Time Series Project

As a business analyst you are entrusted with the responsibility of comparing and evaluating different stocks and having the ability to make informed investment decisions is crucial for ensuring profitability risks.

Times series analysis helps us out with these things we are entrusted with as it is a powerful tool in analytics, as it enables us to unravel trends, patterns and different fluctuations within stock data. This information we have now found helps us make well-informed investment decisions.

In this project I will be using time series analysis to analyze the performance of 5 different stocks which include Microsoft, Tesla, Nintendo, Apple and Nike.

As I explore deeper into time series analysis further in the project, we will see that I go beyond simply just collecting data and doing statistical calculations. As in order to obtain a grasp of each stock’s historical trajectory I have to find the underlying narrative hidden within the data. This will all help me to be able to give investment recommendations that are based on a thorough understanding of the stocks markets obtained through my research and investigation done on this project.

**Research Objectives:**

* The aim of my research is finding and investigate well recognized and used company's stock values and historical data to find 5 suitable ones to use in the rest of the project, I will then evaluate and compare the performance of the 5 different stocks that I have selected.
* I will look into gathering time series data for each stock, focsuing on the essentials such as the stock prices and returns for each day for 1 calendar year. The careful gathering of the data of the stocks will serve as a foundation for all my other assessments.
* From the data I collected in my previous objective I will shift to focusing on the visual representation of the data. I will aim to plot the data to identify trends and patterns. By smoothing the data which will help with being able to see underlying patterns and trends.
* With a better understanding of the data my next objective is to select a suitable times series model for fitting. Factors I would have to consider for this would be trends, seasonality and autocorrelation. Doing this I have to ensure that the model I have chosen accurately reflects the historical performance of each stock I have chosen.
* Once I have the model in place, my objective is to find the potential performance of each stock in the future by forecasting. This long-term perspective is essential for predicting market cycles and movements as well as making informed investment decisions.
* My final research objective would be to create a comprehensive comparative analysis of the 5 stocks I have selected. I intend to incorporate my findings from individual times series analyses, identifying the strengths and weaknesses and the characteristics to formulate the most precise investment recommendations.