

# Capstone Project- Finance Risk Analytics



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# Agenda

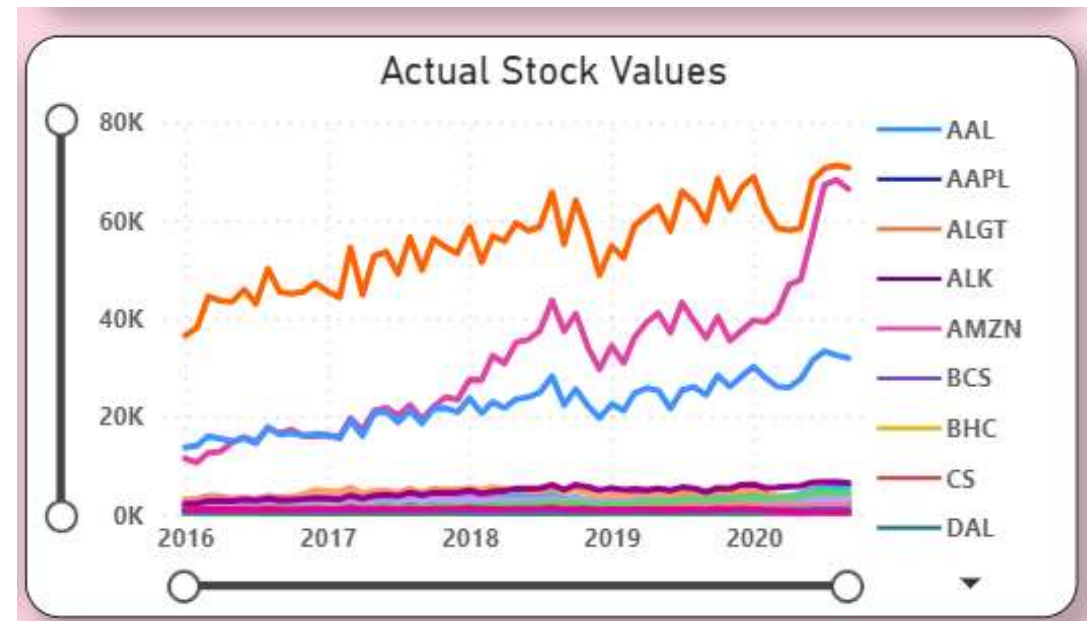
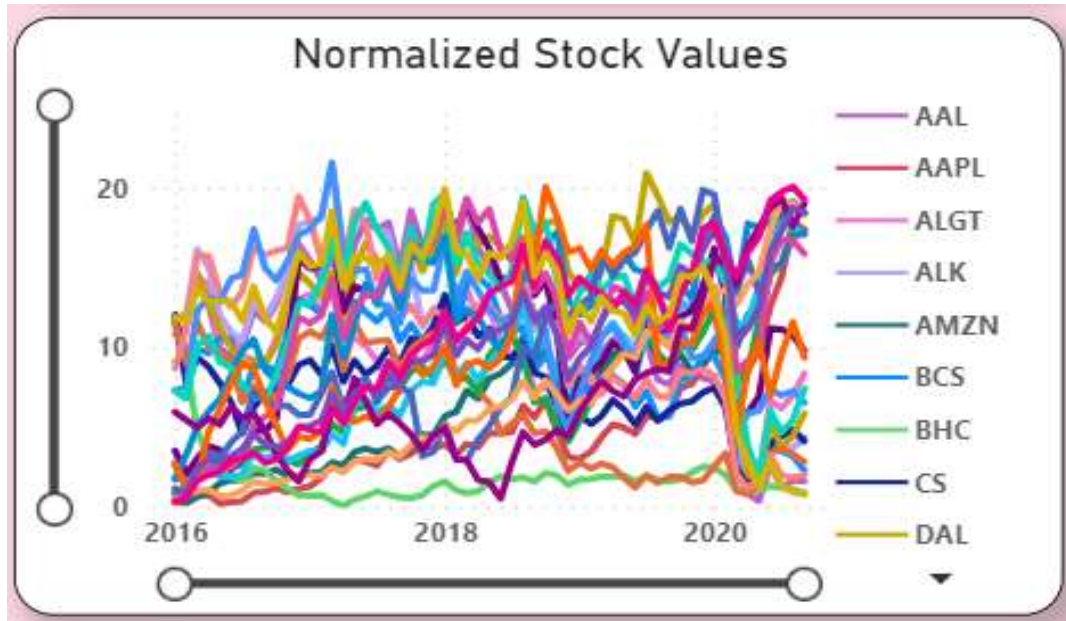
- Problem Statement
- Data Exploration and Visualization
- Investor Personas
- Stock Analysis and Management
- Portfolio Analysis and Management
- Conclusion
- Recommendation

# Problem statement

- Analyze a portfolio of stocks to provide consultation on investment management based on client's requirement.
- Task is to provide consultation to two different investors, Mr. Patrick Jyenger and Mr. Peter Jyenger based on their requirements and financial objectives.

# Data Exploration and Visualization

## Actual and Normalized Stock Values

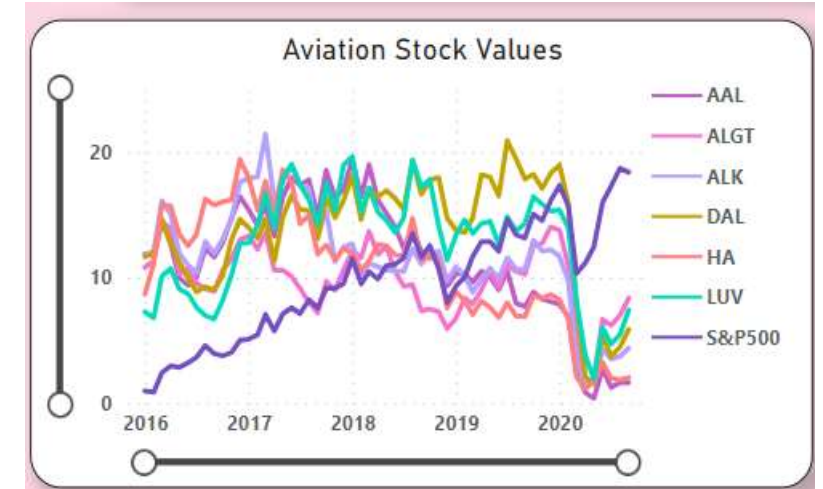


# Data Exploration and Visualization

## Sector-Wise Stock Values Analysis

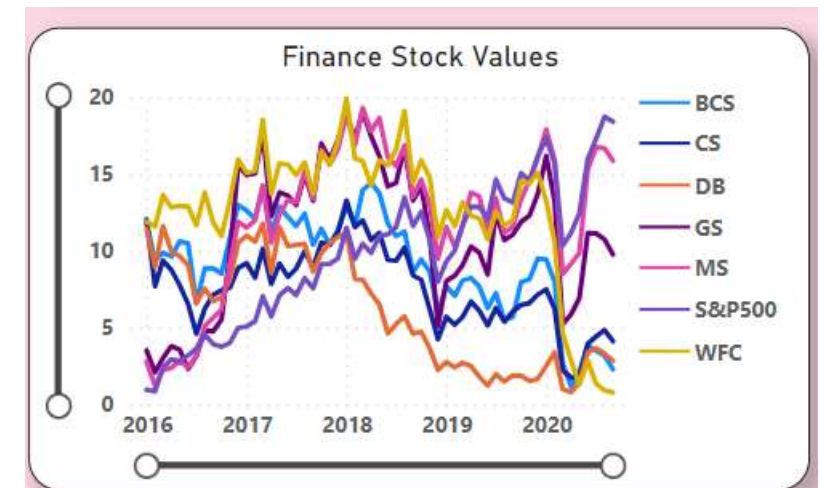
### Aviation Sector

Aviation Sector has faced major crisis in March 2020 due to Corona Pandemic and the aviation sector has not recovered there after even though the market index has gone up.



### Finance Sector

- Finance Sector has also faced crisis in March 2020 due to Corona Pandemic and the Finance sector has recovered a bit although majority of stocks has been hit.



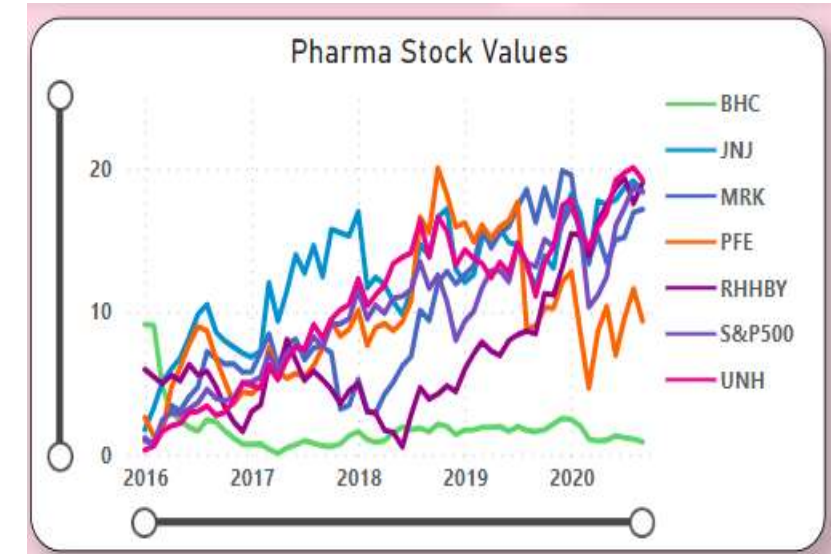


# Data Exploration and Visualization

## Sector-Wise Stock Values Analysis

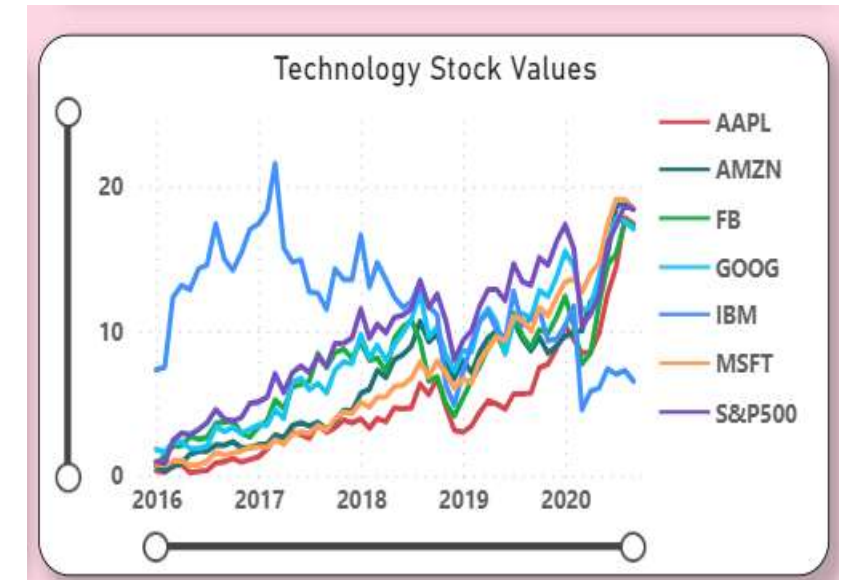
### Pharma Sector

Pharma & Health care Sector has also faced crisis in March 2020 due to Corona Pandemic, but the recovery rate shown by this sector is commendable.



### Technology Sector

- Technology Sector has also faced crisis in March 2020 due to Covid Pandemic, but the recovery rate shown by this sector is commendable.



# Investor Personas

Patrick Jyenger is conservative investor. He expects doubling his income with less risk in 5 years. Stocks like JNJ,RHHBY and MRK are low risk stocks . But these would not yield much return so he can invest in MSFT for better return.

Peter Jyenger Consistent with his attitude towards risk, he prefers high-return investments. He believes he can still bounce back in case of any occasional losses. He can invest in amazon AMZN stock as it has high return with higher risk.

# Stock Analysis and Management

At the end of 5 years, we can see that the top 8 stocks having returns of greater than 80% are as follows:

- AMZN gives 40.59% annual returns
- MSFT gives 34.95% annual returns
- AAPL gives 33.32% annual returns
- FB gives 26.45% annual returns
- UNH gives 23.72% annual returns
- GOOG gives 21.02% annual returns
- MS gives 14.55% annual returns
- S&P500 gives 13.04% annual returns

	Avg Daily Returns	Risk	Min	Max	Annualized_Returns	Annualized_Risk	Sharpe_Ratio
AMZN	0.16	1.90	-7.92	13.22	40.59	30.11	1.32
MSFT	0.14	1.75	-14.74	14.22	34.95	27.84	1.23
AAPL	0.13	1.87	-12.86	11.98	33.32	29.73	1.10
FB	0.10	2.04	-18.96	15.52	26.45	32.31	0.80
UNH	0.09	1.78	-17.28	12.80	23.72	28.27	0.81
GOOG	0.08	1.65	-11.10	10.45	21.02	26.23	0.77
MS	0.06	2.18	-15.60	19.77	14.55	34.62	0.40
S&P500	0.05	1.21	-11.98	9.38	13.04	19.18	0.64
MRK	0.05	1.41	-8.90	10.41	12.88	22.33	0.54
JNJ	0.05	1.25	-10.04	8.00	11.35	19.78	0.54
GS	0.03	1.99	-12.71	17.58	7.64	31.59	0.22
RHHBY	0.03	1.35	-8.96	13.01	7.38	21.45	0.31
LUV	0.02	2.29	-15.11	14.44	6.16	36.37	0.15
PFE	0.02	1.38	-7.73	8.96	5.25	21.95	0.21
DAL	0.00	2.65	-25.99	21.02	1.05	42.03	0.01
HA	0.00	3.31	-26.50	24.58	0.86	52.60	0.00
IBM	-0.00	1.61	-12.85	11.30	-0.04	25.54	-0.03
ALGT	-0.00	2.91	-28.33	29.24	-1.19	46.20	-0.04
ALk	-0.03	2.69	-23.24	20.31	-6.44	42.71	-0.17
AAL	-0.03	3.47	-25.22	41.10	-8.47	55.12	-0.17
WFC	-0.04	2.03	-15.87	14.53	-10.44	32.30	-0.35
CS	-0.04	2.28	-18.26	16.34	-11.01	36.26	-0.32
DB	-0.05	2.77	-17.49	14.02	-13.33	44.04	-0.32



# Stock Analysis and Management

## Annualized Return and Annualized Risk

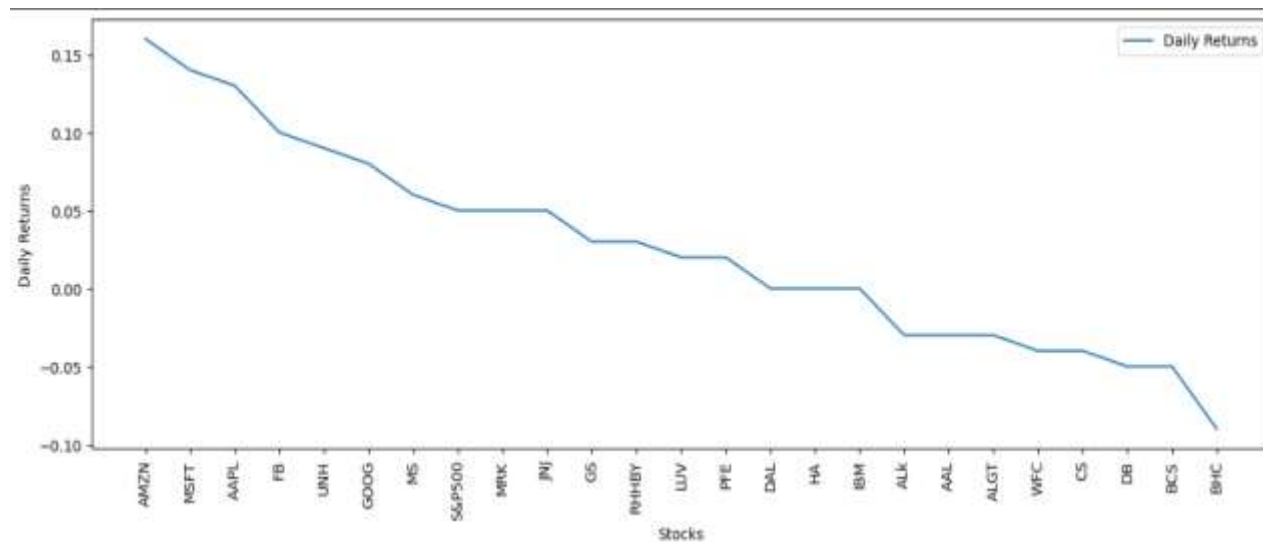
- The top five stocks by annualized return are AMZN, MSFT, AAPL, FB, and UNH.
- **BHC, BCS, DB, CS, and WFC** have higher risk as they didn't provide returns on the initial investment.
- **JNJ, RHHBY, MRK** are stocks with less risk and good returns.



# Stock Analysis and Management

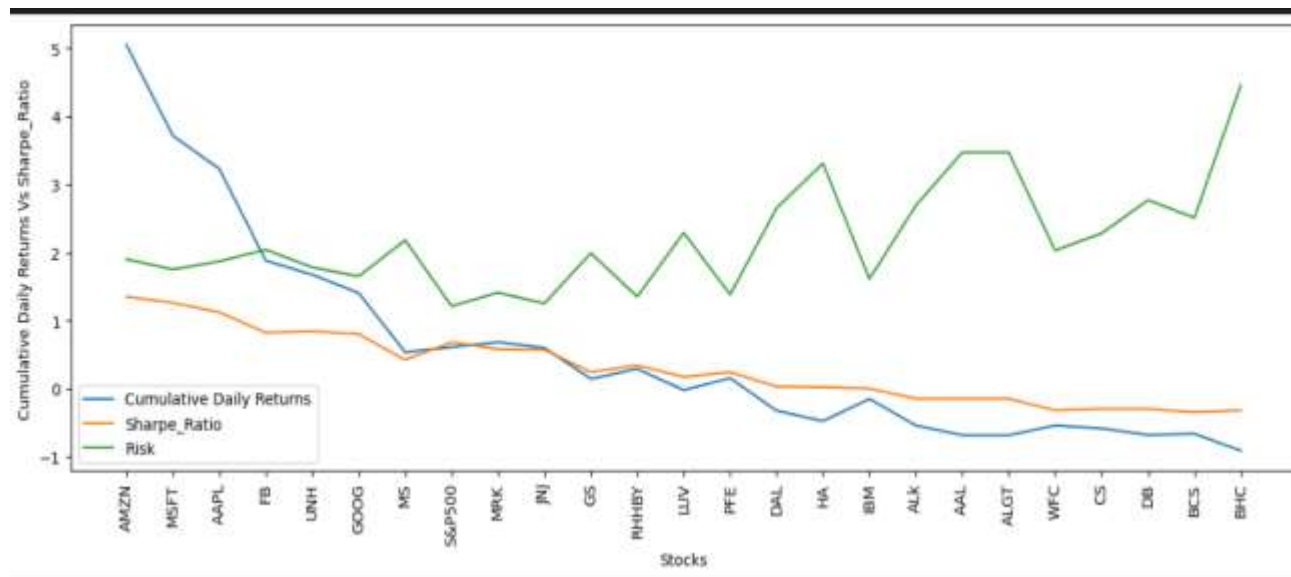
## Daily Returns

We can see that Apple, Amazon, Facebook, Google, Microsoft, United health have given better daily returns.



## Cumulative Daily Return and Risk

We can see that Apple, Amazon, Facebook, Google, Microsoft, United health have given better cumulative daily returns and low risk.



# Portfolio Analysis and Management

## Mr. Patrick Jyengar Portfolio

- By seeing average daily returns, we found that Microsoft MSFT seems to be the best performer.
- Total portfolio return comes out to be 0.066%
- Annualized Sharpe ratio comes out to be 92%.
- Patrick can earn 1+ million after 5 years.



# Portfolio Analysis and Management

## Mr. Peter Jyengar Portfolio

- Average daily returns is 0.001611.
- Total portfolio return comes out to be 0.16%
- Annualized Sharpe ratio comes out to be 134%
- Peter can earn more than 6+ million dollar after 5 years.



# Conclusion

- We have explored stock prices of tech stocks, pharma stocks, Aviation stocks, finance stocks & market Index also.
- We have looked at the daily Return of stock. We have done correlation between the stock prices.
- Maximum daily fluctuation in this stock is 8 % .In stock exchange there is a limit on per day fluctuation of stock.
- Stock with Low risk and high return are the best stock to buy.

# Recommendation

- It is better to invest in stocks with low risks if investor is not risk taking.
- If investor is risk taker and want to earn in less time, then he can invest in stocks with high risk and high return.
- Before you invest in any stocks, analyze the history of that stocks mainly for last five years.





**Thank  
You**