

CEIS150

Course Project

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Creating the Classes



Class Diagrams



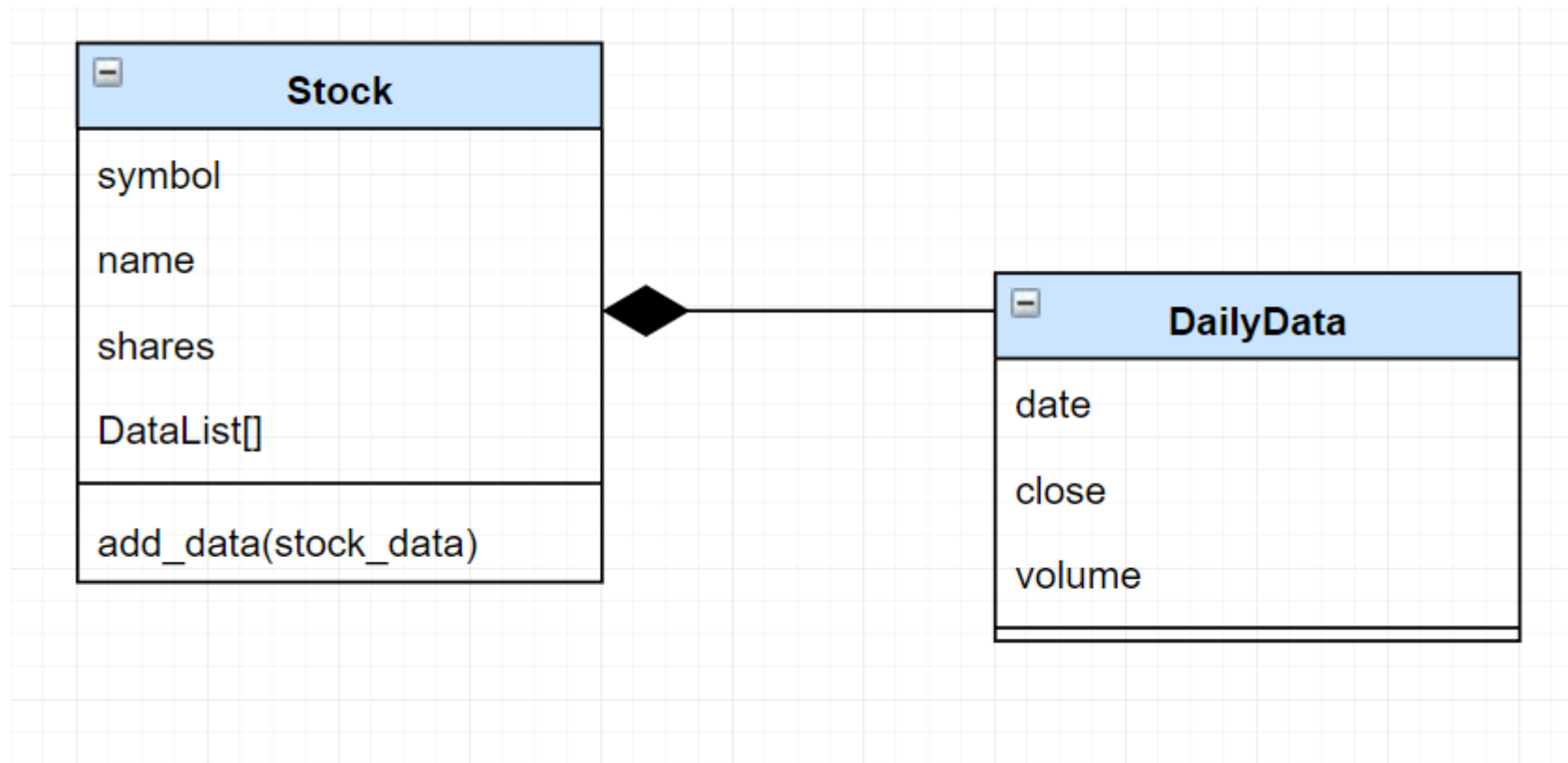
Class Coding



Unit Testing

Class Diagram

Paste your Visio Class Diagram



Class Code

Screen Shot of your stock_class.py file.

```
class Stock:
    def __init__(self, symbol, name, shares):
        self.symbol = symbol
        self.name = name
        self.shares = shares
        self.DataList = [] # list of price and volume history

    def add_data(self, stock_data):
        self.DataList.append(stock_data)

class DailyData:
    def __init__(self, date, close, volume):
        self.date = date
        self.close = close
        self.volume = volume
```

Unit Test

Screen Shot of your successful unit test.

```
Unit Testing Starting---  
Testing Add Stock...Successful!  
Test Change Symbol...Successful!  
Test Change Name...Successful!  
Successful!  
Creating daily stock data...Successful!  
Congratulations - All Tests Passed  
Goodbye
```

Creating the Console Interface



Adding a Stock



Listing 3 Stocks



Daily Data

Adding a Stock

Paste a screen shot of your working Stock program.

```
Enter Menu Option: 1
Enter Ticker Symbol: amzn
Enter Company Name: Amazon
Enter Number of Shares: 8
Stock Added - Enter to Add Another Stock or 0 to Stop:
Enter Ticker Symbol: abnb
Enter Company Name: Airbnb
Enter Number of Shares: 3
Stock Added - Enter to Add Another Stock or 0 to Stop:
Enter Ticker Symbol: aapl
Enter Company Name: Apple
Enter Number of Shares: 4
Stock Added - Enter to Add Another Stock or 0 to Stop: 0
Stock Added - Enter to Add Another Stock or 0 to Stop: 0
```


Listing 3 Stocks

Paste a screen shot of your working Stock program.

```
Enter Menu Option: 3
Stock List ----
Symbol      Name      Shares
=====
AMZN        Amazon    8
ABNB        Airbnb    3
AAPL        Apple     4

Press Enter to Continue ***
```

Daily Data

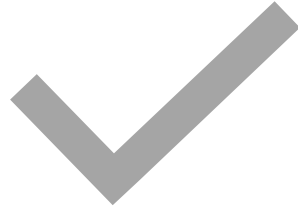
Paste a screen shot of your working Stock program.

```
Enter Menu Option: 4
Add Daily Stock Data ----
Stock List: [AMZN  ABNB  AAPL  ]
Which stock do you want to use?: amzn
Ready to add data for:  AMZN
Enter Data Separated by Commas - Do Not use Spaces
Enter a Blank Line to Quit
Enter Date,Price,Volume
Example: 8/28/20,47.85,10550
Enter Date,Price,Volume: 8/28/20,47.85,10550
Enter Date, Price, Volume:
Data Entry Complete
Stock Analyzer ---
```

Inheritance



Inherited Classes



Unit Tests



Stock Menu

Inherited classes

Paste a screen shot of your classes

```
class Retirement_Account:
    def __init__(self, balance, number):
        self.balance = balance
        self.number = number

class Traditional(Retirement_Account):
    def __init__(self, balance, number):
        Retirement_Account.__init__(self, balance, number)
        self.Stock_List = []

    def add_stock(self, stock_data):
        self.Stock_List.append(stock_data)

class Robo(Retirement_Account):
    def __init__(self, balance, number, years):
        Retirement_Account.__init__(self, balance, number)
        self.years = years

    def investment_return(self):
        return (self.years*self.balance*1.05)
```

Unit Tests

Paste a screen shot of your unit tests
successfully completed

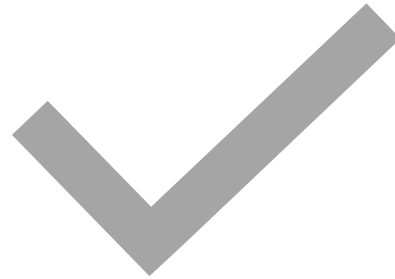
```
PS E:\My Drive\Education\ DeVry\2022\Sem 4\CEIS 150 - Programmin with Objects\Coarse Project> & C:\Python39\python.exe C:\Python39\Scripts\unittest\runner.py C:\Python39\Scripts\unittest\runner.py
Project/account_class.py"
Unit Testing Starting---
Testing Add Retirement Account...Successful!
Testing Add Traditional Account...Successful!
Test Change Balance...Successful!
Unit Testing Starting---
Testing Add Retirement Account...Successful!
Testing Add Traditional Account...Successful!
Test Change Balance...Successful!
Test Change Number...Successful!
Testing Add Robo Account...Successful!
Test Change Balance...Successful!
Test investment return...Successful!
Congratulations - All Tests Passed
Goodbye
PS E:\My Drive\Education\ DeVry\2022\Sem 4\CEIS 150 - Programmin with Objects\Coarse Project> 
```

Stock menu program

Paste a screen shot of your classes in the main program

```
Stock Analyzer ---
1 - Add Stock
2 - Delete Stock
3 - List stocks
4 - Add Daily Stock Data (Date, Price, Volume)
5 - Show Chart
6 - Investor Type
7 - Load Data
0 - Exit Program
Enter Menu Option: 6
Investment Account ---
What is your initial balance: 40
What is your account number: 1234
Do you want a Traditional (t) or Robo (r) account: t
Bought 40.0 of APL
Stock List: [APL MSFT ]
Which stock do you want to purchase, 0 to quit: 0
Stock Analyzer ---
1 - Add Stock
2 - Delete Stock
3 - List stocks
4 - Add Daily Stock Data (Date, Price, Volume)
5 - Show Chart
6 - Investor Type
7 - Load Data
0 - Exit Program
Enter Menu Option: 6
Investment Account ---
What is your initial balance: 30
What is your account number: 12345
Do you want a Traditional (t) or Robo (r) account: r
How many years until retirement: 20
Your investment return is 630.0
```

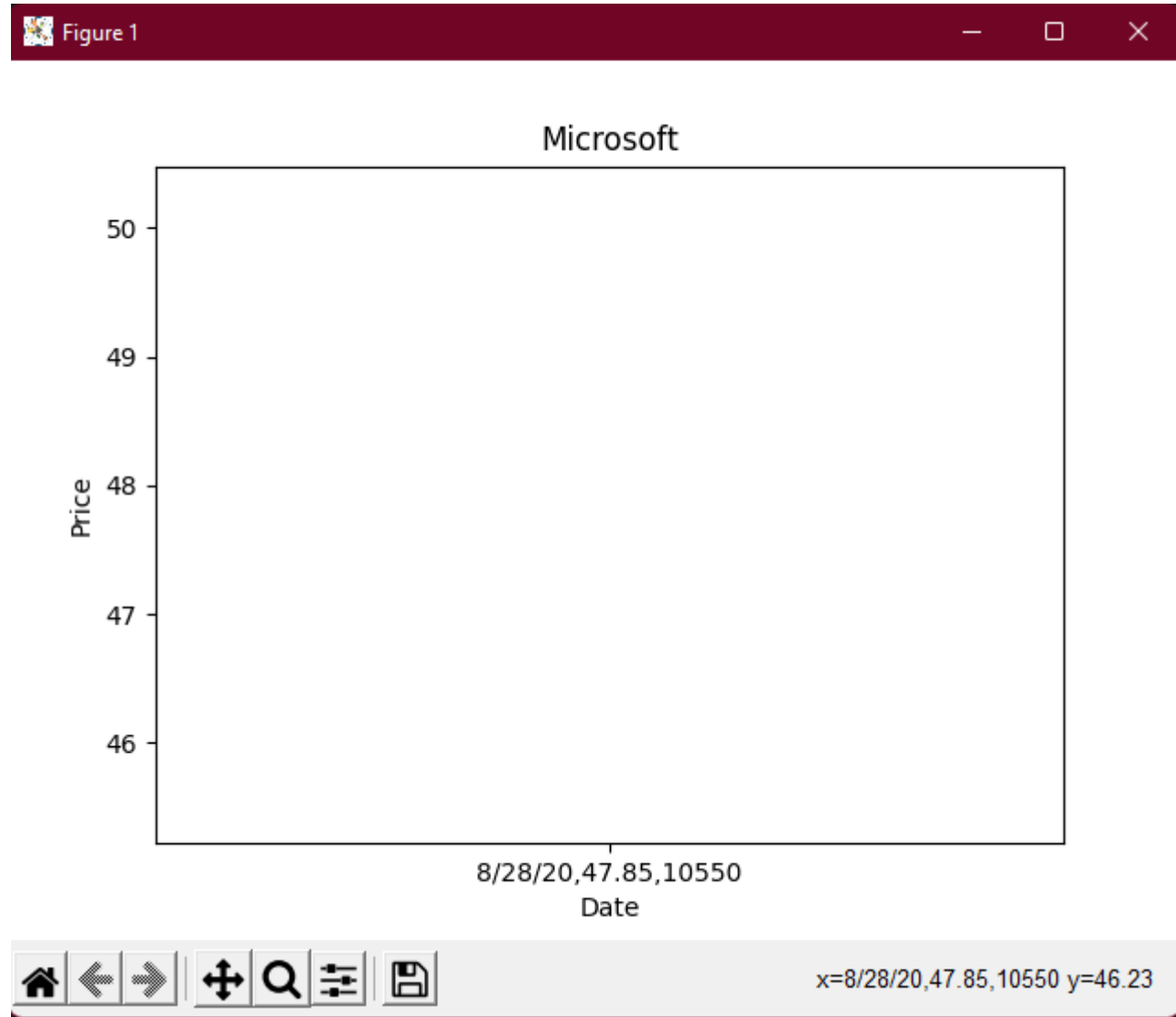
Creating a Chart



Chart

Chart

Paste a screen shot of your stock chart.



Inheritance














File



Importing Data

File

Paste a screen shot of the file downloaded from Yahoo finance

 .git	8/9/2022 9:40 PM	File folder	
 .vs	7/29/2022 6:08 PM	File folder	
 __pycache__	8/1/2022 8:37 AM	File folder	
 css	7/29/2022 5:54 PM	File folder	
 .gitignore	7/18/2022 2:51 PM	Git Ignore Source ...	1 KB
 AAPL	8/8/2022 3:16 PM	Microsoft Excel C...	19 KB
 account_class	7/30/2022 12:10 PM	Python Source File	5 KB
 CEIS150 Project Guide Module 3 v2	7/17/2022 8:39 PM	Microsoft Word D...	330 KB
 CEIS150 Project Template Module Deliverable Week 3 v2	7/18/2022 2:41 PM	Microsoft PowerP...	87 KB
 stock_class	7/30/2022 12:11 PM	Python Source File	4 KB
 stock_menu	8/9/2022 9:41 PM	Python Source File	11 KB

Importing data

Screenshot of the historical data import

```
2021-08-09 146.089996 48908700.0
2021-08-10 145.600006 69023100.0
2021-08-11 145.860001 48493500.0
2021-08-12 148.889999 72282600.0
2021-08-13 149.100006 59375000.0
2021-08-16 151.119995 103296000.0
2021-08-17 150.190002 92229700.0
2021-08-18 146.360001 86326000.0
2021-08-19 146.699997 86960300.0
2021-08-20 148.190002 60549600.0
2021-08-23 149.710007 60131800.0
2021-08-24 149.619995 48606400.0
2021-08-25 148.360001 58991300.0
2021-08-26 147.539993 48597200.0
2021-08-27 148.600006 55802400.0
2021-08-30 153.119995 90956700.0
2021-08-31 151.830002 86453100.0
2021-09-01 152.509995 80313700.0
2021-09-02 153.649994 71115500.0
2021-09-03 154.300003 57808700.0
2021-09-07 156.690002 82278300.0
2021-09-08 155.110001 74420200.0
2021-09-09 154.070007 57305700.0
2021-09-10 148.970001 140893200.0
2021-09-13 149.550003 102404300.0
2021-09-14 148.119995 109296300.0
2021-09-15 149.029999 83281300.0
2021-09-16 148.789993 68034100.0
2021-09-17 146.059998 129868800.0
2021-09-20 142.940002 123478900.0
2021-09-21 143.429993 75834000.0
2021-09-22 145.850006 76404300.0
2021-09-23 146.830002 64838200.0
2021-09-24 146.919998 53477900.0
2021-09-27 145.369995 74150700.0
2021-09-28 141.910004 108972300.0
2021-09-29 142.830002 74602000.0
2021-09-30 141.5 89056700.0
2021-10-01 142.649994 94639600.0
2021-10-04 139.139999 98322000.0
```

Creating a GUI



Stocks in GUI



History



Report

Stocks in GUI

Paste a screen shot of your GUI working

The screenshot displays a web application titled "Stocks". On the left, a list of stock symbols is shown, with "aapl" and "msft" visible. On the right, there are three tabs: "Manage", "History", and "Report". The "Manage" tab is active and contains two sections. The "Add Stock" section has three input fields labeled "Symbol", "Name", and "Shares", followed by a "New Stock" button. The "Delete Stock" section has a "Delete Selected Stock" button.

Stocks

aapl
msft

Manage History Report

Add Stock

Symbol

Name

Shares

New Stock

Delete Stock

Delete Selected Stock

History Tab

Paste a screen shot of your History tab with import working.

aapl
msft

Manage

History

Report

- Date -	- Price -	- Volume -
=====		
=		
2021-08-09	\$146.09	48908700.0
2021-08-10	\$145.60	69023100.0
2021-08-11	\$145.86	48493500.0
2021-08-12	\$148.89	72282600.0
2021-08-13	\$149.10	59375000.0
2021-08-16	\$151.12	103296000.0
2021-08-17	\$150.19	92229700.0
2021-08-18	\$146.36	86326000.0
2021-08-19	\$146.70	86960300.0
2021-08-20	\$148.19	60549600.0
2021-08-23	\$149.71	60131800.0
2021-08-24	\$149.62	48606400.0
2021-08-25	\$148.36	58991300.0
2021-08-26	\$147.54	48597200.0
2021-08-27	\$148.60	55802400.0
2021-08-30	\$153.12	90956700.0
2021-08-31	\$151.83	86453100.0
2021-09-01	\$152.51	80313700.0
2021-09-02	\$153.65	71115500.0
2021-09-03	\$154.30	57808700.0
2021-09-07	\$156.69	82278300.0

Report Complete

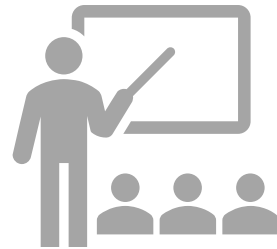
Paste a screen shot of your Report tab

aapl msft	ManageHistoryReport
	<div>Summary Data--</div> <div>Low Price: \$130.06</div> <div>High Price: \$182.01</div> <div>Average Price: \$156.94</div> <div>Low Volume: 999999999999</div> <div>High Volume: 195432700.0</div> <div>Average Volume: \$88,331,163.82</div> <div>Profit/Loss: \$-779.25</div>

Career Skills Developed



Object Oriented
Programming with Python



Classes and Inheritance



GUI Programming

Conclusion

This course builds on structured programming and introduces object-oriented and functional programming concepts. Students design, code, test and document business-oriented solutions using complex algorithms. Advanced topics include the use of libraries for data manipulation and visualization.

