

# Stock Analysis Dashboard Report

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## Abstract

The Stock Analysis Dashboard is an interactive tool designed to analyze and visualize stock trends using Python.

It fetches real-time stock market data, calculates key technical indicators such as Simple Moving Average (SMA),

Exponential Moving Average (EMA), and Relative Strength Index (RSI), and presents the results through dynamic and interactive visualizations.

The dashboard enables investors and traders to make informed decisions using data-driven insights.

## Introduction

Stock market analysis is a critical aspect of investment strategies, requiring accurate data and visualization tools.

This project aims to simplify this process by creating a Stock Analysis Dashboard using Python libraries.

The dashboard integrates data retrieval, technical analysis, and visualization into a single, user-friendly interface,

allowing users to explore historical data and stock performance.

## Tools Used

- Python – Programming language.
- yfinance – For fetching historical stock data.
- Plotly – For creating interactive charts and candlestick graphs.
- Streamlit – For building an intuitive and interactive user interface.
- Pandas – For data manipulation and calculations.

## Steps Involved in Building the Project

1. Accept Stock Ticker Input from the user via the Streamlit interface.
2. Fetch Historical Data using yfinance for the given stock ticker.

3. Calculate Technical Indicators such as:
  - Simple Moving Average (SMA)
  - Exponential Moving Average (EMA)
  - Relative Strength Index (RSI)
4. Visualize Data:
  - Plot candlestick and line graphs using Plotly.
5. Display Performance Summary to help users analyze stock trends.
6. Enable CSV Export Option for further analysis.

## Conclusion

The Stock Analysis Dashboard combines real-time stock data with advanced technical indicators and visualization tools to help traders and investors make informed decisions. The integration of yfinance, Plotly, and Streamlit makes this project efficient, interactive, and highly practical for financial analysis.