jupyter Course5 Project Last Checkpoint: 7 minutes ago (autosaved)

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Run Code

In [1]:

```
!pip install yfinance==0.2.4
#!pip install pandas==1.3.3
#!pip install plotly
!pip install nbformat==5.1.2
```

```
Requirement already satisfied: yfinance==0.2.4 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (0.2.4)
Requirement already satisfied: html5lib>=1.1 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from yfina
nce==0.2.4) (1.1)
Requirement already satisfied: pytz>=2022.5 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from yfinan
ce==0.2.4) (2022.7)
Requirement already satisfied: frozendict>=2.3.4 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from y
finance==0.2.4) (2.3.8)
Requirement already satisfied: requests>=2.26 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from yfin
ance==0.2.4) (2.28.1)
Requirement already satisfied: cryptography>=3.3.2 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from
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Requirement already satisfied: pandas>=1.3.0 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from yfina
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ifulsoup4>=4.11.1->yfinance==0.2.4) (2.3.2.post1)
Requirement already satisfied: cffi>=1.12 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from cryptogr
aphy>=3.3.2->yfinance==0.2.4) (1.15.1)
Requirement already satisfied: six>=1.9 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from html5lib>=
1.1->yfinance==0.2.4) (1.16.0)
Requirement already satisfied: webencodings in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from html5l
ib>=1.1->yfinance==0.2.4) (0.5.1)
Requirement already satisfied: python-dateutil>=2.8.1 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (f
rom pandas>=1.3.0->yfinance==0.2.4) (2.8.2)
Requirement already satisfied: certifi>=2017.4.17 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from
requests>=2.26->yfinance==0.2.4) (2022.12.7)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (fr
om requests>=2.26->yfinance==0.2.4) (1.26.14)
Requirement already satisfied: idna<4,>=2.5 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from reques
ts>=2.26->yfinance==0.2.4) (3.4)
Requirement already satisfied: charset-normalizer<3,>=2 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages
(from requests>=2.26->yfinance==0.2.4) (2.0.4)
Requirement already satisfied: pycparser in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from cffi>=1.1
2->cryptography>=3.3.2->yfinance==0.2.4) (2.21)
Requirement already satisfied: nbformat==5.1.2 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (5.1.2)
Requirement already satisfied: traitlets>=4.1 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from nbfo
rmat==5.1.2) (5.7.1)
Requirement already satisfied: jsonschema!=2.5.0,>=2.4 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages
(from nbformat==5.1.2) (4.17.3)
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format==5.1.2) (0.2.0)
Requirement already satisfied: jupyter-core in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from nbform
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Requirement already satisfied: attrs>=17.4.0 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from jsons
chema!=2.5.0,>=2.4->nbformat==5.1.2) (22.1.0)
Requirement already satisfied: pyrsistent!=0.17.0,!=0.17.1,!=0.17.2,>=0.14.0 in /Users/roshanpinto/anaconda3/lib/pyth
on3.10/site-packages (from jsonschema!=2.5.0,>=2.4->nbformat==5.1.2) (0.18.0)
Requirement already satisfied: platformdirs>=2.5 in /Users/roshanpinto/anaconda3/lib/python3.10/site-packages (from j
upyter-core->nbformat==5.1.2) (2.5.2)
```

In [2]:

```
import yfinance as yf
import pandas as pd
import requests
from bs4 import BeautifulSoup
import plotly.graph_objects as go
from plotly.subplots import make_subplots
```

Question 1: Use yfinance to Extract Stock Data

In [3]:

```
tesla = yf.Ticker('TSLA')
```

In [4]:

```
tesla_data = tesla.history(period="max")
```

In [5]:

```
tesla_data.reset_index(inplace=True)
tesla_data.head()
```

Out[5]:

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2010-06-29 00:00:00-04:00	1.266667	1.666667	1.169333	1.592667	281494500	0.0	0.0
1	2010-06-30 00:00:00-04:00	1.719333	2.028000	1.553333	1.588667	257806500	0.0	0.0
2	2010-07-01 00:00:00-04:00	1.666667	1.728000	1.351333	1.464000	123282000	0.0	0.0
3	2010-07-02 00:00:00-04:00	1.533333	1.540000	1.247333	1.280000	77097000	0.0	0.0
4	2010-07-06 00:00:00-04:00	1.333333	1.333333	1.055333	1.074000	103003500	0.0	0.0

Question 2: Use Webscraping to Extract Tesla Revenue Data

In [6]:

```
url = 'https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue'
html_data = requests.get(url).text
```

In [7]:

```
soup = BeautifulSoup(html_data,"html5lib")
```

In [8]:

```
tesla_revenue = pd.DataFrame(columns=['Date', 'Revenue'])

for table in soup.find_all('table'):

    if ('Tesla Quarterly Revenue' in table.find('th').text):
        rows = table.find_all('tr')

        for row in rows:
            col = row.find_all('td')

            if col != []:
                date = col[0].text
                revenue = col[1].text.replace(',','').replace('$','')

                tesla_revenue = tesla_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
```

```
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/544848982.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  tesla_revenue = tesla_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/544848982.py:15: FutureWarning: The frame.append m
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/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/544848982.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  tesla_revenue = tesla_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/544848982.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  tesla_revenue = tesla_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/544848982.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  tesla_revenue = tesla_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/544848982.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  tesla_revenue = tesla_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/544848982.py:15: FutureWarning: The frame.append m
```

In [9]:

```
tesla_revenue
```

Out[9]:

	Date	Revenue
0	2023-03-31	23329
1	2022-12-31	24318
2	2022-09-30	21454
3	2022-06-30	16934
4	2022-03-31	18756
5	2021-12-31	17719
6	2021-09-30	13757

7	2021-06-30	11958
8	2021-03-31	10389
9	2020-12-31	10744
10	2020-09-30	8771
11	2020-06-30	6036
12	2020-03-31	5985
13	2019-12-31	7384
14	2019-09-30	6303
15	2019-06-30	6350
16	2019-03-31	4541
17	2018-12-31	7226
18	2018-09-30	6824
19	2018-06-30	4002
20	2018-03-31	3409
21	2017-12-31	3288
22	2017-09-30	2985
23	2017-06-30	2790
24	2017-03-31	2696
25	2016-12-31	2285
26	2016-09-30	2298
27	2016-06-30	1270
28	2016-03-31	1147
29	2015-12-31	1214
30	2015-09-30	937
31	2015-06-30	955
32	2015-03-31	940
33	2014-12-31	957
34	2014-09-30	852
35	2014-06-30	769
36	2014-03-31	621
37	2013-12-31	615
38	2013-09-30	431
39	2013-06-30	405
40	2013-03-31	562
41	2012-12-31	306
42	2012-09-30	50
43	2012-06-30	27
44	2012-03-31	30
45	2011-12-31	39
46	2011-09-30	58
47	2011-06-30	58
48	2011-03-31	49
49	2010-12-31	36
50	2010-09-30	31
51	2010-06-30	28
52	2010-03-31	21
53	2009-12-31	
54	2009-09-30	46
55	2009-06-30	27

```
In [10]: tesla_revenue = tesla_revenue[tesla_revenue['Revenue'].astype(bool)]
```

```
In [11]: tesla_revenue.tail()
```

Out[11]:

	Date	Revenue
50	2010-09-30	31
51	2010-06-30	28
52	2010-03-31	21
54	2009-09-30	46
55	2009-06-30	27

Question 3: Use yfinance to Extract Stock Data

```
In [12]: gme = yf.Ticker('GME')
```

```
In [13]: gme_data = gme.history(period='max')
```

```
In [14]: gme_data.reset_index(inplace=True)
         gme_data.head()
```

Out[14]:

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2002-02-13 00:00:00-05:00	1.620128	1.693350	1.603296	1.691667	76216000	0.0	0.0
1	2002-02-14 00:00:00-05:00	1.712707	1.716074	1.670626	1.683250	11021600	0.0	0.0
2	2002-02-15 00:00:00-05:00	1.683250	1.687458	1.658001	1.674834	8389600	0.0	0.0
3	2002-02-19 00:00:00-05:00	1.666417	1.666417	1.578047	1.607504	7410400	0.0	0.0
4	2002-02-20 00:00:00-05:00	1.615921	1.662210	1.603296	1.662210	6892800	0.0	0.0

Question 4: Use Webscraping to Extract GME Revenue Data

```
In [15]: url = 'https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue'
         html_data = requests.get(url).text
```

```
In [16]: soup = BeautifulSoup(html_data,"html5lib")
```

```
In [17]: gme_revenue = pd.DataFrame(columns=['Date', 'Revenue'])

         for table in soup.find_all('table'):

             if ('GameStop Quarterly Revenue' in table.find('th').text):
                 rows = table.find_all('tr')

                 for row in rows:
                     col = row.find_all('td')

                     if col != []:
                         date = col[0].text
                         revenue = col[1].text.replace(',','').replace('$','')

                         gme_revenue = gme_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
```

```
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/326897550.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  gme_revenue = gme_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/326897550.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  gme_revenue = gme_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/326897550.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  gme_revenue = gme_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/326897550.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  gme_revenue = gme_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/326897550.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  gme_revenue = gme_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/326897550.py:15: FutureWarning: The frame.append m
ethod is deprecated and will be removed from pandas in a future version. Use pandas.concat instead.
  gme_revenue = gme_revenue.append({"Date":date, "Revenue":revenue}, ignore_index=True)
/var/folders/9b/v200xrsd5wnckbg55v_nlx900000gn/T/ipykernel_45666/326897550.py:15: FutureWarning: The frame.append m
```

```
In [18]: gme_revenue.tail()
```

Out[18]:

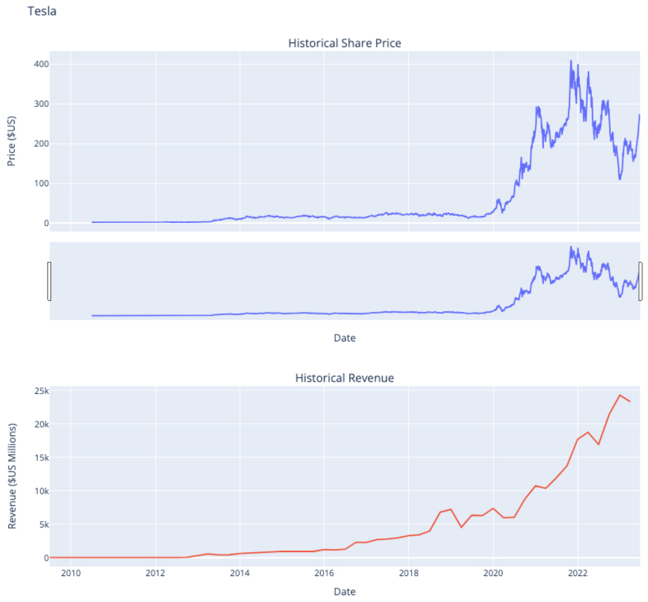
Out[18]:

	Date	Revenue
53	2010-01-31	3524
54	2009-10-31	1835
55	2009-07-31	1739
56	2009-04-30	1981
57	2009-01-31	3492

```
In [19]: def make_graph(stock_data, revenue_data, stock):
             fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Historical Share Price", "Historical Revenu
             fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data.Date, infer_datetime_format=True), y=stock_data.Close.astype("
             fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data.Date, infer_datetime_format=True), y=revenue_data.Revenue.as
             fig.update_xaxes(title_text="Date", row=1, col=1)
             fig.update_xaxes(title_text="Date", row=2, col=1)
             fig.update_yaxes(title_text="Price ($US)", row=1, col=1)
             fig.update_yaxes(title_text="Revenue ($US Millions)", row=2, col=1)
             fig.update_layout(showlegend=False,
             height=900,
             title=stock,
             xaxis_rangeslider_visible=True)
             fig.show()
```

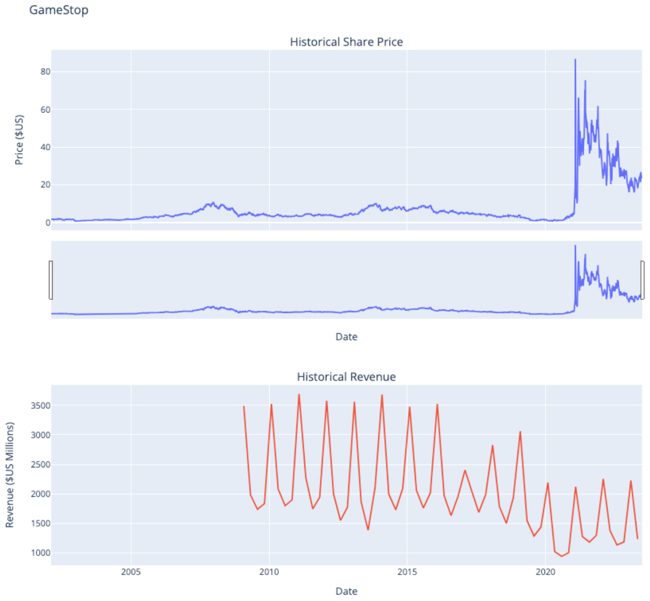
Question 5: Plot Tesla Stock Graph

```
In [20]: make_graph(tesla_data[['Date','Close']], tesla_revenue, 'Tesla')
```



Question 6: Plot GameStop Stock Graph

```
In [21]: make_graph(gme_data[['Date','Close']], gme_revenue, 'GameStop')
```



```
In [ ]:
```