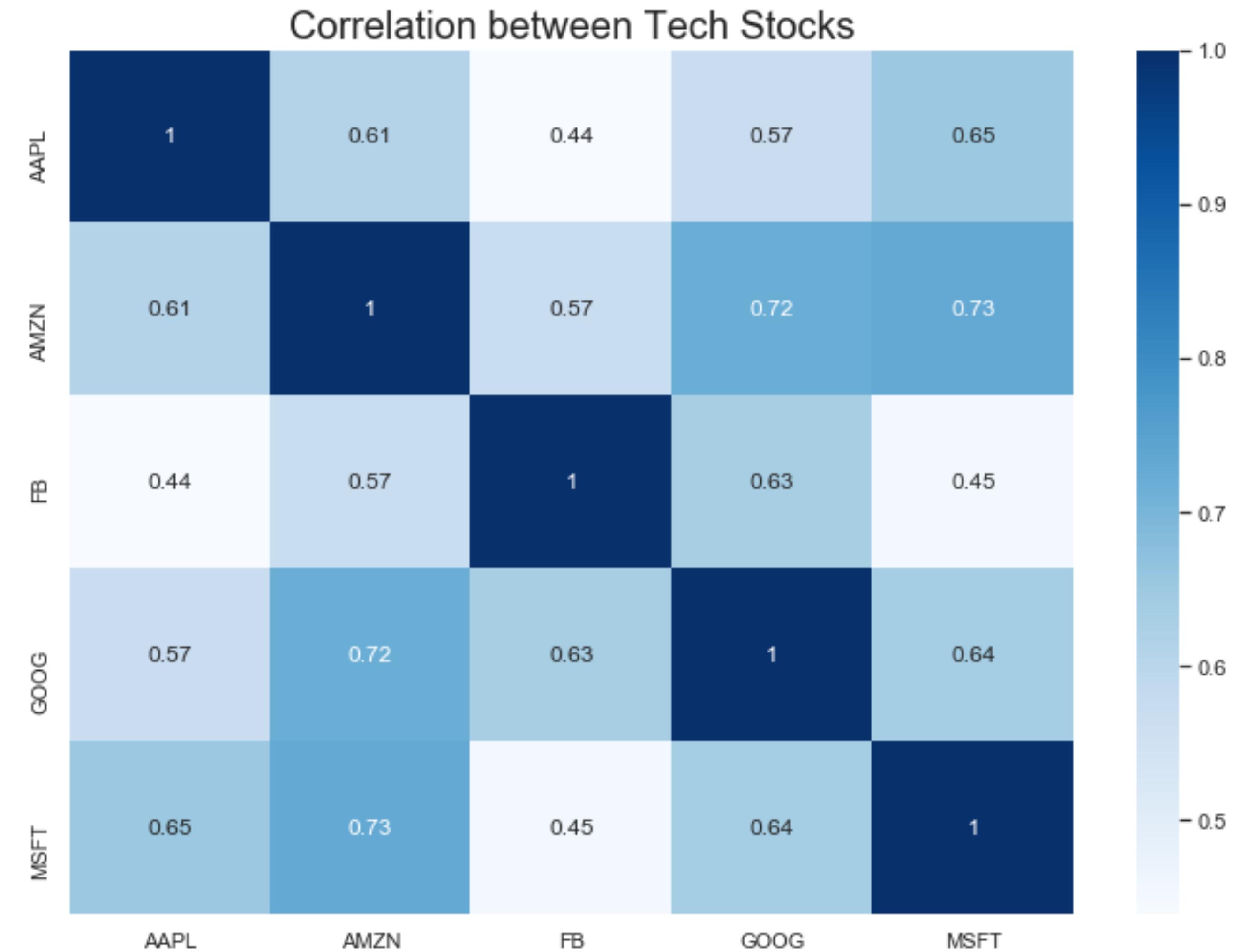
# MEAN RATE OF RETURN



# STYLING CORRELATION

Symbols	AAPL	AMZN	FB	GOOG	MSFT
Symbols					
<b>AAPL</b>	1.000000	0.610110	0.438760	0.569773	0.652943
<b>AMZN</b>	0.610110	1.000000	0.572073	0.721504	0.731493
<b>FB</b>	0.438760	0.572073	1.000000	0.633440	0.454094
<b>GOOG</b>	0.569773	0.721504	0.633440	1.000000	0.636987
<b>MSFT</b>	0.652943	0.731493	0.454094	0.636987	1.000000

Using Pandas



Using Seaborn

# ANALYSIS

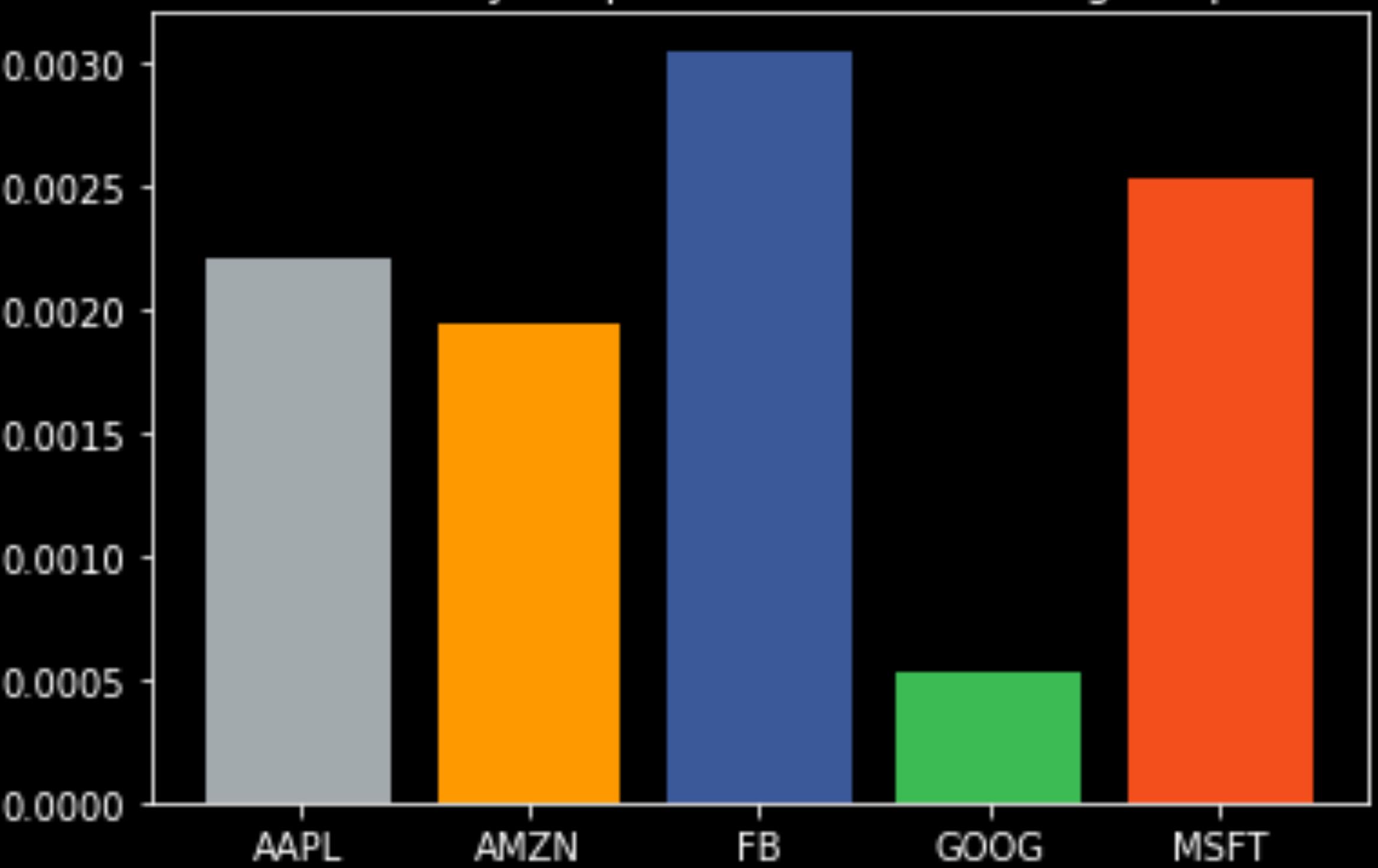
## ANALYSING

# MEAN RATE OF RETURN

Based only on the mean rate of return Facebook would be the best option to invest in.

It has the highest mean simple rate of return over the given time period.

The mean daily simple rate of return using Matplotlib

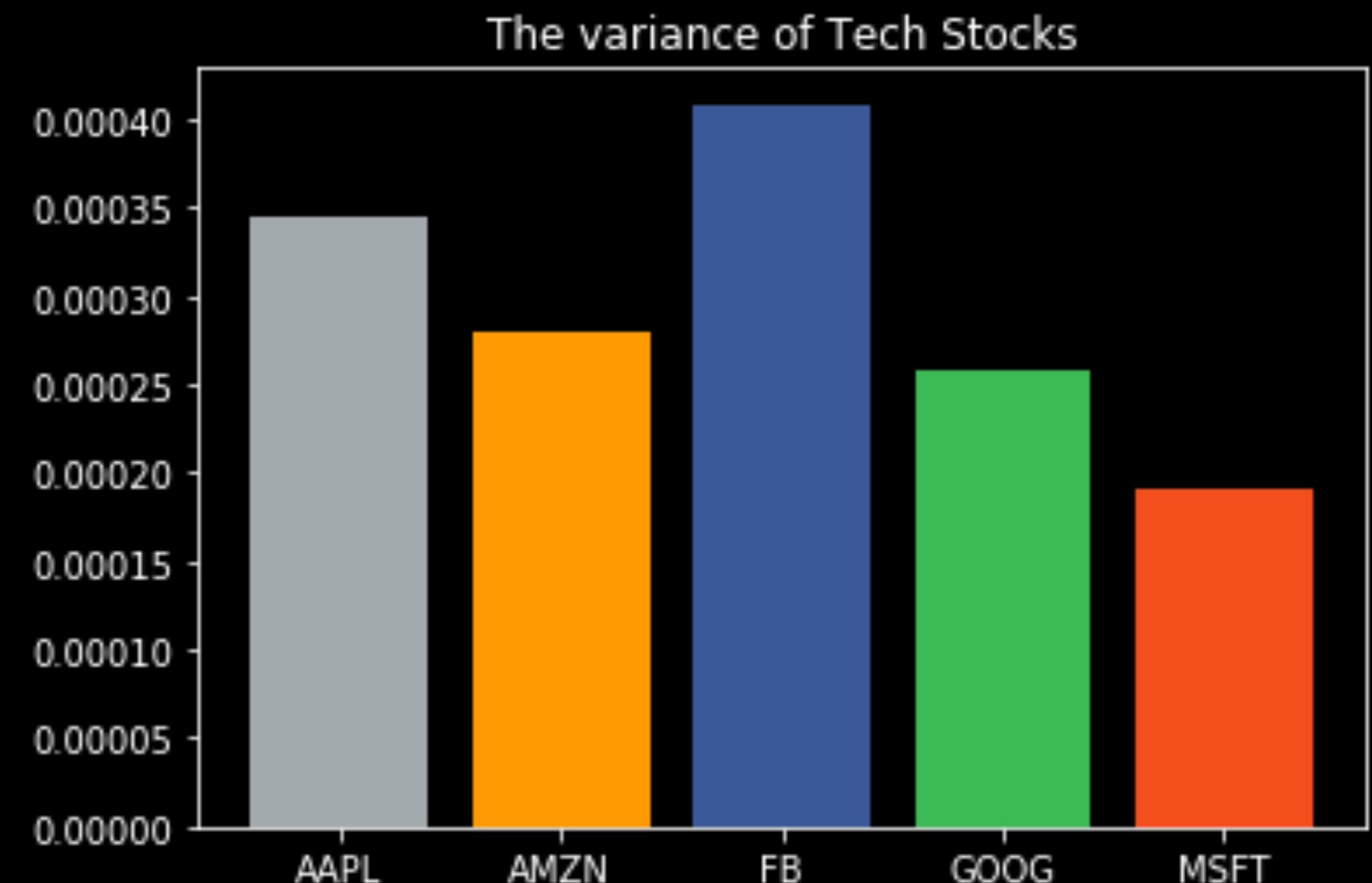


**ANALYSING**

# **THE VARIANCE OF THE RATE OF RETURN**

**Based only on the variance Facebook would be the riskiest option to invest in, since it has the highest variance.**

**The best option to invest in would be Microsoft, it is the most stable stock.**

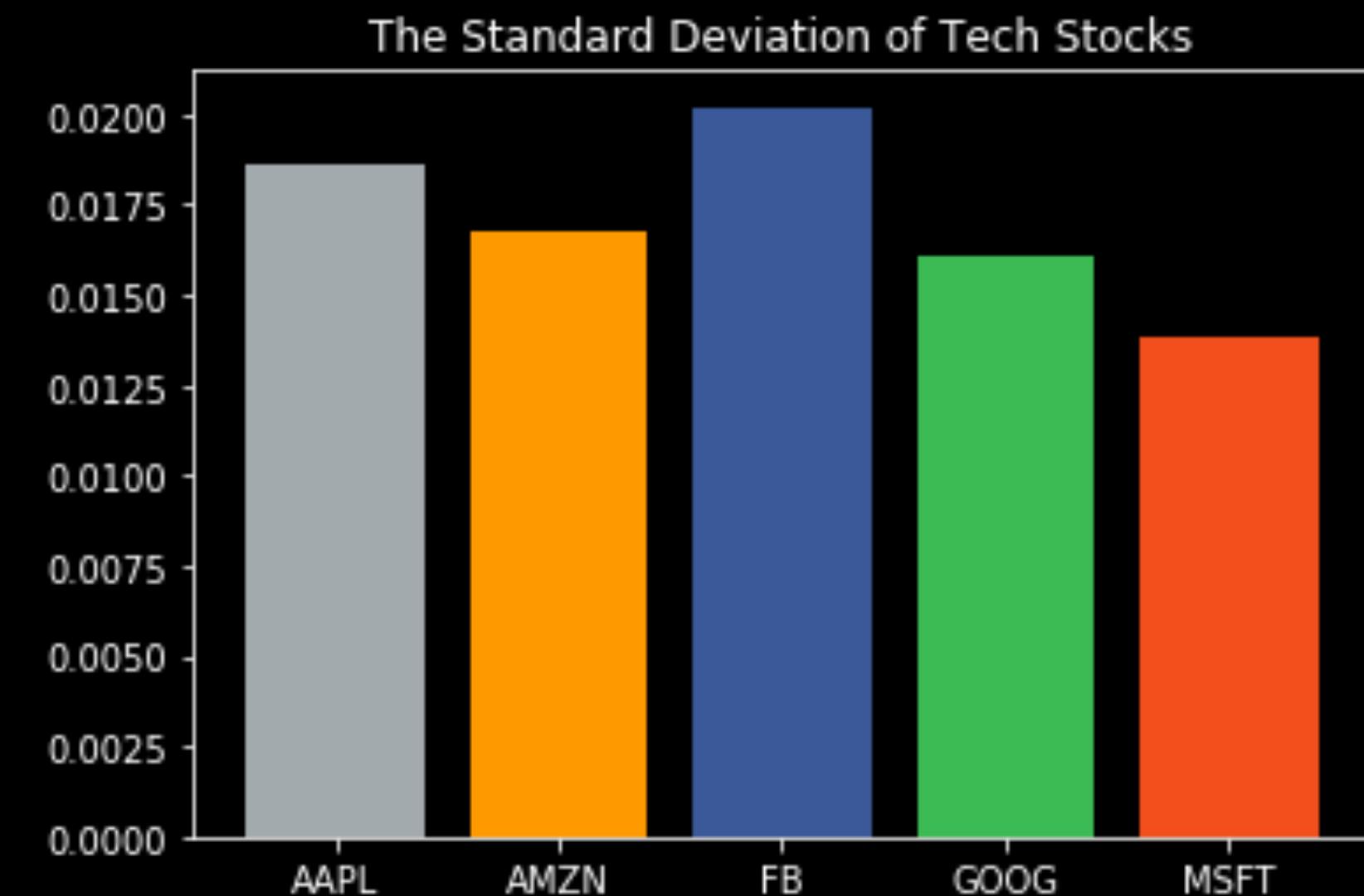
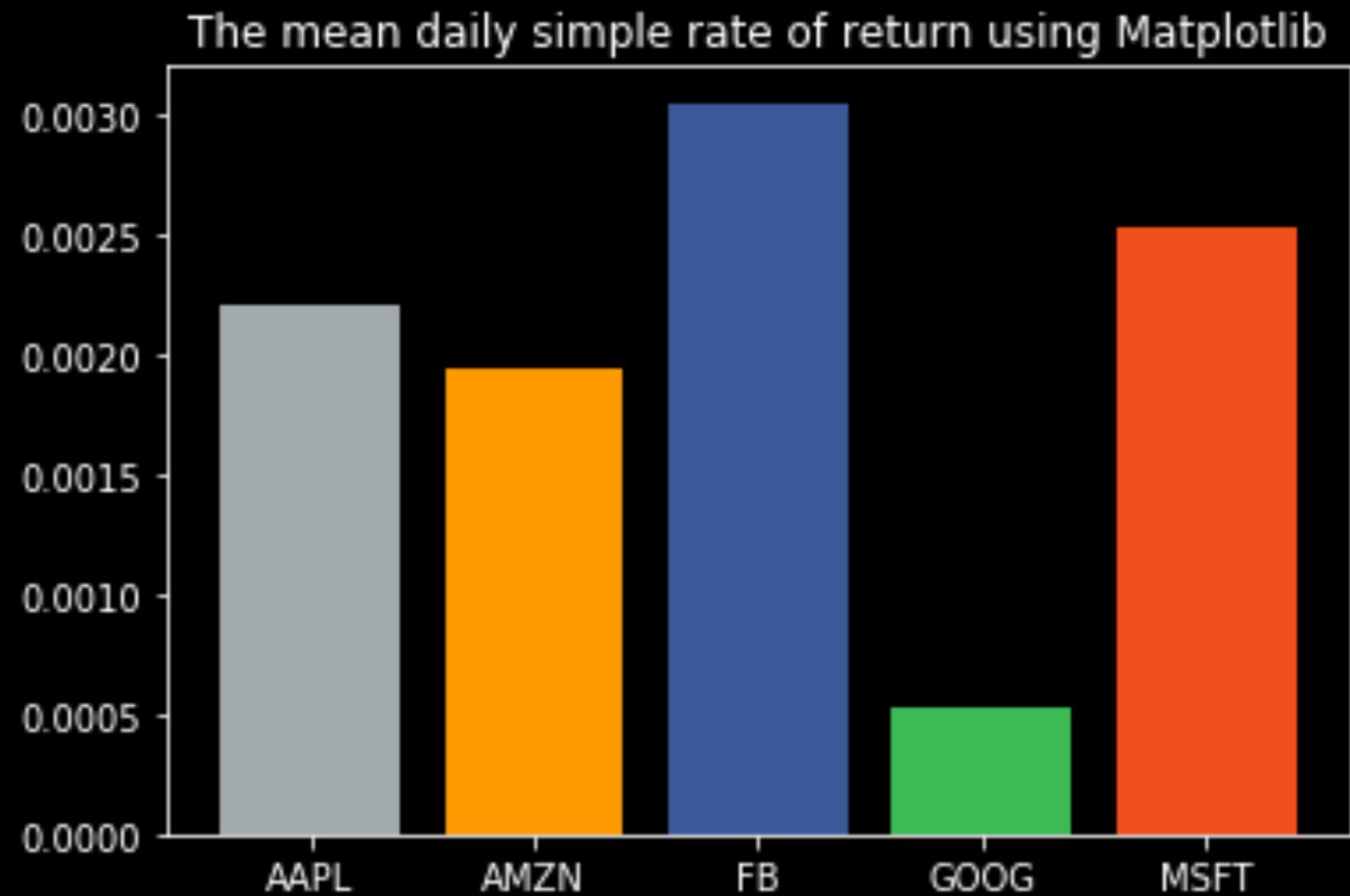


## ANALYSING

# THE STANDARD DEVIATION AND THE MEAN

Putting it together:

- Facebook has the highest rate of return, but it is also the riskiest option.
- Microsoft, on the other hand, has the second-highest mean rate of return but the lowest standard deviation, making it the safest option.
- Having only this information for decision making Microsoft would be the wisest choice.

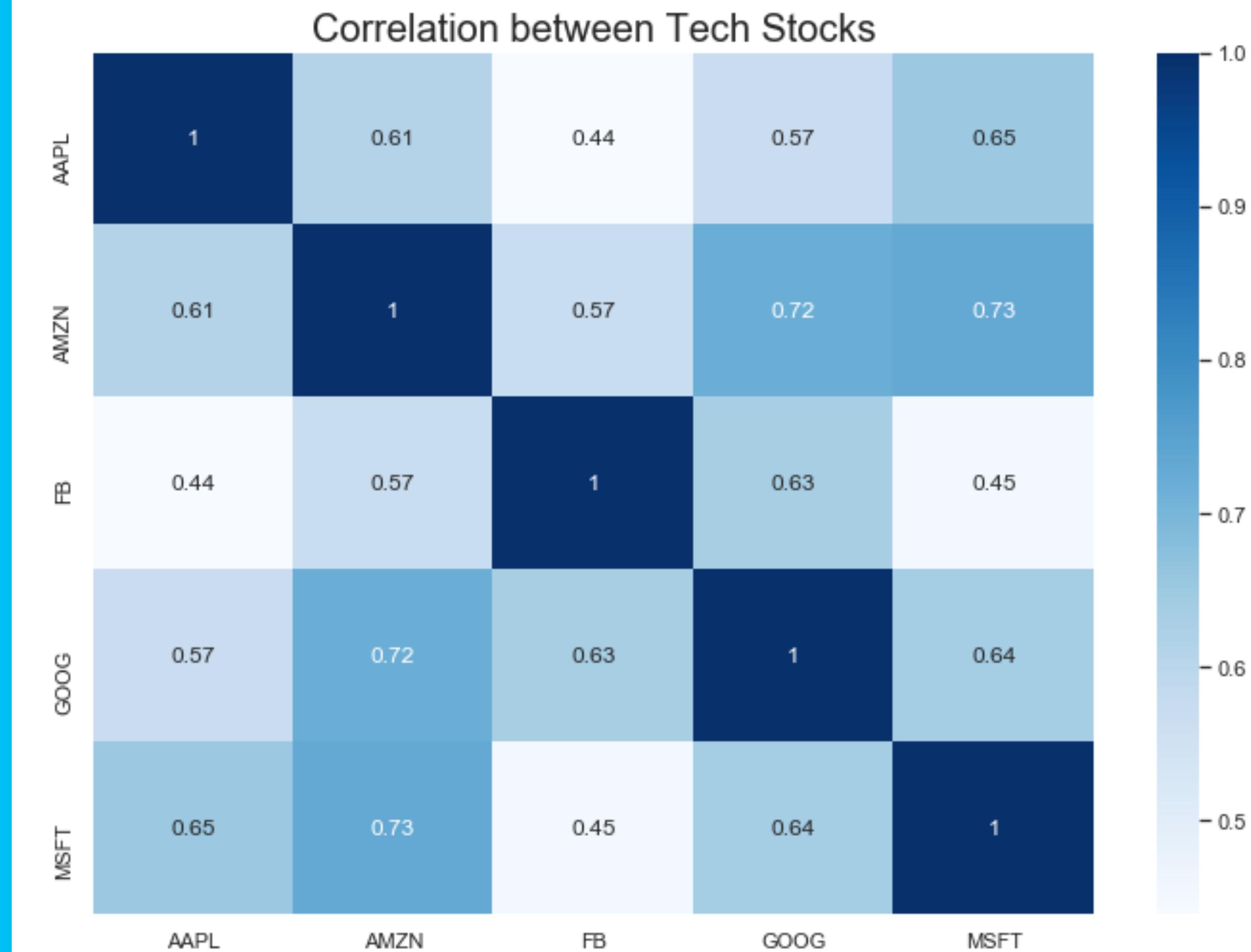


# ANALYSING CORRELATION

All companies are positive correlates, which is logical since they represent the same industry

To diversify portfolio:

- Microsoft is highly correlated with Amazon, so it would not be the best choice.
- Microsoft and Facebook have the least correlation, and Facebook has the highest rate of return. For the riskier investor that would be the best option.
- Alternatively, Apple could be chosen. Google and Apple have close variations, but Apple has a significantly higher return.



# BONUS: MICROSOFT CANDLESTICK CHART

