python project for data science

In [ ]:
```
#!pip install pandas
#!pip install requests
!pip install bs4
!pip install plotly
!pip install yfinance
#!pip install pandas
```

```
Requirement already satisfied: bs4 in c:\users\sherawali\anaconda3\lib\site-packages (0.0.1)
Requirement already satisfied: beautifulsoup4 in c:\users\sherawali\anaconda3\lib\site-packag
es (from bs4) (4.9.1)
Requirement already satisfied: soupsieve>1.2 in c:\users\sherawali\anaconda3\lib\site-package
s (from beautifulsoup4->bs4) (2.0.1)
```

In [ ]:
```
import yfinance as yf
import requests
import pandas as pd
from bs4 import BeautifulSoup
import matplotlib.pyplot as plt
import plotly.graph_objects as go
from plotly.subplots import make_subplots
```

In [10]:
```
Tesla= yf.Ticker('TSLA')
```

In [11]:
```
tesla_data = Tesla.history(period = "max")
```

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

Out[12]:

	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

In [13]:
```
url = "https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue"
html_data = requests.get(url).text
```

In [15]:
```
response = BeautifulSoup(html_data, "html.parser")
response.find_all('title')
```

Out[15]:
```
[<title>Tesla Revenue 2009-2021 | TSLA | MacroTrends</title>]
```

In [16]:
```
tesla_revenue = pd.DataFrame(columns = ['Date', 'Revenue'])

for row in soup.find_all("tbody")[1].find_all("tr"):
    col = row.find_all("td")
    date = col[0].text
    revenue = col[1].text.replace("$", "").replace(",", "")

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

In [17]:
```
tesla_revenue.dropna(inplace=True)
tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]
```

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

Out[18]:

	Date	Revenue
42	2010-09-30	31
43	2010-06-30	28
44	2010-03-31	21
46	2009-09-30	46
47	2009-06-30	27

In [19]:
```
GameStop = yf.Ticker("GME")
```

In [20]:
```
gme_data = GameStop.history(period = 'max')
```

In [21]:
```
gme_data.reset_index(inplace = True)
gme_data.head()
```

Out[21]:

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2002-02-13	6.480513	6.773399	6.413183	6.766666	19054000	0.0	0.0
1	2002-02-14	6.850831	6.864296	6.682506	6.733003	2755400	0.0	0.0
2	2002-02-15	6.733001	6.749833	6.632006	6.699336	2097400	0.0	0.0
3	2002-02-19	6.665671	6.665671	6.312189	6.430017	1852600	0.0	0.0
4	2002-02-20	6.463681	6.648838	6.413183	6.648838	1723200	0.0	0.0

In [22]:
```
url = "https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue"
html_data = requests.get(url).text
```

In [23]:
```
response=BeautifulSoup(html_data,'html.parser')
response.find_all('title')
```

Out[23]:
```
[<title>GameStop Revenue 2006-2021 | GME | MacroTrends</title>]
```

In [24]:
```
gme_revenue = pd.DataFrame(columns = ['Date', 'Revenue'])

for row in response.find_all("tbody")[1].find_all("tr"):
    col = row.find_all("td")
    date = col[0].text
    revenue = col[1].text.replace("$", "").replace(",", "")

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

In [25]:
```
tesla_revenue.dropna(inplace=True)
tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]
gme_revenue.tail()
```

Out[25]:

	Date	Revenue
60	2006-01-31	1667
61	2005-10-31	534
62	2005-07-31	416
63	2005-04-30	475
64	2005-01-31	709

In [41]:
```
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)
    fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data.Date, infer_datetime_format=True),
y=stock_data.Close.astype("float"), name="Share Price"), row=1, col=1)
    fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data.Date, infer_datetime_format=True
), y=revenue_data.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_rangeslider_visible=True)
    fig.show()
```

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

In [ ]:
```

```