

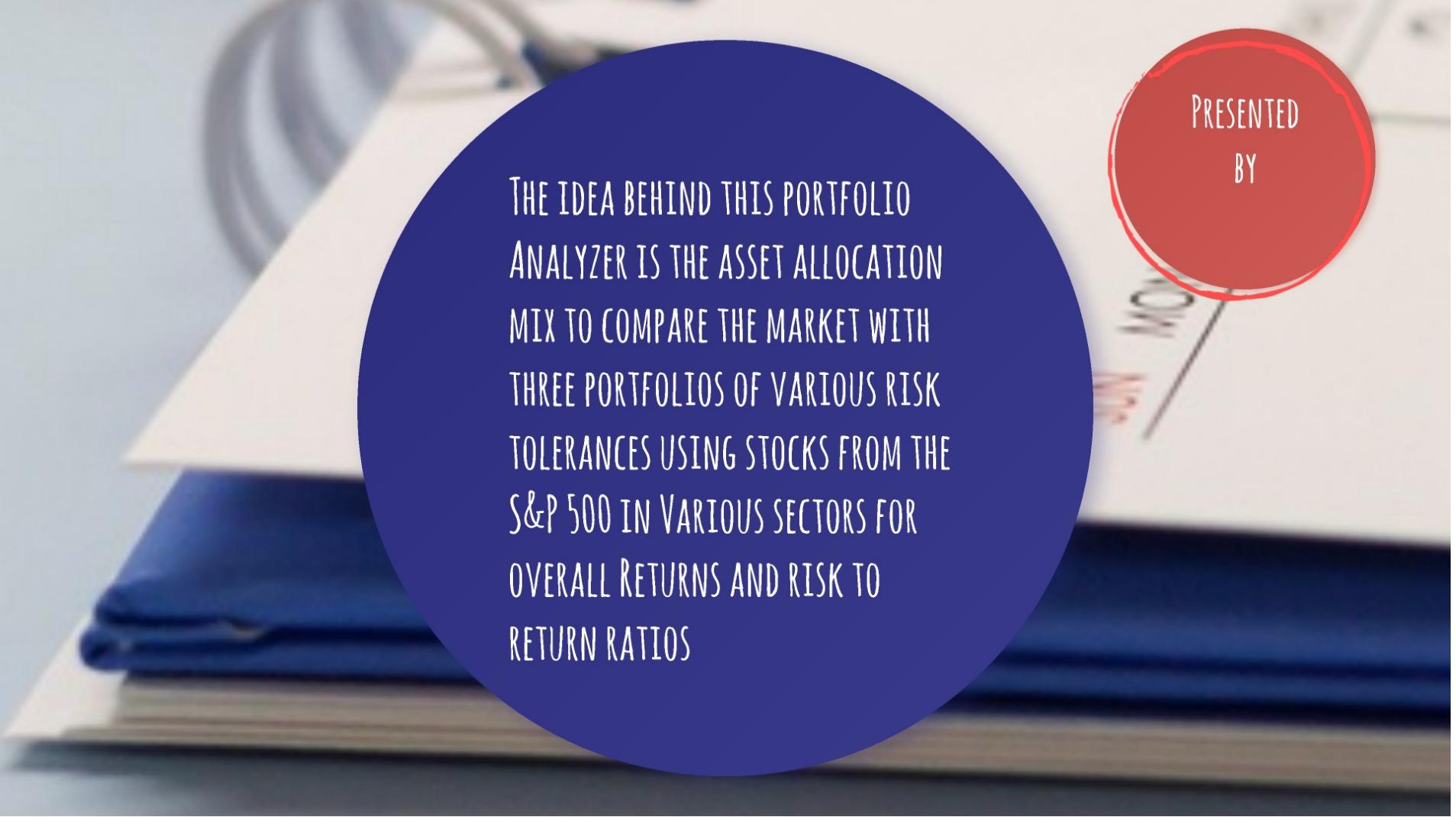
THE IDEA BEHIND THIS PORTFOLIO
ANALYZER IS THE ASSET ALLOCATION
MIX TO COMPARE THE MARKET WITH
THREE PORTFOLIOS OF VARIOUS RISK
TOLERANCES USING STOCKS FROM THE
S&P 500 IN VARIOUS SECTORS FOR
OVERALL RETURNS AND RISK TO
RETURN RATIOS

PRESENTED
BY



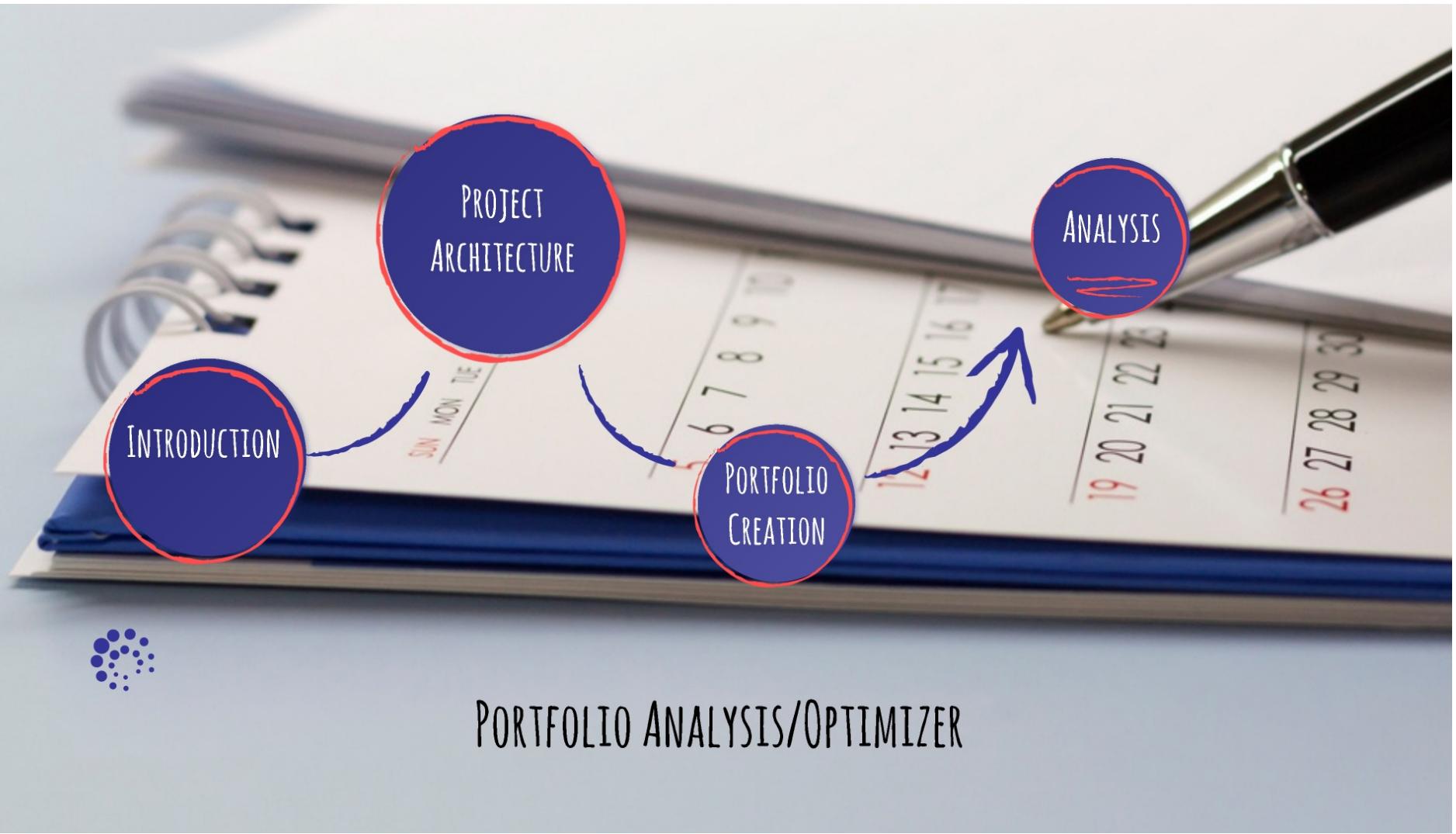
PRESENTED BY

MICHAEL CHAVIS
SAMUEL MOORE
BINA JARIWALA
RONAK AGARWAL



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PROJECT ARCHITECTURE AND CALCULATIONS

- Connect to Alpacas API to pull 3 years of stocks in SP500 and bonds data
- Read in the CSV file containing SP500 stock list.
- Create a data frame/database to store the imported data
- Separate the stocks by sectors

IMPORT &
ORGANIZE DATA

CALCULATIONS

- Connect to Alpacas API to pull 5 years of stocks in SP500 and bonds data
- Read in the CSV file containing SP500 stock list.
- Create a data frame/database to store the imported data
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PROJECT ARCHITECTURE AND CALCULATIONS

- Connect to Alpacas API to pull 3 years of stocks in SP500 and bonds data
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CALCULATIONS

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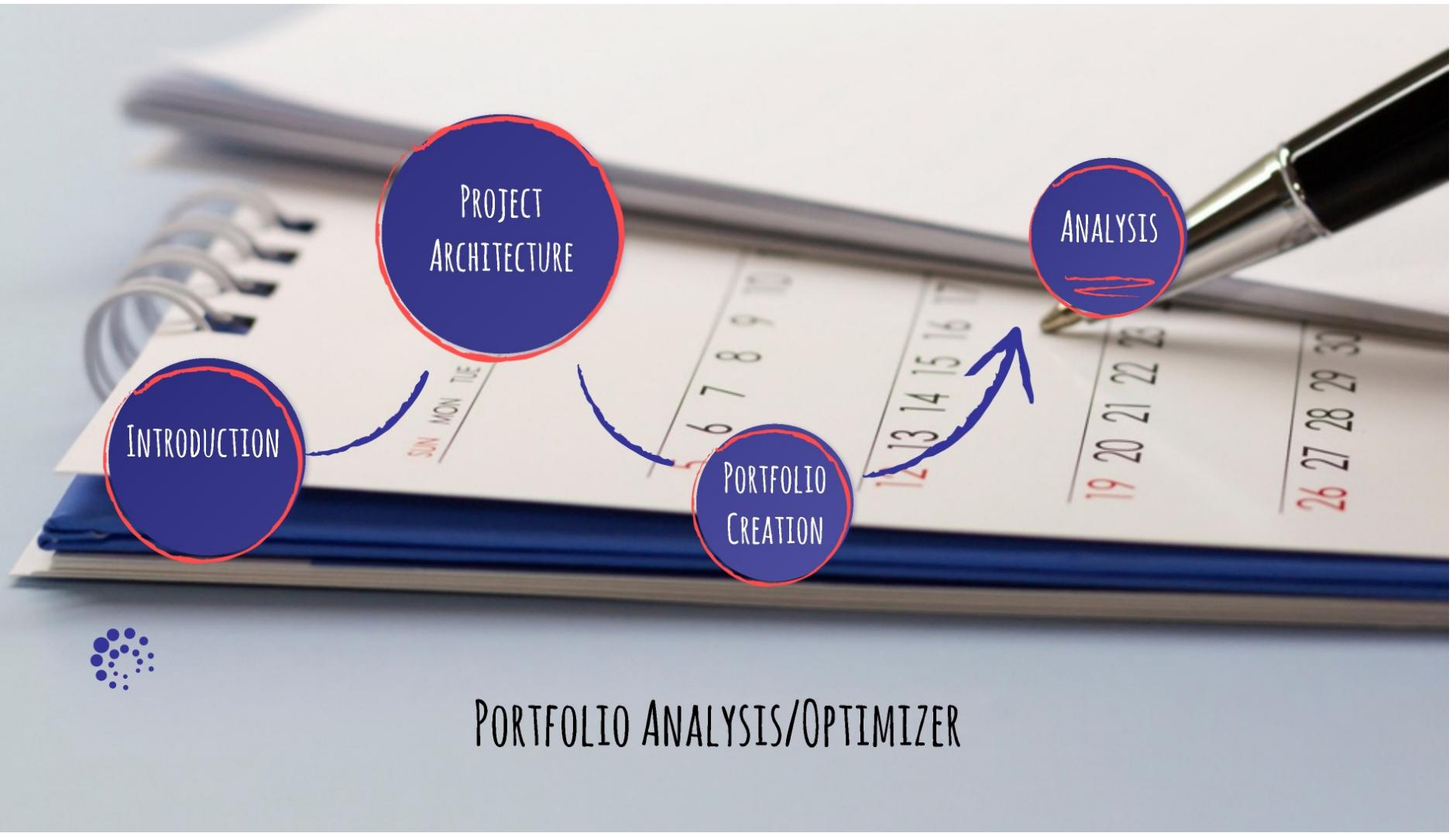
- Daily Returns
- Yearly Returns
- Cumulative returns
- Volatility
- Beta
- Standard Deviation
- Sharpe Ratio

PROJECT ARCHITECTURE AND CALCULATIONS

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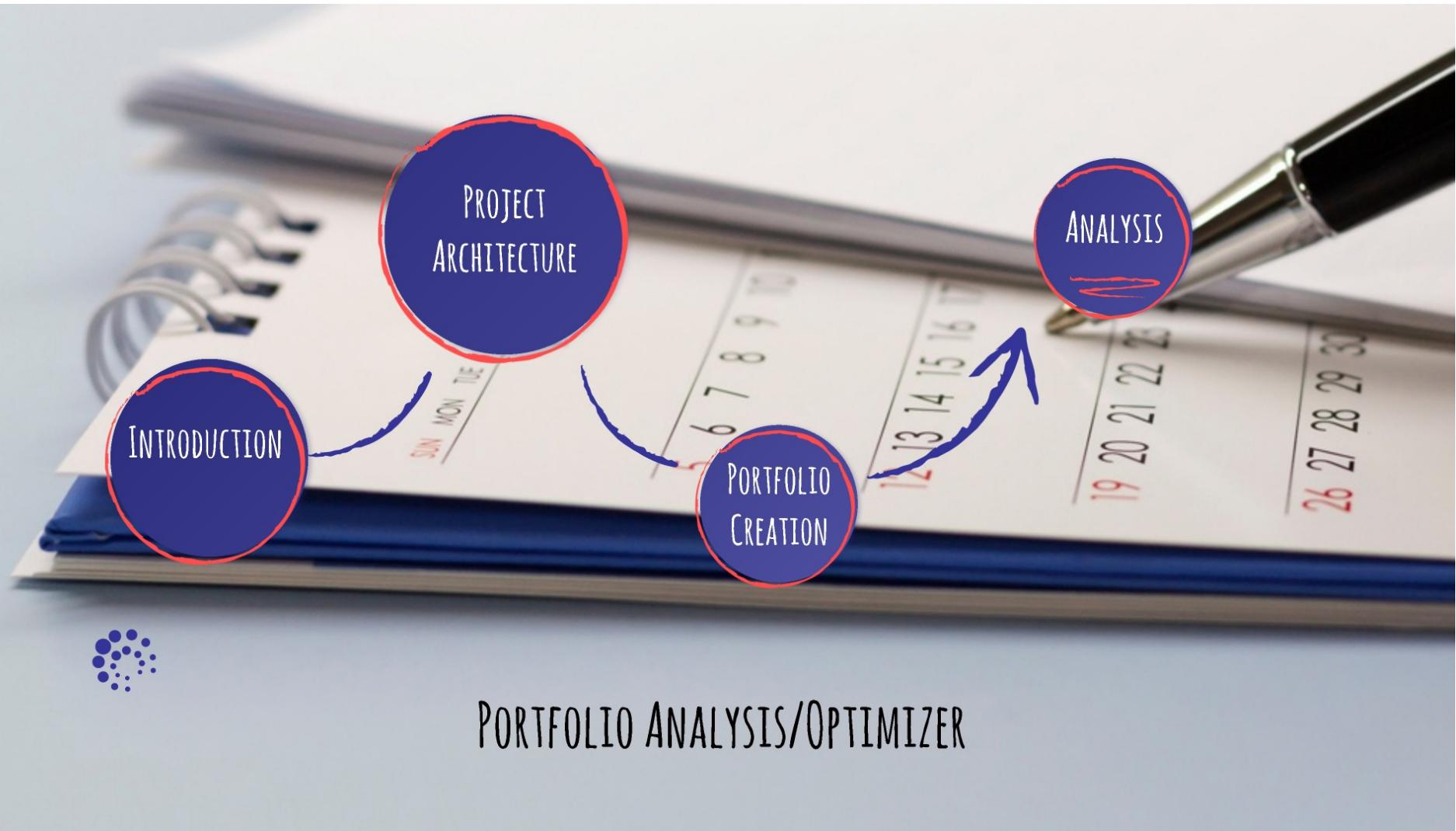
IMPORT &
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CALCULATIONS



PROCESS

- LOOPED THROUGH ALL OF THE SELECTED STOCKS FROM EACH SECTOR AND CHOSE NO MORE THAN FIVE THAT MATCHED THE CRITERIA FOR EACH SECTOR
- THE CONSERVATIVE PORTFOLIO PRIORITIZES STOCKS WITH A LOW BETA AND HIGH SHARPE RATIO , WHILE THE AGGRESSIVE PORTFOLIO PRIORITIZES STOCKS WITH A HIGH BETA AND HIGH RETURNS. THE MODERATE PORTFOLIO FALLS IN BETWEEN.



ANALYSIS

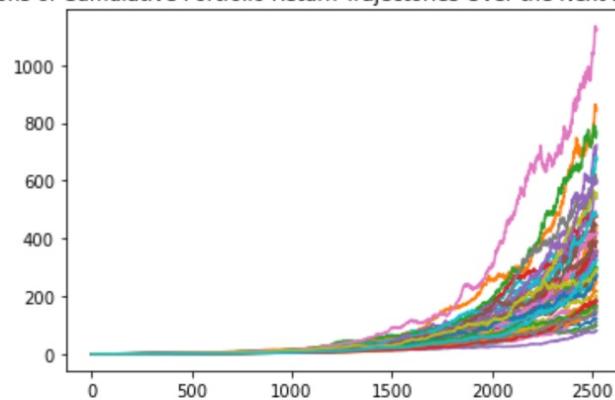
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- CONSERVATIVE: HIGH SHARPE RATIO AND WILL SACRIFICE CUMULATIVE RETURNS
- MODERATE: MID RANGE SHARPE RATIO FOR HIGHER RETURNS
- AGGRESSIVE: HIGH BETA FOR POTENTIALLY HIGHER RETURNS
- FOR EACH PORTFOLIO RUN MONTE CARLO SIMULATION FOR 10 YEARS 50 TIMES

CONSERVATIVE
PORTFOLIO

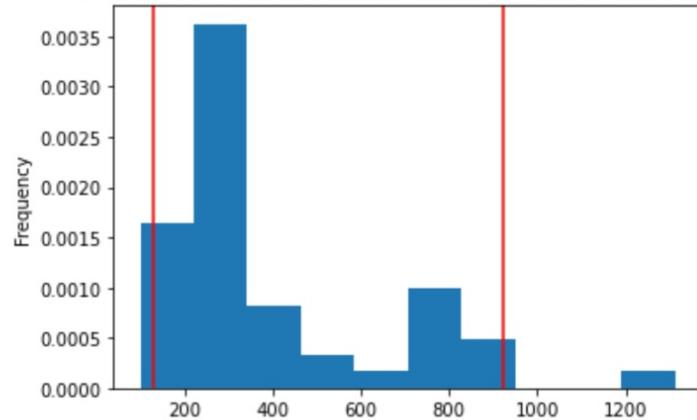
MODERATE
PORTFOLIO

AGGRESSIVE
PORTFOLIO

50 Simulations of Cumulative Portfolio Return Trajectories Over the Next 2520 Trading Days.



Distribution of Final Cumulative Returns Across All 50 Simulations



ANALYSIS

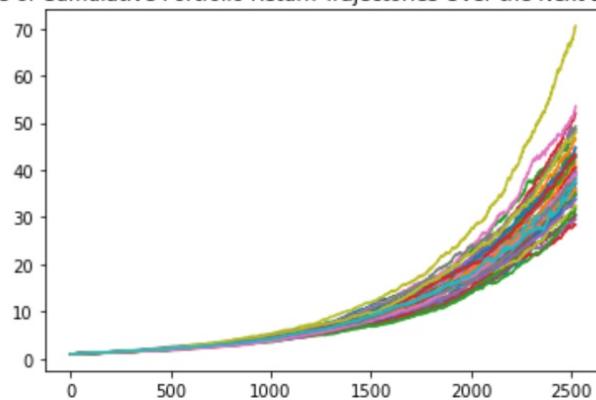
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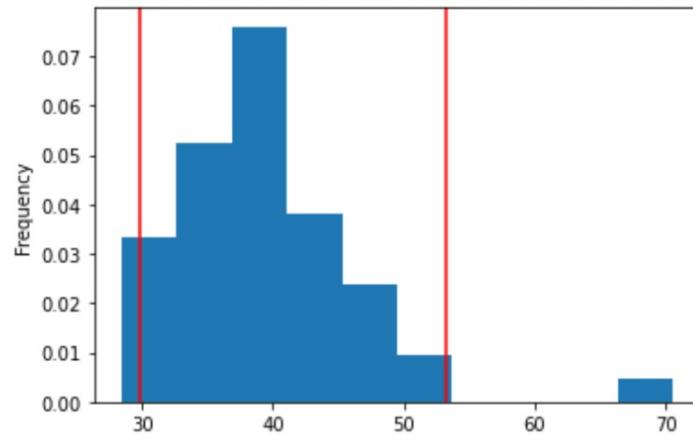
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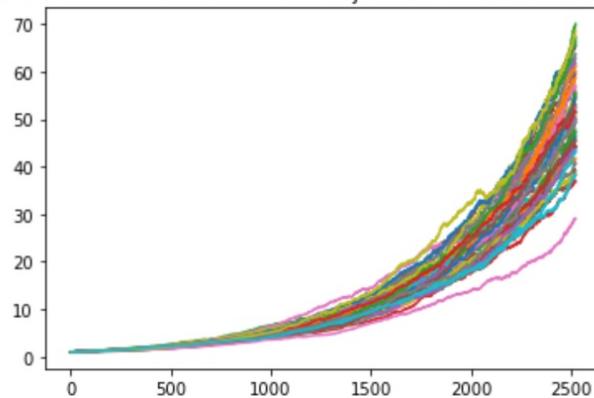
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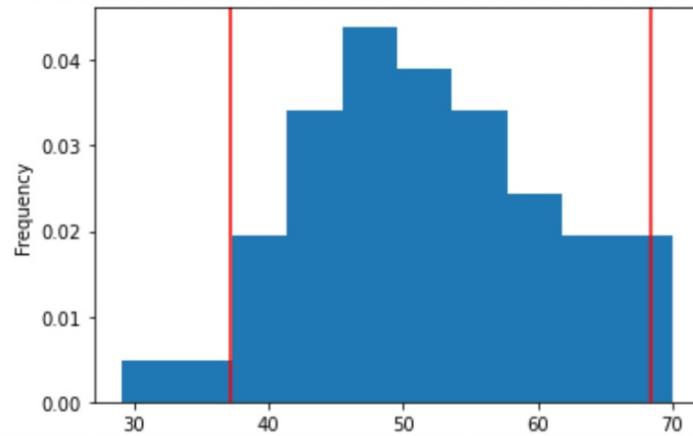
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