TCS Stock History Project

Project under Unified Mentor Data Science Internship

1. Project Overview

This project focuses on analyzing the **historical stock performance of Tata Consultancy Services (TCS)** — one of India's leading IT companies.
The main goal is to understand how TCS stock prices have changed over time, identify patterns or trends, and gain insights into its performance using data visualization and analysis.

Insight: Understanding stock history helps investors make better decisions and recognize long-term growth trends.

2. Data Used

The data contained information about:

- Date

- Open price

- High and Low price

- Closing price

- Trading volume

Before starting, the data was cleaned:

- Missing values were removed.

- The date column was properly formatted.

- Unnecessary data was deleted.

 Insight: Clean data makes analysis more accurate and reliable.

3. Stock Price Trend

A line chart was used to show **TCS stock prices over the years**.
The chart clearly showed that TCS prices have **grown steadily** with some ups and downs.

 Insight: Even though there were small drops at times, TCS has shown **strong and consistent long-term growth** — proving it's a stable company in the IT sector.

4. Daily Changes and Volatility

Daily changes (returns) were calculated to understand how much the price moved each day.
Some days had bigger changes due to **market news or company announcements**.

Insight: TCS is a **low-volatility stock**, meaning it doesn't fluctuate wildly. It's safer for long-term investment compared to riskier stocks.

5. Moving Averages

To understand long-term trends, **moving averages** (like 20-day and 100-day) were used.

- When the short average went above the long average → the price was likely to **go up**.
- When it went below → the price was likely to **go down**.

Insight: Moving averages help investors identify when it might be a good time to buy or sell the stock.

6. Volume Analysis

The **volume** (number of shares traded) was also studied.
Whenever the volume was high, the stock price usually moved more — showing **strong market interest**.

Insight: High volume with rising prices means strong buying; high volume with falling prices means selling pressure.

7. Key Learnings

- TCS has shown **steady growth** over the years.
- It's a **safe and strong stock** for long-term investment.
- Market trends and world events can affect its price, but it recovers well.
- **Data visualization** makes it easy to see stock trends clearly.

8. Final Conclusion

This project helped me understand how to analyze stock data, clean it, and find real insights from it.
TCS has proven to be one of the most stable and reliable stocks in India's IT industry.

"Stock data tells a story — and TCS's story is one of growth, trust, and stability."