

SYNOPSIS

on

FUNDAMENTAL STOCK ANALYZER

in partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE

Submitted by:

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ACADEMIC UNIT – 4



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Stock Analyzer using Python

Stock analysis is the evaluation of a particular trading instrument, an investment sector, or the market as a whole. Stock analysts attempt to determine the future activity of an instrument, sector, or market.

PROBLEM STATEMENT:

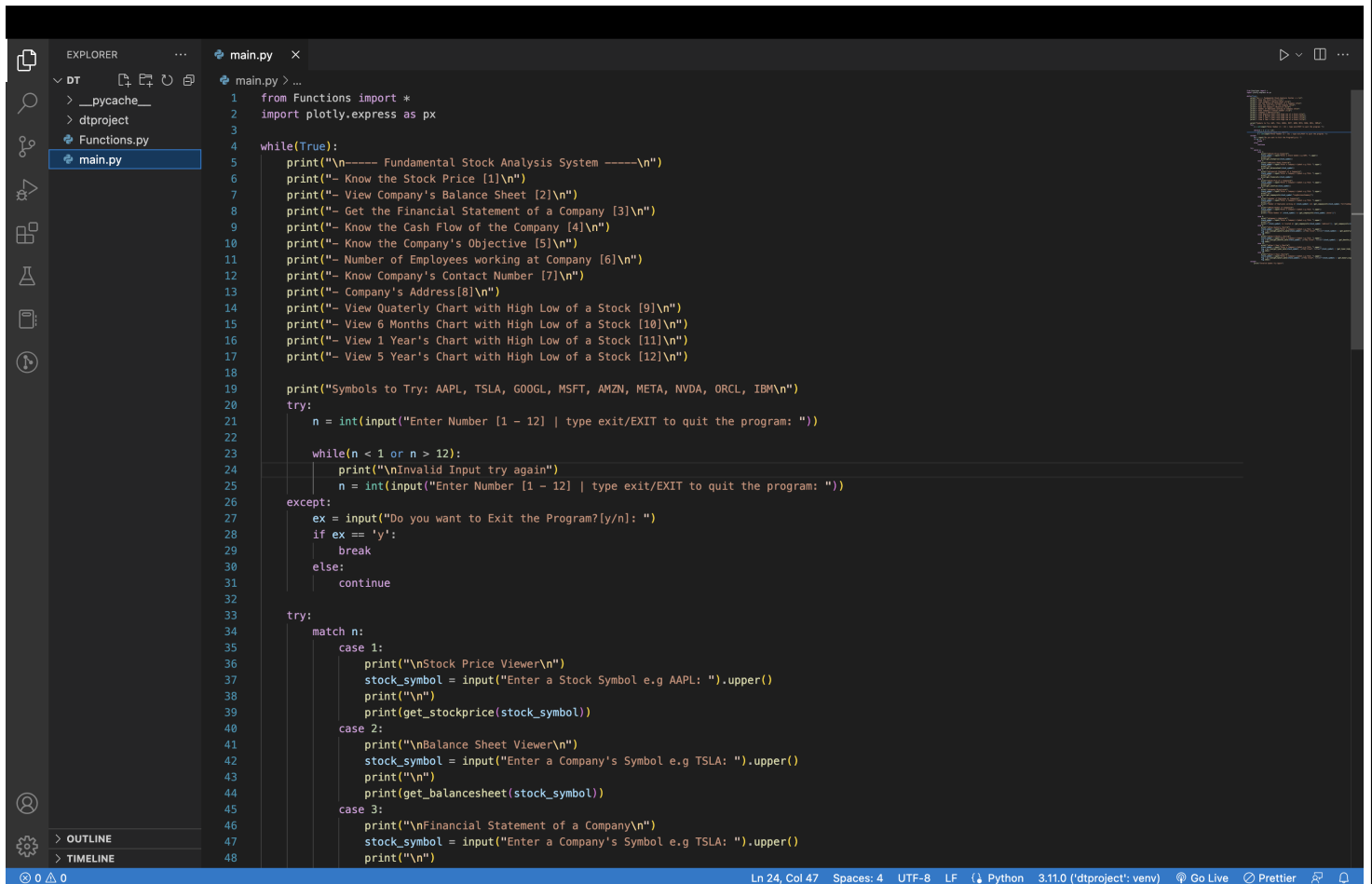
To create program which can collect all the data and can provide graphical visuals for better understating of a stock.

KEY FEATURES/BENEFITS:

Stock market analysis is used to gain knowledge of the equity market to arrive at true value of a stock. It involves fundamental and technical research as its main tools.

- Return On Equity (ROE)
Return On Equity tells you about how much does a company earns on shareholders' equity.
- Earning Per Share (EPS)
Earning Per Share is one such useful measure which the investors look for all the time.
- Graphical representation
- All time high-low
- Quarterly or yearly profit, revenue and net worth.

➤ Python Code:

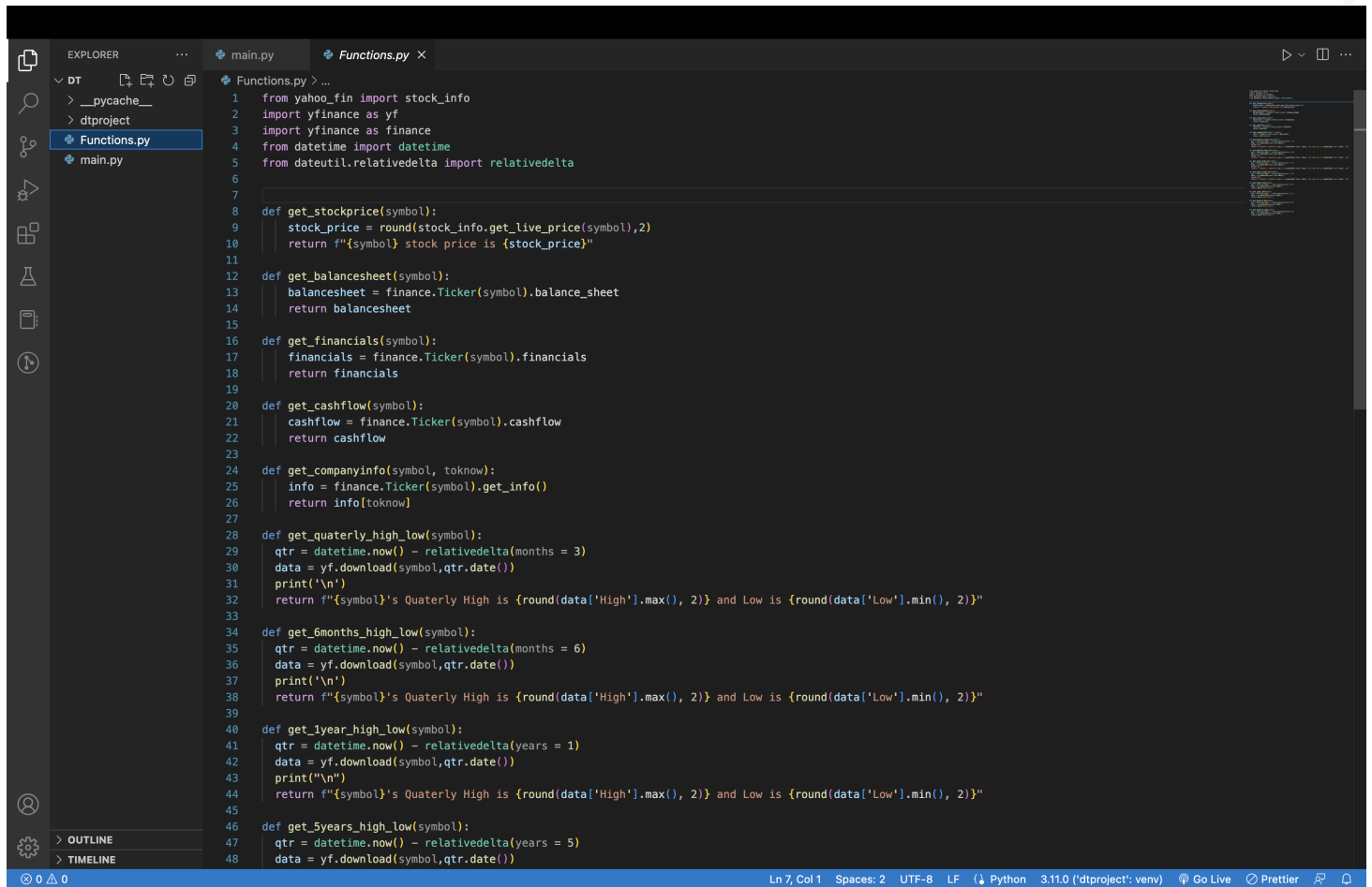


```
1 from Functions import *
2 import plotly.express as px
3
4 while(True):
5     print("\n----- Fundamental Stock Analysis System ----- \n")
6     print("- Know the Stock Price [1]\n")
7     print("- View Company's Balance Sheet [2]\n")
8     print("- Get the Financial Statement of a Company [3]\n")
9     print("- Know the Cash Flow of the Company [4]\n")
10    print("- Know the Company's Objective [5]\n")
11    print("- Number of Employees working at Company [6]\n")
12    print("- Know Company's Contact Number [7]\n")
13    print("- Company's Address[8]\n")
14    print("- View Quaterly Chart with High Low of a Stock [9]\n")
15    print("- View 6 Months Chart with High Low of a Stock [10]\n")
16    print("- View 1 Year's Chart with High Low of a Stock [11]\n")
17    print("- View 5 Year's Chart with High Low of a Stock [12]\n")
18
19    print("Symbols to Try: AAPL, TSLA, GOOGL, MSFT, AMZN, META, NVDA, ORCL, IBM\n")
20    try:
21        n = int(input("Enter Number [1 - 12] | type exit/EXIT to quit the program: "))
22
23        while(n < 1 or n > 12):
24            print("\nInvalid Input try again")
25            n = int(input("Enter Number [1 - 12] | type exit/EXIT to quit the program: "))
26    except:
27        ex = input("Do you want to Exit the Program?y/n: ")
28        if ex == 'y':
29            break
30        else:
31            continue
32
33    try:
34        match n:
35            case 1:
36                print("\nStock Price Viewer\n")
37                stock_symbol = input("Enter a Stock Symbol e.g AAPL: ").upper()
38                print("\n")
39                print(get_stockprice(stock_symbol))
40            case 2:
41                print("\nBalance Sheet Viewer\n")
42                stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
43                print("\n")
44                print(get_balancesheet(stock_symbol))
45            case 3:
46                print("\nFinancial Statement of a Company\n")
47                stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
48                print("\n")
```

➤ Python Code:

```
50 case 4:
51     print("\nCASH Flow of a Company\n")
52     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
53     print("\n")
54     print(get_cashflow(stock_symbol))
55
56 case 5:
57     print("\nCompany Objective\n")
58     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
59     print("\n")
60     print(get_companyinfo(stock_symbol, "longBusinessSummary"))
61
62 case 6:
63     print("\nNumber of Employees at Company\n")
64     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
65     print("\n")
66     print(f"Number of Employees working at {stock_symbol} are {get_companyinfo(stock_symbol, 'fullTimeEmployees')}")
67
68 case 7:
69     print("\nPhone Number of Company\n")
70     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
71     print("\n")
72     print(f"Phone Number of {stock_symbol} is {get_companyinfo(stock_symbol, 'phone')}")
73
74 case 8:
75     print("\nCompany's Address\n")
76     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
77     print("\n")
78     print(f"{stock_symbol} is located at {get_companyinfo(stock_symbol, 'address1')}, {get_companyinfo(stock_symbol, 'city')}, {get_companyinfo(stock_symbol, 'state')}")
79
80 case 9:
81     print("\nView Quarterly Chart\n")
82     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
83     fig = px.line(get_quarterly_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_quarterly_high_low(stock_symbol)}")
84     fig.show()
85
86 case 10:
87     print("\nView 6 Month's Chart\n")
88     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
89     fig = px.line(get_6months_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_6months_high_low(stock_symbol)}")
90     fig.show()
91
92 case 11:
93     print("\nView 1 Year's Chart\n")
94     stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
95     fig = px.line(get_1year_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_1year_high_low(stock_symbol)}")
96     fig.show()
97
98 case 12:
99     print("\nView 5 Years Chart\n")
100    stock_symbol = input("Enter a Company's Symbol e.g. TSLA: ").upper()
101    fig = px.line(get_5years_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_5years_high_low(stock_symbol)}")
102    fig.show()
103
104 except:
105    print("Invalid Symbol Try Again")
```

➤ Python Code:

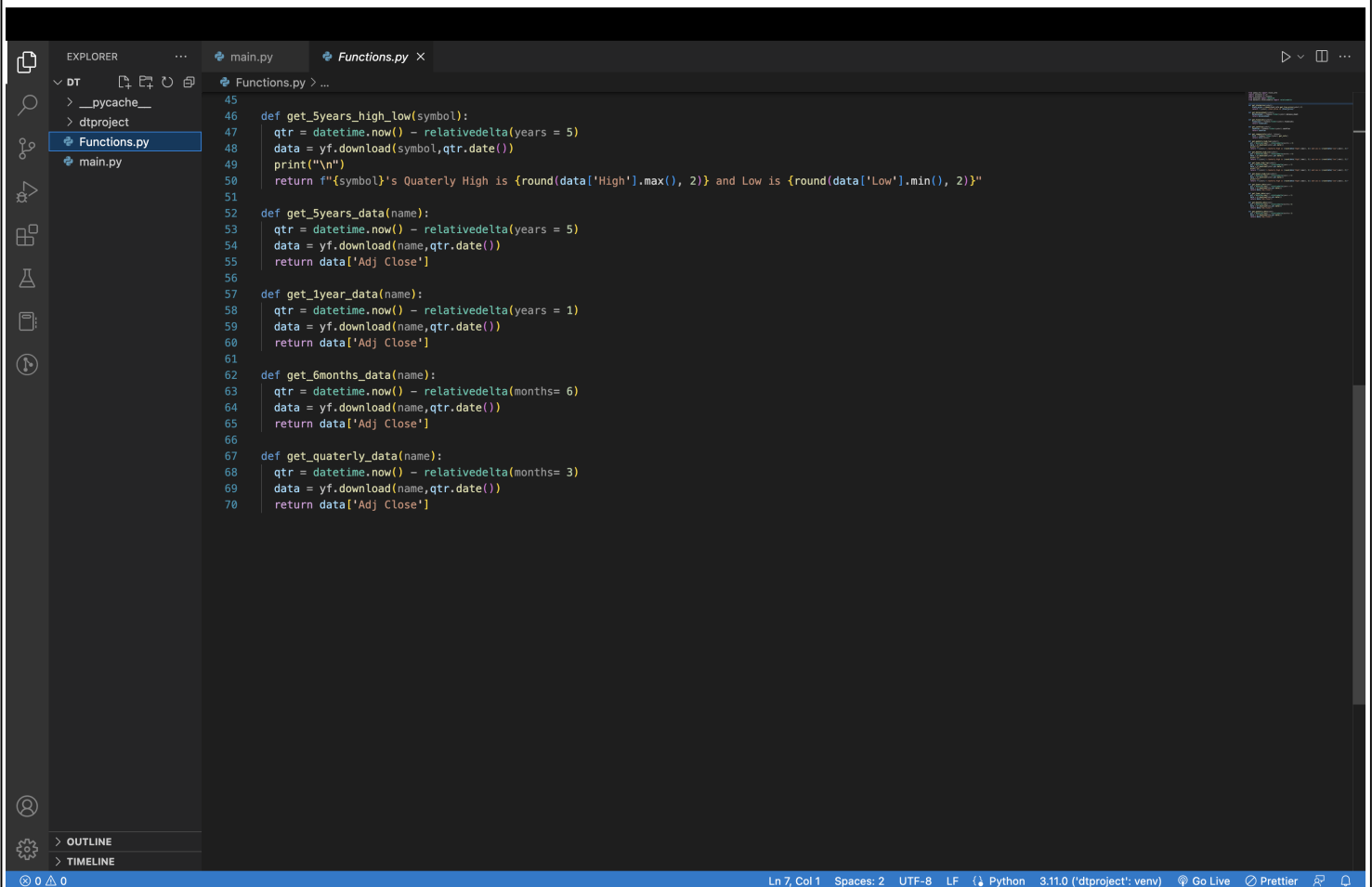


The image shows a VS Code editor window with a dark theme. The Explorer sidebar on the left shows a project structure with folders `DT`, `__pycache__`, and `dtproject`. Inside `dtproject`, there are files `Functions.py` and `main.py`. The `Functions.py` file is open in the editor, showing the following Python code:

```
1 from yahoo_fin import stock_info
2 import yfinance as yf
3 import yfinance as finance
4 from datetime import datetime
5 from dateutil.relativedelta import relativedelta
6
7
8 def get_stockprice(symbol):
9     stock_price = round(stock_info.get_live_price(symbol),2)
10    return f"{symbol} stock price is {stock_price}"
11
12 def get_balancesheet(symbol):
13     balancesheet = finance.Ticker(symbol).balance_sheet
14     return balancesheet
15
16 def get_financials(symbol):
17     financials = finance.Ticker(symbol).financials
18     return financials
19
20 def get_cashflow(symbol):
21     cashflow = finance.Ticker(symbol).cashflow
22     return cashflow
23
24 def get_companyinfo(symbol, toknow):
25     info = finance.Ticker(symbol).get_info()
26     return info[toknow]
27
28 def get_quaterly_high_low(symbol):
29     qtr = datetime.now() - relativedelta(months = 3)
30     data = yf.download(symbol,qtr.date())
31     print('\n')
32     return f"{symbol}'s Quaterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"
33
34 def get_6months_high_low(symbol):
35     qtr = datetime.now() - relativedelta(months = 6)
36     data = yf.download(symbol,qtr.date())
37     print('\n')
38     return f"{symbol}'s Quaterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"
39
40 def get_1year_high_low(symbol):
41     qtr = datetime.now() - relativedelta(years = 1)
42     data = yf.download(symbol,qtr.date())
43     print("\n")
44     return f"{symbol}'s Quaterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"
45
46 def get_5years_high_low(symbol):
47     qtr = datetime.now() - relativedelta(years = 5)
48     data = yf.download(symbol,qtr.date())
```

The status bar at the bottom indicates the cursor is at line 7, column 1, with 2 spaces, UTF-8 encoding, LF line endings, and the Python 3.11.0 interpreter from the `dtproject` virtual environment. Other icons for Go Live, Prettier, and a search icon are also visible.

➤ Python Code:



The screenshot shows a VS Code editor with a dark theme. The Explorer sidebar on the left shows a project structure with folders `DT` and `dtproject`, and files `__pycache__`, `Functions.py`, and `main.py`. The `Functions.py` file is selected and open in the editor. The code defines five functions for fetching financial data using `yfinance` (`yf`).

```
45
46 def get_5years_high_low(symbol):
47     qtr = datetime.now() - relativedelta(years = 5)
48     data = yf.download(symbol,qtr.date())
49     print("\n")
50     return f"{symbol}'s Quarterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"
51
52 def get_5years_data(name):
53     qtr = datetime.now() - relativedelta(years = 5)
54     data = yf.download(name,qtr.date())
55     return data['Adj Close']
56
57 def get_1year_data(name):
58     qtr = datetime.now() - relativedelta(years = 1)
59     data = yf.download(name,qtr.date())
60     return data['Adj Close']
61
62 def get_6months_data(name):
63     qtr = datetime.now() - relativedelta(months= 6)
64     data = yf.download(name,qtr.date())
65     return data['Adj Close']
66
67 def get_quaterly_data(name):
68     qtr = datetime.now() - relativedelta(months= 3)
69     data = yf.download(name,qtr.date())
70     return data['Adj Close']
```

The status bar at the bottom indicates the current cursor position is Line 7, Column 1. It also shows the file encoding as UTF-8, the language as Python, and the environment as `3.11.0 (dtproject: venv)`. Other icons for Go Live, Prettier, and a bell are also present.

Deliverables

Data analytics, programing and algorithms have proven that they are very useful to us in this world. With the help of these we have made a program which helps us in analyzing stock of company, current price of the stock, net worth, profit, revenue and graphical representation of data. With the help of these investing will become easier.