SYNOPSIS

on

FUNDAMENTAL STOCK ANALYZER

in partial fulfilment for the award of the degree of

BACHELOR OF ENGINEERING

IN

COMPUTER SCIENCE

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ACADEMIC UNIT – 4

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.
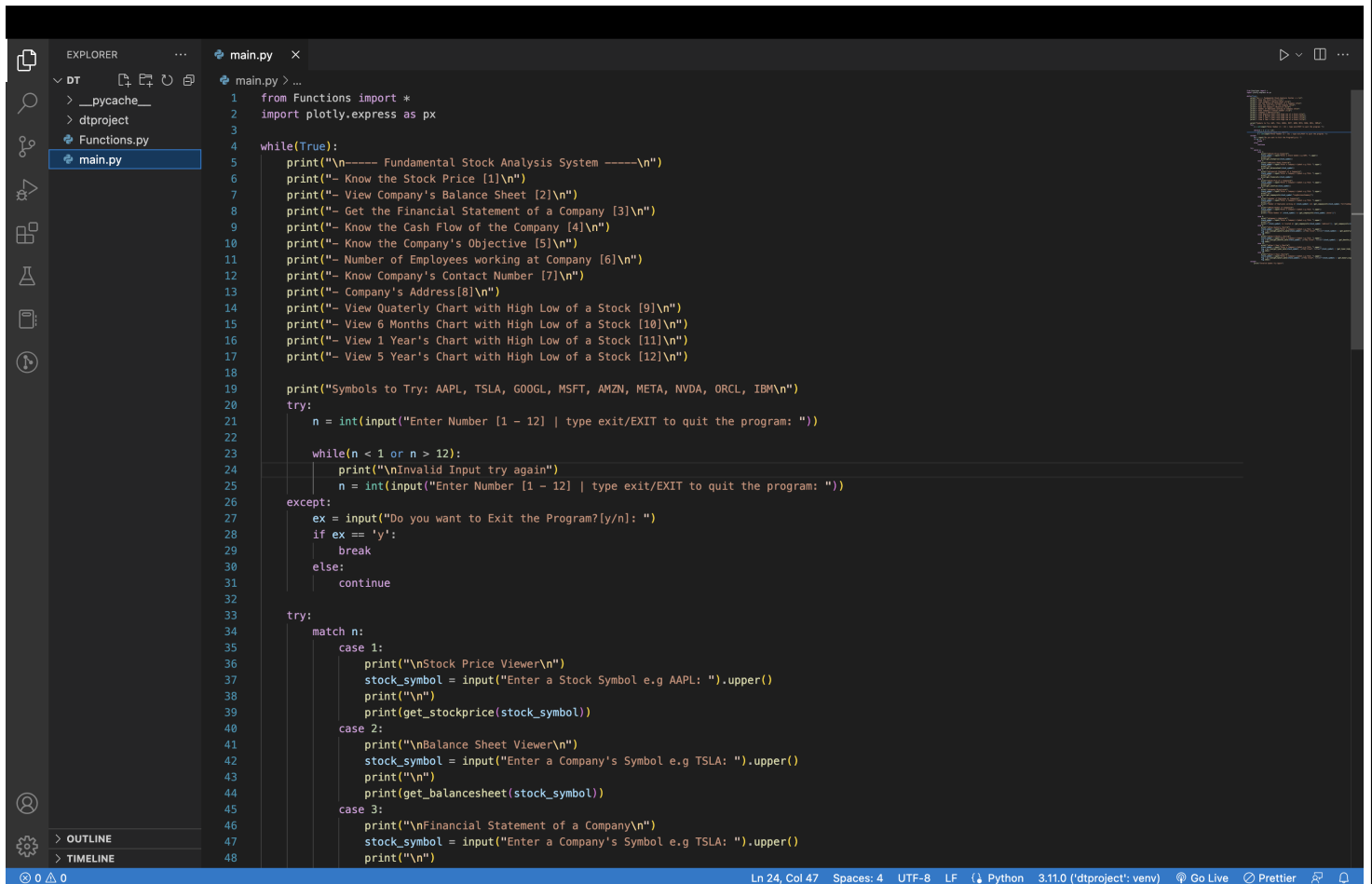
PROBLEM STATEMENT:

 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
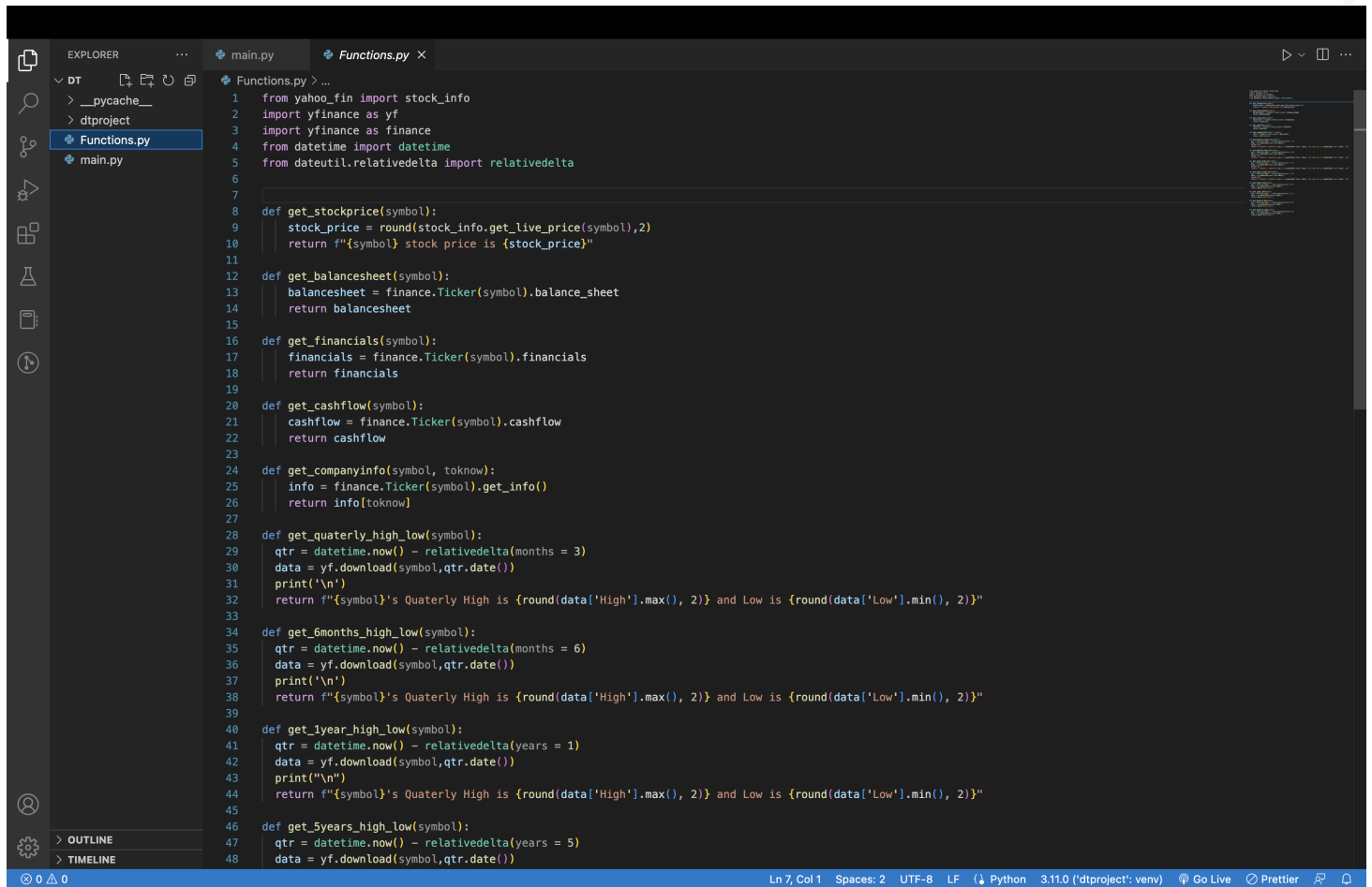- Quarterly or yearly profit, revenue and net worth.

➤ Python Code:

```python
from Functions import *
import plotly.express as px

while(True):
    print("\n----- Fundamental Stock Analysis System -----\n")
    print("- Know the Stock Price [1]\n")
    print("- View Company's Balance Sheet [2]\n")
    print("- Get the Financial Statement of a Company [3]\n")
    print("- Know the Cash Flow of the Company [4]\n")
    print("- Know the Company's Objective [5]\n")
    print("- Number of Employees working at Company [6]\n")
    print("- Know Company's Contact Number [7]\n")
    print("- Company's Address[8]\n")
    print("- View Quaterly Chart with High Low of a Stock [9]\n")
    print("- View 6 Months Chart with High Low of a Stock [10]\n")
    print("- View 1 Year's Chart with High Low of a Stock [11]\n")
    print("- View 5 Year's Chart with High Low of a Stock [12]\n")

    print("Symbols to Try: AAPL, TSLA, GOOGL, MSFT, AMZN, META, NVDA, ORCL, IBM\n")
    try:
        n = int(input("Enter Number [1 - 12] | type exit/EXIT to quit the program: "))

        while(n < 1 or n > 12):
            print("\nInvalid Input try again")
            n = int(input("Enter Number [1 - 12] | type exit/EXIT to quit the program: "))
    except:
        ex = input("Do you want to Exit the Program?[y/n]: ")
        if ex == 'y':
            break
        else:
            continue

    try:
        match n:
            case 1:
                print("\nStock Price Viewer\n")
                stock_symbol = input("Enter a Stock Symbol e.g AAPL: ").upper()
                print("\n")
                print(get_stockprice(stock_symbol))
            case 2:
                print("\nBalance Sheet Viewer\n")
                stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
                print("\n")
                print(get_balancesheet(stock_symbol))
            case 3:
                print("\nFinancial Statement of a Company\n")
                stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
                print("\n")
```

➤ **Python Code:**


```python
        case 4:
            print("\nCash Flow of a Company\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            print("\n")
            print(get_cashflow(stock_symbol))
        case 5:
            print("\nCompany Objective\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            print("\n")
            print(get_companyinfo(stock_symbol,"longBusinessSummary"))
        case 6:
            print("\nNumber of Employees at Company\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            print("\n")
            print(f"Number of Employees working at {stock_symbol} are {get_companyinfo(stock_symbol,'fullTimeEmployees')}")
        case 7:
            print("\nPhone Number of Company\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            print("\n")
            print(f"Phone Number of {stock_symbol} is {get_companyinfo(stock_symbol,'phone')}")

        case 8:
            print("\nCompany's Address\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            print("\n")
            print(f"{stock_symbol} is located at {get_companyinfo(stock_symbol,'address1')}, {get_companyinfo(stock_symbol,'city')}, {get_companyinf
        case 9:
            print("\nView Quaterly Chart\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            fig = px.line(get_quaterly_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_quaterly_high_low(stock_symbol)}")
            fig.show()
        case 10:
            print("\nView 6 Month's Chart\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            fig = px.line(get_6months_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_6months_high_low(stock_symbol)}")
            fig.show()
        case 11:
            print("\nView 1 Year's Chart\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            fig = px.line(get_1year_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_1year_high_low(stock_symbol)}")
            fig.show()
        case 12:
            print("\nView 5 Years Chart\n")
            stock_symbol = input("Enter a Company's Symbol e.g TSLA: ").upper()
            fig = px.line(get_5years_data(stock_symbol), y="Adj Close", title=f"{stock_symbol} | {get_5years_high_low(stock_symbol)}")
            fig.show()
    except:
        print("Invalid Symbol Try Again")
```

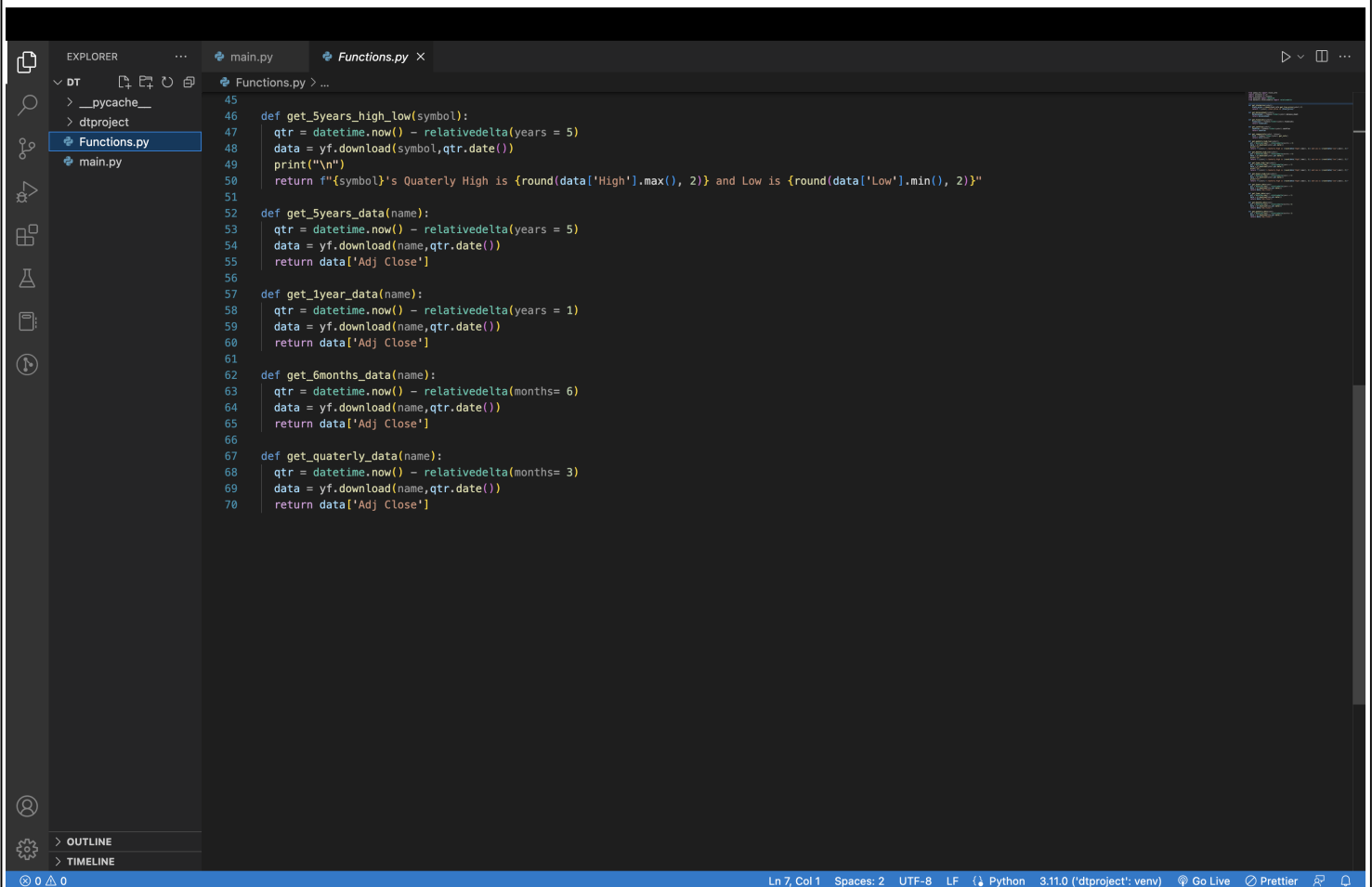# ➢ Python Code:

```python
from yahoo_fin import stock_info
import yfinance as yf
import yfinance as finance
from datetime import datetime
from dateutil.relativedelta import relativedelta


def get_stockprice(symbol):
    stock_price = round(stock_info.get_live_price(symbol),2)
    return f"{symbol} stock price is {stock_price}"

def get_balancesheet(symbol):
    balancesheet = finance.Ticker(symbol).balance_sheet
    return balancesheet

def get_financials(symbol):
    financials = finance.Ticker(symbol).financials
    return financials

def get_cashflow(symbol):
    cashflow = finance.Ticker(symbol).cashflow
    return cashflow

def get_companyinfo(symbol, toknow):
    info = finance.Ticker(symbol).get_info()
    return info[toknow]

def get_quaterly_high_low(symbol):
    qtr = datetime.now() - relativedelta(months = 3)
    data = yf.download(symbol,qtr.date())
    print('\n')
    return f"{symbol}'s Quaterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"

def get_6months_high_low(symbol):
    qtr = datetime.now() - relativedelta(months = 6)
    data = yf.download(symbol,qtr.date())
    print('\n')
    return f"{symbol}'s Quaterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"

def get_1year_high_low(symbol):
    qtr = datetime.now() - relativedelta(years = 1)
    data = yf.download(symbol,qtr.date())
    print("\n")
    return f"{symbol}'s Quaterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"

def get_5years_high_low(symbol):
    qtr = datetime.now() - relativedelta(years = 5)
    data = yf.download(symbol,qtr.date())
```

EXPLORER

∨ DT
  > __pycache__
  > dtproject
  ✦ Functions.py
  ✦ main.py

main.py   ✦ Functions.py ✕

✦ Functions.py > ...

Ln 7, Col 1   Spaces: 2   UTF-8   LF   Python   3.11.0 ('dtproject': venv)   Go Live   Prettier

➢ Python Code:

```python
def get_5years_high_low(symbol):
  qtr = datetime.now() - relativedelta(years = 5)
  data = yf.download(symbol,qtr.date())
  print("\n")
  return f"{symbol}'s Quaterly High is {round(data['High'].max(), 2)} and Low is {round(data['Low'].min(), 2)}"

def get_5years_data(name):
  qtr = datetime.now() - relativedelta(years = 5)
  data = yf.download(name,qtr.date())
  return data['Adj Close']

def get_1year_data(name):
  qtr = datetime.now() - relativedelta(years = 1)
  data = yf.download(name,qtr.date())
  return data['Adj Close']

def get_6months_data(name):
  qtr = datetime.now() - relativedelta(months= 6)
  data = yf.download(name,qtr.date())
  return data['Adj Close']

def get_quaterly_data(name):
  qtr = datetime.now() - relativedelta(months= 3)
  data = yf.download(name,qtr.date())
  return data['Adj Close']
```

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.