

Stock Market Insights Dashboard

Abstract

The Stock Market Insights Dashboard is an **interactive data visualization tool** built with **Python, Streamlit, yFinance, Altair, and Plotly**. The project provides real-time stock market analysis, key performance indicators (KPIs), and financial insights, allowing users to explore both technical and fundamental aspects of companies with a simple interface.

Introduction

Stock market analysis often requires navigating through multiple platforms and sources of data. This project addresses that challenge by creating a **single, unified dashboard** that integrates company information, historical stock performance, financial statements, and key KPIs into a visually appealing and interactive web application.

The dashboard leverages the **yFinance API** to fetch live data, while **Streamlit** provides a user-friendly interface for displaying metrics, charts, and insights.

System Design

- **Data Source:** yFinance (unofficial Yahoo Finance API)
- **Frontend Framework:** Streamlit
- **Visualization Libraries:** Altair (bar charts), Plotly (candlestick charts)
- **Backend Language:** Python 3.13

Architecture Flow:

1. User inputs a stock ticker symbol.
 2. yFinance fetches company details, financials, and historical price data.
 3. Data is processed (moving averages, KPIs).
 4. Streamlit displays interactive charts, summaries, and metrics.
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Features

1. Company Information

- Logo, company name, expandable business summary.
- Key metrics: Market Cap, EPS, Net Profit Margin, P/E Ratio, Dividend Yield, 52-Week High/Low.

2. Stock Price Performance

- Interactive candlestick chart.
- 50-day moving average (trend indicator).

3. Financial Reports

- Quarterly vs Annual comparisons.
- Revenue and Net Income visualized with bar charts.

4. Additional Insights (KPIs)

- Return on Equity (ROE).
- Debt-to-Equity Ratio.
- Free Cash Flow.

Results

Sample Analysis: Apple Inc. (AAPL)

- Market Cap over **\$3 trillion**, making it one of the world's most valuable companies.
- Net Profit Margin consistently above **20%**, showing strong profitability.
- Revenue and Net Income charts highlight seasonal sales spikes (holidays).
- ROE of **~150%**, indicating exceptional returns to shareholders.

1. Home Page:

Stock Market Insights Dashboard

Enter a stock symbol

AAPL



Company Information

Apple Inc.




Business Summary

Apple Inc. designs, manufactures, and markets smartphones, personal computers, tablets, wearables, and accessories worldwide. The company offers iPhone, a line of smartphones; Mac, a line of personal ...


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2. Company Information



Company Information


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Key Metrics

Market Cap: \$3,643,315,585,024	P/E Ratio: 37.31003
EPS: 6.58	52-Week High/Low: 260.1 / 169.21
Net Profit Margin: 24.30%	Dividend Yield: 42.00%



Additional Insights

Return on Equity (ROE): 149.81%

ROE shows how effectively the company generates profit from shareholders' equity.

Debt-to-Equity Ratio: 154.49

D/E compares total debt to shareholders' equity, showing financial leverage.

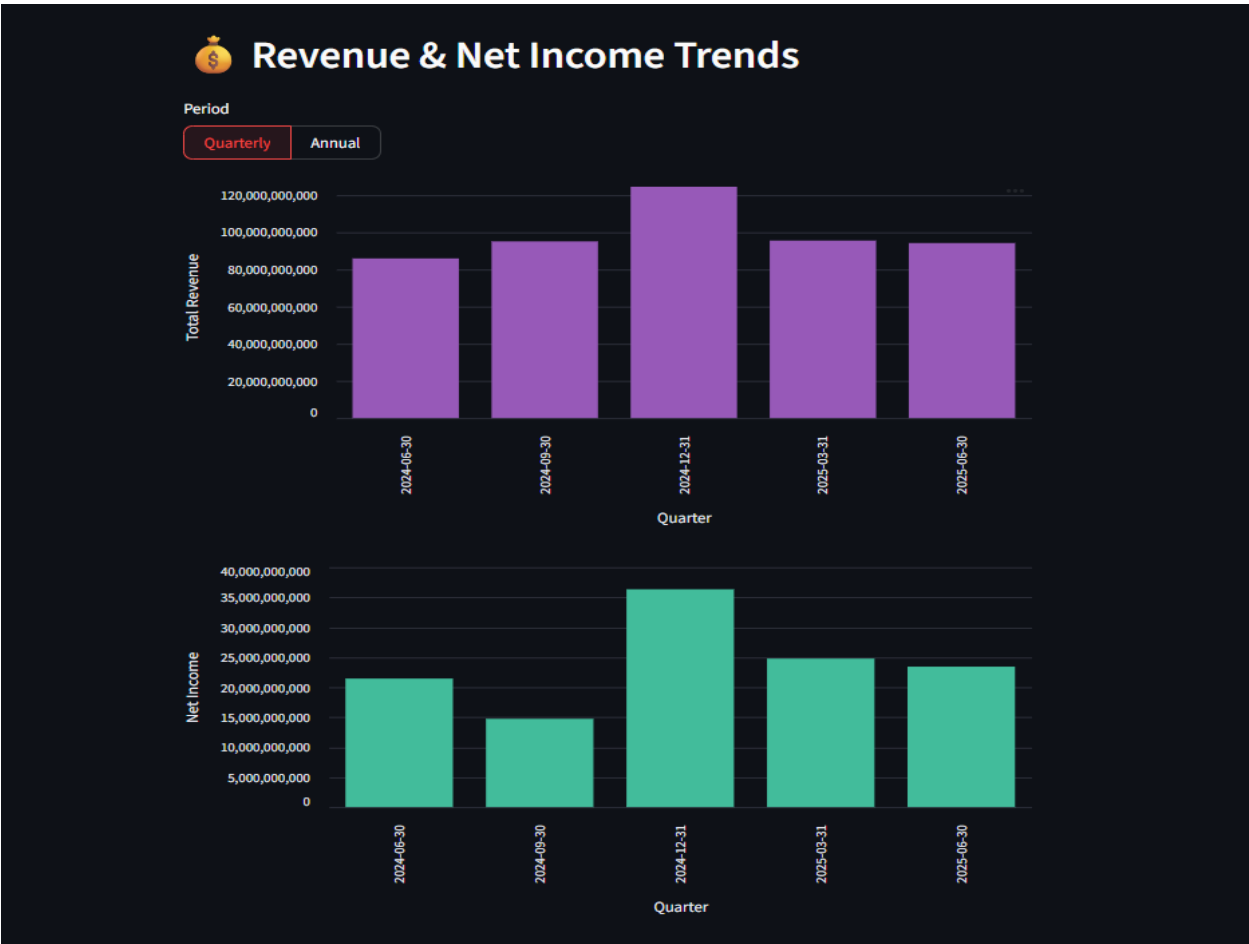
Free Cash Flow: \$94,873,747,456

Free Cash Flow represents cash available after expenses, useful for expansion or debt repayment.

3. Price Chart



4. Financials Section



Future Improvements

- Add sentiment analysis from financial news.
- Include sector/industry comparison.
- Deploy on Streamlit Cloud for public access.
- Provide downloadable reports (PDF/Excel).

Conclusion

This project demonstrates the power of **Python + Streamlit + yFinance** in creating professional dashboards for financial analysis. It brings together **technical indicators, fundamental metrics, and visualization techniques** to provide meaningful insights for investors and analysts.