

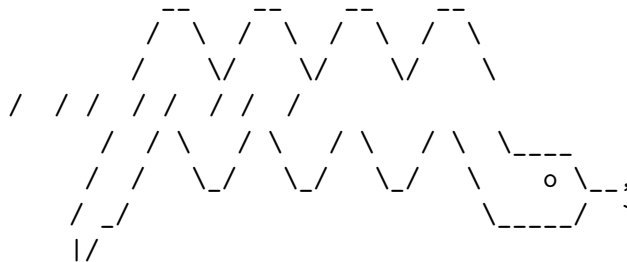
Final Assignment Test

April 23, 2024

```
[1]: !pip install yfinance==0.1.67
      !mamba install bs4==4.10.0 -y
      !pip install nbformat==4.2.0
```

```
Collecting yfinance==0.1.67
  Downloading yfinance-0.1.67-py2.py3-none-any.whl (25 kB)
Requirement already satisfied: pandas>=0.24 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.1.67) (1.3.5)
Requirement already satisfied: numpy>=1.15 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.1.67) (1.21.6)
Requirement already satisfied: requests>=2.20 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.1.67) (2.29.0)
Collecting multitasking>=0.0.7 (from yfinance==0.1.67)
  Downloading multitasking-0.0.11-py3-none-any.whl (8.5 kB)
Requirement already satisfied: lxml>=4.5.1 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
yfinance==0.1.67) (4.6.4)
Requirement already satisfied: python-dateutil>=2.7.3 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
pandas>=0.24->yfinance==0.1.67) (2.8.2)
Requirement already satisfied: pytz>=2017.3 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
pandas>=0.24->yfinance==0.1.67) (2023.3)
Requirement already satisfied: charset-normalizer<4,>=2 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.20->yfinance==0.1.67) (3.1.0)
Requirement already satisfied: idna<4,>=2.5 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.20->yfinance==0.1.67) (3.4)
Requirement already satisfied: urllib3<1.27,>=1.21.1 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.20->yfinance==0.1.67) (1.26.15)
Requirement already satisfied: certifi>=2017.4.17 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
requests>=2.20->yfinance==0.1.67) (2023.5.7)
```

Requirement already satisfied: six>=1.5 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from python-
dateutil>=2.7.3->pandas>=0.24->yfinance==0.1.67) (1.16.0)
Installing collected packages: multitasking, yfinance
Successfully installed multitasking-0.0.11 yfinance-0.1.67



mamba (1.4.2) supported by @QuantStack

GitHub: <https://github.com/mamba-org/mamba>

Twitter: <https://twitter.com/QuantStack>

Looking for: ['bs4==4.10.0']

[+] 0.0s		
pkgs/main/linux-64	0.0 B /	???.?MB
@ ???.?MB/s 0.0s[+] 0.1s		
pkgs/main/linux-64	0.0 B /	???.?MB
@ ???.?MB/s 0.1s		
pkgs/main/noarch	0.0 B /	???.?MB
@ ???.?MB/s 0.1s		
pkgs/r/linux-64	0.0 B /	???.?MB
@ ???.?MB/s 0.1s		
pkgs/r/noarch	0.0 B	
/ ???.?MB @ ???.?MB/s		
0.1s		
pkgs/main/noarch		
No change		
pkgs/main/linux-64		No change
pkgs/r/noarch		No change
pkgs/r/linux-64		No change

Pinned packages:

- python 3.7.*

Transaction

Prefix: /home/jupyterlab/conda/envs/python

All requested packages already installed

Collecting nbformat==4.2.0

Downloading nbformat-4.2.0-py2.py3-none-any.whl (153 kB)

153.3/153.3 kB

25.8 MB/s eta 0:00:00

Requirement already satisfied: ipython-genutils in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
nbformat==4.2.0) (0.2.0)

Requirement already satisfied: jsonschema!=2.5.0,>=2.4 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
nbformat==4.2.0) (4.17.3)

Requirement already satisfied: jupyter-core in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
nbformat==4.2.0) (4.12.0)

Requirement already satisfied: traitlets>=4.1 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
nbformat==4.2.0) (5.9.0)

Requirement already satisfied: attrs>=17.4.0 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (23.1.0)

Requirement already satisfied: importlib-metadata in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (4.11.4)

Requirement already satisfied: importlib-resources>=1.4.0 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (5.12.0)

Requirement already satisfied: pkgutil-resolve-name>=1.3.10 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (1.3.10)

Requirement already satisfied: pyparsing!=0.17.0,!0.17.1,!0.17.2,>=0.14.0 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (0.19.3)

Requirement already satisfied: typing-extensions in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from
jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (4.5.0)

Requirement already satisfied: zipp>=3.1.0 in
/home/jupyterlab/conda/envs/python/lib/python3.7/site-packages (from importlib-
resources>=1.4.0->jsonschema!=2.5.0,>=2.4->nbformat==4.2.0) (3.15.0)

Installing collected packages: nbformat

```

Attempting uninstall: nbformat
Found existing installation: nbformat 5.8.0
Uninstalling nbformat-5.8.0:
  Successfully uninstalled nbformat-5.8.0
ERROR: pip's dependency resolver does not currently take into account all
the packages that are installed. This behaviour is the source of the following
dependency conflicts.

jupyter-server 1.24.0 requires nbformat>=5.2.0, but you have nbformat 4.2.0
which is incompatible.

nbclient 0.7.4 requires nbformat>=5.1, but you have nbformat 4.2.0 which is
incompatible.

nbconvert 7.4.0 requires nbformat>=5.1, but you have nbformat 4.2.0 which is
incompatible.

Successfully installed nbformat-4.2.0

```

```

[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

```

```

[3]: import warnings
# Ignore all warnings
warnings.filterwarnings("ignore", category=FutureWarning)

```

```

[5]: def make_graph(stock_data, revenue_data, stock):
    fig = make_subplots(rows=2, cols=1, shared_xaxes=True,
↳ subplot_titles=("Historical Share Price", "Historical Revenue"),
↳ vertical_spacing = .3)
    stock_data_specific = stock_data[stock_data.Date <= '2021--06-14']
    revenue_data_specific = revenue_data[revenue_data.Date <= '2021-04-30']
    fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data_specific.Date,
↳ infer_datetime_format=True), y=stock_data_specific.Close.astype("float"),
↳ name="Share Price"), row=1, col=1)
    fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data_specific.Date,
↳ infer_datetime_format=True), y=revenue_data_specific.Revenue.
↳ astype("float"), name="Revenue"), row=2, col=1)
    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_rangeflider_visible=True)
fig.show()

```

```
[8]: tesla = yf.Ticker("TLA")
```

```
[9]: tesla_data = tesla.history(period="max")
```

```
[12]: tesla_data.reset_index(inplace=True)
tesla_data.head()
```

```
[12]:
```

	level_0	index	Date	Open	High	Low	Close	Volume	Dividends	\
0	0	0	1996-08-08	0.50	0.50	0.50	0.50	6000	0	
1	1	1	1996-08-09	0.50	0.50	0.50	0.50	0	0	
2	2	2	1996-08-12	0.46	0.52	0.46	0.52	7500	0	
3	3	3	1996-08-13	0.49	0.50	0.49	0.50	14000	0	
4	4	4	1996-08-14	0.52	0.52	0.50	0.50	16500	0	

Stock Splits

0	0
1	0
2	0
3	0
4	0

```
[13]: tesla_data.tail()
```

```
[13]:
```

	level_0	index	Date	Open	High	Low	Close	Volume	Dividends	\
5071	5071	5071	2018-01-25	0.52	0.52	0.52	0.52	10000	0	
5072	5072	5072	2018-01-26	0.52	0.52	0.52	0.52	0	0	
5073	5073	5073	2018-01-29	0.52	0.52	0.52	0.52	0	0	
5074	5074	5074	2018-01-30	0.52	0.55	0.52	0.55	12500	0	
5075	5075	5075	2018-02-22	0.52	0.52	0.52	0.52	3500	0	

Stock Splits

5071	0
5072	0
5073	0
5074	0
5075	0

```
[17]: url = "https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/
↳IBMDeveloperSkillsNetwork-PY0220EN-SkillsNetwork/labs/project/revenue.htm"
html_data= requests.get(url).text
```

```
[18]: type(html_data)
```

```
[18]: str
```

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

```
[22]: type(soup)
```

```
[22]: bs4.BeautifulSoup
```

```
[24]: tesla_revenue= pd.read_html(url, match="Tesla Quarterly Revenue",  
    ↪flavor='bs4')[0]  
tesla_revenue=tesla_revenue.rename(columns = {'Tesla Quarterly Revenue(Millions  
    ↪of US $)': 'Date', 'Tesla Quarterly Revenue(Millions of US $).1':  
    ↪'Revenue'}, inplace = False)  
tesla_revenue["Revenue"] = tesla_revenue["Revenue"].str.replace(",","").str.  
    ↪replace("$","")  
tesla_revenue.head()
```

```
[24]:
```

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

```
[25]: tesla_revenue.tail()
```

```
[25]:
```

	Date	Revenue
49	2010-06-30	28
50	2010-03-31	21
51	2009-12-31	NaN
52	2009-09-30	46
53	2009-06-30	27

```
[26]: gamestop = yf.Ticker("GAME")
```

```
[27]: gamestop_data = gamestop.history(period="max")
```

```
[28]: gamestop_data.reset_index(inplace=True)  
gamestop_data.head()
```

```
[28]:
```

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2018-01-26	2893.5	2893.5	2893.5	2893.5	0	0	0.0
1	2018-01-29	2893.5	2893.5	2893.5	2893.5	0	0	0.0
2	2018-01-30	2893.5	2893.5	2893.5	2893.5	0	0	0.0
3	2018-01-31	2893.5	2893.5	2893.5	2893.5	0	0	0.0
4	2018-02-01	2785.5	2785.5	2785.5	2785.5	0	0	0.0

```
[41]: url = "https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/
↳IBMDeveloperSkillsNetwork-PY0220EN-SkillsNetwork/labs/project/stock.html"
html_data= requests.get(url).text
```

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

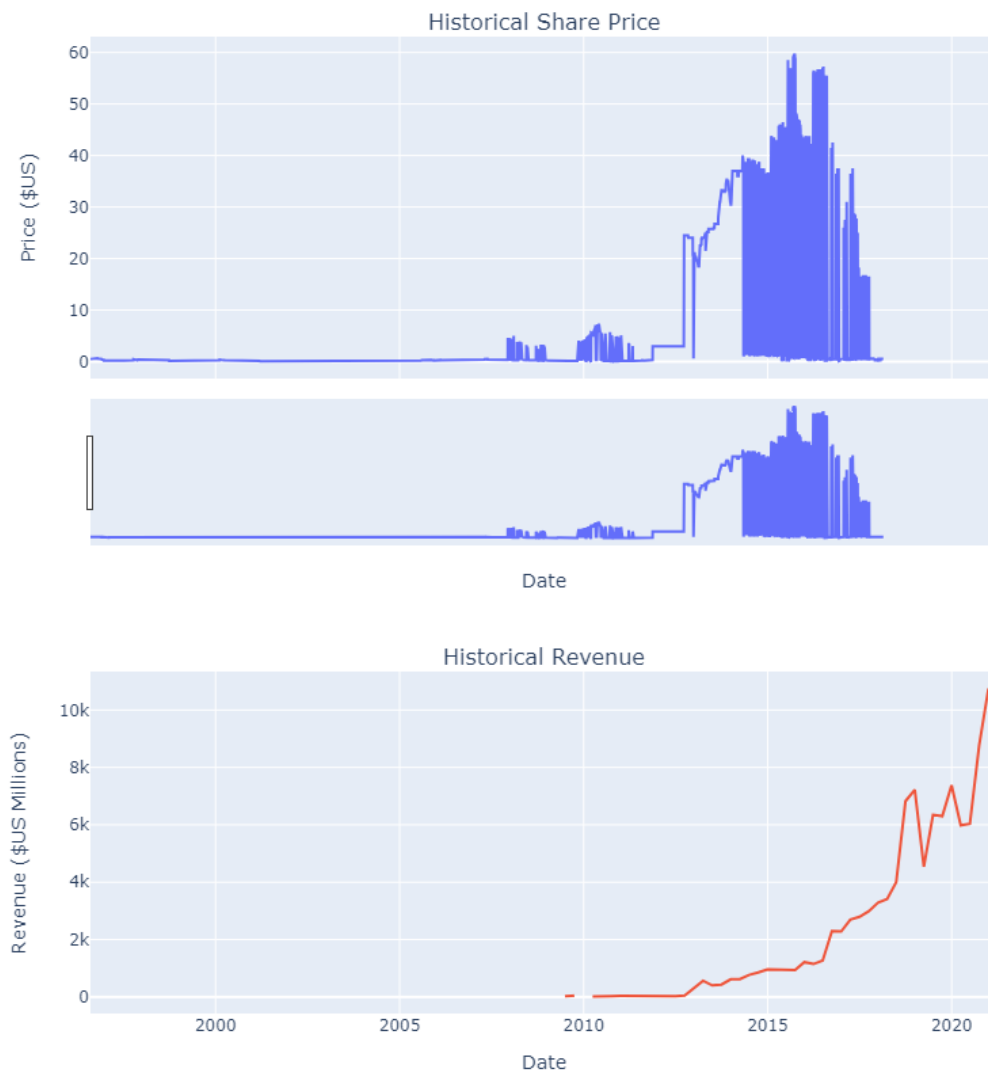
```
[44]: gme_revenue= pd.read_html(url, match="GameStop Quarterly Revenue",
↳flavor='bs4')[0]
gme_revenue=gme_revenue.rename(columns = {'GameStop Quarterly Revenue(Millions
↳of US $)': 'Date', 'GameStop Quarterly Revenue(Millions of US $).1':
↳'Revenue'}, inplace = False)
gme_revenue["Revenue"] = gme_revenue["Revenue"].str.replace(",","").str.
↳replace("$","")
```

```
[45]: gme_revenue.tail()
```

```
[45]:      Date Revenue
57  2006-01-31    1667
58  2005-10-31     534
59  2005-07-31     416
60  2005-04-30     475
61  2005-01-31     709
```

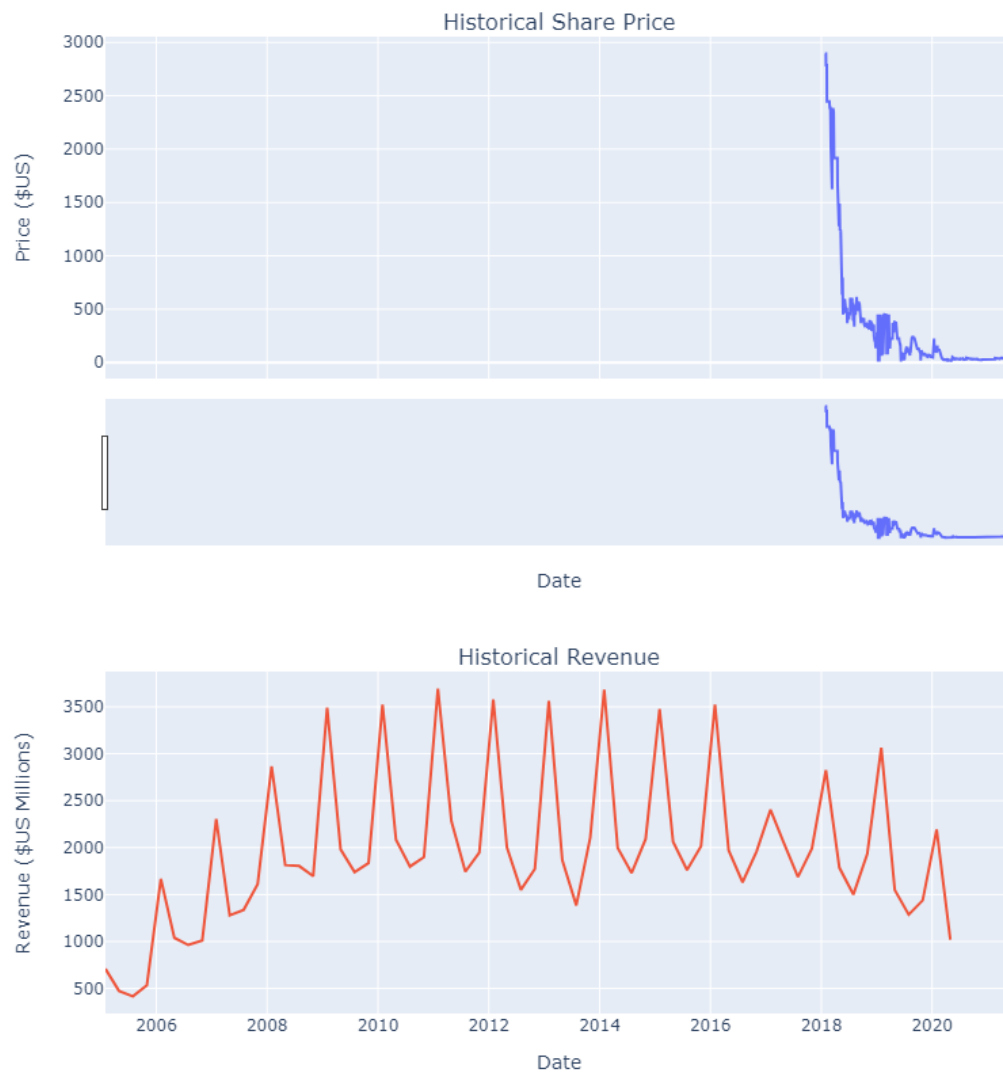
```
[49]: make_graph(tesla_data, tesla_revenue, "Tesla Stock Data")
```

Tesla Stock Data



```
[48]: make_graph(gamestop_data, gme_revenue, "Gamestop Stock Data")
```


Gamestop Stock Data



[]: