Project Overview

Stock Market Tool

Project Goals

Simplify complex stock market data for new and intermediate **investors.**

Provide easy access to current and historical **stock information.**

Offer basic **advice** based on data trends to support **decision making**.

Make the experience **user-friendly** and less **overwhelming.**

Reduce the need for users to **manually search** multiple **websites.**

Description

Designed for users of all **stock market skill levels.**

Lets users search for a company by **stock symbol.**

Shows **easy to understand** company and stock information.

Highlights whether the stock is trending **up** or **down.**

Offers **basic advice** to guide **investment decisions.**

Use Cases

Use Case 1

Business Analyst

Evaluates small company for **acquisition.**

Views **stock trends** (growth, stability).

Reviews company **overview.**

Use Case 2

New Investor

Looks for **low risk** investment **options.**

Analyzes **recent trend data.**

Uses **analyst sentiment** to guide **decision.**

Technology

Python Modules

requests: calls API and handles JSON data

webbrowser: opens stock symbol lookup site

csv: saves data for Excel use

datetime: names files with current date

matplotlib: graphs stock price trends

sys: allows user to quit program

New Technology: APIs

Alpha Vantage API: Real-time & historical stock data

Program Flow

User runs the program and **selects a stock symbol.**

Program checks if the symbol is valid using **Alpha Vantage API.**

User chooses to **view stock overview info, get advice**, or **export close data.**

Stock data and analyst ratings are **retrieved** and **analyzed.**

Program gives **simple investment advice** based on metrics.

Exports data to CSV and **makes & saves** a **line chart PNG file** for later use.

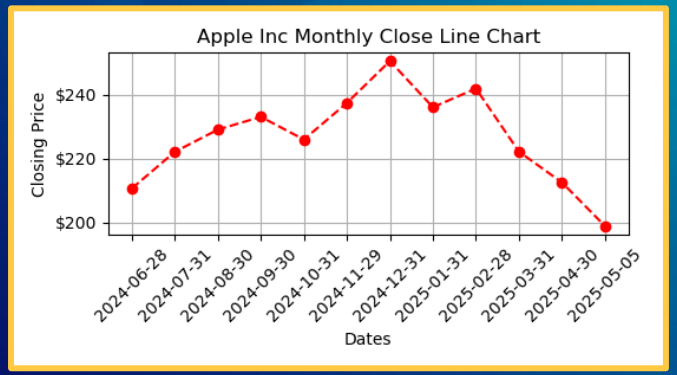
Menu repeats until the user **quits.**

```
================================================================================

You are looking at Apple Inc with the symbol AAPL.

📋 Please choose an option.

================================================================================
1. View stock data, save to CSV, and view line chart display.
2. View company information.
3. Get investment advice.
4. Change the stock you'd like to view.
q. To quit.
```



One Error Encountered

Encountered Error

Program **crashed** when **API fields** like **Beta** or **PEGRatio** were **missing.**

Caused a **ValueError** when trying to convert **empty strings** to **floats.**

```
    "Beta" : float(overviewJSON["Beta"]),

ValueError: could not convert string to float: ''
```

How We Fixed It

Added **function** called **safeconversonfloat** to **catch errors** and **return 0.0** instead.

Prevented **crashes** and **kept program running** smoothly for **all stocks.**

```
def safeconversionfloat(number):
    try:
        return float(number)
    except (ValueError, TypeError):
        return 0.0
```

```
"Beta" : safeconversionfloat(overviewJSON["Beta"])
```

Related Documents

https://www.alphavantage.co/documentation/#

https://docs.python.org/3/library/csv.html

https://docs.python.org/3/library/webbrowser.html

https://matplotlib.org/stable/users/index

https://www.youtube.com/watch?v=D4VlmL3G4_o

https://matplotlib.org/stable/api/ticker_api.html

https://docs.python.org/3/library/sys.html

https://docs.python.org/3/library/datetime.html