Stock Market Analysis

Team Member

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Mentor

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To be filled by Project group

Business Problem:

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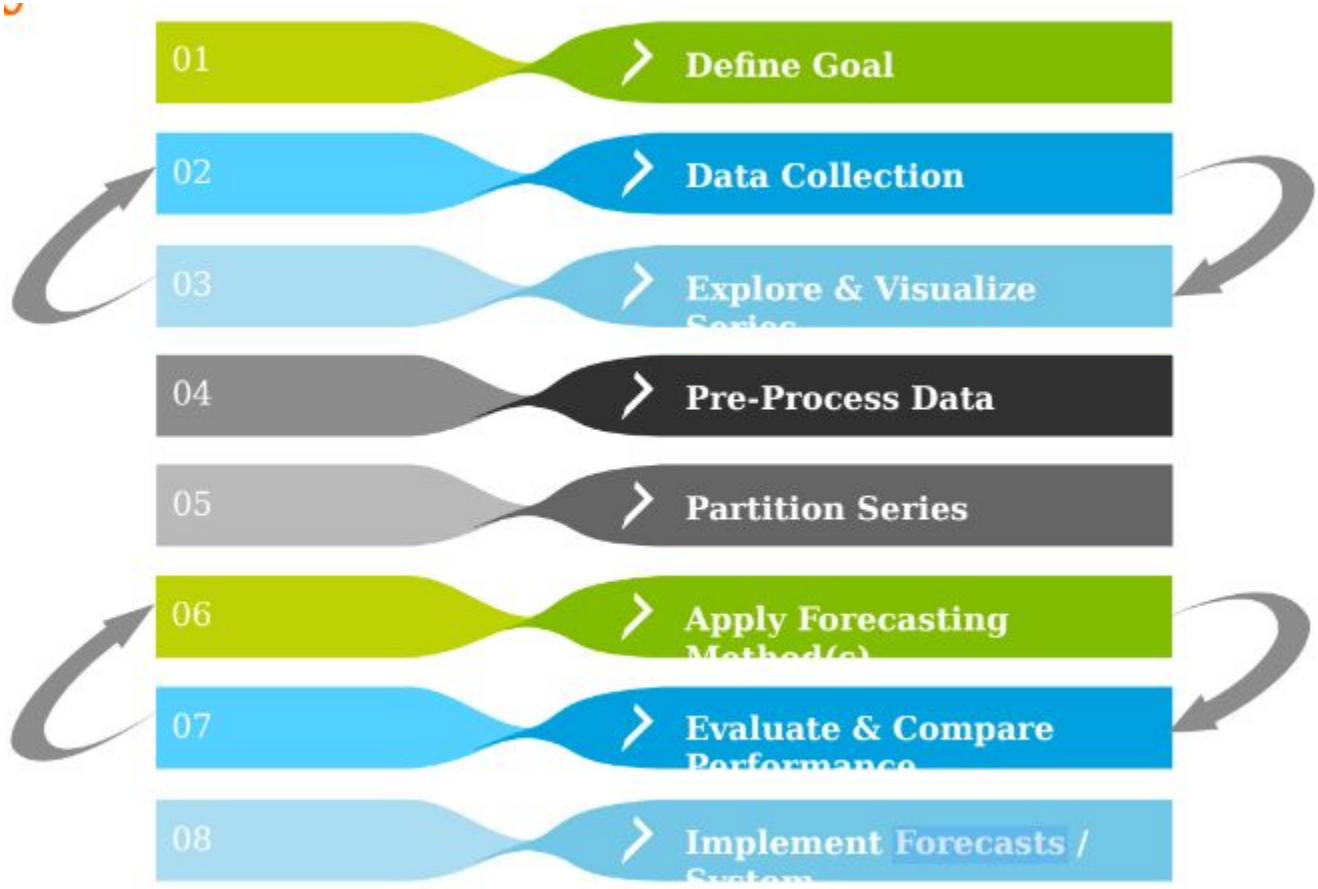
Predict the Reliance Industries Stock Price for the next 30 days.

Objective:

Predict the Reliance Industries Stock Price for the next 30 days.
There are Open, High, Low and Close prices that you need to obtain from the web for each day starting from 2015 to 2022 for Reliance Industries stock.

- Split the last year into a test set- to build a model to predict stock price.
- Find short term, & long term trends.
- Understand how it is impacted from external factors or any big external events.
- Forecast for next 30 days.

Project Architecture / Project Flow



Forecasting stock prices is a complex task that involves analyzing historical data, identifying patterns and trends, and making predictions based on various factors. While there is no one-size-fits-all approach to stock price forecasting, here is a general project flow that can be followed

- Define the Objective
- Gather Data
- Preprocess the Data
- Explore and Visualize
- Feature Engineering
- Split the Data
- Select a Forecasting Model
- Train the Model
- Validate and Tune
- Test and Evaluate
- Monitor and Refine

Exploratory Data Analysis (EDA) and Feature Engineering

Data set details

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```
<class 'pandas.core.frame.DataFrame'>
DatetimeIndex: 2078 entries, 2015-01-01 to 2023-06-01
Data columns (total 6 columns):
 #   Column     Non-Null Count  Dtype
---  ------     --------------  -----
 0   Open       2078 non-null   float64
 1   High       2078 non-null   float64
 2   Low        2078 non-null   float64
 3   Close      2078 non-null   float64
 4   Adj Close  2078 non-null   float64
 5   Volume     2078 non-null   int64
```

Exploratory Data Analysis (EDA)

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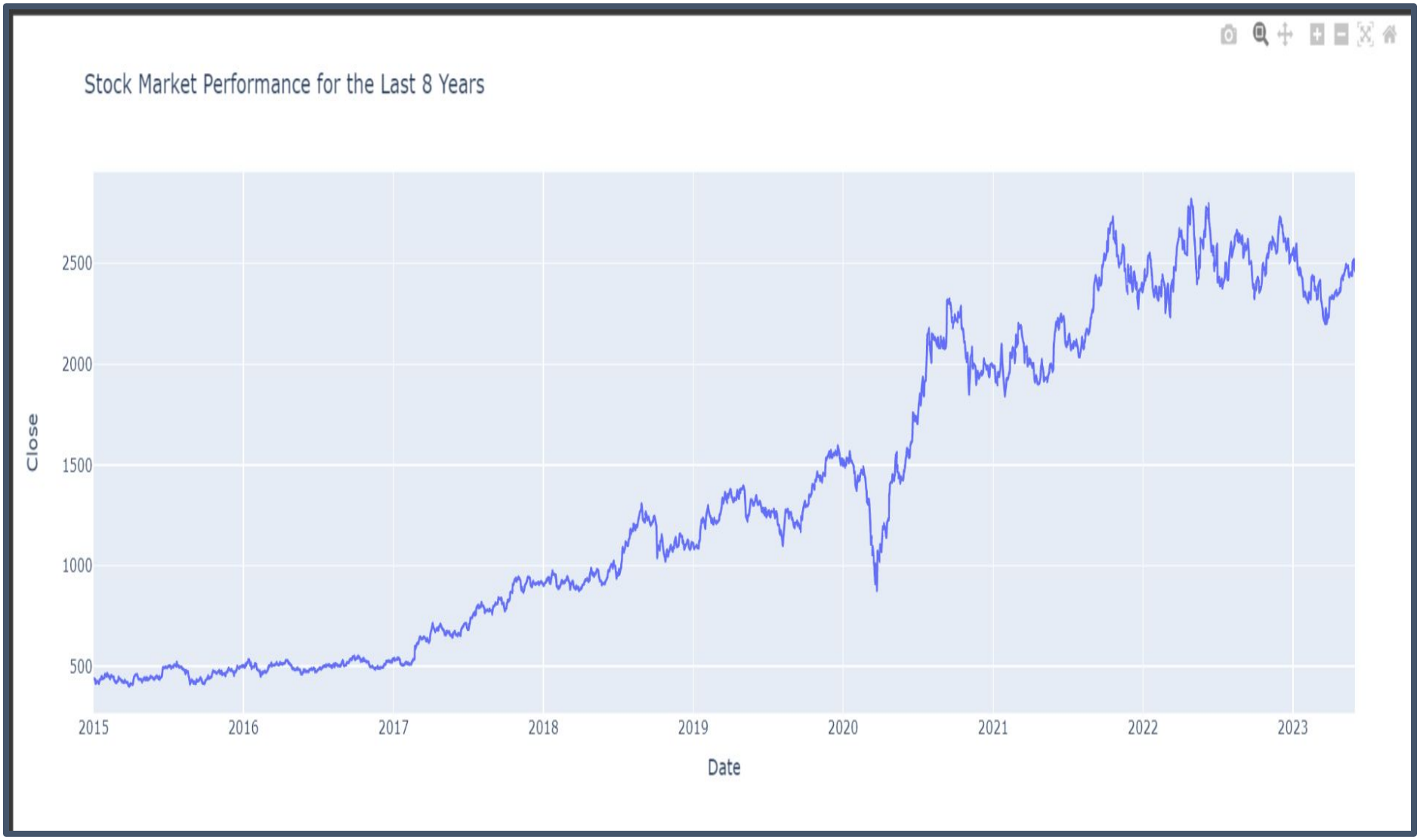
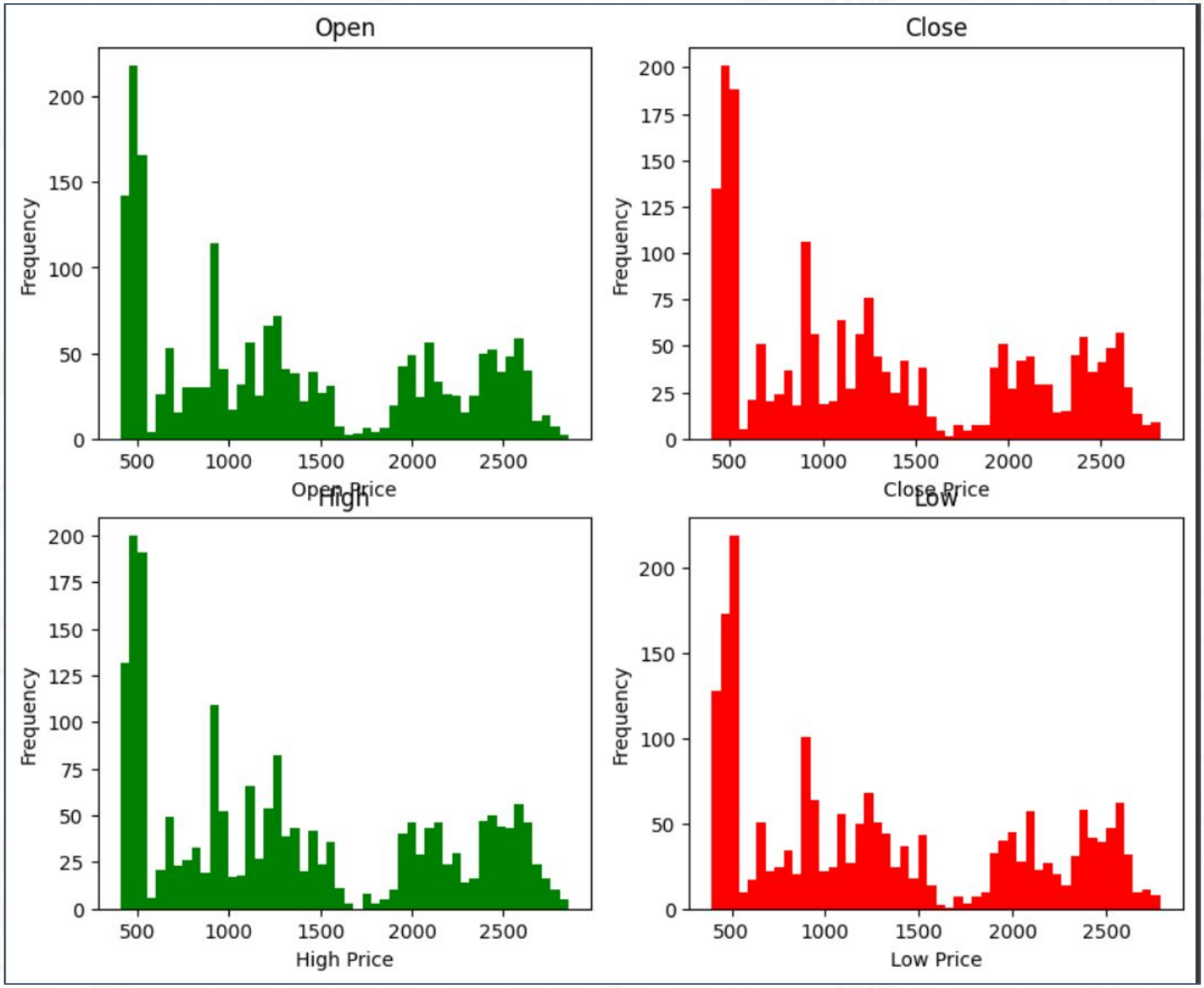
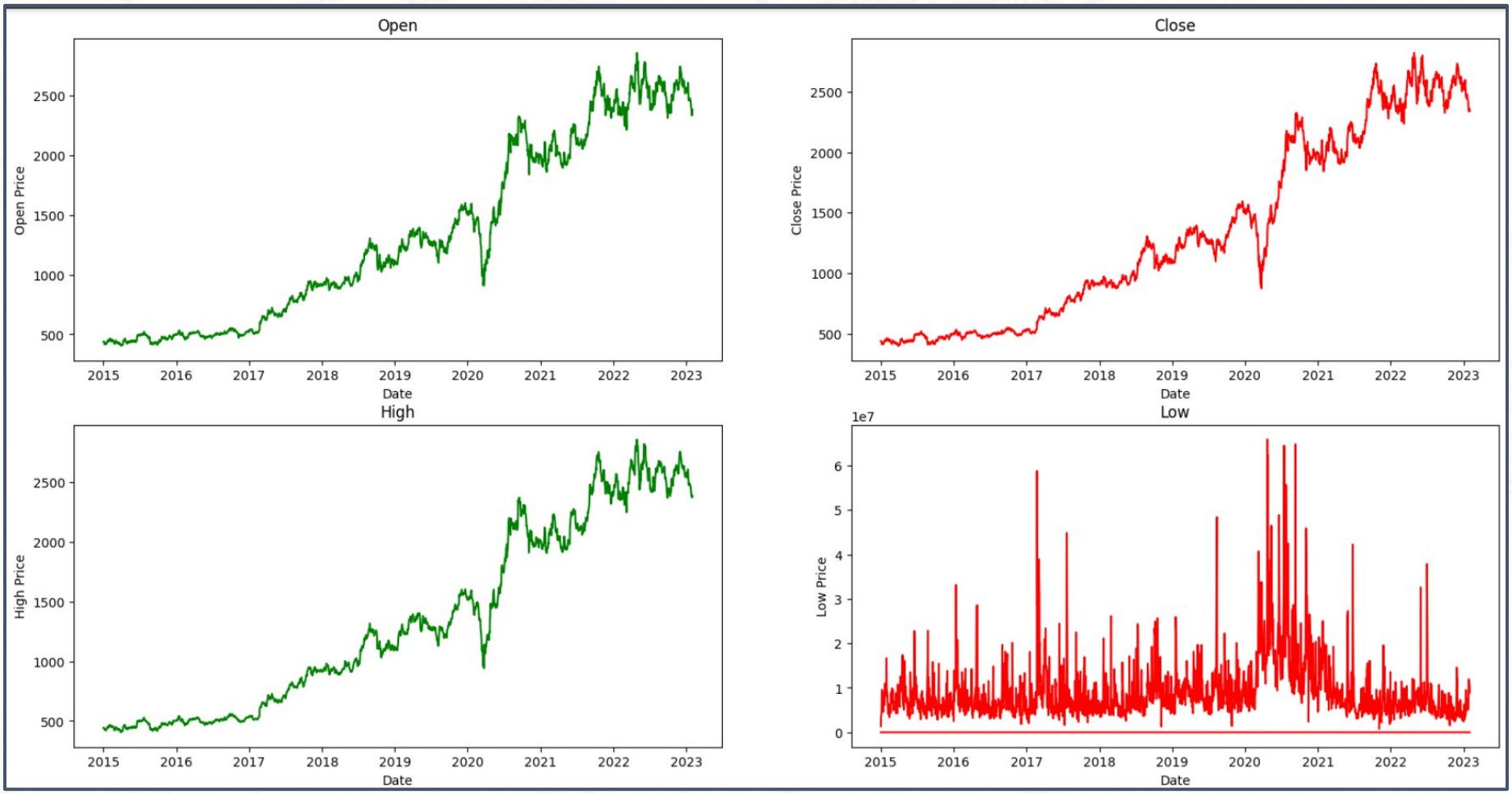



Open
Frequency
Open Price
Close
Frequency
Close Price
High
Frequency
High Price
Low
Frequency
Low Price


Open
Open Price
Date
Close
Close Price
Date
High
High Price
Date
Low
1e7
Low Price
Date

EDA

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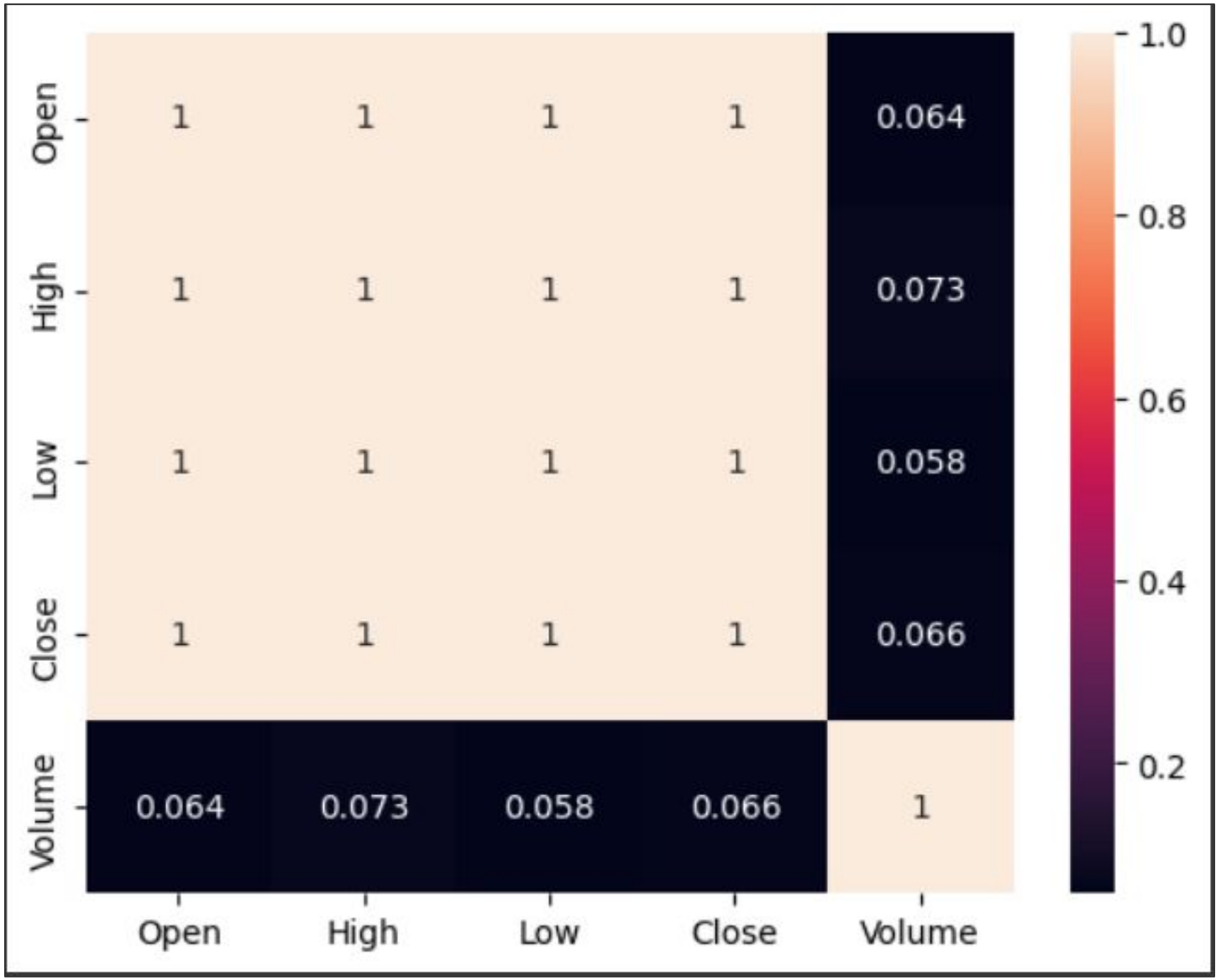

Feature Engineering

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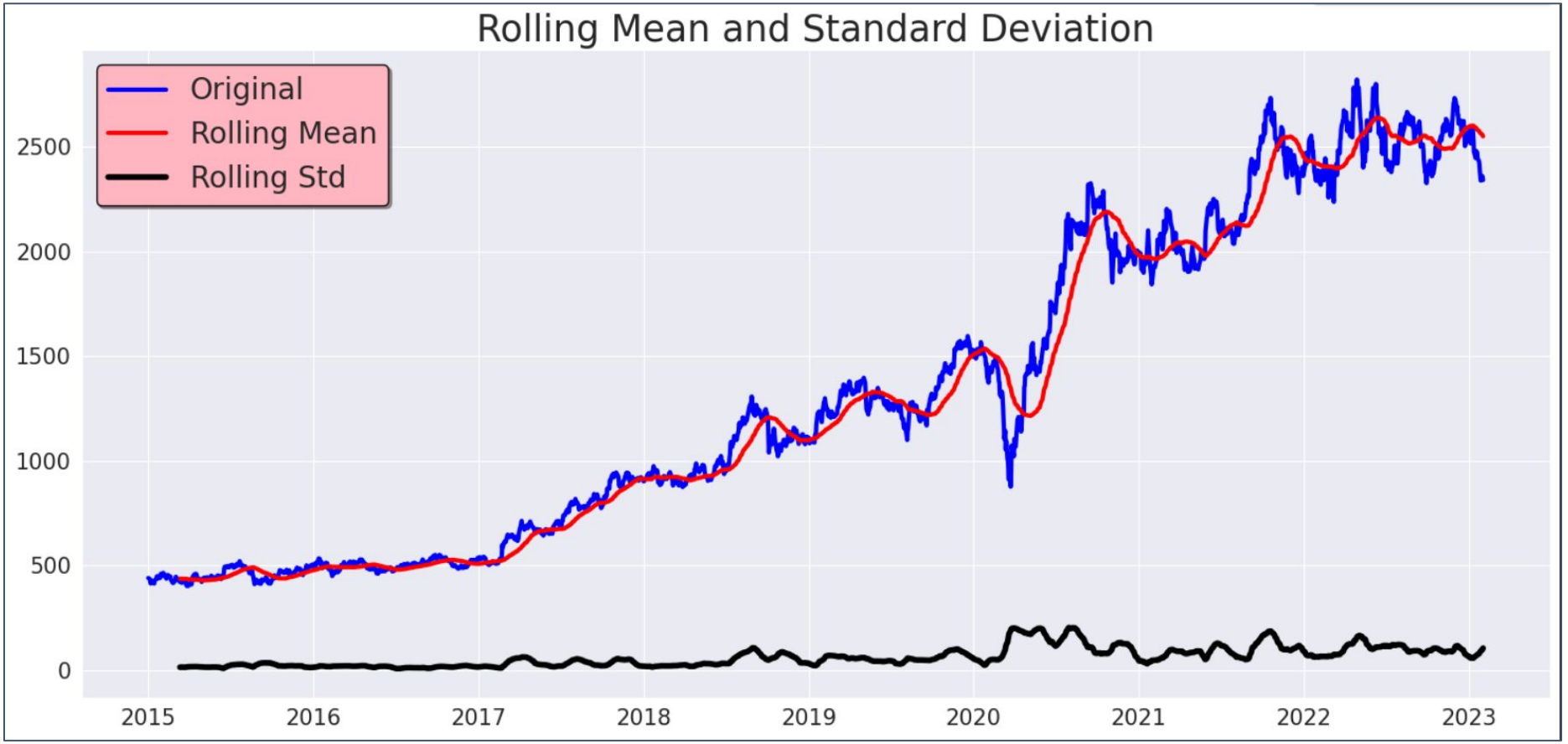

Model Building

Template for Model results presentation

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Model - LSTM

Data set details

Reliance stock Market dataset

Data Partition details

Algorithms

LSTM is a Kind of RNN

Algorithm details and configuration

Model Predictions

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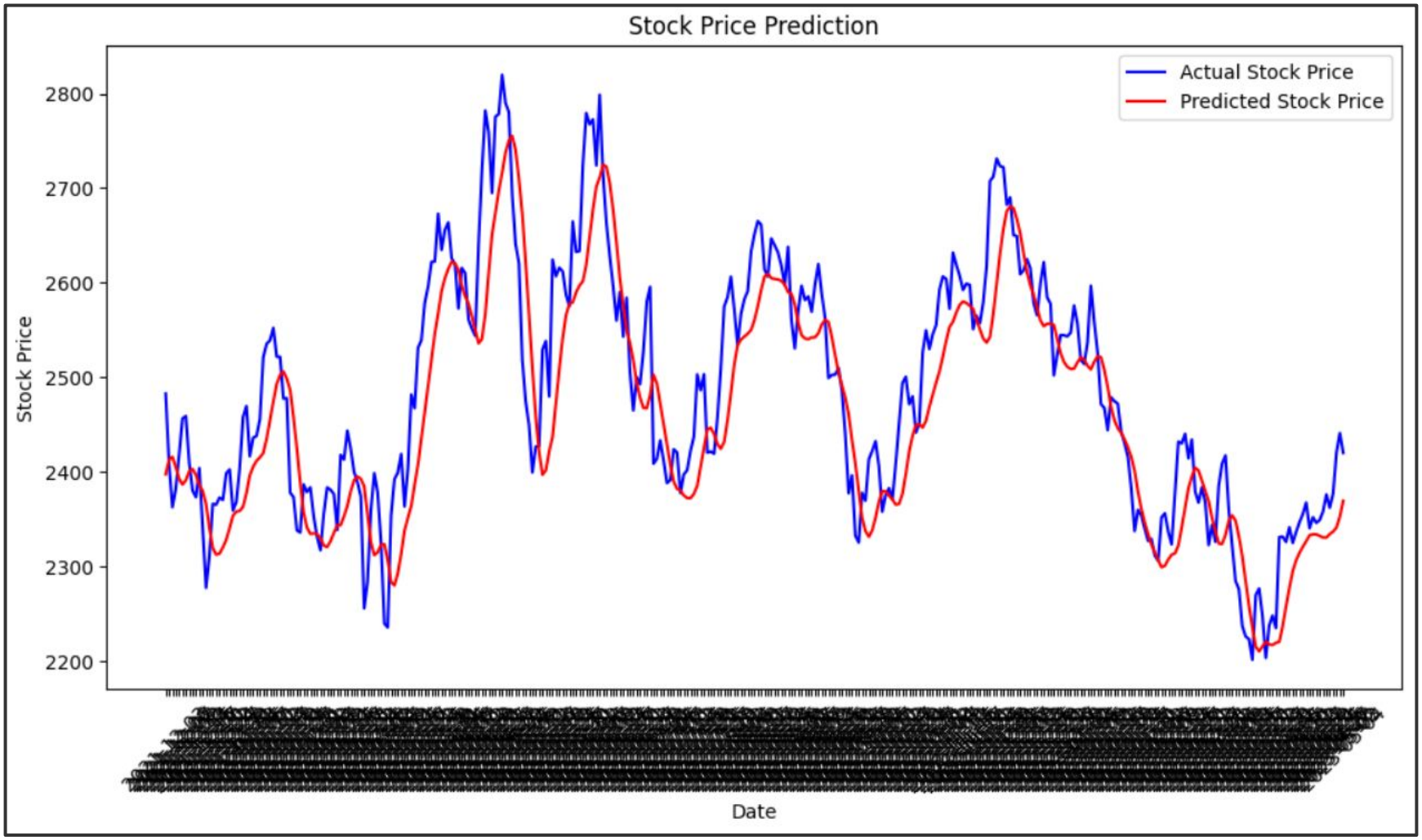

Model Results

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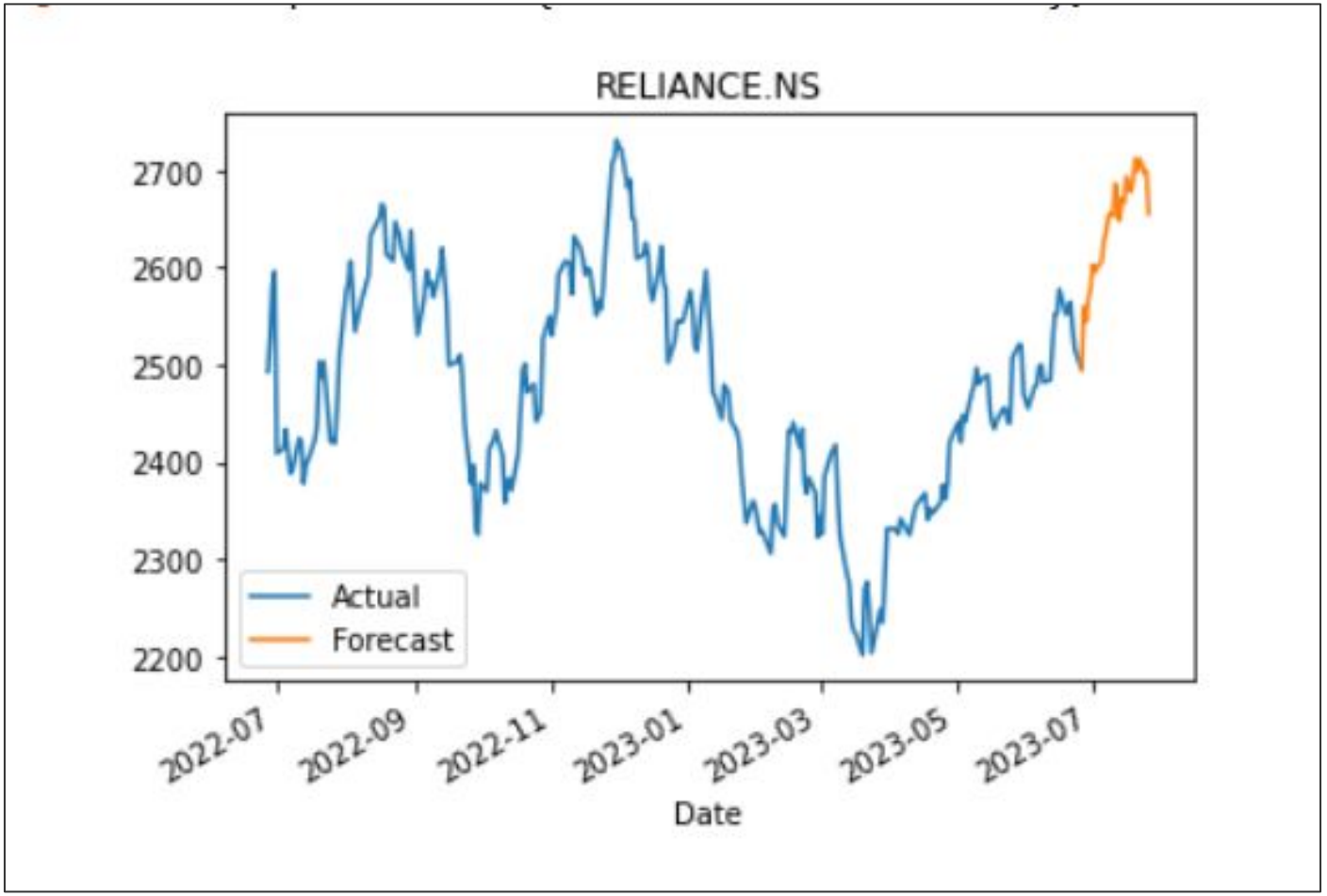

Model Deployment using R shiny / Flask or any other method
STREAMLIT

Challenges faced?

- Model Selection and Parameter estimation
- Forecasting Uncertanity

How did you overcome?

We have overcome through Researched and analysis.

Thank you