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```
!pip install yfinance==0.1.67
#!pip install pandas==1.3.3
#!pip install requests==2.26.0
!mamba install bs4==4.10.0 -y
#!pip install plotly==5.3.1
```

```
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
```

Define Graphing Function

```
def make_graph(stock_data, revenue_data, stock):
    fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Historical Share Price",
    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),
    fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data_specific.Date, infer_datetime_format=True)
    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 1: Use yfinance to Extract Stock Data

Using the Ticker function enter the ticker symbol of the stock we want to extract data on to create a ticker object. The stock is Tesla and its ticker symbol is TSLA.

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

Using the ticker object and the function history extract stock information and save it in a dataframe named tesla_data. Set the period parameter to max so we get information for the maximum amount of time.

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

Reset the index using the reset_index(inplace=True) function on the tesla_data DataFrame and display the first five rows of the tesla_data dataframe using the head function. Take a screenshot of the results and code from the beginning of Question 1 to the results below.

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

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

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

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2010-06-29	3.800	5.000	3.508	4.778	93831500	0	0.0
1	2010-06-30	5.158	6.084	4.660	4.766	85935500	0	0.0
2	2010-07-01	5.000	5.184	4.054	4.392	41094000	0	0.0
3	2010-07-02	4.600	4.620	3.742	3.840	25699000	0	0.0
4	2010-07-06	4.000	4.000	3.166	3.222	34334500	0	0.0

Question 2: Use Webscraping to Extract Tesla Revenue Data

Use the requests library to download the webpage https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue. Save the text of the response as a variable named html_data.

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

Parse the html data using beautiful_soup.

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

Using BeautifulSoup or the read_html function extract the table with Tesla Quarterly Revenue and store it into a dataframe named tesla_revenue. The dataframe should have columns Date and Revenue.

```
tesla_revenue=pd.read_html(url, match="Tesla Quarterly Revenue", flavor='bs4')[0]
tesla_revenue.head()
```

```
tesla_revenue=pd.read_html(url, match="Tesla Quarterly Revenue", flavor='bs4')[0]
tesla_revenue.head()
```

	Tesla Quarterly Revenue(Millions of US $)	Tesla Quarterly Revenue(Millions of US $).1
0	2022-06-30	$16,934
1	2022-03-31	$18,756
2	2021-12-31	$17,719
3	2021-09-30	$13,757
4	2021-06-30	$11,958

Execute the following line to remove the comma and dollar sign from the Revenue column.

```
tesla_revenue = tesla_revenue.rename(columns={"Tesla Quarterly Revenue(Millions of US $)":"Date","Tes
tesla_revenue["Revenue"] = tesla_revenue['Revenue'].str.replace(',|\$',"")
tesla_revenue.head()
```

```
tesla_revenue = tesla_revenue.rename(columns={"Tesla Quarterly Revenue(Millions of US $)":"Date","Tesla Quarterly Revenue(Millions of US $).1":"Revenue"}) #
tesla_revenue["Revenue"] = tesla_revenue['Revenue'].str.replace(',|\$',"")
tesla_revenue.head()
```

```
/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:2: FutureWarning: The default value of regex will change from True to False in a future version.
```

	Date	Revenue
0	2022-06-30	16934
1	2022-03-31	18756
2	2021-12-31	17719
3	2021-09-30	13757
4	2021-06-30	11958

Execute the following lines to remove an null or empty strings in the Revenue column.

```
tesla_revenue.dropna(inplace=True)

tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]
```

Display the last 5 row of the tesla_revenue dataframe using the tail function. Take a screenshot of the results.

```
tesla_revenue.tail()
```

```
tesla_revenue.dropna(inplace=True)

tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]
```

```
tesla_revenue.tail()
```

	Date	Revenue
47	2010-09-30	31
48	2010-06-30	28
49	2010-03-31	21
51	2009-09-30	46
52	2009-06-30	27

Question 3: Use yfinance to Extract Stock Data

Using the Ticker function enter the ticker symbol of the stock we want to extract data on to create a ticker object. The stock is GameStop and its ticker symbol is GME.

```
game_stop = yf.Ticker("GME")
```

Using the ticker object and the function history extract stock information and save it in a dataframe named gme_data. Set the period parameter to max so we get information for the maximum amount of time.

```
gme_data = game_stop.history(period="max")
```

Reset the index using the reset_index(inplace=True) function on the gme_data DataFrame and display the first five rows of the gme_data dataframe using the head function. Take a screenshot of the results and code from the beginning of Question 3 to the results below.

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

```
game_stop = yf.Ticker("GME")
```

```
gme_data = game_stop.history(period="max")
```

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

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2002-02-13	1.620129	1.693350	1.603296	1.691667	76216000	0.0	0.0
1	2002-02-14	1.712707	1.716074	1.670626	1.683250	11021600	0.0	0.0
2	2002-02-15	1.683251	1.687459	1.658002	1.674835	8389600	0.0	0.0
3	2002-02-19	1.666418	1.666418	1.578047	1.607504	7410400	0.0	0.0
4	2002-02-20	1.615921	1.662210	1.603296	1.662210	6892800	0.0	0.0

Question 4: Use Webscraping to Extract GME Revenue Data

Use the requests library to download the webpage https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue. Save the text of the response as

a variable named html_data.

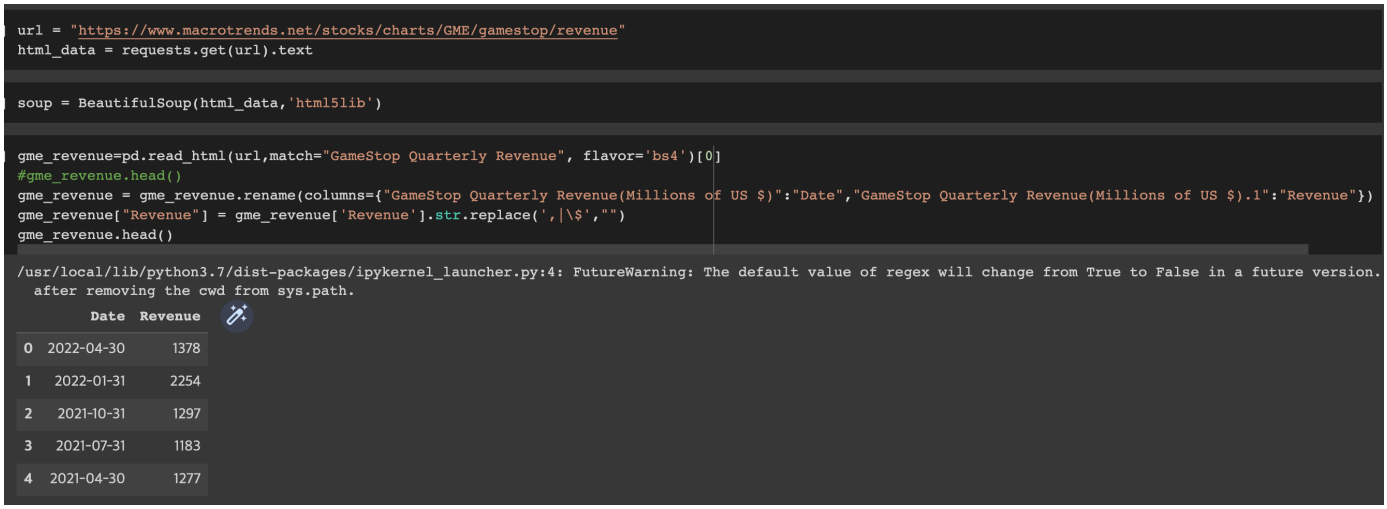
```
url = "https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue"
html_data = requests.get(url).text
```

Parse the html data using beautiful_soup.

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

Using BeautifulSoup or the read_html function extract the table with GameStop Quarterly Revenue and store it into a dataframe named gme_revenue. The dataframe should have columns Date and Revenue. Make sure the comma and dollar sign is removed from the Revenue column using a method similar to what you did in Question 2.

```
gme_revenue=pd.read_html(url,match="GameStop Quarterly Revenue", flavor='bs4')[0]
#gme_revenue.head()
gme_revenue = gme_revenue.rename(columns={"GameStop Quarterly Revenue(Millions of US $)":"Date","Game
gme_revenue["Revenue"] = gme_revenue['Revenue'].str.replace(',|\$',"")
gme_revenue.head()
```



```
url = "https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue"
html_data = requests.get(url).text

soup = BeautifulSoup(html_data,'html5lib')

gme_revenue=pd.read_html(url,match="GameStop Quarterly Revenue", flavor='bs4')[0]
#gme_revenue.head()
gme_revenue = gme_revenue.rename(columns={"GameStop Quarterly Revenue(Millions of US $)":"Date","GameStop Quarterly Revenue(Millions of US $).1":"Revenue"})
gme_revenue["Revenue"] = gme_revenue['Revenue'].str.replace(',|\$',"")
gme_revenue.head()

/usr/local/lib/python3.7/dist-packages/ipykernel_launcher.py:4: FutureWarning: The default value of regex will change from True to False in a future version.
  after removing the cwd from sys.path.
```

	Date	Revenue
0	2022-04-30	1378
1	2022-01-31	2254
2	2021-10-31	1297
3	2021-07-31	1183
4	2021-04-30	1277

Display the last five rows of the gme_revenue dataframe using the tail function. Take a screenshot of the results.

```
gme_revenue.dropna(inplace=True)
gme_revenue = gme_revenue[gme_revenue['Revenue'] != ""]

gme_revenue.tail()
```

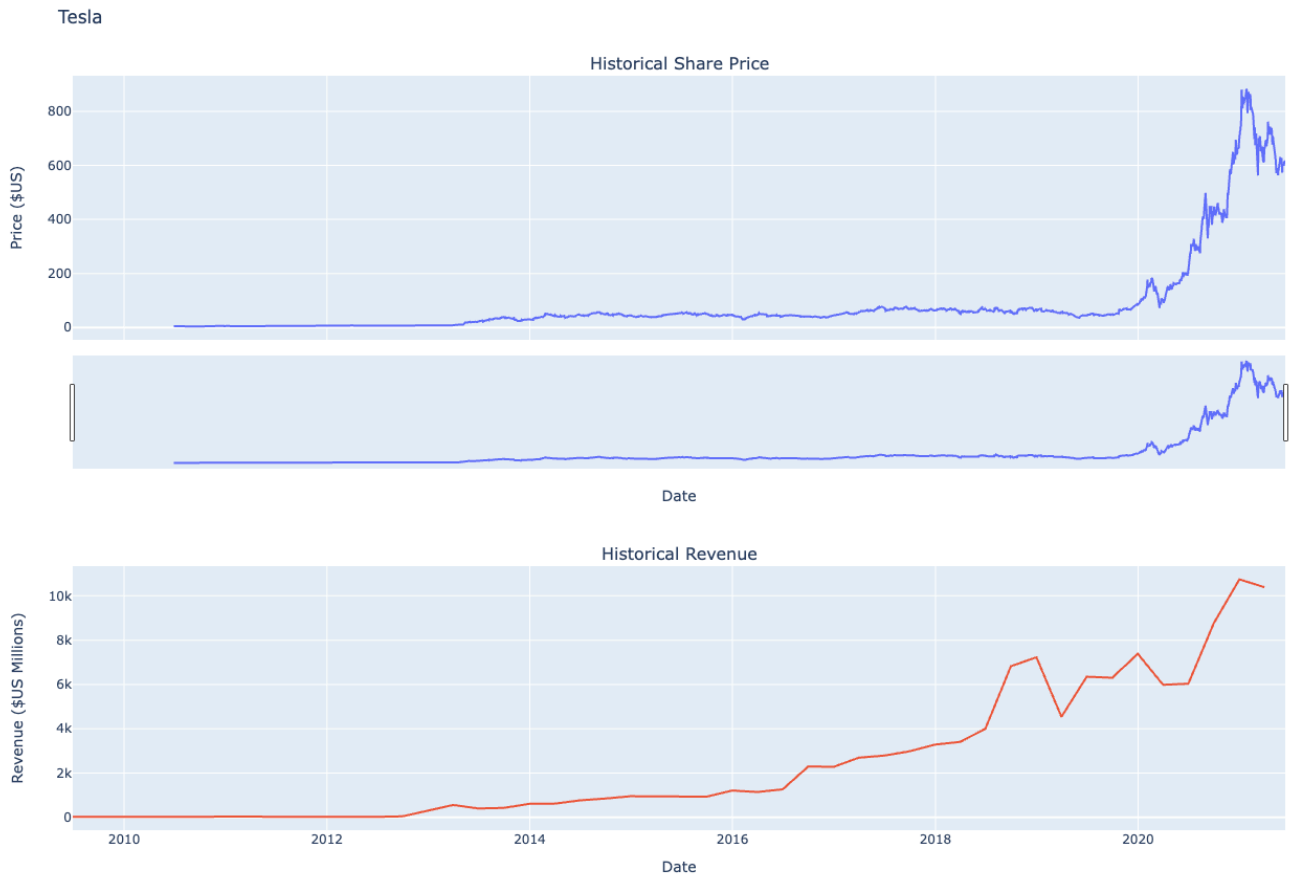
```
gme_revenue.dropna(inplace=True)
gme_revenue = gme_revenue[gme_revenue['Revenue'] != ""]

gme_revenue.tail()
```

	Date	Revenue
49	2010-01-31	3524
50	2009-10-31	1835
51	2009-07-31	1739
52	2009-04-30	1981
53	2009-01-31	3492

Question 5: Plot Tesla Stock Graph

Use the make_graph function to graph the Tesla Stock Data, also provide a title for the graph. The structure to call the make_graph function is make_graph(tesla_data, tesla_revenue, 'Tesla'). Note the graph will only show data upto June 2021.

```
make_graph(tesla_data, tesla_revenue, 'Tesla')
```



Question 6: Plot GameStop Stock Graph

Use the make_graph function to graph the GameStop Stock Data, also provide a title for the graph. The structure to call the make_graph function is make_graph(gme_data, gme_revenue, 'GameStop').

Note the graph will only show data upto June 2021.

```
make_graph(gme_data, gme_revenue, 'GameStop')
```