# PORTFOLIO ANALYSIS REPORT

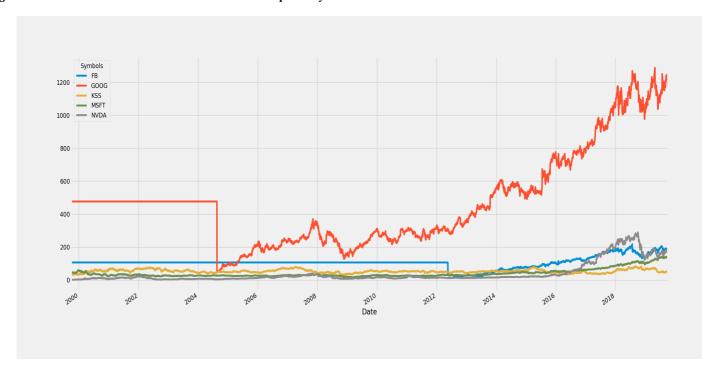
## Introduction

The portfolio optimizer accepted your inputs and analyzed historical data for the past 20 years. Audience for this report are financial analyst and investors. Based on our analysis below is your report around portfolio overview and portfolio optimizations.

## **Portfolio Overview**

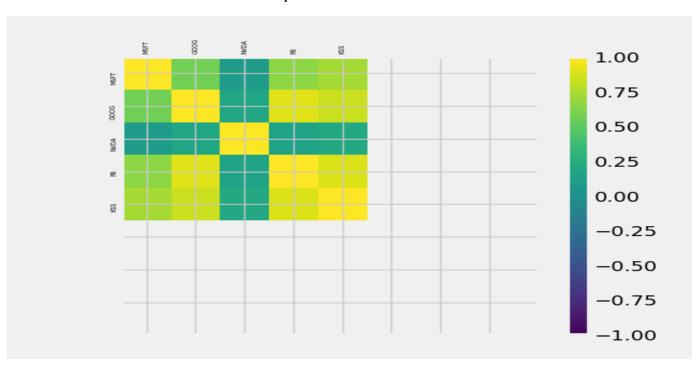
#### **Individual Stock Trends**

Fig 1.1 shows the individual selected stock trends for the past 20 years



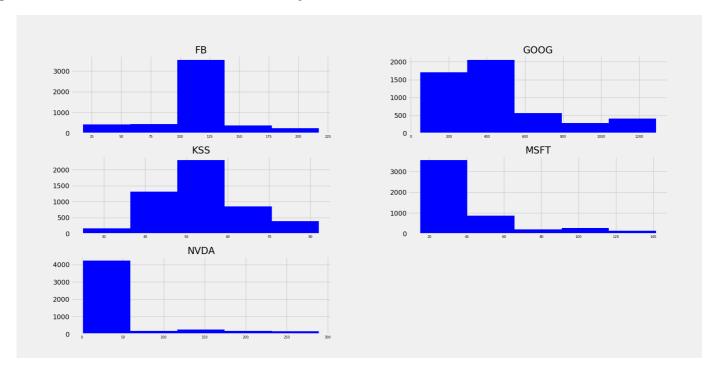
#### **Correlation Matrix**

Fig 1.2 shows the correlation of all stocks within the selcted portfolio



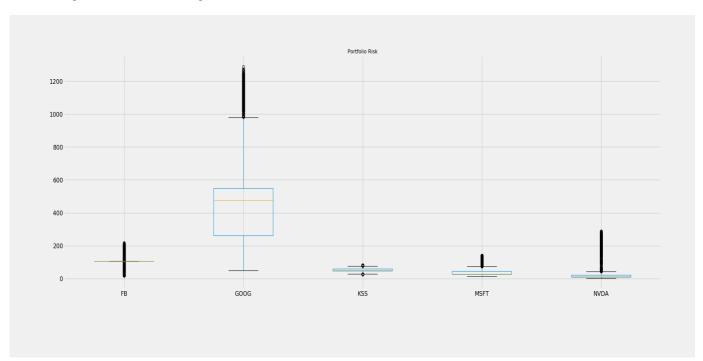
# **Histogram Matrix**

Fig 1.3 shows the distribution of all stocks within the selcted portfolio



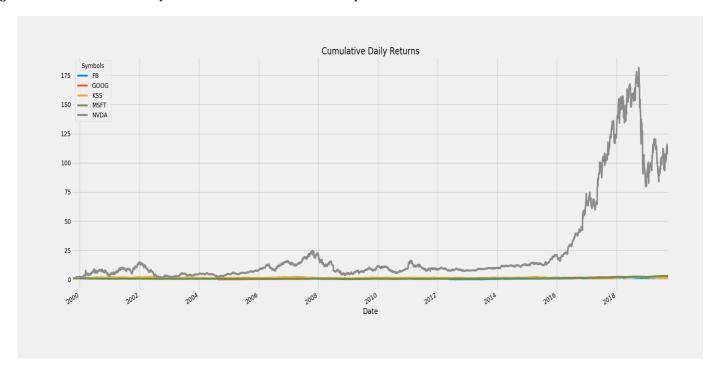
# **Box Plot to evaluate Risk**

Fig 1.4 shows box plots across stocks to help understand risk



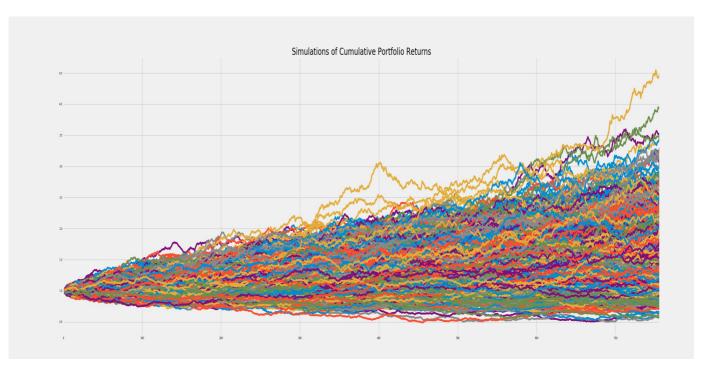
# **Cumulative Daily Returns**

Fig 1.5 shows the Cumulative daily returns of stocks within the selected portfolio



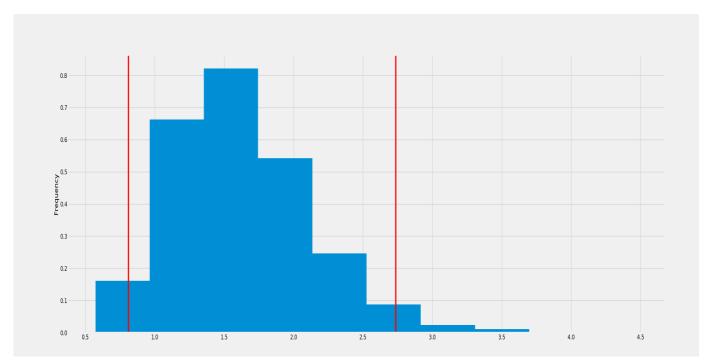
## **Montecarlo Simulation**

Fig 1.6 shows the simulation of Cumulative Portfolio Returns



## **Confidence Interval**

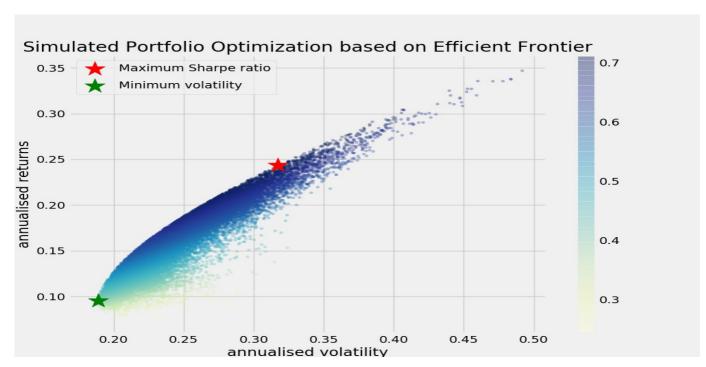
Fig~1.7~shows~the~probability~distribution~adn~95%~confidence~interval~of~simulated~ending~cumulative~portfolio~returns



Based on the simulation, above charts, investment amount of 264706 and for an investment horizon of 14 the expected range of projected cumulative returns for the portfolio is between 214381.63262844854 and 724531.9626983217

#### **Efficient Frontier**

Fig 3.1 shows the portfolios with a Max Sharpe Ratio and Minimum Volatility as compared to all the other simulated portfolios



**Maximum Sharpe Ratio Portfolio Allocation** 

Annualized Return: 0.24365135448624506 Annalized Volatility: 0.317330287935578

| Symbols    | FB    | GOOG  | KSS  | MSFT | NVDA  |
|------------|-------|-------|------|------|-------|
| allocation | 18.81 | 36.84 | 1.93 | 1.25 | 41.17 |

# **Minimum Volatility Portfolio Allocation**

Annualized Return: 0.09525358722972681 Annalized Volatility: 0.18906518009312798

| Symbols    | FB    | GOOG  | KSS   | MSFT  | NVDA |
|------------|-------|-------|-------|-------|------|
| allocation | 39.92 | 17.88 | 16.12 | 25.36 | 0.72 |

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# **Individual Stock Returns and Volatility**

|         | Annualised Return | <b>Annualised Volatility</b> |
|---------|-------------------|------------------------------|
| Symbols |                   |                              |
| FB      | 0.07              | 0.26                         |
| GOOG    | 0.15              | 0.33                         |
| KSS     | 0.08              | 0.36                         |
| MSFT    | 0.10              | 0.30                         |
| NVDA    | 0.42              | 0.61                         |

Based on your risk profile we suggest the Portfolio with the Maximum Sharpe Ratio for you which is again listed below:

# **Maximum Sharpe Ratio Portfolio Allocation**

Annualized Return: 0.24365135448624506 Annalized Volatility: 0.317330287935578

| Symbols    | FB    | GOOG  | KSS  | MSFT | NVDA  |
|------------|-------|-------|------|------|-------|
| allocation | 18.81 | 36.84 | 1.93 | 1.25 | 41.17 |

Thanks for using our portfolio optimizer and have a great day!

## Disclaimer:

We are not registered as a securities broker-dealer or an investment adviser either with the U.S. Securities and Exchange Commission (the SEC) or with any state securities regulatory authority. We are neither licensed nor qualified to provide investment advice. Use advice at your own discretion