

STOCK MARKET OBSERVER

OBJECTIVE

- TO GET INPUT FROM USER USING A GUI
- TO SEARCH THE PRICES USING YAHOO FINANCE API
- TO SHOW THE DATAFRAME DEVELOPED
- TO PRESENT A USER FRIENDLY PLOT OF THE DATA
- TO MAKE AN EXCEL FILE FOR THE SAME DATA
- TO STORE THE DATABASE IN A DATABASE

LANGUAGES USED

- PYTHON
- SQL

MODULES USED

- PANDAS
- DATETIME
- OS
- MAY
- MATPLOTLIB
- PANDAS DATAREADER
- TKINTER
- MYSQL-CONNECTOR
- GUI (SELF DEVELOPED)
- XLSXWRITER
- XLRD

PROJECT GITHUB REPOSITORY: I8PI/StockPrice

CREATED BY: **SOMSHUVRA BASU**

Main Program

```
import os
import xlswriter
import datetime as dt
from datetime import date, timedelta
import matplotlib.pyplot as plt
from matplotlib import style
import pandas as pd
import pandas_datareader.data as web
from tkinter import *
import mysql.connector as m
import tkinter.messagebox as mb
import GUI

if os.path.exists("StockPrices.xlsx"):
    os.remove("StockPrices.xlsx")
else:
    pass

GUI.loop()

style.use('ggplot')

#s_id = input("Enter Stock ID: ")
#s_name = input("Enter Stock Name: ")

def stock(s_id, s_name):

    start = dt.datetime(1985, 1, 1)
    today = date.today()

    df = web.DataReader(s_id, 'yahoo', start, today)
    dm = web.DataReader(s_id, 'yahoo', start, today)

    print(df)

    df['90ma'] = df['Adj Close'].rolling(window=90, min_periods=0).mean()
    df.dropna(inplace=True)

    ds = df[['Adj Close', '90ma']]

    workbook = xlswriter.Workbook('StockPrices.xlsx')
    ws = workbook.add_worksheet(s_name)

    row = 0
```

```

col = 0
j = 0
cp = len(dm)

dw = dm['Adj Close']
dq = df['90ma']

'''
for k in range(0,cp):
    lo=dw[k]
    p=dw.index[lo]
    datel.append(p)
'''

mov_avg = dq.values.tolist()
price = dw.values.tolist()

print(price)

ws.write(row, col + 1, 'AdjClose')
ws.write(row, col + 2, 'Moving')
ws.write(row, col + 0, 'Date')

datel=[]

d1 = date(1985, 1, 1)
d2 = date(2020, 6, 10)
delta = d2-d1
for k in range(delta.days + 1):
    c=d1+timedelta(days=k)
    datel.append(c)

for i in price:
    ws.write(row + 2, col + 0, datel[j])
    ws.write(row + 2, col + 1, price[j])
    ws.write(row + 2, col + 2, mov_avg[j])
    row += 1
    j += 1

workbook.close()

print(df)
print(ds)
print(datel)

ds.plot()
plt.show()
print("Please run sqlmod")

```

sid="^BSESN"

```
name="Sensex"  
stock(sid, name)
```

Graphic User Interface

```
from tkinter import *
import tkinter.messagebox as mb

def loop():

    a=Tk()
    a.resizable(0,0)
    #a.wm_attributes('-transparentcolor','white')
    a.geometry('900x550')
    a.title("I8PI Digital Solutions")
    a.iconphoto(False, PhotoImage(file="E:\Computer Science\Images\logo.png"))
    imag=PhotoImage(file="E:\Computer Science\Images\stock.png")
    b=Label(a, image=imag,width=950,height=550).pack()

    def sub():
        a.destroy()

    def clear():
        na.delete(0, END)
        nu.delete(0, END)
        da.delete(0, END)

    form=Label(a, text="STOCK MARKET OBSERVER", width=35, font=("bold",15)).place(x=250,y=20)

    var1 = IntVar()
    check=Checkbutton(a, text="Is It A Index", variable=var1, font=("underline",10), width=18
)
    check.place(x=280,y=100)

    stock_n=Label(a, text="Index Name Of Stock", width=20, font=("Times 32",10), padx=5, pady
=2)
    stock_n.place(x=280,y=150)

    start=Label(a, text="Enter Start Date", width=20, font=("Times 32",10), padx=5, pady=2).p
lace(x=280,y=225)

    end=Label(a, text="Enter End Date", width=20, font=("Times 32",10), padx=5, pady=2).place
(x=280,y=300)
```

```
namestock=Label(a, text="Enter Stock Name", width=20, font=("Times 32",10), padx=5, pady=
2)
namestock.place(x=280,y=375)

sid = StringVar()
na=Entry(relief=SOLID, textvariable=sid)
na.place(x=500,y=150)

stdate = StringVar()
nu=Entry(relief=SOLID, textvariable=stdate)
nu.place(x=500,y=225)

enddate = StringVar()
nc=Entry(relief=SOLID, textvariable=endate)
nc.place(x=500,y=300)

name= StringVar()
da=Entry(relief=SOLID, textvariable=name)
da.place(x=500,y=375)

sub=Button(a,text="Submit",width=20,bg="grey",fg="black",command=sub).place(x=275,y=450)

cl=Button(a,text="Clear",width=20,bg="grey",fg="black",command=clear).place(x=475,y=450)

print(str(sid), str(name), str(stdate), str(endate), str(var1))
a.mainloop()
```


DATABASE (MARIA-DB)

```
import xlrd
import mysql.connector as m

query = """INSERT INTO sensex (AdjClose, 90ma) VALUES(%s,%s)"""
book = xlrd.open_workbook("StockPrices.xlsx")
sheet = book.sheet_by_name("sensex")

for r in range(3, sheet.nrows):
    date =sheet.cell(r,0).value
    AdjClose =sheet.cell(r,1).value
    Moving =sheet.cell(r,2).value
    values = (AdjClose, Moving)

database = m.connect (host='localhost', user="root", passwd="1234", db="stock")
cursor = database.cursor()
cursor.execute(query, values)
cursor.close()
database.commit()

print ("complete")
```

OUTPUTS

- GUI

I8PI Digital Solutions

STOCK MARKET OBSERVER

☒ Is It A Index

Index Name Of Stock

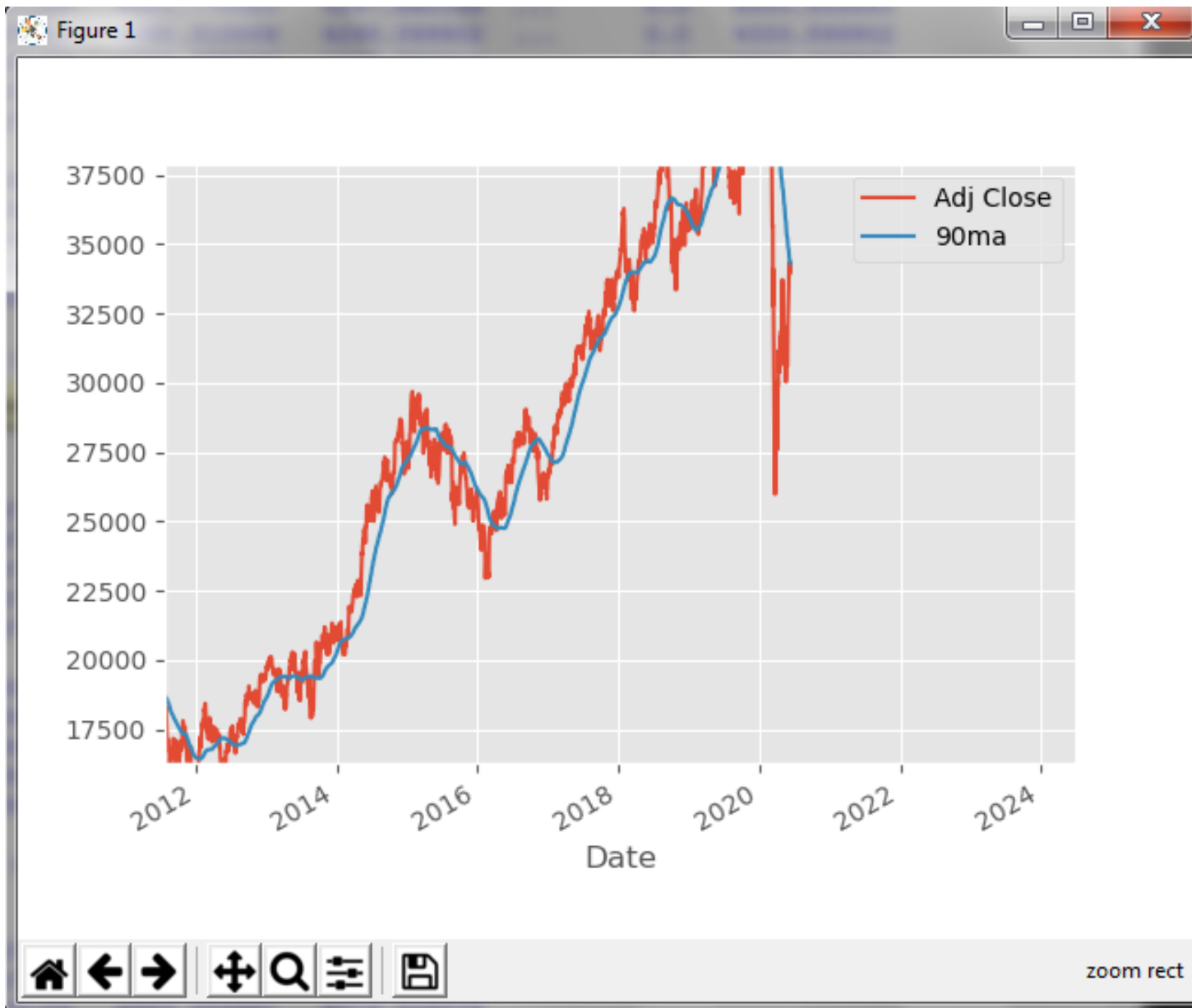
Enter Start Date

Enter End Date

Enter Stock Name

● PYPLOT





● PYTHON TERMINAL

```
*Python 3.8.2 Shell*
File Edit Shell Debug Options Window Help

      High      Low ... Volume      Adj Close
Date
1997-07-01  4301.770020  4247.660156 ...      0.0  4300.859863
1997-07-02  4395.310059  4295.399902 ...      0.0  4333.899902
1997-07-03  4393.290039  4299.970215 ...      0.0  4323.459961
1997-07-04  4347.589844  4300.580078 ...      0.0  4323.819824
1997-07-07  4391.009766  4289.490234 ...      0.0  4291.450195
...
2020-06-03  34488.691406  34027.500000 ... 18400.0  34109.539062
2020-06-04  34310.140625  33711.238281 ... 17900.0  33980.699219
2020-06-05  34405.429688  33958.019531 ... 24600.0  34287.238281
2020-06-08  34927.800781  34211.828125 ... 25700.0  34370.578125
2020-06-09  34811.289062  33881.191406 ...      0.0  33956.691406

[5642 rows x 6 columns]
Squeezed text (1161 lines).
      High      Low ...      Adj Close      90ma
Date
1997-07-01  4301.770020  4247.660156 ...  4300.859863  4300.859863
1997-07-02  4395.310059  4295.399902 ...  4333.899902  4317.379883
1997-07-03  4393.290039  4299.970215 ...  4323.459961  4319.406576
1997-07-04  4347.589844  4300.580078 ...  4323.819824  4320.509888
1997-07-07  4391.009766  4289.490234 ...  4291.450195  4314.697949
...
2020-06-03  34488.691406  34027.500000 ...  34109.539062  34624.861437
2020-06-04  34310.140625  33711.238281 ...  33980.699219  34540.992426
2020-06-05  34405.429688  33958.019531 ...  34287.238281  34462.808312
2020-06-08  34927.800781  34211.828125 ...  34370.578125  34387.866081
2020-06-09  34811.289062  33881.191406 ...  33956.691406  34305.313780

[5642 rows x 7 columns]
      Adj Close      90ma
Date
1997-07-01  4300.859863  4300.859863
1997-07-02  4333.899902  4317.379883
1997-07-03  4323.459961  4319.406576
1997-07-04  4323.819824  4320.509888
1997-07-07  4291.450195  4314.697949
...
Ln: 5 Col: 0
```

```
Python 3.8.2 Shell
File Edit Shell Debug Options Window Help
2020-06-10 34303.558594 33949.460938 ... 0.0 34159.191406

[5643 rows x 6 columns]
Squeezed text (749 lines).
      High      Low ... Adj Close      90ma
Date
1997-07-01 4301.770020 4247.660156 ... 4300.859863 4300.859863
1997-07-02 4395.310059 4295.399902 ... 4333.899902 4317.379883
1997-07-03 4393.290039 4299.970215 ... 4323.459961 4319.406576
1997-07-04 4347.589844 4300.580078 ... 4323.819824 4320.509888
1997-07-07 4391.009766 4289.490234 ... 4291.450195 4314.697949
...
2020-06-04 34310.140625 33711.238281 ... 33980.699219 34540.992426
2020-06-05 34405.429688 33958.019531 ... 34287.238281 34462.808312
2020-06-08 34927.800781 34211.828125 ... 34370.578125 34387.866081
2020-06-09 34811.289062 33881.191406 ... 33956.691406 34305.313780
2020-06-10 34303.558594 33949.460938 ... 34159.191406 34222.491558

[5643 rows x 7 columns]
      Adj Close      90ma
Date
1997-07-01 4300.859863 4300.859863
1997-07-02 4333.899902 4317.379883
1997-07-03 4323.459961 4319.406576
1997-07-04 4323.819824 4320.509888
1997-07-07 4291.450195 4314.697949
...
2020-06-04 33980.699219 34540.992426
2020-06-05 34287.238281 34462.808312
2020-06-08 34370.578125 34387.866081
2020-06-09 33956.691406 34305.313780
2020-06-10 34159.191406 34222.491558

[5643 rows x 2 columns]
Squeezed text (2919 lines).

===== RESTART: E:\Computer Science\Programming\Py Projects\StockPrice\sqlmod.py =====
complete
>>>
```


● DATABASE (maria-DB)

Unnamed\stock\sensex - HeidiSQL 10.2.0.5599

File Edit Search Tools Go to Help

Database filter Table filter Host: 127.0.0.1 Database: stock Table: sensex Data Query

stock.sensex: 5,642 rows total (appr >> Next) Show all Sorting (1) Columns (3/3) Filter

	AdjClose	90ma
(...)	34,159.1	34,222.5
(...)	4,323.46	4,319.41
(...)	4,323.82	4,320.51
(...)	4,291.45	4,314.7
(...)	4,306.39	4,313.31
(...)	4,404.69	4,326.37
(...)	4,378.37	4,332.87
(...)	4,321.98	4,331.66
(...)	4,225.02	4,320.99
(...)	4,221.02	4,311.91
(...)	4,183.42	4,301.2
(...)	4,193.61	4,292.92
(...)	4,124.81	4,280.91
(...)	4,154.28	4,272.47
(...)	4,186.29	4,267.09

X Filter: Regular expression

```
26 SHOW COLLATION;
27 SHOW ENGINES;
28 SELECT * FROM `stock`.`sensex` ORDER BY `Date` DESC LIMIT 1000;
29 SHOW CREATE TABLE `stock`.`sensex`;
30 SHOW TABLE STATUS LIKE 'sensex';
```

1:1 Connected: 00 MariaDB 10.4.12 Uptime: 03:47 h Server time: 2: Idle.

Command Prompt (MariaDB 10.4) - mysql -u root -p stock

```
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MariaDB server version for the right syntax to use near 'sen
sex' at line 1
MariaDB [stock]> show tables;
+-----+
| Tables_in_stock |
+-----+
| sensex          |
| tsla            |
+-----+
2 rows in set (0.099 sec)
MariaDB [stock]>
```

```
desc senssex' at line 1
MariaDB [stock]> desc senssex;
```

Field	Type	Null	Key	Default	Extra
Date	date	YES		NULL	
AdjClose	float	YES		NULL	
90ma	float	YES		NULL	

3 rows in set (0.005 sec)

CA. Command Prompt (MariaDB 10.4) - mysql -u root -p stock

NULL	38363.5	36064.2
NULL	38386.8	36101.9
NULL	38164.6	36134.4
NULL	37808.9	36163.9
NULL	38233.4	36201.9
NULL	38132.9	36235.1
NULL	38545.7	36272.9
NULL	38871.9	36313
NULL	39056.6	36353
NULL	38877.1	36387.5
NULL	38684.7	36423.1
NULL	38862.2	36463.8
NULL	38700.5	36505.2
NULL	38939.2	36545
NULL	38585.4	36579.1
NULL	38607	36611.2
NULL	38767.1	36640.1
NULL	38905.8	36670.2
NULL	39275.6	36703.9
NULL	39140.3	36737.3
NULL	38645.2	36768
NULL	38564.9	36804.2
NULL	39054.7	36841.7
NULL	38730.9	36883.6
NULL	39067.3	36927.2

CA. Command Prompt (MariaDB 10.4) - mysql -u root -p stock

NULL	31371.1	36263.8
NULL	32008.6	36157.5
NULL	31122.9	36041.5
NULL	31097.7	35928.7
NULL	30029	35799.8
NULL	30196.2	35674.6
NULL	30818.6	35565.1
NULL	30932.9	35454.7
NULL	30672.6	35341.9
NULL	30609.3	35221.5
NULL	31605.2	35110.4
NULL	32200.6	35003.1
NULL	32424.1	34897.2
NULL	33303.5	34802
NULL	33825.5	34711.9
NULL	34109.5	34624.9
NULL	33980.7	34541
NULL	34287.2	34462.8
NULL	34370.6	34387.9
NULL	33956.7	34305.3
NULL	34159.1	34222.5

5642 rows in set (0.048 sec)

MariaDB [stock]>

● EXCEL

The screenshot displays a Microsoft Excel spreadsheet titled "StockPrices - Microsoft Excel (Product Activation Failed)". The ribbon at the top includes tabs for File, Home, Insert, Page Layout, Formulas, Data, Review, and View. The active tab is "Home".

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
	Date	AdjClose	Moving												
1															
2															
3	31048	4300.86	4300.86												
4	31049	4333.9	4317.38												
5	31050	4323.46	4319.407												
6	31051	4323.82	4320.51												
7	31052	4291.45	4314.698												
8	31053	4306.39	4313.313												
9	31054	4404.69	4326.367												
10	31055	4378.37	4332.867												
11	31056	4321.98	4331.658												
12	31057	4225.02	4320.994												
13	31058	4221.02	4311.905												
14	31059	4183.42	4301.198												
15	31060	4193.61	4292.922												
16	31061	4124.81	4280.914												
17	31062	4154.28	4272.472												
18	31063	4186.29	4267.086												
19	31064	4251.13	4266.147												
20	31065	4226.37	4263.937												
21	31066	4189.81	4260.036												
22	31067	4181.48	4256.108												
23	31068	4217.58	4254.273												
24	31069	4244.89	4253.847												
25	31070	4305.76	4256.104												

The status bar at the bottom indicates "Ready" and shows the zoom level as 100%.

5630	36675	30196.17	35674.61
5631	36676	30818.61	35565.07
5632	36677	30932.9	35454.67
5633	36678	30672.59	35341.94
5634	36679	30609.3	35221.46
5635	36680	31605.22	35110.41
5636	36681	32200.59	35003.09
5637	36682	32424.1	34897.22
5638	36683	33303.52	34802
5639	36684	33825.53	34711.93
5640	36685	34109.54	34624.86
5641	36686	33980.7	34540.99
5642	36687	34287.24	34462.81
5643	36688	34370.58	34387.87
5644	36689	33956.69	34305.31
5645	36690	34159.05	34222.49