NIFTY 50 Stock Market Data Analysis (2000–2025)

Internship Project Report

Prepared by: M. Devesh kumar
Tools Used: Python, Power BI

1. Objective

The objective of this project is to analyze historical NIFTY 50 stock market data to identify long-term trends, volatility patterns, and derive business insights using Python and Power BI.

2. Dataset Description

Source: Yahoo Finance / Kaggle
Time Period: 2000–2025
Key Columns: Date, Open, High, Low, Close, Daily_Return_%, MA_20

3. Data Collection & Cleaning

The raw NIFTY 50 dataset was collected and cleaned using Python. Missing values were handled, data types were corrected, and the dataset was prepared for analysis.

4. Exploratory Data Analysis (EDA)

Exploratory analysis revealed a strong upward trend in NIFTY 50 closing prices. Daily return distributions highlighted periods of volatility during major market events.

5. Statistical Analysis

Key statistics such as mean daily return, volatility, and extreme returns were calculated to understand risk and return behavior.

6. Predictive Modeling

A Linear Regression model was applied to identify long-term price trends. While effective for trend analysis, it is limited in capturing sudden market shocks.

7. Dashboard Insights (Power BI)

An interactive Power BI dashboard was created showcasing KPIs, trends, moving averages, and date-based filtering for deeper insights.

• NIFTY 50 exhibits a strong long-term upward trend.

• The 20-day moving average smooths short-term volatility.

• Date slicer enables interactive analysis.

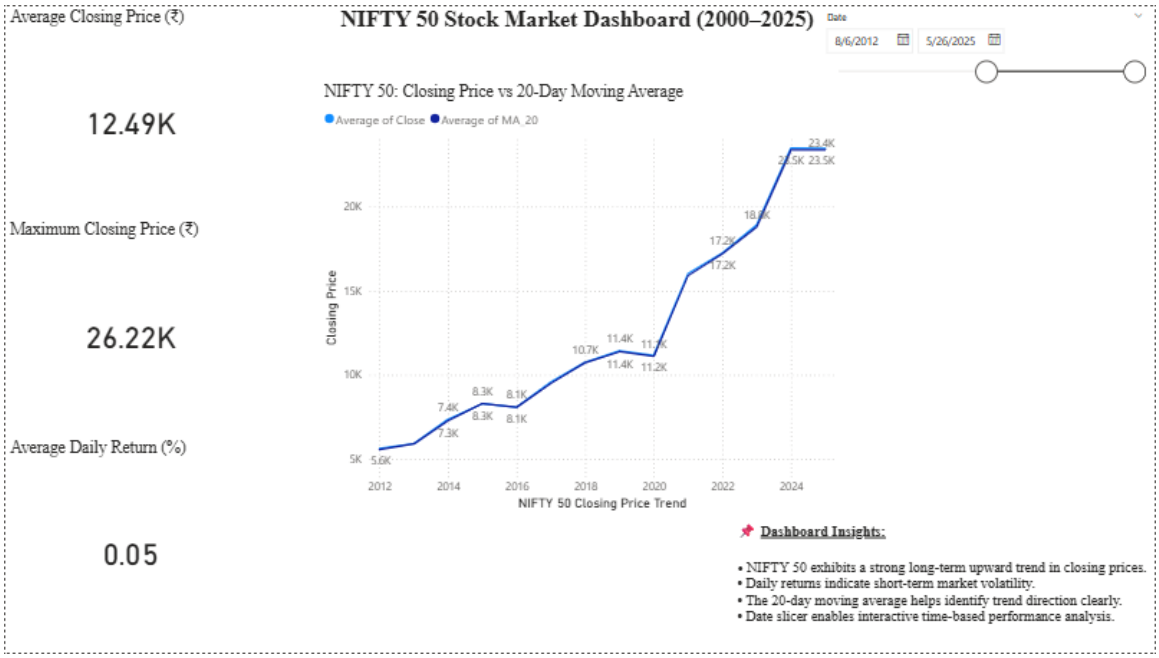

Figure 1: Power BI Dashboard showing NIFTY 50 KPIs and trends

8. Business Recommendations

- Long-term investors can benefit from consistent market growth.
- Short-term traders should consider volatility risks.
- Moving averages can aid entry and exit decisions.
- Dashboards improve decision-making speed.

9. Conclusion

This project demonstrates how data analytics and visualization tools can transform raw financial data into actionable insights, supporting informed business decisions.