Portfolio Optimization

Data Science – Solution Overview

Agenda

- ✓ Introduction
- ✓ Problem Statement and Data Source
- ✓ Objective & Methodology
- ✓ Solution Description
- ✓ Impact

Introduction

Portfolio optimization is based on the tenet that most portfolios need to satisfy multiple dimensions (“constraints”) when being evaluated and reflects a more holistic approach to the construction of portfolios than other approaches that utilize a ranking or prioritization approach on a single or limited metric of value.

Portfolio optimization should result in what investors call an ‘efficient portfolio’. This means it’s generating the highest possible return at your established risk tolerance. (Alternatively, this term may refer to a portfolio that has the minimum amount of risk for the return that it seeks, although it’s a less common usage.)

Problem Statement & Data Source

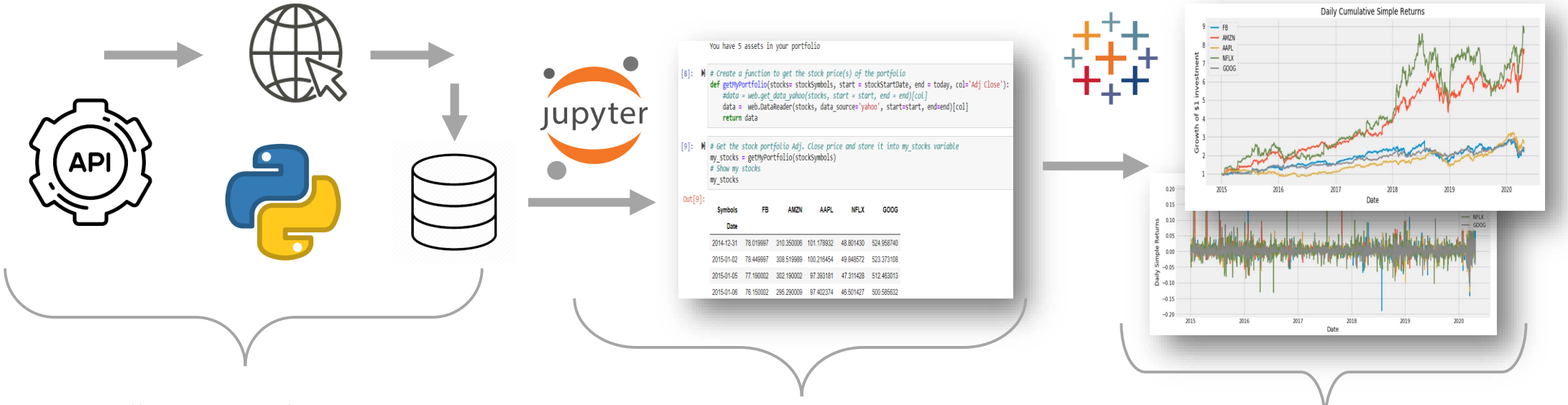
Understanding the trend and pattern of the stocks which are suggested by the clients and help in optimizing the portfolio which will result in minimum risk and medium investment.

- Increase in the Profit margin by more than 20% in the 1st Quarter of the year.
- Identifying the best stocks for Investment for the future.

Data is Collected form an API of Python which is Quandl and also from the pandas web data reader. The data is from 2015 to Upto date of the 5 well known stocks of the companies.

Objective & Methodology

- Increase in the Profit margin by more than 20% in the 1st Quarter of the year.
- Identifying the best stocks for Investment for the future.
- Optimize the risk of the portfolios through proper analysis.
- Also understanding the ROI based on different percentage of Investments



Data Collection and Storing

Per-processing and Analysing

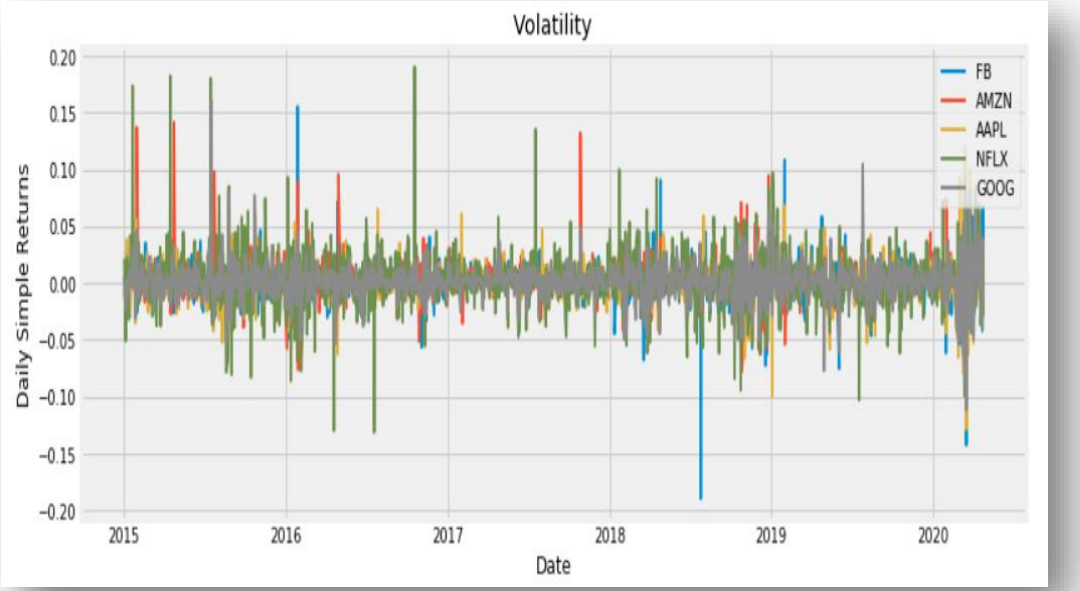
Visualizing

Solution Description

- ✓ Analysing the stocks based on various dates.
- ✓ Understanding the trends by various exploratory analysis such as the descriptive stats of the variable and its relation with other stocks.
- ✓ Understanding the volatility of the stocks based on variance calculations.
- ✓ Bidding the stocks and the portfolio models by assigning different weights to calculate the ROI.
- ✓ Predicting the next day closing price based on the different parameters and also validating the model based on new data.
- ✓ Tuning the model for better performance and plotting for visualization.

Business Impact

- ✓ Creating a proper portfolio for good return on ROI.
- ✓ Reducing the risk of the Investments by 30%
- ✓ Building a predictive model for real time analysis and ROI.



THANK YOU

FOR YOU ATTENTION

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