TATA POWER STOCK PRICE FORECASTING

[SMARTBRIDGE DATA ANALYTICS FINAL PROJECT]

REPORT- TEAM 90

WEBSITE: https://drive.google.com/file/d/1EA-LRc9cYRXvCsUnziQyeb3vWffuCeHD/view?usp=drive_link

DEMO LINK: https://drive.google.com/file/d/1VQaFMY6kJC8BFuZdTJWLkUwCrXT-cDI8/view?usp=drive_link

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INTRODUCTION

1.1. OVERVIEW

TATA Power is the largest power generator in private sector in India. It has a capacity of 13068 Megawatts. Along with the power distribution business, the company operated transmission circuits in Mumbai and its suburb areas.

It also has a joint venture with Power Grid Corporation of India in the construction of circuit kilometres of transmission lines from Siliguri in West Bengal via Bihar to Mandola in Uttar Pradesh.

Resurgent Power, a joint venture in which Tata holds a 26% stake is developing a 153 km transmission system.

TATA Power Stock Forecasting Project is an evaluation of stock prices of TATA dated from **20 June, 2022 to 20 June, 2023**. This dataset of one year comprises the respective fields-

a) Date,
b) Opening Price of the stock for the day,
c) Highest Price of the stock for the day,
d) Lowest Price of the stock for the day,
e) Closing Price of the stock for the day,
f) Adjacent Closing Price of the stock,
g) Volume of the stocks sold.

The above fields are to be analysed in order to create suitable visualizations as per the requirement.

1.2. PURPOSE

The project aims at creating visualizations depicting each important aspect of stock analysis. The story and dashboard are included in order to simplify the understanding of the purpose.

First, the past analysis of all prices- starting, closing, and adjacent closing is done. Afterwards, the data is used to forecast the stock prices for the upcoming period of time.

A proper past analysis and future forecasting can be achieved by using this project as a reference.

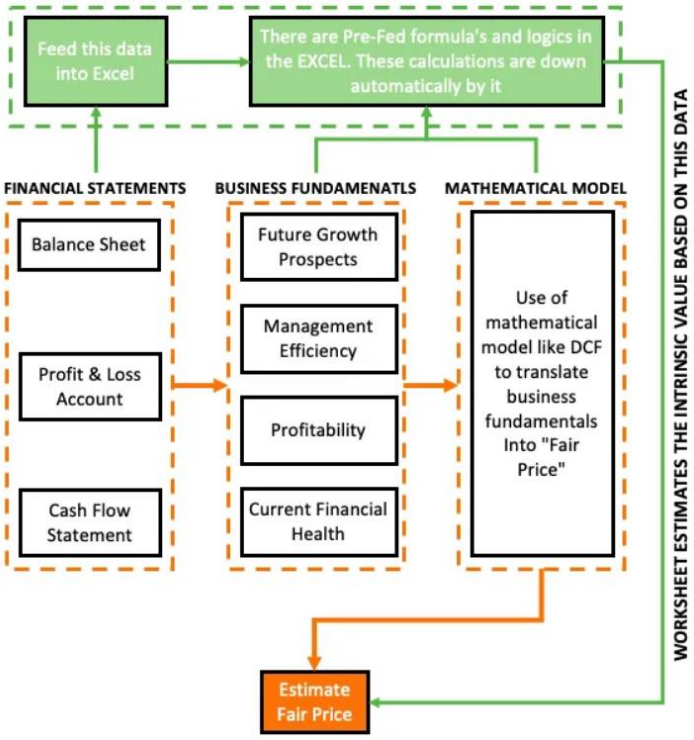
LITERATURE SURVEY

2.1 EXISTING PROBLEM

As per various analysts, there is no such method that can be used to determine future predictions of any stock in the available market with 100% precision. Stock prices of the market can vary due to several factors, including social, economic, and political variations in a geographical reason.

The existing methods use to predict stock prices are-

01. Intrinsic value estimation of a stock is a skill.

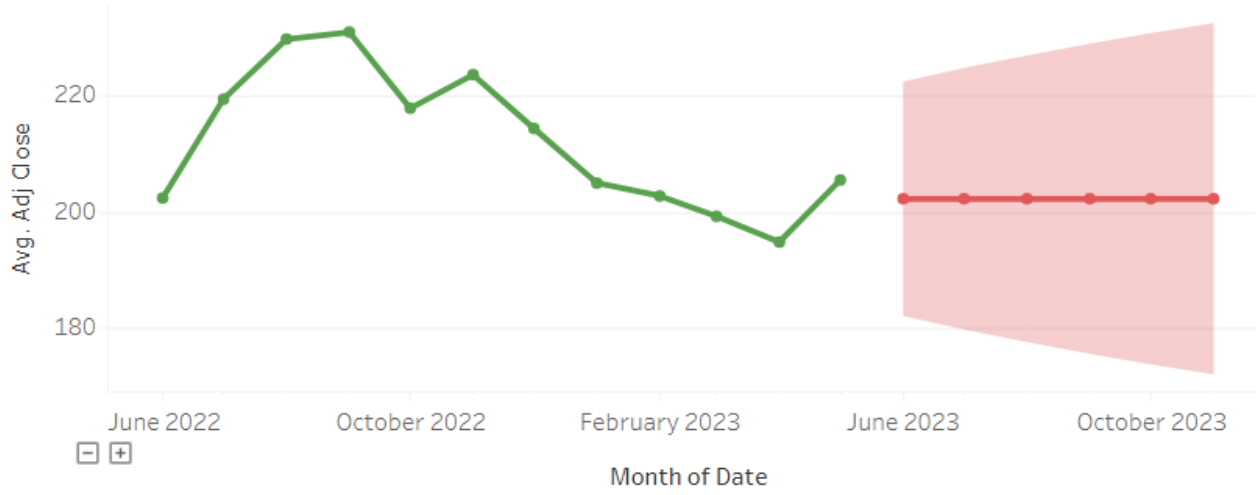


02. Another crude way to guessing a stock price. But the logic is that will be used to implement the process is sound.

03. Future PE-EPS Method- This method of predicting future price of a stock is based on a basic formula - (P/E x EPS = Price)

2.2 PROPOSED SOLUTION

The method used to predict stock prices is done by using Tableau Forecasting Model.



THEORETICAL ANALYSIS

3.1 THEORETICAL EXPLANANATION OF THE COMPONENTS

A. TABLEAU DESKTOP

Tableau Desktop is a powerful data visualization and business intelligence tool developed by Tableau Software. It is designed to help individuals and organizations analyze and understand their data by creating interactive and visually appealing dashboards, reports, and charts.

Tableau Desktop offers a wide range of visualization options, including bar charts, line graphs, scatter plots, maps, and more. Users can customize these visualizations by applying filters, aggregating data, and adding calculations or parameters. The software also supports interactive features like tooltips, drill-downs, and data highlighting, enabling users to explore their data in-depth and gain valuable insights.

With Tableau Desktop, users can connect to various data sources, such as spreadsheets, databases, cloud services, and big data sources, to bring in their data for analysis. The software provides a user-friendly drag-and-drop interface that allows users to easily create visualizations without the need for complex coding or scripting.

B. TABLEAU PUBLIC

Tableau Public is a free, cloud-based platform provided by Tableau Software that allows users to create, publish, and share interactive data visualizations and dashboards with the public. It is a separate offering from Tableau Desktop and is specifically designed for public data storytelling and collaboration.

One of the key features of Tableau Public is its ability to publish and share visualizations publicly. When a user publishes a visualization or dashboard to Tableau Public, it becomes accessible to anyone on the web. This allows individuals, journalists, bloggers, and organizations to share their data stories with a wide audience, including embedding the visualizations in websites or blogs.

Tableau Public visualizations are interactive and can be explored by viewers. They can filter and drill down into the data, hover over data points to view details, and interact with other features such as tooltips and legends. This interactivity enhances engagement and enables viewers to gain insights from the data.

C. VISUAL STUDIO CODE

Visual Studio Code is a lightweight, free, and open-source code editor developed by Microsoft. It is widely used by developers and programmers for writing, editing, and debugging code across various programming languages. Visual Studio Code, often referred to as VS Code, provides a user-friendly and customizable interface with numerous features and extensions that enhance productivity and streamline the development process.

Key features of Visual Studio Code include:

1. Cross-platform compatibility: VS Code runs on Windows, macOS, and Linux, allowing developers to use the same editor across different operating systems.

2. Intelligent code editing: VS Code offers smart features such as syntax highlighting, code completion, and IntelliSense, which provides suggestions and autocompletion based on the context.

3. Integrated terminal: It includes an integrated terminal within the editor, enabling developers to run commands, execute scripts, and interact with the command-line interface without leaving the editor.

4. Built-in Git support: Visual Studio Code has built-in Git integration, allowing developers to manage version control, browse repositories, and perform Git operations seamlessly.

5. Extensibility: VS Code supports a wide range of extensions, which are add-ons developed by the community, extending its capabilities for specific programming languages, frameworks, and tools.

EXPERIMENTAL INVESTIGATIONS

This section talks about the analysis and investigations while working on the given problem. There are numerous aspects for whom attention can be drawn: -

01. MARKET VOLATILITY: Stock prices can be highly volatile and influenced by various factors such as economic conditions, market sentiment, geopolitical events, and company-specific news. The volatility can make it difficult to predict short-term price movements accurately.

02. DATA QUALITY: Accurate and reliable data is crucial for stock analysis. However, there may be instances where the data is incomplete, inaccurate, or inconsistent, which can affect the analysis and the resulting conclusions.

03. COMPLEX INTERACTIONS: Stock prices can be influenced by a multitude of complex interactions between various factors. Understanding the relationships between economic indicators, industry trends, company performance, and investor sentiment requires a comprehensive analysis and a deep understanding of the market.

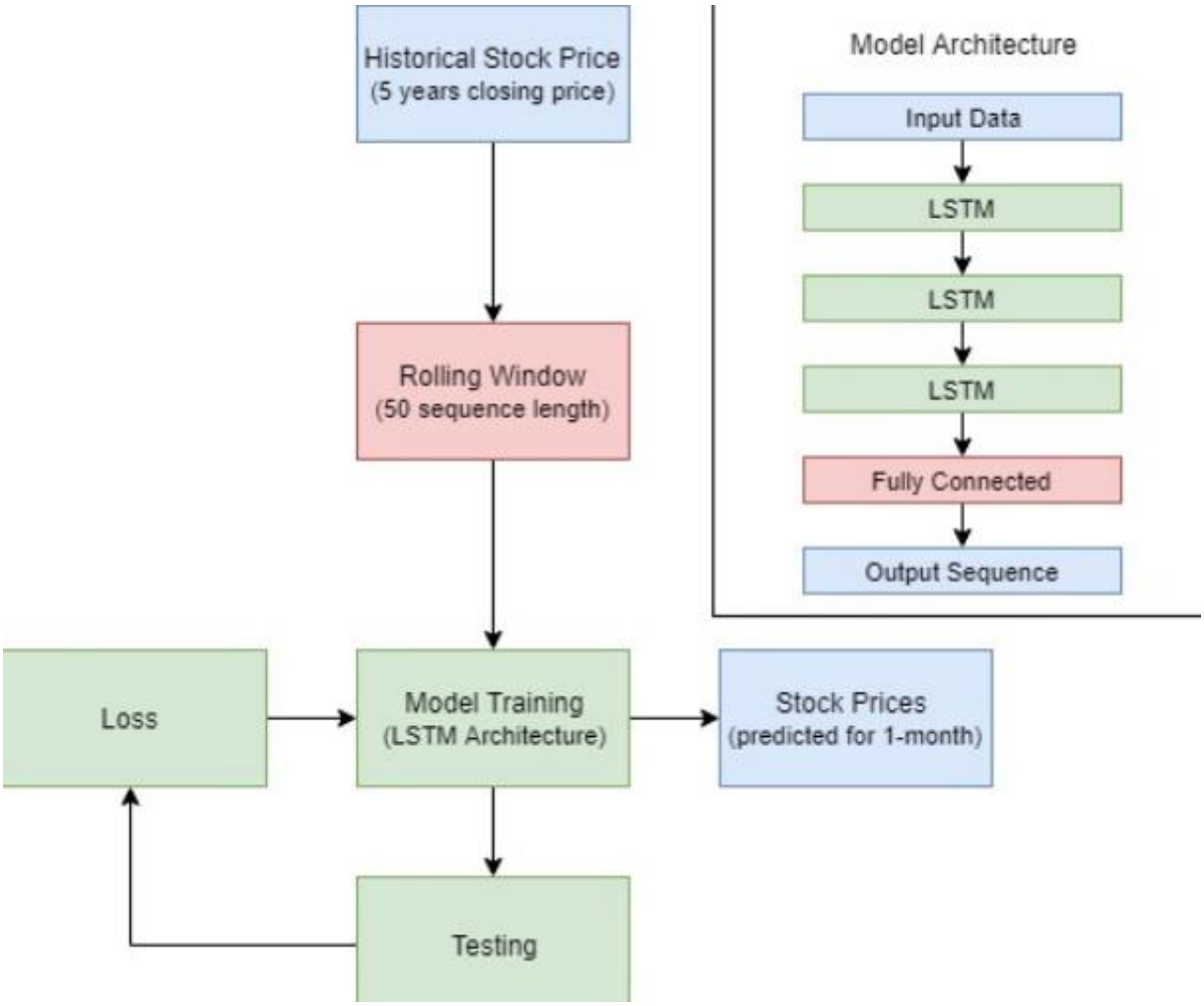
04. INFORMATION OVERLOAD: There is an overwhelming amount of information available for stock analysis, ranging from financial statements, news articles, analyst reports, and social media sentiment. Filtering and processing this information to extract meaningful insights can be challenging.

05. REGULATORY AND LEGAL FACTORS: Changes in regulations, government policies, or legal issues can significantly impact stock prices. Staying up-to-date with relevant legal and regulatory developments is crucial for accurate analysis.

06. BLACK SWAN EVENTS: Unforeseen events, often referred to as black swan events, can have a dramatic impact on stock prices. These events, such as natural disasters, political unrest, or global pandemics, are challenging to predict and can disrupt traditional analysis models.

Additionally, staying informed about market news, understanding risk management strategies, and employing various analytical tools and techniques can help improve the accuracy of stock price analysis.

FLOWCHART


Historical Stock Price
(5 years closing price)
Rolling Window
(50 sequence length)
Model Architecture
Input Data
LSTM
LSTM
LSTM
Fully Connected
Output Sequence
Loss
Model Training
(LSTM Architecture)
Stock Prices
(predicted for 1-month)
Testing

RESULT

As per the analysis, given below are the created visualizations for the analysis of Tata Power Stock Prices for the given dataset of 01 year-

01. Line Chart w.r.t. Highest Stock Prices

Tableau Public Link:

Line Highest | Tableau Public

Creation Video Link:

https://drive.google.com/file/d/1gZ85jCAXVXb58W5KIfdePVRlGLn9VVWQ/view?usp=drive_link

02. Line Chart w.r.t Lowest Stock Prices

Tableau Public Link:
[Line Lowest | Tableau Public]

03. Bubble Chart w.r.t volume of stocks sold

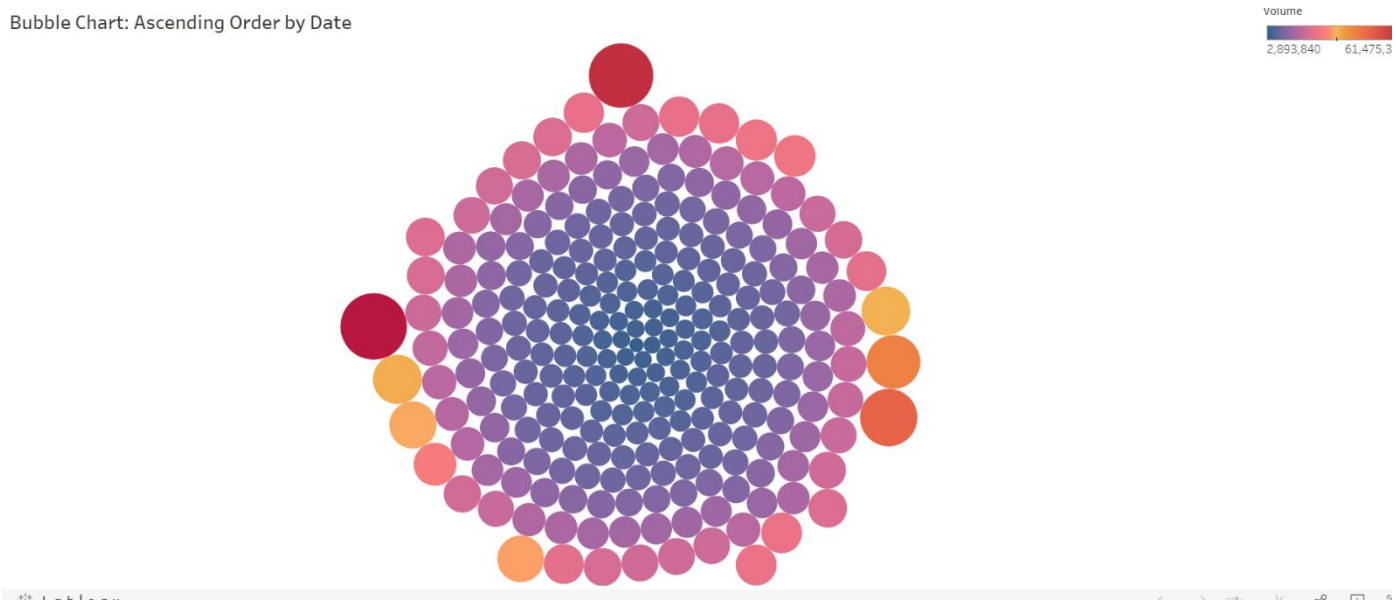


Tableau Public Link:
[Bubble | Tableau Public]

Creation Video Link:
https://drive.google.com/file/d/1srJwkkmCmGKIRPchoFY2wjoLulGF2u-L/view?usp=drive_link

04.Moving Average Line Chart w.r.t Adjacent Closing Prices

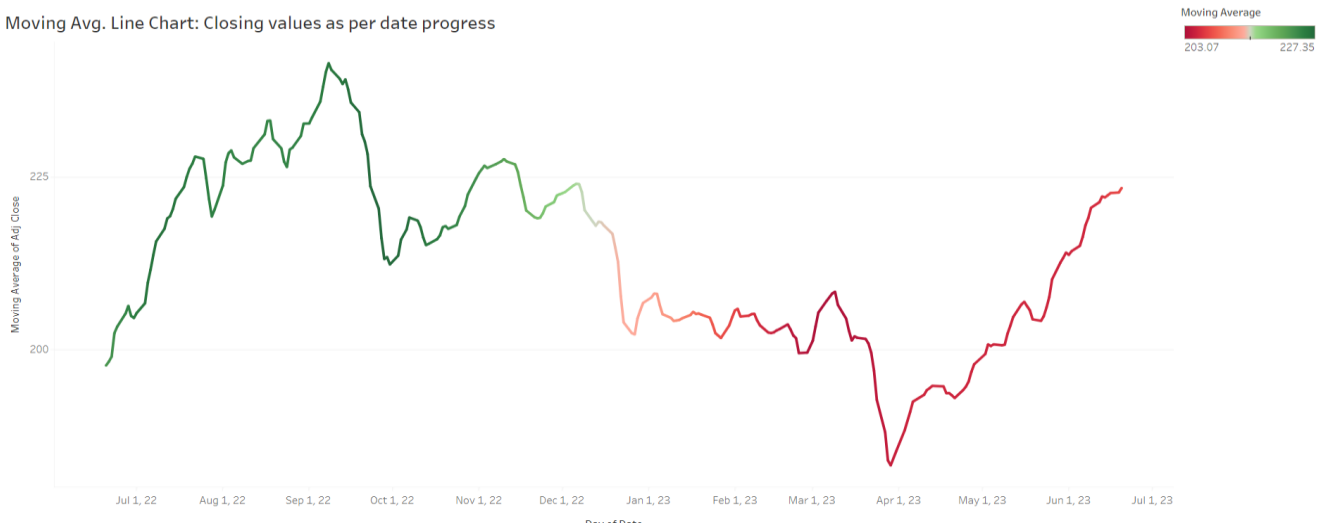


Tableau Public Link:
[Moving Avg. Line | Tableau Public]

Video Creation Link:
https://drive.google.com/file/d/1Yr67afvJcaSQw9VtXVGecIp8LVQHPWZk/view?usp=drive_link

05. Open-High Low Chart

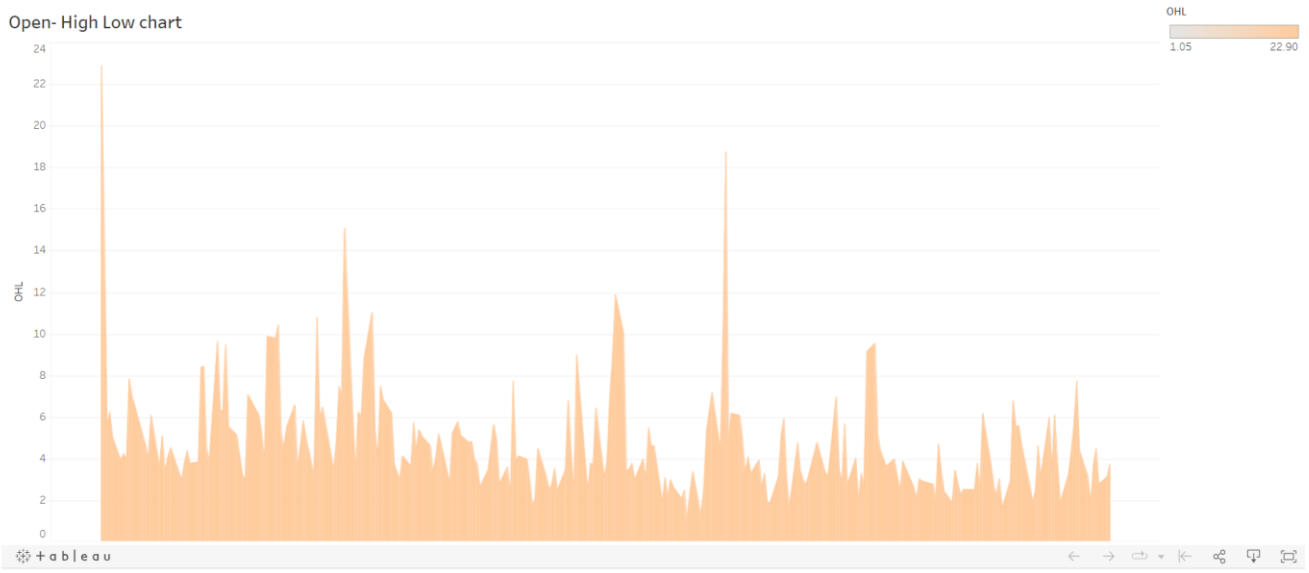


Tableau Public Link:
[OHL | Tableau Public]

Video Creation Link:

https://drive.google.com/file/d/1fvVekbaSibvpNqdMROGmlJdbDorcoDsd/view?usp=drive_link

06. Candlestick Chart

Tableau Public Link:
[Candlestick | Tableau Public]

Creation Video Link:
[https://drive.google.com/file/d/14kVHV-W8W-oLvdak8PKsOHp-jLkljpQr/view?usp=drive_link]

07. Forecasting of future stock prices

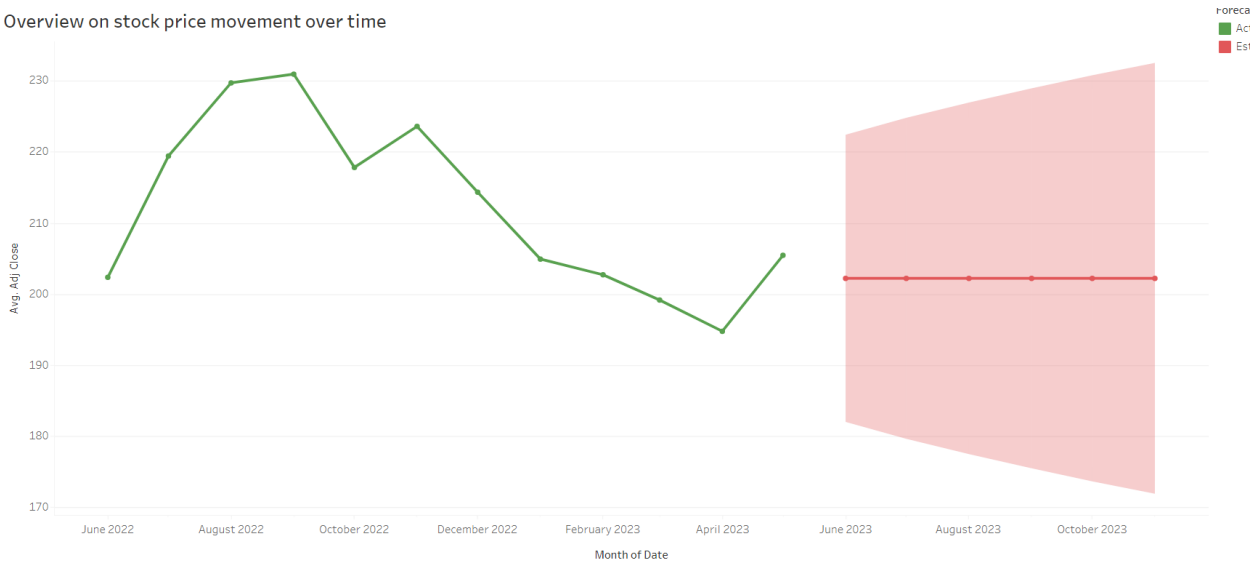


Tableau Public Link:

[Forecasting | Tableau Public]

08. Dashboard of the project visualizations

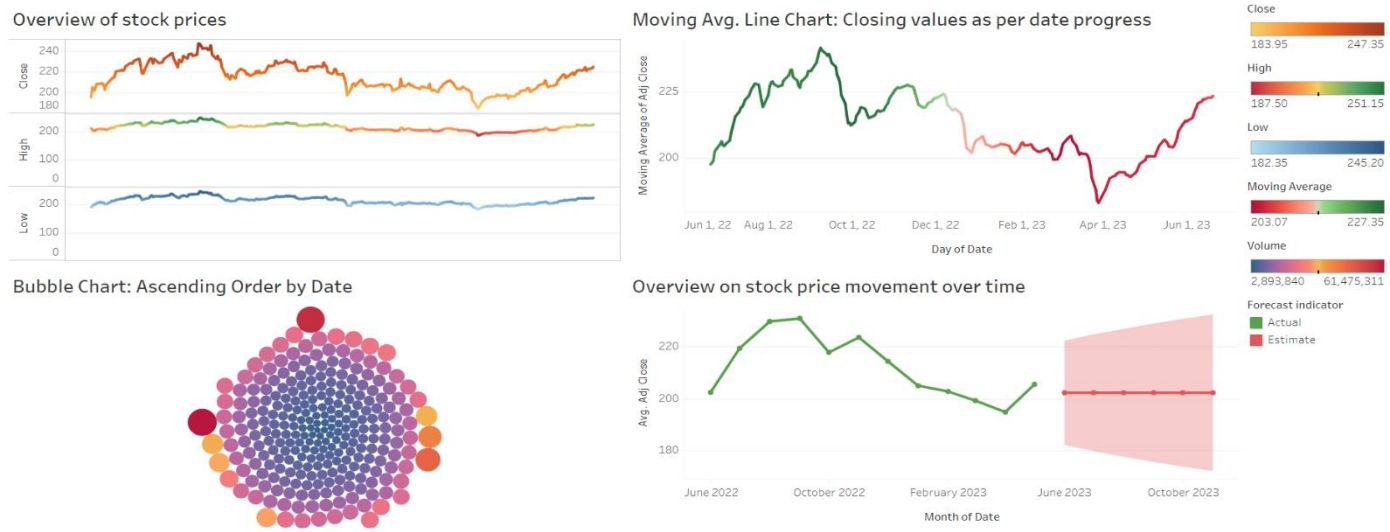


Tableau desktop Link:
[Dashboard | Tableau Public]

Creation Video Link:
[https://drive.google.com/file/d/1DoXsV7hFy-quRdlaXddaeLnO4vCJ59_1/view?usp=drive_link]

09. Story of the project visualizations

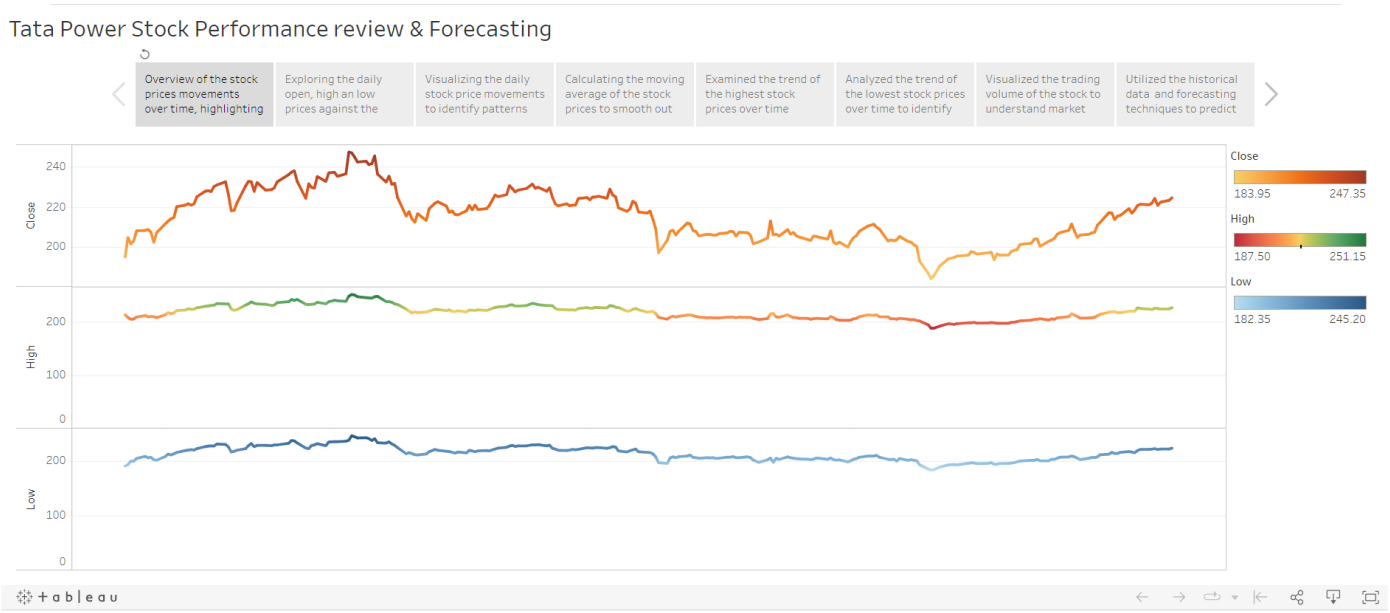


Tableau Public Link:
[Story | Tableau Public]

Creation Video Link:
https://drive.google.com/file/d/1MPF0D7_3w0exL2vwjy6ENgOVl7CefO_b/view?usp=drive_link

10. Basic Links- a. SQL Tableau Connection:
https://drive.google.com/file/d/1AZE004rW_X92Mc1pQ6Hd1ZHmzZgvYsmc/view?usp=drive_link

11. Basic Link- b. Uploading Data to SQL Server:
https://drive.google.com/file/d/1MnSRHPWCMwTZ5VJtWTUSX0Ae9X84NPHX/view?usp=drive_link

12. Basic Links- c. Uploading Visualizations on Tableau Public:
https://drive.google.com/file/d/10TPETVJEUDU0Pn0_lTij74xu0DCUXKh9/view?usp=drive_link

13. Basic Links- d. Integration with Flask:
https://drive.google.com/file/d/1fyayWFQqxDa6k07wP0BOTExA1uBeU03A/view?usp=drive_link

ADVANTAGES AND DISADVANTAGES

ADVANTAGES-

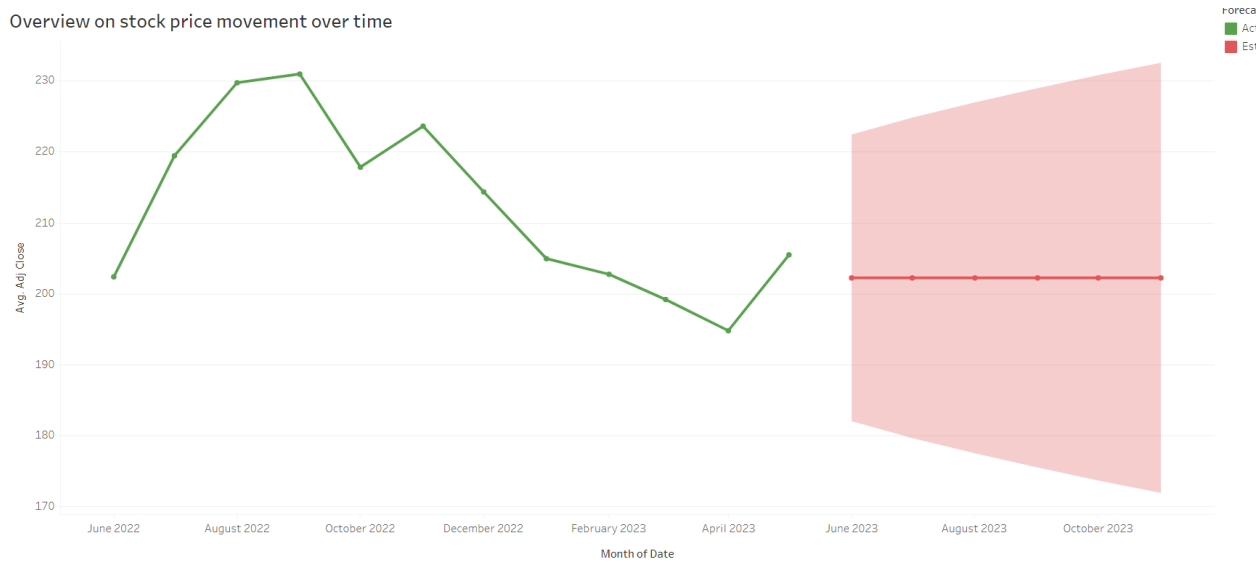
1. Accurate analysis of past 01 year of stock prices of Tata Power.
2. Simplified visualizations for easy understanding.
3. Professional candlestick chart usage for subtle interfacing.
4. Different graphs used for covering various aspects of analysis.
5. Prediction of future prices by Tableau Forecasting Model.

DISADVANTAGES-

1. Prediction of future stock prices may not be accurate.
2. Analysis of only 01-year data is done to create visualizations.

CONCLUSION

The first and foremost finding of the developed future prediction of Tata Power Stock Prices is –



The above forecasting shows the trend of stock prices in upcoming August 2023 to end of October 2023. This prediction is done using Tableau Forecasting Model that takes in account the past prevalent trends.

The red reference line is the depiction of predicted average stock prices in the month of August and October.

FUTURE SCOPE

Tata Power Stock Forecasting Project can be expected to continue growing and evolving due to advancements in technology, data analytics, and artificial intelligence. Here are some key areas that hold potential for the future of stock forecasting:

01. **Machine Learning and AI:** With the increasing availability of vast amounts of financial data, machine learning and AI techniques can be leveraged to develop more sophisticated models for stock forecasting. These models can analyse historical data, identify patterns, and make predictions based on a broader range of factors.

02. **Big Data and Cloud Computing**: The growth of big data and cloud computing technologies enables the processing and analysis of large volumes of data in real-time. This allows for more accurate and timely stock predictions by incorporating diverse data sources, such as market data, economic indicators, and even alternative data like satellite imagery or social media sentiment.

03. **High-Frequency Trading:** As trading speeds continue to increase, stock forecasting models need to adapt to the demands of high-frequency trading. Algorithms that can make split-second decisions based on real-time data and forecast fluctuations in stock prices will be critical for traders and financial institutions.

04. **Risk Assessment and Portfolio Management**: Stock forecasting models can play a significant role in risk assessment and portfolio management. By providing insights into potential market risks and identifying opportunities, these models can assist investors and fund managers in making informed decisions and optimizing their portfolios.

05. **Personalized Stock Recommendations**: As stock forecasting techniques advance, there is potential for developing personalized stock recommendation systems. These systems could consider an individual's risk tolerance, investment goals, and preferences to provide tailored investment advice.

BIBLIOGRAPHY

Research Papers:

01. *Campbell, J. Y., Lo, A. W., & MacKinlay, A. C. (1997). The Econometrics of Financial Markets. Princeton University Press.*

02. *Hyndman, R. J., & Athanasopoulos, G. (2018). Forecasting: Principles and Practice (2nd ed.). OTexts.*

03. *Zhang, G., & Qi, M. (2005). Neural network forecasting for seasonal and trend time series. European Journal of Operational Research, 160(2), 501-514.*

Internet website links:

01. https://www.macroaxis.com/predict/TATAPOWER.BO/TATA-POWER-LTD

02. Tata Power Company Ltd. Brokerage/Research Reports, analyst Research Reports (trendlyne.com)

03. Tata Power Share Price Forecast | Is Tata Power a Good Stock to Buy? (capital.com)

APPENDIX

A. SOURCE CODE

01.

index.html

C: > Users > dayes > OneDrive > Desktop > Higher Studies > VIT_Internship > project > Arsha > templates > index.html > ...

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="utf-8">
  <meta content="width=device-width, initial-scale=1.0" name="viewport">

  <title>Tata Power Stock</title>
  <meta content="" name="description">
  <meta content="" name="keywords">

  <!-- Favicons -->
  <link href="static/assets/img/favicon.png" rel="icon">
  <link href="static/assets/img/apple-touch-icon.png" rel="apple-touch-icon">

  <!-- Google Fonts -->
  <link
    href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,600,600i,700,700i|Jost:300,300i,400,400i,500,500i,600,600i,700,700i|Poppins:300,300i,400,400
    rel="stylesheet">

  <!-- Vendor CSS Files -->
  <link href="static/assets/vendor/aos/aos.css" rel="stylesheet">
  <link href="static/assets/vendor/bootstrap/css/bootstrap.min.css" rel="stylesheet">
  <link href="static/assets/vendor/bootstrap-icons/bootstrap-icons.css" rel="stylesheet">
  <link href="static/assets/vendor/boxicons/css/boxicons.min.css" rel="stylesheet">
  <link href="static/assets/vendor/glightbox/css/glightbox.min.css" rel="stylesheet">
  <link href="static/assets/vendor/remixicon/remixicon.css" rel="stylesheet">
  <link href="static/assets/vendor/swiper/swiper-bundle.min.css" rel="stylesheet">

  <!-- Template Main CSS File -->
  <link href="static/assets/css/style.css" rel="stylesheet">
```

02.

```
<!-- ======================================================
* Template Name: Arsha
* Updated: May 30 2023 with Bootstrap v5.3.0
* Template URL: https://bootstrapmade.com/arsha-free-bootstrap-html-template-corporate/
* Author: BootstrapMade.com
* License: https://bootstrapmade.com/license/
====================================================== -->
/head>

body>

<!-- ======= Header ======= -->
<header id="header" class="fixed-top ">
  <div class="container d-flex align-items-center">

    <h1 class="logo me-auto"><a href="index.html">Tata Power Stock Forecasting</a></h1>
    <!-- Uncomment below if you prefer to use an image logo -->
    <!-- <a href="index.html" class="logo me-auto"><img src="assets/img/logo.png" alt="" class="img-fluid"></a>-->

    <nav id="navbar" class="navbar">
      <ul>
        <li><a class="nav-link scrollto active" href="#hero">Home</a></li>
        <li><a class="nav-link scrollto" href="#about">About the Project</a></li>
        <li><a class="nav-link  scrollto" href="#services">Visualisations</a></li>
        <li><a class="nav-link  scrollto" href="#services">Dashboard</a></li>
        <li><a class="nav-link scrollto" href="#team">Story & Report </a></li>
        <li><a class="nav-link scrollto" href="#contact">Contact</a></li>
      </ul>
      <i class="bi bi-list mobile-nav-toggle"></i>
    </nav><!-- .navbar -->

  </div>
</header><!-- End Header -->
```

03.

```
<!-- ======= Home Section ======= -->
<section id="hero" class="d-flex align-items-center">

  <div class="container">
    <div class="row">
      <div class="col-lg-6 d-flex flex-column justify-content-center pt-4 pt-lg-0 order-2 order-lg-1"
        data-aos="fade-up" data-aos-delay="100">
        <h1>Forecasting Tata Power stock prices for Analysis and Visualisation </h1>
        <h2>Stock market forecasting is a behavior to determine the future value of corporate stocks or other
          financial instruments traded on exchanges.
          successful forecast on stock price can make considerable profit.</h2>
      </div>
      <div class="col-lg-6 order-1 order-lg-2 tata_power.png" data-aos="zoom-out" data-aos-delay="800">
        <img src="static/assets/img/tata.jpg" class="img-fluid animated" alt="">
      </div>
    </div>
  </div>

</section><!-- End Home -->

<main id="main">

  <!-- ======= About the Project Section ======= -->
  <section id="about" class="about">
    <div class="foreground">
    <div class="container" data-aos="fade-up">
      <link href='https://fonts.googleapis.com/css?family=Lexend Deca' rel='stylesheet'>
      <div class="section-title">
        <h2>About The Project</h2>
      </div>
      <div class="row content">
        <div class="col-lg-6">
          <p>
            The Tata Power Stock Price Forecasting project focuses on predicting the future price movements of Tata
            Power Company's stock
            by leveraging historical stock price data, financial indicators, and market trends.
```

04.

```
103             </p>
104             <p class="big">
105               This project aims to:
106             </p>
107             <ul>
108               <li><i class="ri-check-double-line"></i> Develop accurate and reliable forecasting models to assist
109                 investors, traders</li>
110               <li><i class="ri-check-double-line"></i> Provide investors, traders, and stakeholders with valuable
111                 insights into the future price movements of Tata Power Company's stock</li>
112             </ul>
113           </div>
114           <div class="col-lg-6 pt-4 pt-lg-0">
115             <p>
116               This project aims to assist in informed decision-making, risk assessment, and the formulation of effective
117               investment strategies.
118               The accurate and reliable stock price forecasts generated through this project can enable stakeholders to
119               make more informed decisions in the dynamic and competitive stock market environment.
120             </p>
121             <a href="#" class="btn-learn-more">Learn More</a>
122           </div>
123         </div>
124       </div>
125     </div>
126     </section><!-- End About Us Section -->
127
128     <!-- ======= Visualization Section ======= -->
129     <section id="services" class="services section-bg">
130       <div class="container" data-aos="fade-up">
131
132         <div class="section-title">
133           <h2>Stock Price Analysis & Visualisations</h2>
134           <p>Our Stock analysis evaluates a particular trading instrument, an investment sector, or the market as a
135             whole.
136             We have determined the future activity of Tata Power stocks.
137           </p>
138         </div>
```

05.

```
<!-- ======= Visualization Section ======= -->
<section id="services" class="services section-bg">
  <div class="container" data-aos="fade-up">

    <div class="section-title">
      <h2>Stock Price Analysis & Visualisations</h2>
      <p>Our Stock analysis evaluates a particular trading instrument, an investment sector, or the market as a
        whole.
        We have determined the future activity of Tata Power stocks.
      </p>
    </div>


    <div class='tableauPlaceholder' id='viz1687981844624' style='position: relative'><noscript><a href='#'><img
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          src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Ca&#47;Candlestick_16879817700510&#47;Candlestick&#47;1_rss.png'
          style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'>
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      </object></div>
    <script
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06.

```
    <div class='tableauPlaceholder' id='viz1687982568412' style='position: relative'><noscript><a href='#'><img
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          style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'>
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        <param name='toolbar' value='yes' />
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        <param name='animate_transition' value='yes' />
        <param name='display_static_image' value='yes' />
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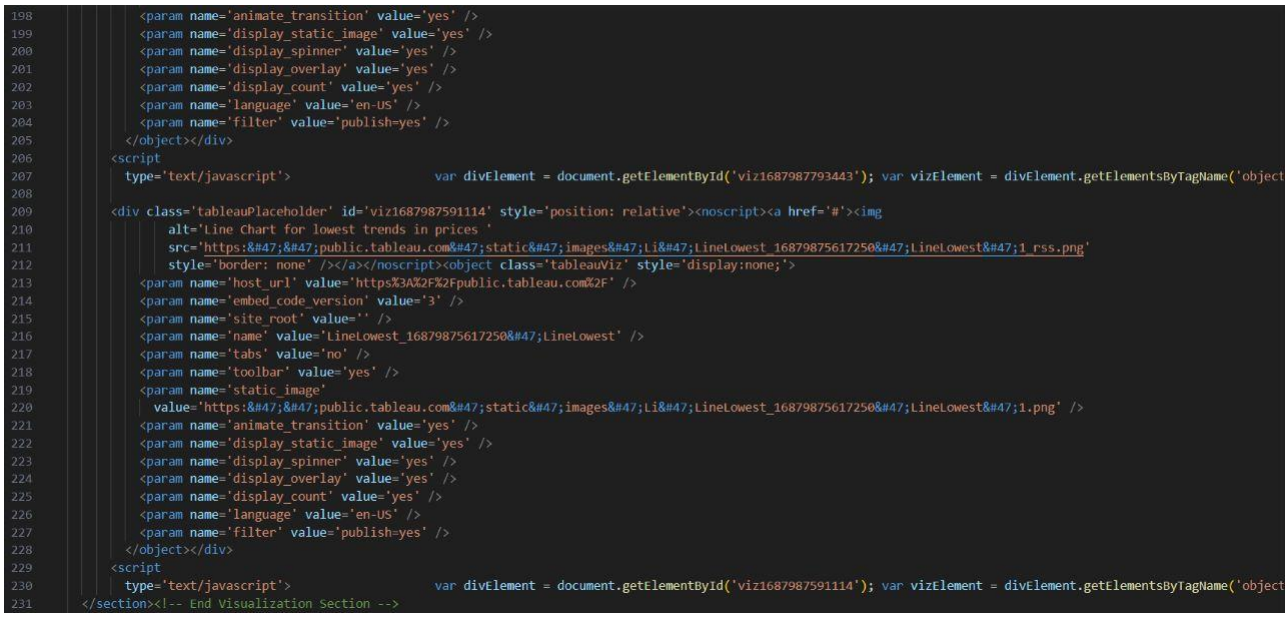
        <param name='display_overlay' value='yes' />
        <param name='display_count' value='yes' />
        <param name='language' value='en-US' />
        <param name='filter' value='publish=yes' />
      </object></div>
    <script
      type='text/javascript'>                    var divElement = document.getElementById('viz1687982568412'); var vizElement = divElement.getElementsByTagName('object

    <div class='tableauPlaceholder' id='viz1687987793443' style='position: relative'><noscript><a href='#'><img
          alt='Line Chart for highest trends in prices '
          src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Li&#47;LineLowest&#47;LineHighest&#47;1_rss.png'
          style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'>
        <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F' />
        <param name='embed_code_version' value='3' />
        <param name='site_root' value='' />
        <param name='name' value='LineLowest&#47;LineHighest' />
        <param name='tabs' value='no' />
        <param name='toolbar' value='yes' />
        <param name='static_image'
          value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Li&#47;LineLowest&#47;LineHighest&#47;1.png' />
        <param name='animate_transition' value='yes' />
```

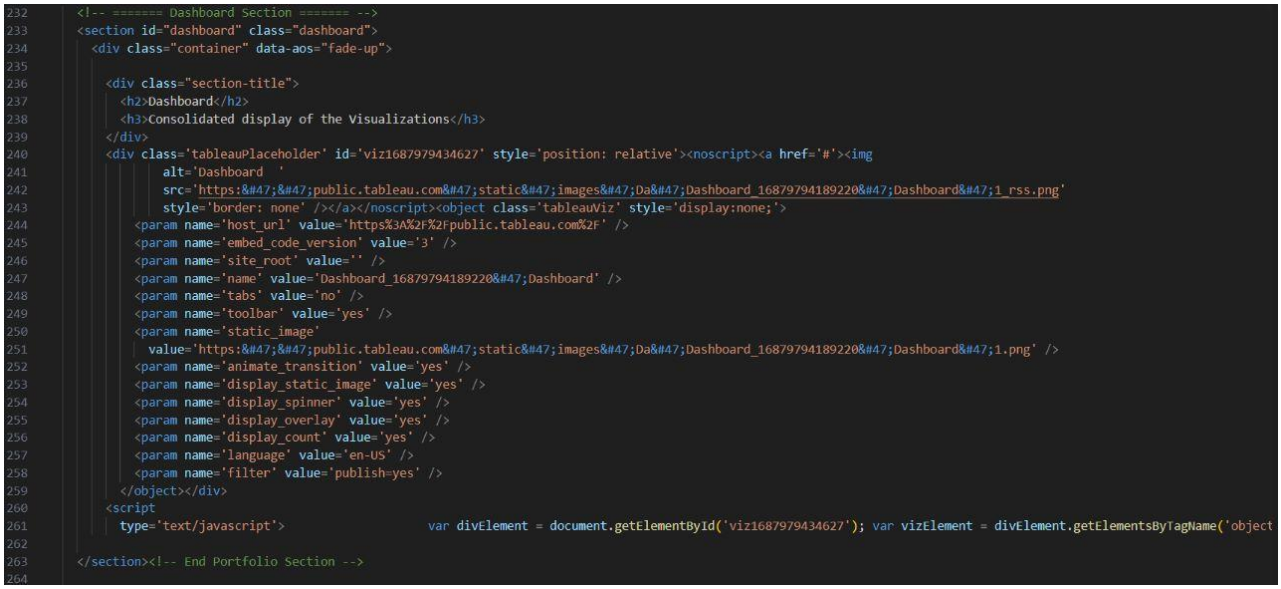
07.



```
        <param name='animate_transition' value='yes' />
        <param name='display_static_image' value='yes' />
        <param name='display_spinner' value='yes' />
        <param name='display_overlay' value='yes' />
        <param name='display_count' value='yes' />
        <param name='language' value='en-US' />
        <param name='filter' value='publish=yes' />
      </object></div>
    <script
      type='text/javascript'>                    var divElement = document.getElementById('viz1687987793443'); var vizElement = divElement.getElementsByTagName('object

    <div class='tableauPlaceholder' id='viz1687987591114' style='position: relative'><noscript><a href='#'><img
          alt='Line Chart for lowest trends in prices '
          src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Li&#47;LineLowest_16879875617250&#47;LineLowest&#47;1_rss.png'
          style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'>
        <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F' />
        <param name='embed_code_version' value='3' />
        <param name='site_root' value='' />
        <param name='name' value='LineLowest_16879875617250&#47;LineLowest' />
        <param name='tabs' value='no' />
        <param name='toolbar' value='yes' />
        <param name='static_image'
          value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Li&#47;LineLowest_16879875617250&#47;LineLowest&#47;1.png' />
        <param name='animate_transition' value='yes' />
        <param name='display_static_image' value='yes' />
        <param name='display_spinner' value='yes' />
        <param name='display_overlay' value='yes' />
        <param name='display_count' value='yes' />
        <param name='language' value='en-US' />
        <param name='filter' value='publish=yes' />
      </object></div>
    <script
      type='text/javascript'>                    var divElement = document.getElementById('viz1687987591114'); var vizElement = divElement.getElementsByTagName('object
  </section><!-- End Visualization Section -->
```

08.



```
  <!-- ======= Dashboard Section ======= -->
  <section id="dashboard" class="dashboard">
    <div class="container" data-aos="fade-up">

      <div class="section-title">
        <h2>Dashboard</h2>
        <h3>Consolidated display of the Visualizations</h3>
      </div>
      <div class='tableauPlaceholder' id='viz1687979434627' style='position: relative'><noscript><a href='#'><img
            alt='Dashboard  '
            src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Da&#47;Dashboard_16879794189220&#47;Dashboard&#47;1_rss.png'
            style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'>
        <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F' />
        <param name='embed_code_version' value='3' />
        <param name='site_root' value='' />
        <param name='name' value='Dashboard_16879794189220&#47;Dashboard' />
        <param name='tabs' value='no' />
        <param name='toolbar' value='yes' />
        <param name='static_image'
          value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Da&#47;Dashboard_16879794189220&#47;Dashboard&#47;1.png' />
        <param name='animate_transition' value='yes' />
        <param name='display_static_image' value='yes' />
        <param name='display_spinner' value='yes' />
        <param name='display_overlay' value='yes' />
        <param name='display_count' value='yes' />
        <param name='language' value='en-US' />
        <param name='filter' value='publish=yes' />
      </object></div>
      <script
        type='text/javascript'>                    var divElement = document.getElementById('viz1687979434627'); var vizElement = divElement.getElementsByTagName('object

  </section><!-- End Portfolio Section -->
```

09.

```
<!-- ======= Story Section ======= -->
<section id="team" class="team section-bg">
  <div class="container" data-aos="fade-up">

    <div class="section-title">
      <h2>Story</h2>
    </div>
    <div class='tableauPlaceholder' id='viz1687979159753' style='position: relative'><noscript><a href='#'><img
          alt='Tata Power Stock Performance review &amp; Forecasting '
          src='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Pr&#47;Project_visualizations_16879750850840&#47;Story&#47;1_rss.png'
          style='border: none' /></a></noscript><object class='tableauViz' style='display:none;'>
        <param name='host_url' value='https%3A%2F%2Fpublic.tableau.com%2F' />
        <param name='embed_code_version' value='3' />
        <param name='site_root' value='' />
        <param name='name' value='Project_visualizations_16879750850840&#47;Story' />
        <param name='tabs' value='no' />
        <param name='toolbar' value='yes' />
        <param name='static_image'
          value='https:&#47;&#47;public.tableau.com&#47;static&#47;images&#47;Pr&#47;Project_visualizations_16879750850840&#47;Story&#47;1.png' />
        <param name='animate_transition' value='yes' />
        <param name='display_static_image' value='yes' />
        <param name='display_spinner' value='yes' />
        <param name='display_overlay' value='yes' />
        <param name='display_count' value='yes' />
        <param name='language' value='en-US' />
        <param name='filter' value='publish=yes' />
      </object></div>
    <script
      type='text/javascript'>                    var divElement = document.getElementById('viz1687979159753'); var vizElement = divElement.getElementsByTagName('object

    <div class="section-title">
      <h2>Forecast Report</h2>
    </div>
    <img src="static/assets/img/report.jpg" class="img-fluid animated" alt="">
  </section><!-- End Story Section -->
```

10.

```
  <!-- ======= Team & Contact Section ======= -->
  <section id="contact" class="contact">
    <div class="container" data-aos="fade-up">

      <div class="section-title">
        <h2>Team & Contact</h2>
      </div>

      <div class="row">

        <div class="col-lg-7 d-flex align-items-stretch">
          <div class="info">
            <div class="email">
              <i class="bi bi-phone"></i>
              <h4>Team Members:</h4>
              <p>Shaun Varghese: 20BAC10022</p>
              <p>Dayesh Raval:20BAI10189</p>
              <p>Harshita Agarwal:20BCE10783</p>
              <p>Deergh Tiwari:20BCE10949</p>

            </div>

            <div class="phone">
              <i class="bi bi-envelope"></i>
              <h4>Email:</h4>
              <p>shaun.varghese2020@vitbhopal.ac.in</p>
              <p>dayesh.raval2020@vitbhopal.ac.in</p>
              <p>harshita.agarwal2020@vitbhopal.ac.in</p>
              <p>deergh.tiwari2020@vitbhopal.ac.in</p>
            </div>
          </div>

          <div class="dayesh mt-5 mt-lg-0 d-flex align-items-stretch">
            <form action="forms/contact.php" method="post" role="form" class="php-email-form">
              <div class="row">
```

11.

```
                <div class="form-group col-md-6">
                  <label for="name">Your Name</label>
                  <input type="text" name="name" class="form-control" id="name" required>
                </div>
                <div class="form-group col-md-6">
                  <label for="name">Your Email</label>
                  <input type="email" class="form-control" name="email" id="email" required>
                </div>
              </div>
              <div class="form-group">
                <label for="name">Subject</label>
                <input type="text" class="form-control" name="subject" id="subject" required>
              </div>
              <div class="form-group">
                <label for="name">Message</label>
                <textarea class="form-control" name="message" rows="10" required></textarea>
              </div>
              <div class="my-3">
                <div class="loading">Loading</div>
                <div class="error-message"></div>
                <div class="sent-message">Your message has been sent. Thank you!</div>
              </div>
              <div class="text-center"><button type="submit">Send Message</button></div>
            </form>
          </div>

        </div>

      </div>
    </section><!-- End Contact Section -->

  </main><!-- End #main -->
```

12.

```
368
369     <div id="preloader"></div>
370     <a href="#" class="back-to-top d-flex align-items-center justify-content-center"><i
371         class="bi bi-arrow-up-short"></i></a>
372
373     <!-- Vendor JS Files -->
374     <script src="static/assets/vendor/aos/aos.js"></script>
375     <script src="static/assets/vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
376     <script src="static/assets/vendor/glightbox/js/glightbox.min.js"></script>
377     <script src="static/assets/vendor/isotope-layout/isotope.pkgd.min.js"></script>
378     <script src="static/assets/vendor/swiper/swiper-bundle.min.js"></script>
379     <script src="static/assets/vendor/waypoints/noframework.waypoints.js"></script>
380     <script src="static/assets/vendor/php-email-form/validate.js"></script>
381
382     <!-- Template Main JS File -->
383     <script src="static/assets/js/main.js"></script>
384
385   </body>
386
387   </html>
```