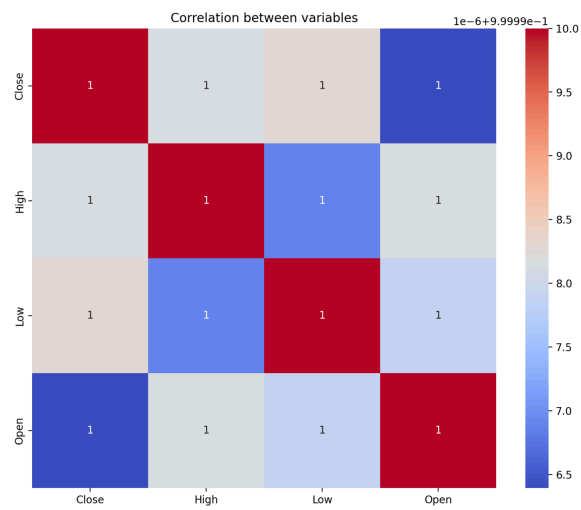# Indian Stock Market Analysis and Prediction

This application provides insights into stock market trends and predictions using LSTM and ARIMA models. Explore interactive visualizations and evaluate model performance.

Dataset Preview

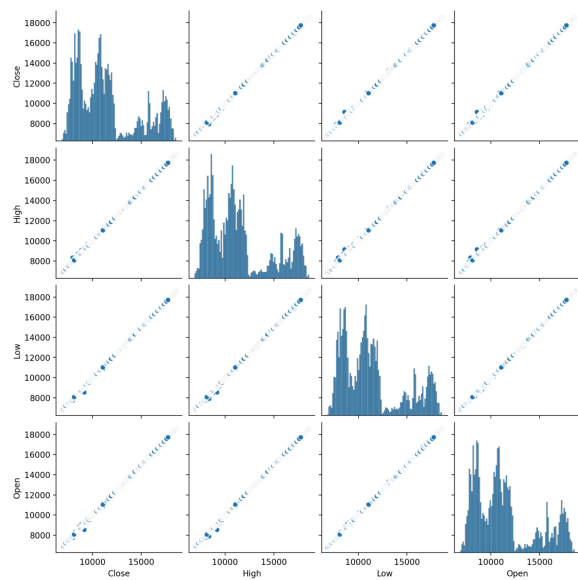|	Date	Close
0	2015-01-09 12:24:00+05:30	8,217.4
1	2015-01-09 12:27:00+05:30	8,214.7
2	2015-01-09 12:30:00+05:30	8,216.95
3	2015-01-09 12:33:00+05:30	8,209.2
4	2015-01-09 12:36:00+05:30	8,202.9

Correlation Analysis

Understanding the relationships between different features in the dataset is crucial. Correlation plots help us identify how different variables are related.
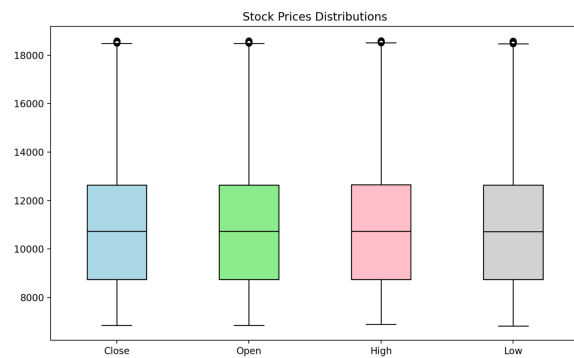
Correlation between variables

Pair Plot

Visualizing pairwise relationships between variables using a scatterplot matrix.

Stock Price Distributions

Box plots provide a quick summary of the distribution of stock prices, highlighting key statistics like median, quartiles, and potential outliers.
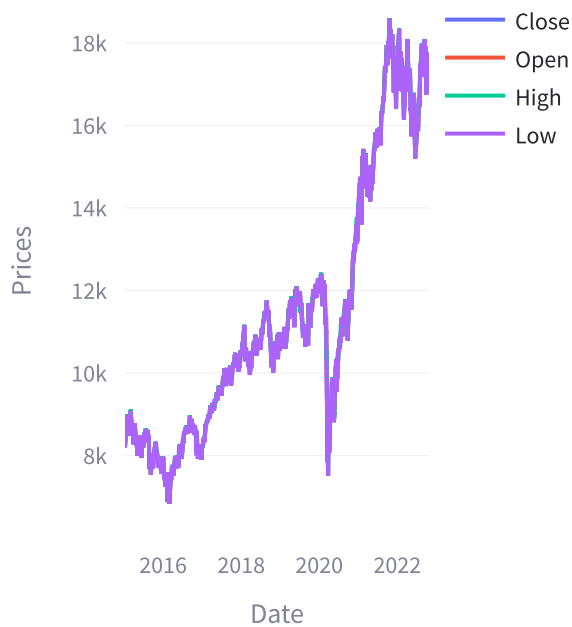
Stock Prices Distributions

Price Trends

Below is a multi-line graph representing stock price trends over time, which helps identify general trends, anomalies, and patterns.

NIFTY Stock Prices From 2015 until 2023

Key Observations:

- There is a significant drop in stock prices during the **2015-2016 recession** period.

- A noticeable dip in stock prices occurred in **2016,** attributed to the **demonetization drive** in India.
- Another sharp decline happened in **2020**, driven by the global **COVID-19 pandemic**.
- By the end of 2020 through 2023, stock prices showed a steady upward trend, reflecting economic recovery.

Train LSTM Model

Train ARIMA Model