Name: Denisha Ketan Tank. Lab 2

Code: :

```python
# Denisha TANK


from datetime import datetime

class Stock:
    def __init__(self, symbol, name, shares):
        self._symbol = symbol
        self._name = name
        self._shares = shares
        self.DataList = []

    @property
    def symbol(self):
        return self._symbol
    @symbol.setter
    def symbol(self, symbol):
        raise RuntimeWarning("Cannot Change Stock Symbol")

    @property
    def name(self):
        return self._name
    @name.setter
    def name(self,name):
        self._name = name

    @property
    def shares_(self):
        return self._shares
    @shares_.setter
    def shares_(self,shares):
        raise RuntimeWarning("Use buy() or sell() to change shares.")
```

```
def main():
        error_count = error_count + 1
        error_list.append("Buy Shares Failure!")
    print("Test Sell shares...",end="")
    try:
        testStock.sell(25)
        if testStock.shares_ == 125:
            print("Successful!")
        else:
            print("ERROR! Sell shares unsuccessful.")
            error_count = error_count+1
            error_list.append("Sell Shares Failure!")
    except:
        print("ERROR! Sell shares failed.")
        error_count = error_count + 1
        error_list.append("Sell Shares Failure!")

    # Test add daily data
    print("Creating daily stock data...",end="")
    daily_data_error = False
    try:
        dayData = DailyData(datetime.strptime("1/1/20","%m/%d/%y"),float(14.50),float
        testStock.add_data(dayData)
        if testStock.DataList[0].date != datetime.strptime("1/1/20","%m/%d/%y"):
            error_count = error_count + 1
            daily_data_error = True
            error_list.append("Add Daily Data - Problem with Date")
        if testStock.DataList[0].close != 14.50:
            error_count = error_count + 1
            daily_data_error = True
            error_list.append("Add Daily Data - Problem with Closing Price")
        if testStock.DataList[0].volume != 100000:
            error_count = error_count + 1
            daily_data_error = True
```

```
#Denisha Tank

import stock_console
import stock_GUI

def main():

    stock_console.main()


    return


if __name__ == "__main__":
```

```python
# Denisha Tank


from datetime import datetime
from stock_class import Stock, DailyData
from utilities import clear_screen, display_stock_chart
from os import path
import stock_data


# Main Menu
def main(stock_list):
    option = ""
    while option != "0":
        clear_screen()
        print("Stock Analyzer ---")
        print("1 - Manage Stocks (Add, Update, Delete, List)")
        print("2 - Add Daily Stock Data (Date, Price, Volume)")
        print("3 - Show Report")
        print("4 - Show Chart")
        print("5 - Manage Data (Save, Load, Retrieve)")
        print("0 - Exit Program")
        option = input("Enter Menu Option: ")
        while option not in ["1","2","3","4","5","0"]:
            clear_screen()
            print("*** Invalid Option - Try again ***")
            print("Stock Analyzer")
            print("1 - Manage Stocks (Add, Update, Delete, List)")
            print("2 - Add Daily Stock Data (Date, Price, Volume)")
            print("3 - Show Report")
            print("4 - Show Chart")
            print("5 - Manage Data (Save, Load, Retrieve)")
            print("0 - Exit Program")
            option = input("Enter Menu Option: ")
        if option == "1":
```

```python
def buying_stock(stock_list):
    symbol = input("Enter Stock Symbol to Buy: ").upper()
    stocks = next((s for s in stock_list if s.symbol.upper() == symbol), None)
    if stocks is None:
        print("Symbol not found.")
        input("Press Enter to continue...")
        return
    try:
        shares = float(input("Enter Number of Shares to Buy: "))
    except ValueError:
        print("Invalid number of shares.")
        input("Press Enter to continue...")
        return
    stocks.buy(shares)
    print("Shares updated.")
    input("Press Enter to continue...")


def selling_stock(stock_list):
    clear_screen()
    print("Sell Shares ---")
    if not stock_list:
        print("No stocks in portfolio.")
        input("Press Enter to continue...")
        return
    print("Stock List: [", end="")
    print(", ".join([stock.symbol for stock in stock_list]), end="")
    print("]")
    symbol = input("Enter Stock Symbol to Sell: ").upper()
    stock = next((s for s in stock_list if s.symbol.upper() == symbol), None)
    if stock is None:
        print("Symbol not found.")
        input("Press Enter to continue...")
        return
```

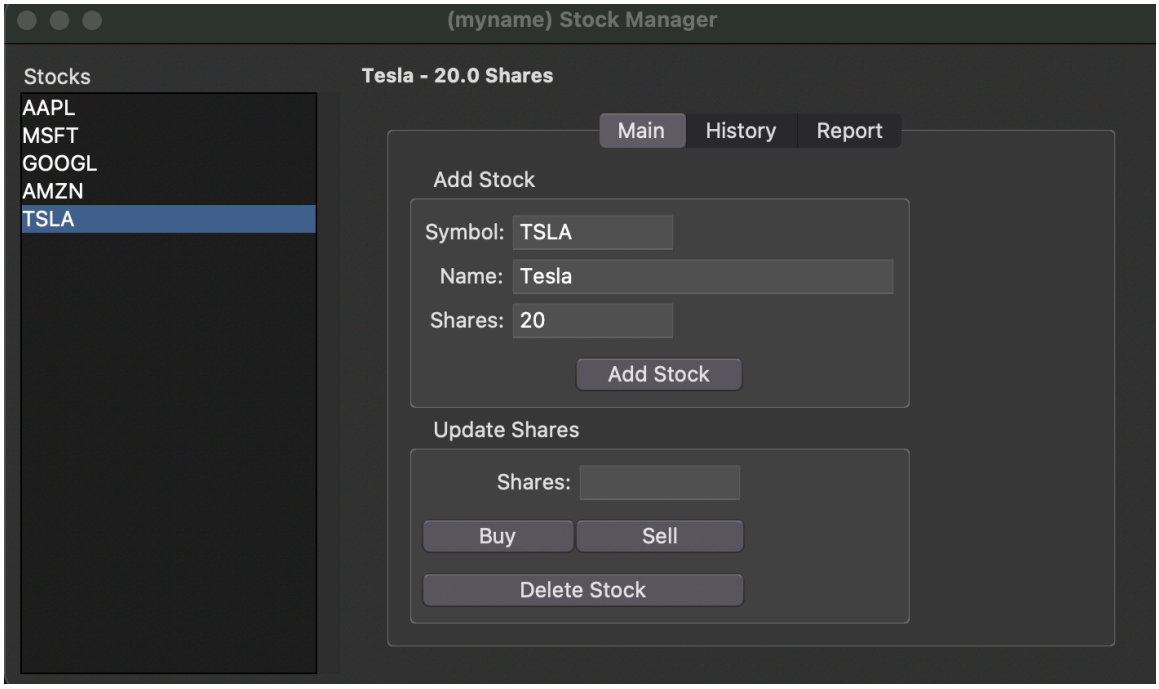
```python
# Denisha Tank



import sqlite3
from selenium import webdriver
from selenium.webdriver.common.keys import Keys
from bs4 import BeautifulSoup
import re
import pandas as pd
import os
import csv
import time
from datetime import datetime
from utilities import clear_screen
from utilities import sortDailyData
from stock_class import Stock, DailyData

# Creating the SQLite database
def create_database():
    stockDB = "stocks.db"
    conn = sqlite3.connect(stockDB)
    cur = conn.cursor()
    createStockTableCmd = """CREATE TABLE IF NOT EXISTS stocks (
                                symbol TEXT NOT NULL PRIMARY KEY,
                                name TEXT,
                                shares REAL
                            );"""
    createDailyDataTableCmd = """CREATE TABLE IF NOT EXISTS dailyData (
                                    symbol TEXT NOT NULL,
                                    date TEXT NOT NULL,
                                    price REAL NOT NULL,
```

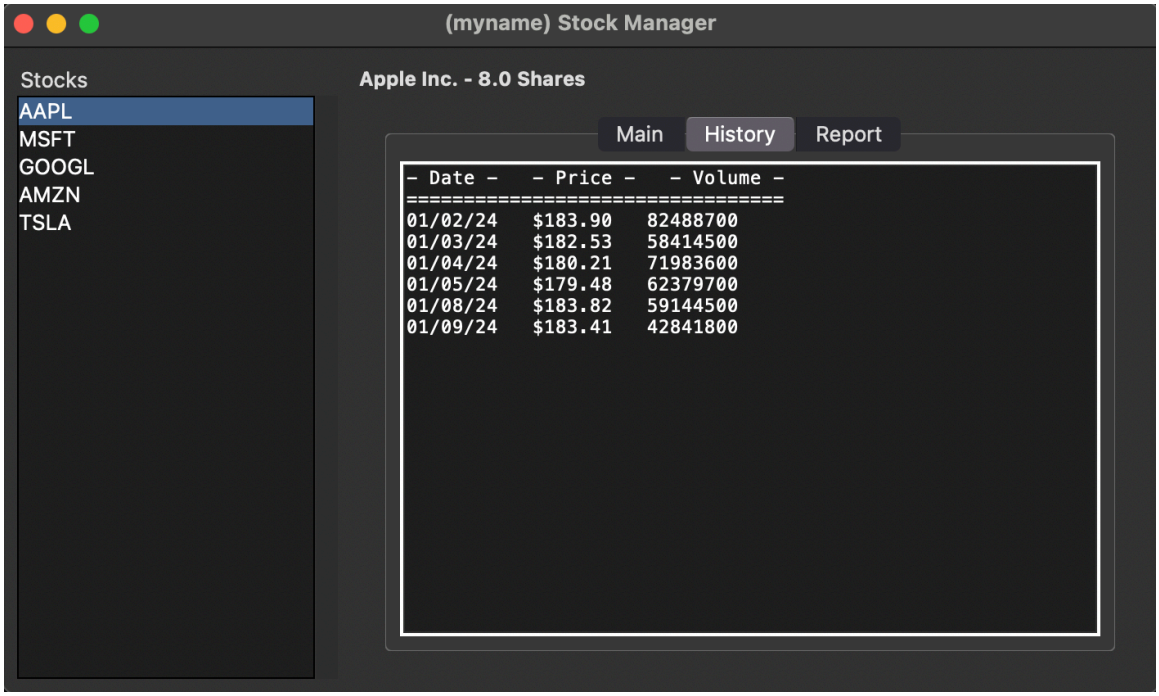
```python
def saving_stock_data(stock_list):
            cur.execute(insertStockCmd, insertValues)
            cur.execute("COMMIT;")
        except:
            pass
        for daily_data in stock.DataList:
            insertValues = (stock.symbol,daily_data.date.strftime("%m/%d/%y"),daily_data.close,d
            try:
                cur.execute(insertDailyDataCmd, insertValues)
                cur.execute("COMMIT;")
            except:
                pass

def loading_stock_data(stock_list):
    stock_list.clear()
    stockDB = "stocks.db"
    conn = sqlite3.connect(stockDB)
    stockCur = conn.cursor()
    stockSelectCmd = """SELECT symbol, name, shares
                        FROM stocks; """
    stockCur.execute(stockSelectCmd)
    stockRows = stockCur.fetchall()
    for row in stockRows:
        new_stock = Stock(row[0],row[1],row[2])
        dailyDataCur = conn.cursor()
        dailyDataCmd = """SELECT date, price, volume
                          FROM dailyData
                          WHERE symbol=?; """
        selectValue = (new_stock.symbol)
        dailyDataCur.execute(dailyDataCmd,(selectValue,))
        dailyDataRows = dailyDataCur.fetchall()
```

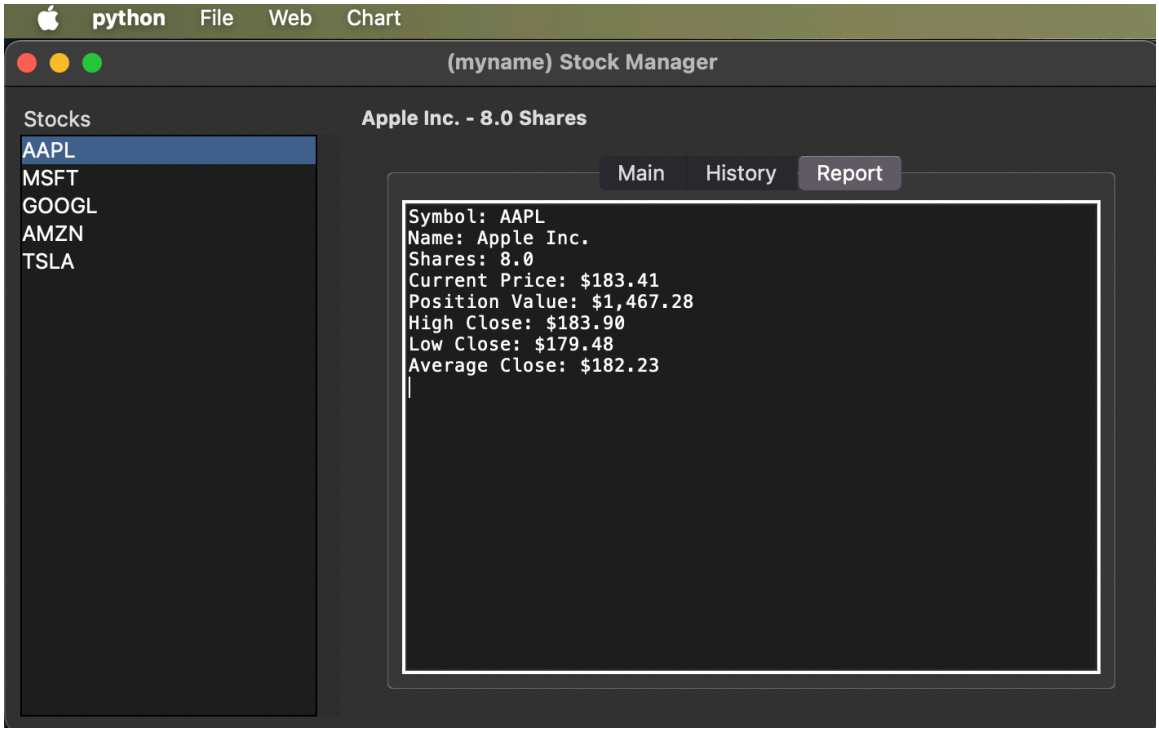
```python
# Denisha Tank

from datetime import datetime
from os import path
from tkinter import *
from tkinter import ttk
from tkinter import messagebox, simpledialog, filedialog
import csv
import stock_data
from stock_class import Stock, DailyData
from utilities import clear_screen, display_stock_chart, sortStocks, sortDailyData

class StockApp:
    def __init__(self):
        self.stock_list = []

        if path.exists("stocks.db") == False:
            stock_data.create_database()

        self.root = Tk()
        self.root.title("(myname) Stock Manager")  # Replace with a suitable name for your p


        self.menubar = Menu(self.root)

        # Adding File Menu
        self.fileMenu = Menu(self.menubar, tearoff=0)
        self.fileMenu.add_command(label="Load Data", command=self.load)
        self.fileMenu.add_command(label="Save Data", command=self.save)
        self.fileMenu.add_separator()
        self.fileMenu.add_command(label="Exit", command=self.root.destroy)
        self.menubar.add_cascade(label="File", menu=self.fileMenu)

        # Add Web Menu
```

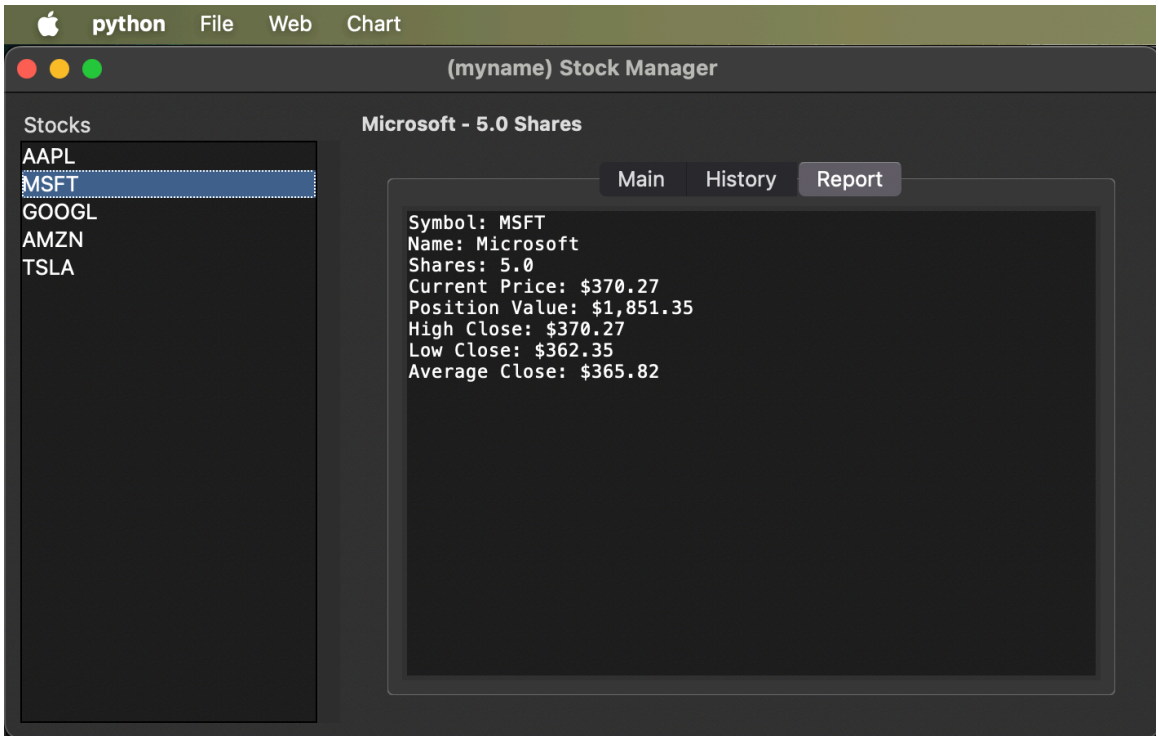
```python
#Denisha Tank
import matplotlib.pyplot as plt

from os import system, name

def clearing_screen():
    if name == "nt":
        _ = system('cls')
    else:
        _ = system('clear')

def sortingStocks(stock_list):
    stock_list.sort(key=lambda stock: stock.symbol.upper())

def sortingofDailyData(stock_list):
    for stock in stock_list:
        stock.DataList.sort(key=lambda daily: daily.date)

def displaying_stock_chart(stock_list, symbol):
    target = next((s for s in stock_list if s.symbol.upper() == s
    if target is None or not target.DataList:
        print("No data available to chart for symbol:", symbol)
        return

    target.DataList.sort(key=lambda d: d.date)

    dates = [d.date for d in target.DataList]
    closes = [d.close for d in target.DataList]

    plt.figure()
    plt.plot(dates, closes)
    plt.title(f"{target.symbol} Closing Price History")
```

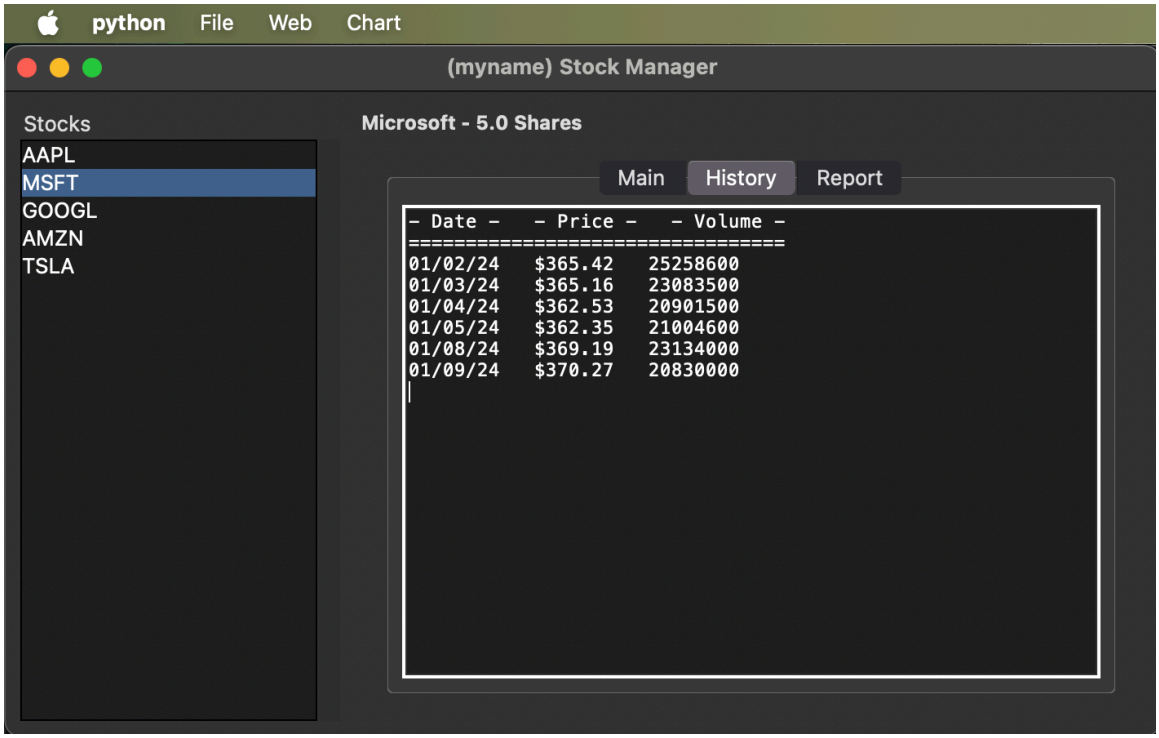
Output:

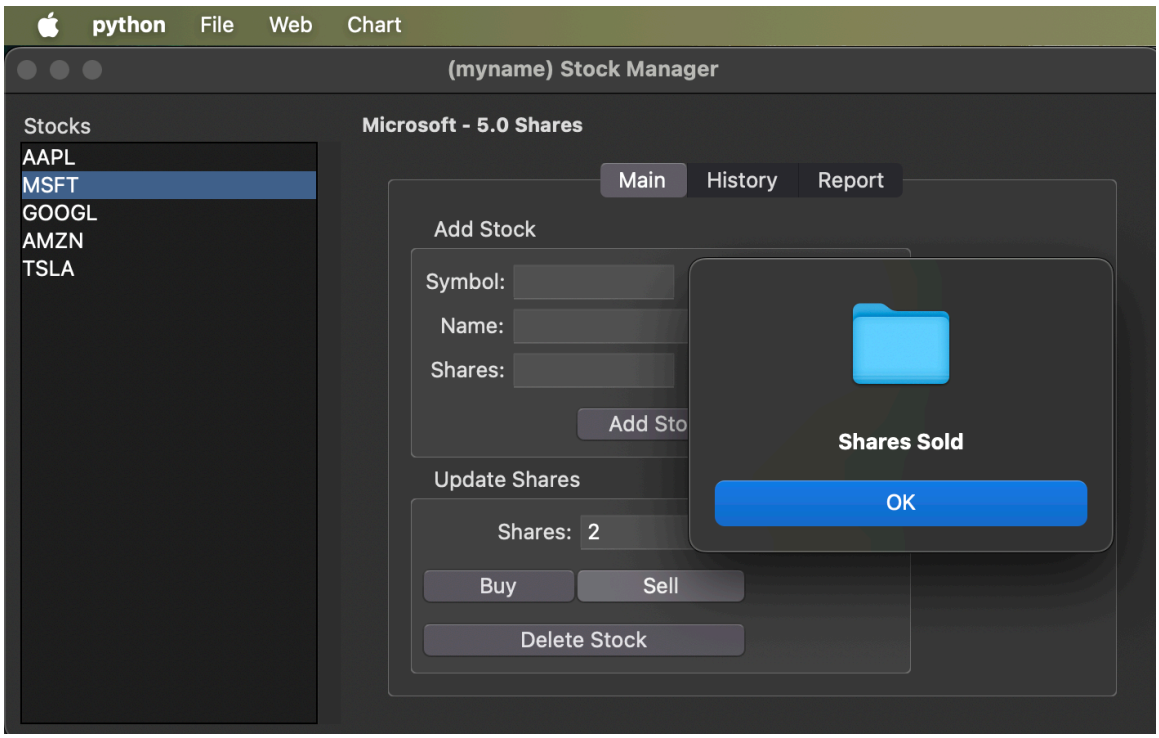

(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
TSLA
Tesla - 20.0 Shares
Main
History
Report
Add Stock
Symbol: TSLA
Name: Tesla
Shares: 20
Add Stock
Update Shares
Shares:
Buy
Sell
Delete Stock

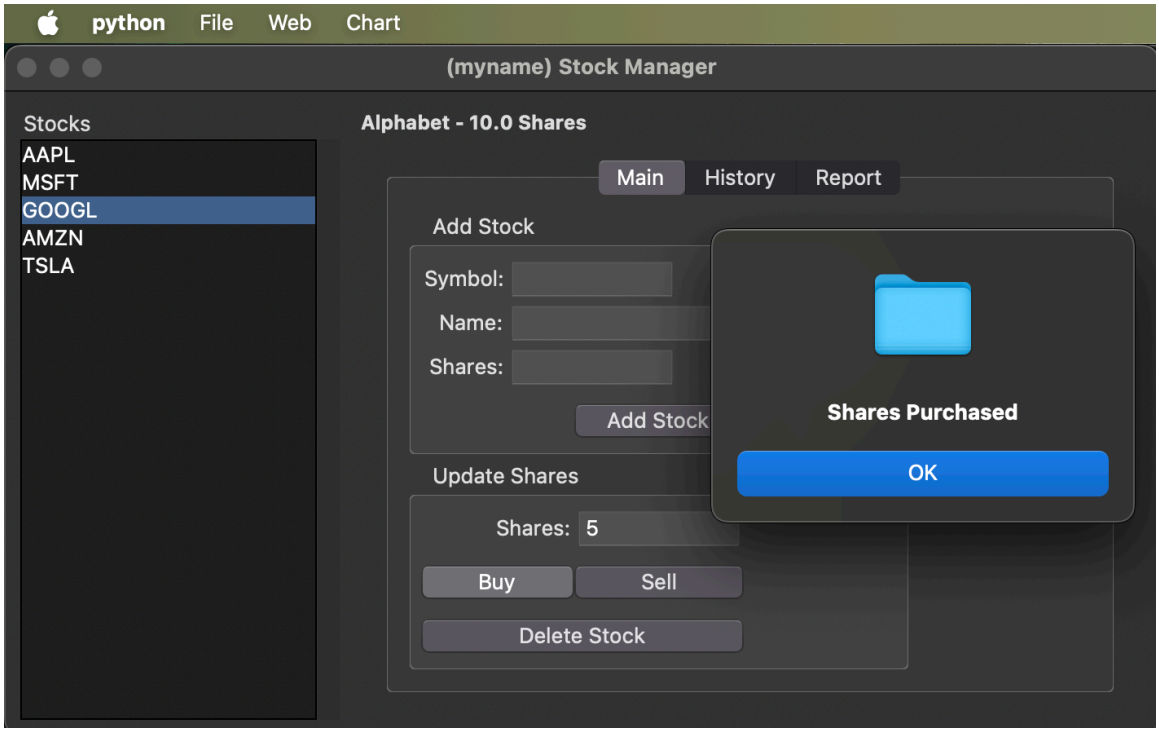

(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
TSLA
Apple Inc. - 8.0 Shares
Main
History
Report
- Date - - Price - - Volume -
01/02/24 $183.90 82488700
01/03/24 $182.53 58414500
01/04/24 $180.21 71983600
01/05/24 $179.48 62379700
01/08/24 $183.82 59144500
01/09/24 $183.41 42841800

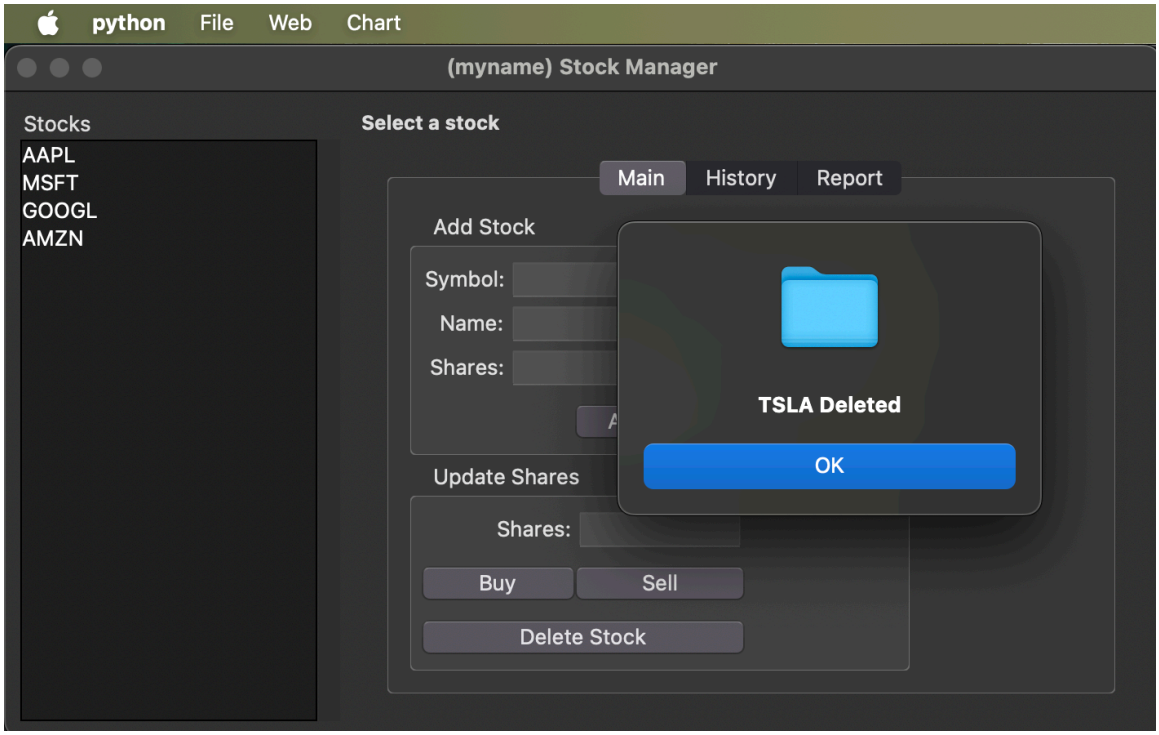

python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
TSLA
Apple Inc. - 8.0 Shares
Main History Report
Symbol: AAPL
Name: Apple Inc.
Shares: 8.0
Current Price: $183.41
Position Value: $1,467.28
High Close: $183.90
Low Close: $179.48
Average Close: $182.23

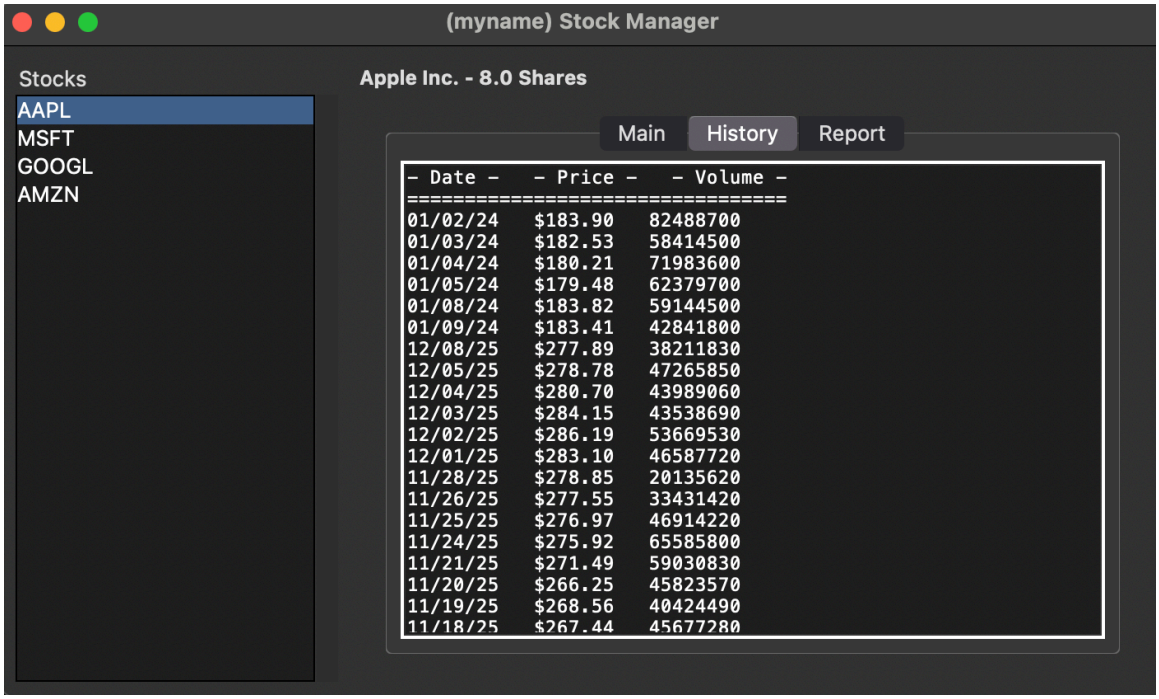

python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
TSLA
Microsoft - 5.0 Shares
Main History Report
Symbol: MSFT
Name: Microsoft
Shares: 5.0
Current Price: $370.27
Position Value: $1,851.35
High Close: $370.27
Low Close: $362.35
Average Close: $365.82

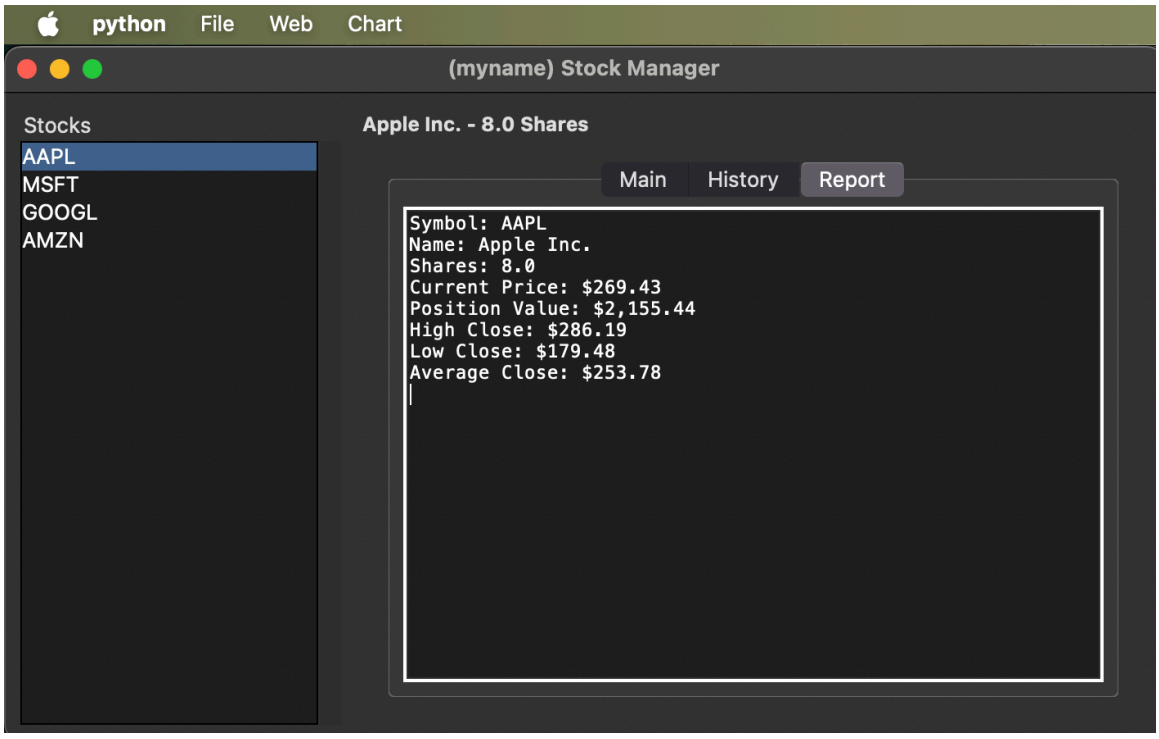

python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
TSLA
Microsoft - 5.0 Shares
Main History Report
- Date - - Price - - Volume -
01/02/24 $365.42 25258600
01/03/24 $365.16 23083500
01/04/24 $362.53 20901500
01/05/24 $362.35 21004600
01/08/24 $369.19 23134000
01/09/24 $370.27 20830000

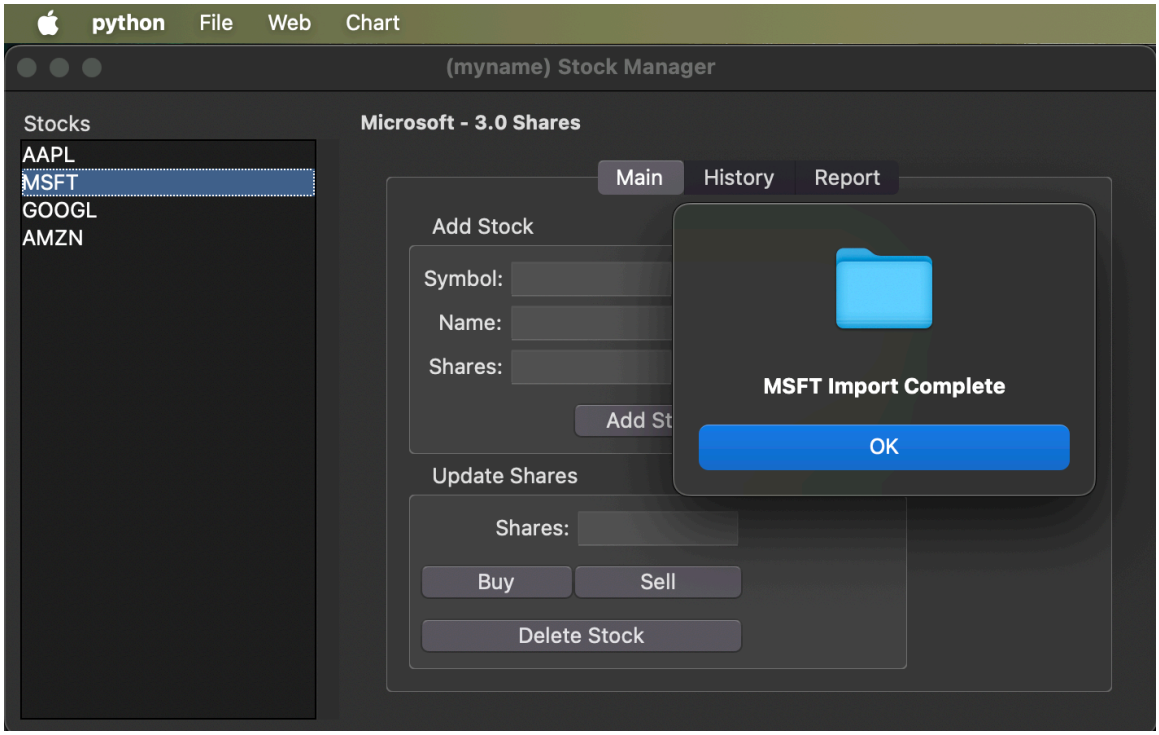

python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
TSLA
Microsoft - 5.0 Shares
Main History Report
Add Stock
Symbol:
Name:
Shares:
Add Sto
Update Shares
Shares: 2
Buy
Sell
Delete Stock
Shares Sold
OK

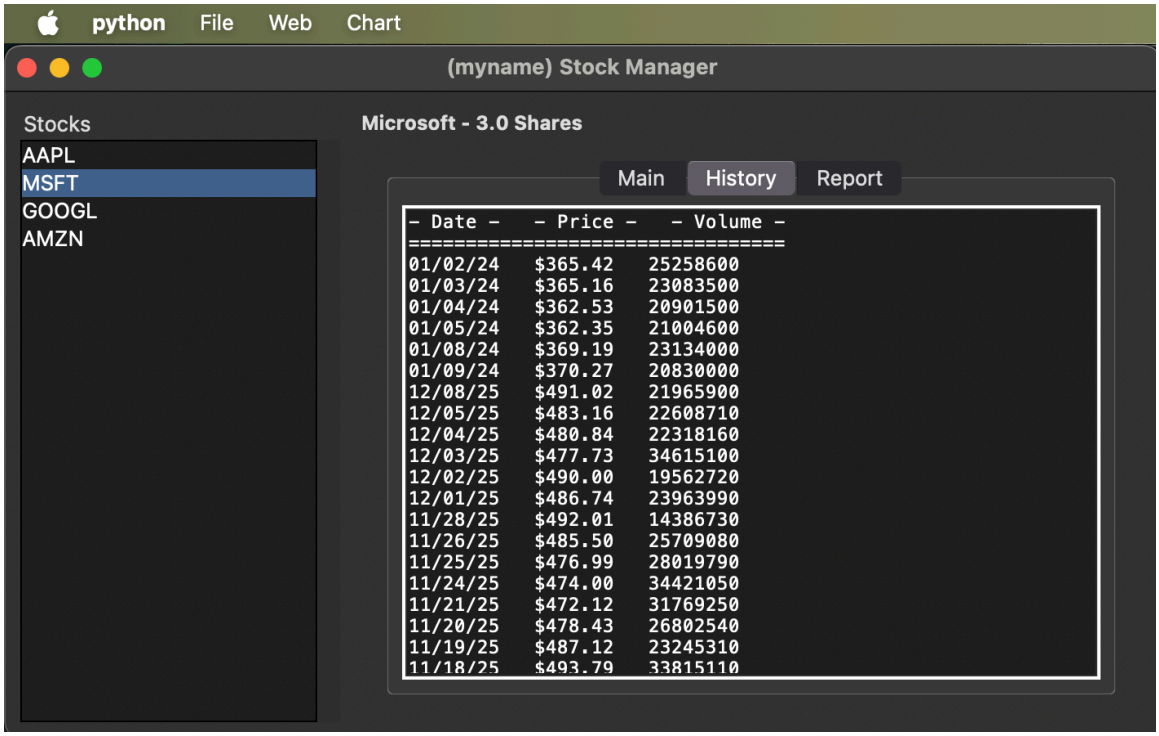

python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
TSLA
Alphabet - 10.0 Shares
Main History Report
Add Stock
Symbol:
Name:
Shares:
Add Stock
Update Shares
Shares: 5
Buy Sell
Delete Stock
Shares Purchased
OK

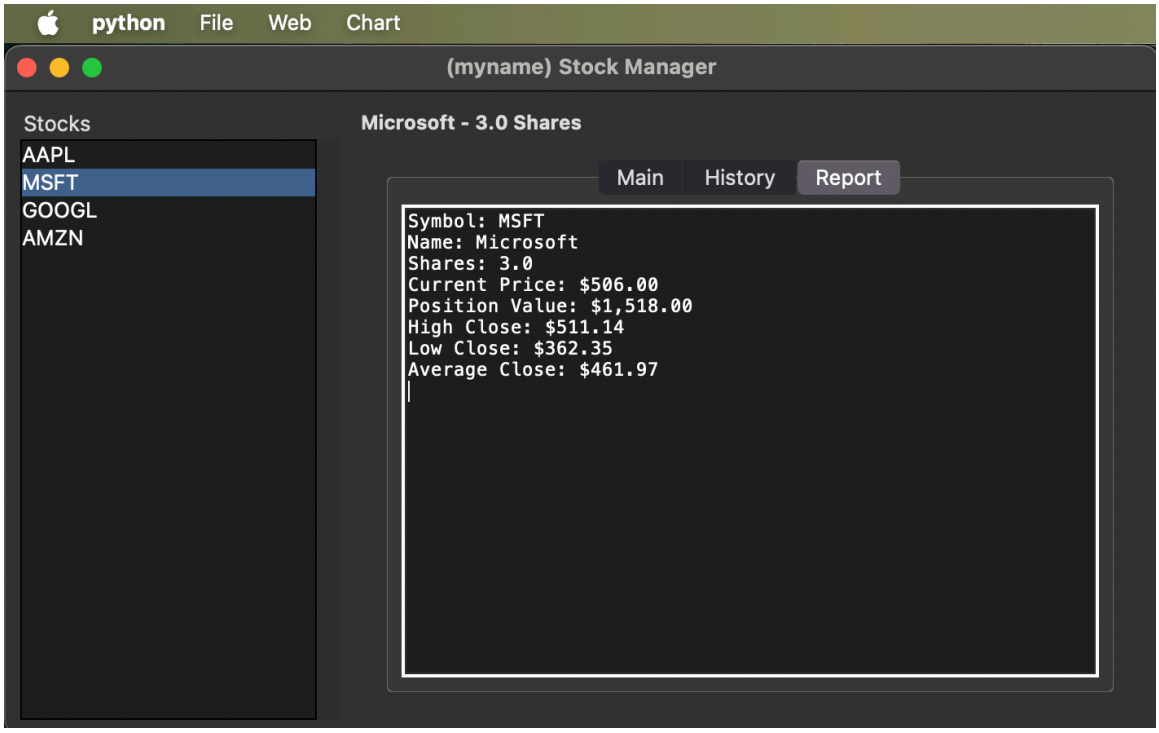

python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
Select a stock
Main History Report
Add Stock
Symbol:
Name:
Shares:
Update Shares
Shares:
Buy Sell
Delete Stock
TSLA Deleted
OK


(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
Apple Inc. - 8.0 Shares
Main
History
Report
- Date - - Price - - Volume -
01/02/24 $183.90 82488700
01/03/24 $182.53 58414500
01/04/24 $180.21 71983600
01/05/24 $179.48 62379700
01/08/24 $183.82 59144500
01/09/24 $183.41 42841800
12/08/25 $277.89 38211830
12/05/25 $278.78 47265850
12/04/25 $280.70 43989060
12/03/25 $284.15 43538690
12/02/25 $286.19 53669530
12/01/25 $283.10 46587720
11/28/25 $278.85 20135620
11/26/25 $277.55 33431420
11/25/25 $276.97 46914220
11/24/25 $275.92 65585800
11/21/25 $271.49 59030830
11/20/25 $266.25 45823570
11/19/25 $268.56 40424490


python
File
Web
Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
Apple Inc. - 8.0 Shares
Main
History
Report
Symbol: AAPL
Name: Apple Inc.
Shares: 8.0
Current Price: $269.43
Position Value: $2,155.44
High Close: $286.19
Low Close: $179.48
Average Close: $253.78


python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
Microsoft - 3.0 Shares
Main History Report
Add Stock
Symbol:
Name:
Shares:
Add St
Update Shares
Shares:
Buy Sell
Delete Stock
MSFT Import Complete
OK


python File Web Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
Microsoft - 3.0 Shares
Main History Report
- Date - - Price - - Volume -
01/02/24 $365.42 25258600
01/03/24 $365.16 23083500
01/04/24 $362.53 20901500
01/05/24 $362.35 21004600
01/08/24 $369.19 23134000
01/09/24 $370.27 20830000
12/08/25 $491.02 21965900
12/05/25 $483.16 22608710
12/04/25 $480.84 22318160
12/03/25 $477.73 34615100
12/02/25 $490.00 19562720
12/01/25 $486.74 23963990
11/28/25 $492.01 14386730
11/26/25 $485.50 25709080
11/25/25 $476.99 28019790
11/24/25 $474.00 34421050
11/21/25 $472.12 31769250
11/20/25 $478.43 26802540
11/19/25 $487.12 23245310
11/18/25 $493.79 33815110


python
File
Web
Chart
(myname) Stock Manager
Stocks
AAPL
MSFT
GOOGL
AMZN
Microsoft - 3.0 Shares
Main
History
Report
Symbol: MSFT
Name: Microsoft
Shares: 3.0
Current Price: $506.00
Position Value: $1,518.00
High Close: $511.14
Low Close: $362.35
Average Close: $461.97

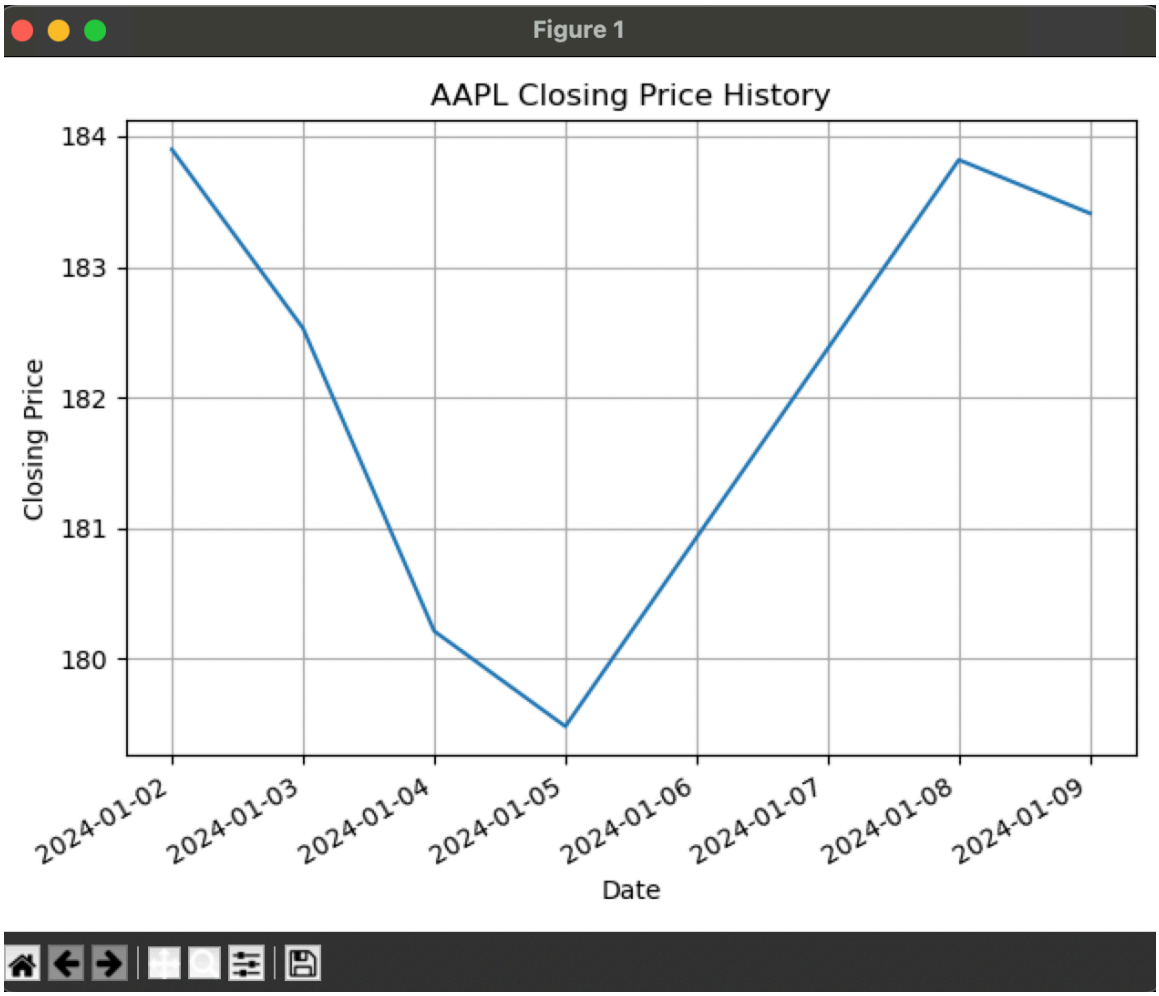


Figure 1
AAPL Closing Price History
Closing Price
184
183
182
181
180
2024-01-02
2024-01-03
2024-01-04
2024-01-05
2024-01-06
2024-01-07
2024-01-08
2024-01-09
Date

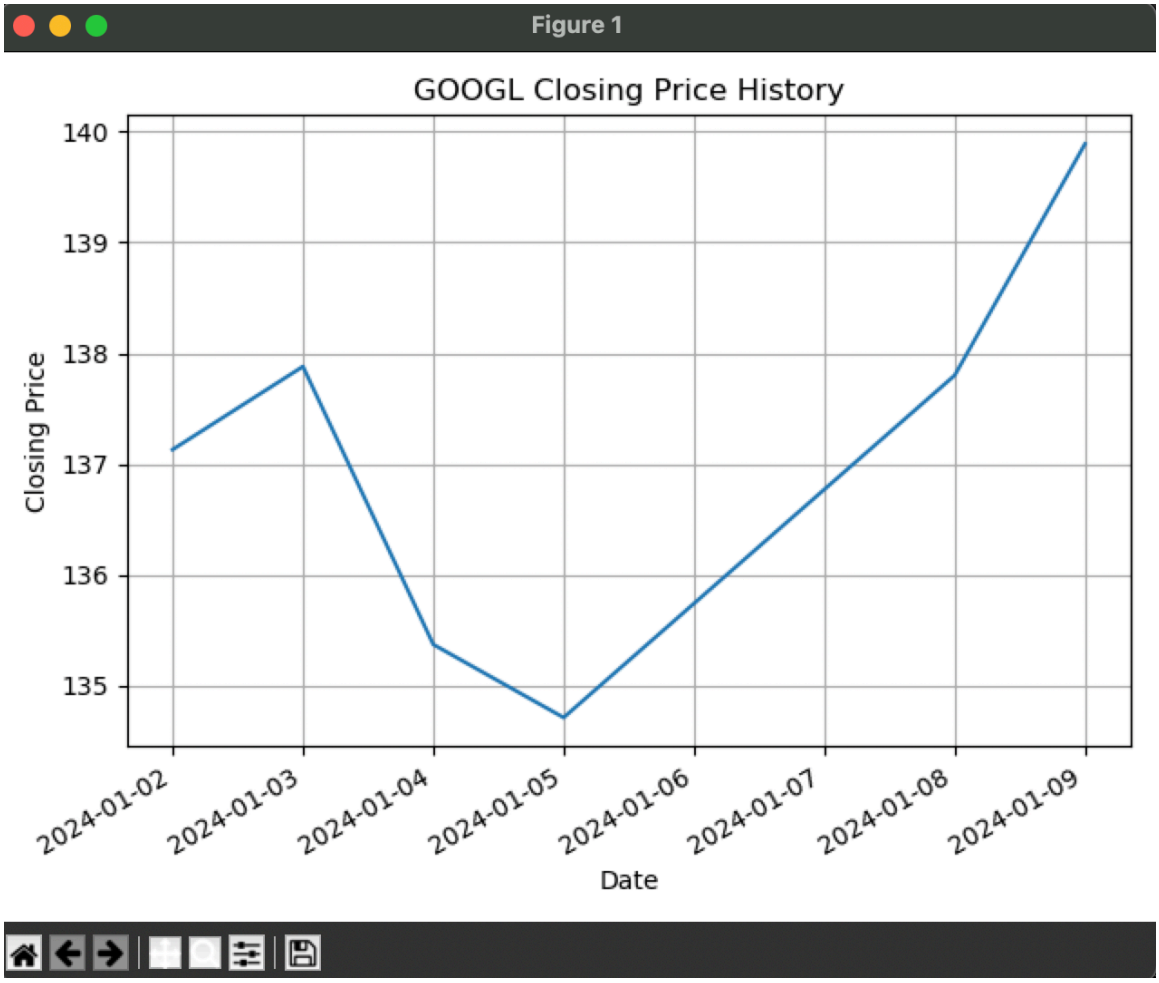
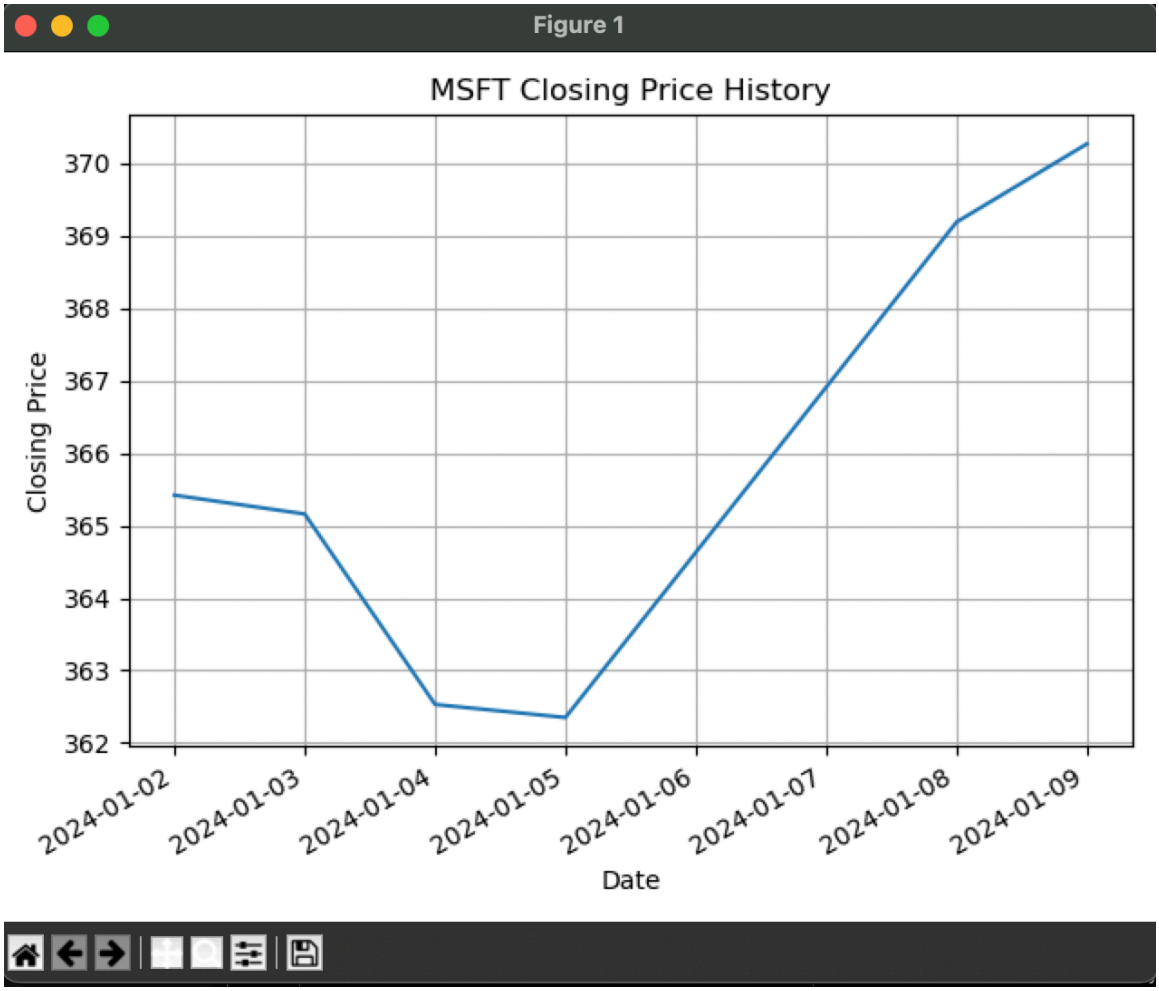
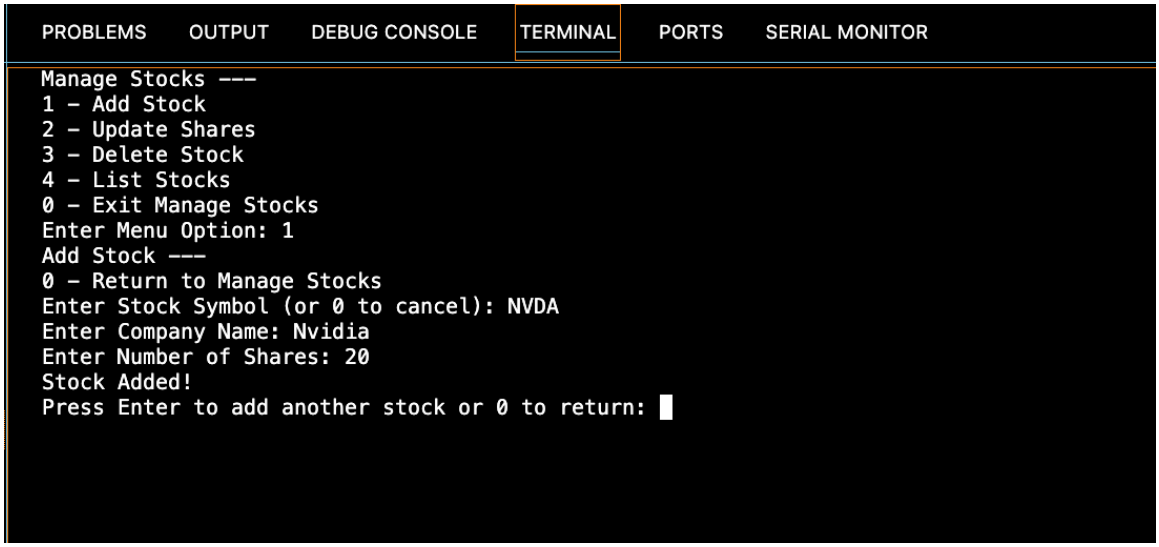
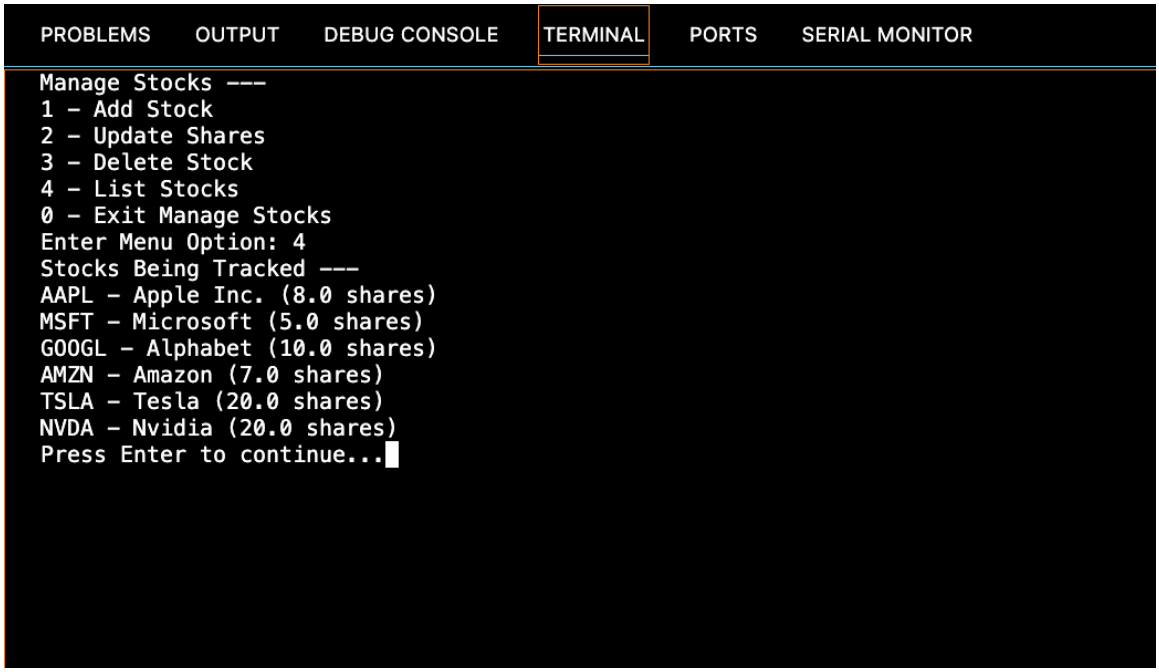


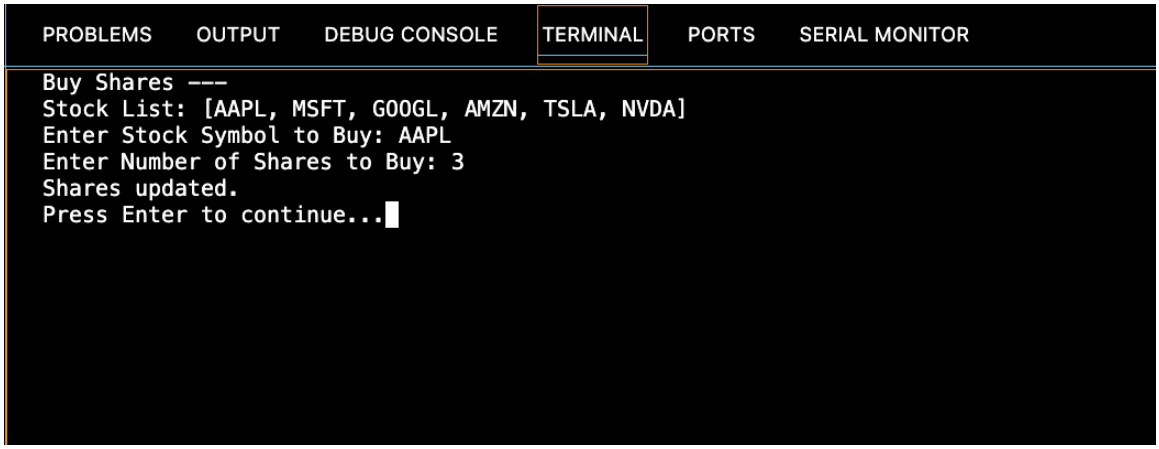
Figure 1
GOOGL Closing Price History
Closing Price
140
139
138
137
136
135
2024-01-02
2024-01-03
2024-01-04
2024-01-05
2024-01-06
2024-01-07
2024-01-08
2024-01-09
Date

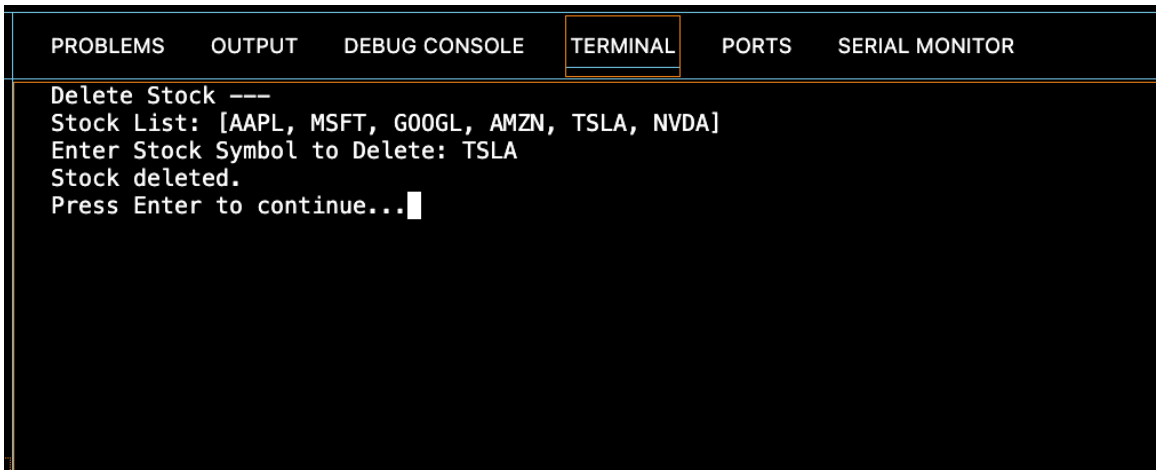


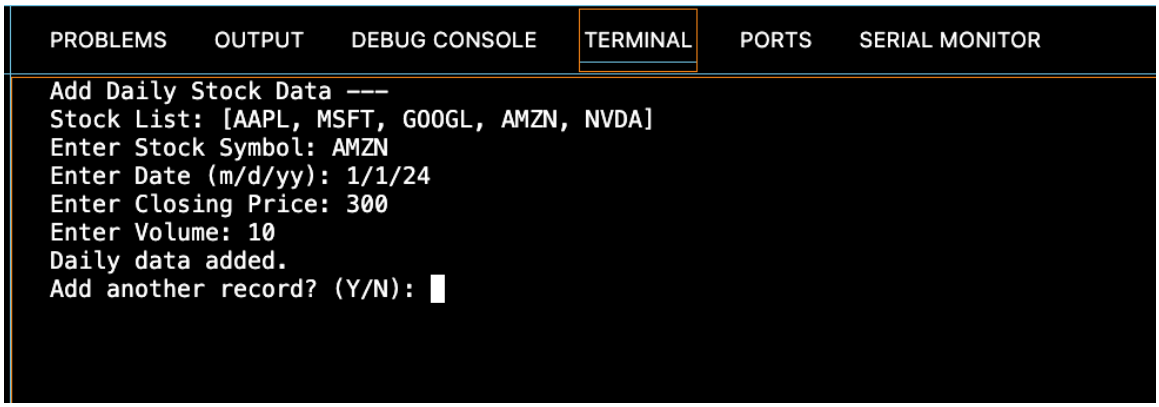

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS   SERIAL MONITOR

Stock Analyzer ---
1 - Manage Stocks (Add, Update, Delete, List)
2 - Add Daily Stock Data (Date, Price, Volume)
3 - Show Report
4 - Show Chart
5 - Manage Data (Save, Load, Retrieve)
0 - Exit Program
Enter Menu Option: 5
Manage Data ---
1 - Save to Database
2 - Load from Database
3 - Retrieve Data From Web
4 - Import From CSV File
0 - Return to Main Menu
Enter Menu Option: 2
Data loaded from database.
Press Enter to continue...
```


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SERIAL MONITOR
Manage Stocks ---
1 - Add Stock
2 - Update Shares
3 - Delete Stock
4 - List Stocks
0 - Exit Manage Stocks
Enter Menu Option: 1
Add Stock ---
0 - Return to Manage Stocks
Enter Stock Symbol (or 0 to cancel): NVDA
Enter Company Name: Nvidia
Enter Number of Shares: 20
Stock Added!
Press Enter to add another stock or 0 to return:

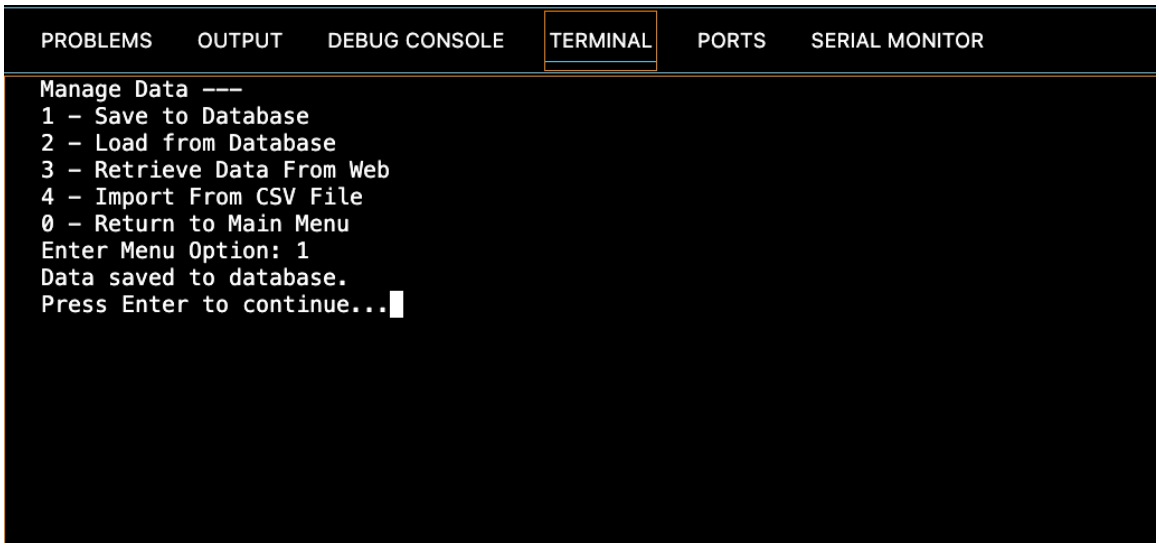

PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SERIAL MONITOR
Manage Stocks ---
1 - Add Stock
2 - Update Shares
3 - Delete Stock
4 - List Stocks
0 - Exit Manage Stocks
Enter Menu Option: 4
Stocks Being Tracked ---
AAPL - Apple Inc. (8.0 shares)
MSFT - Microsoft (5.0 shares)
GOOGL - Alphabet (10.0 shares)
AMZN - Amazon (7.0 shares)
TSLA - Tesla (20.0 shares)
NVDA - Nvidia (20.0 shares)
Press Enter to continue...


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SERIAL MONITOR
Buy Shares ---
Stock List: [AAPL, MSFT, GOOGL, AMZN, TSLA, NVDA]
Enter Stock Symbol to Buy: AAPL
Enter Number of Shares to Buy: 3
Shares updated.
Press Enter to continue...


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SERIAL MONITOR
Delete Stock ---
Stock List: [AAPL, MSFT, GOOGL, AMZN, TSLA, NVDA]
Enter Stock Symbol to Delete: TSLA
Stock deleted.
Press Enter to continue...


PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
SERIAL MONITOR
Add Daily Stock Data ---
Stock List: [AAPL, MSFT, GOOGL, AMZN, NVDA]
Enter Stock Symbol: AMZN
Enter Date (m/d/yy): 1/1/24
Enter Closing Price: 300
Enter Volume: 10
Daily data added.
Add another record? (Y/N):


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SERIAL MONITOR
Stock Report ---
AAPL - Apple Inc. (11.0 shares)
Date Close Volume
01/02/24 183.90 82488700
01/03/24 182.53 58414500
01/04/24 180.21 71983600
01/05/24 179.48 62379700
01/08/24 183.82 59144500
01/09/24 183.41 42841800
MSFT - Microsoft (5.0 shares)
Date Close Volume
01/02/24 365.42 25258600
01/03/24 365.16 23083500
01/04/24 362.53 20901500
01/05/24 362.35 21004600
01/08/24 369.19 23134000
01/09/24 370.27 20830000
GOOGL - Alphabet (10.0 shares)
Date Close Volume
01/02/24 137.13 23711200
01/03/24 137.88 24212100
01/04/24 135.37 27137700
01/05/24 134.71 22513900
01/08/24 137.80 21404000
01/09/24 139.89 24759600
AMZN - Amazon (7.0 shares)
Date Close Volume
01/01/24 300.00 5
01/01/24 300.00 10
NVDA - Nvidia (20.0 shares)
No daily data.
Press Enter to continue...


PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS SERIAL MONITOR
Manage Data ---
1 - Save to Database
2 - Load from Database
3 - Retrieve Data From Web
4 - Import From CSV File
0 - Return to Main Menu
Enter Menu Option: 1
Data saved to database.
Press Enter to continue...

Github Link: https://github.com/denishatank12/Lab-2