Shiny Dashboard Project (Business Analytics)

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Brief Description

This dashboard will allow users to analyze stock market data using data from the past 25 years and provide insight on time series analysis of the selected stock.

This data was sourced from Yahoo Finance using the `yfR` package. The data is then converted to monthly data and analyzed using the ARIMA and TBATS algorithms.

There are 2 main panels for the dashboard, and one side panel for interaction.

The side panel :

1. Allows user to select ticker to analyze.

2. Select algorithm preferred (ARIMA vs TBATS).

3. Select date range for visualization.

4. Select how many months ahead to forecast.

5. It also has a short guide on terms used and on how to select which algorithm.

The main panel (1):

1. Shows the time series plot of the stock

2. Shows the time series plot of the volume of trade.

The main panel (2):

1. Shows the yearly Seasonal decomposition of the time-series analysis.

2. Shows the Trend decomposition of the time-series analysis for the past 25 years.

Stock Market Analysis Dashboard 2000-2025

This dashboard will allow users to analyse stock market data using data from the past 25 years and provide insight on time series analysis of the selected stock.

This data was sourced from Yahoo Finance using the `yfR` package. The data is then converted to monthly data and analysed using the ARIMA and TBATS algorithms.

Users can select the stock ticker symbol, the algorithm to use and the date range for analysis

1. Enter stock ticker symbol

^NDX ▼

Selected Stock:

Nasdaq 100 Index

Further details on tickers can be obtained at:

Yahoo Finance

2. Select preferred algorithm
- ○ ARIMA
- ● TBATS

3. Select date range to visualize (Select future dates to see forecast of price)

2000-01   to   2026-01

4. How many months to forecast price?

12 ──────────────────────── 36

12   15   18   21   24   27   30   33   36

Guide:

Current Price : Current price of the stock as of 2025-01-25

Latest Change (%) : Difference in closing price between today and yesterday

Latest Volume : Total number of shares traded today

YTD Performance : Year-to-date performance of the stock

How to choose between ARIMA and TBATS:

ARIMA is a univariate time series model that works well with data that has a clear trend and seasonality.

TBATS is a more complex model that can handle multiple seasonalities and is more robust to outliers.

This dashboard was created by:

Hathim Azman

Hazim Fitri

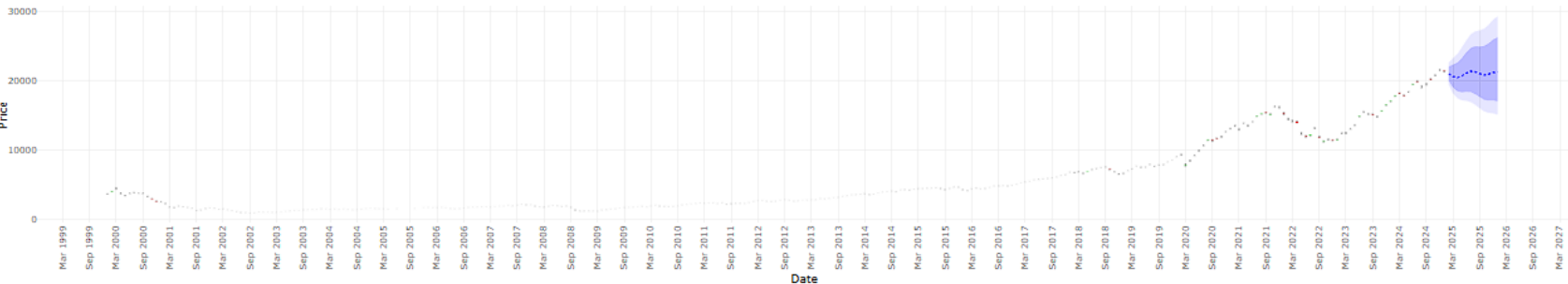Link to yfR Package Documentation in Github.

| Plot | Time-Series Analysis |

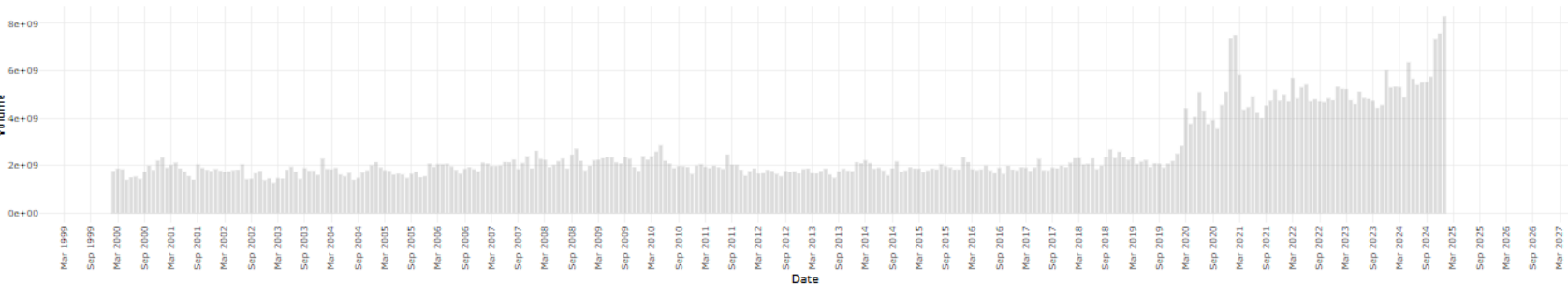| **Current Price** | **Latest Change** | **Latest Volume** | **YTD Performance** |
| $21774.01 | -126.92 (-0.58%) | 8,299,488,667 | 3.81% |

Monthly Candlestick Chart with Forecast

Monthly Volume Chart

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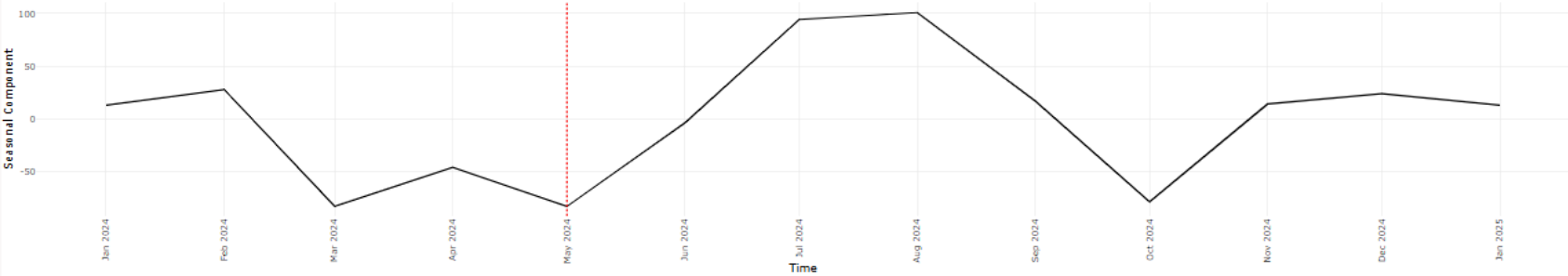
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Plot   **Time-Series Analysis**

Seasonal Decomposition for the past 1 year

The lowest point of the seasonal component occurs in the month of May

Trend Decomposition Since 2000

The price trend since 2000 is increasing