Extracting and Visualizing Stock Data

Description

Extracting essential data from a dataset and displaying it is a necessary part of data science; therefore individuals can make correct decisions based on the data. In this project, I will extract some stock data, I will then display this data in a graph.

In [1]:

```
#!pip install yfinance
#!pip install pandas
#!pip install requests
#!pip install bs4
#!pip install plotly
```

You will require the following libraries:

In [2]:

```
import pandas as pd
import yfinance as yf
import numpy as np
import requests
from bs4 import BeautifulSoup
import matplotlib.pyplot as plt
%matplotlib inline
```

Question 1: Use yfinance to Extract Tesla 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	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

In [6]:

```
url = "https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue"
```

In [7]:

```
html_data = requests.get(url).text
```

In [8]:

```
soup = BeautifulSoup(html_data, "html.parser")
soup.find_all('title')
```

Out[8]:

```
[<title>Tesla Revenue 2010-2022 | TSLA | MacroTrends</title>]
```

In [9]:

```
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_i
```

In [10]:

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

In [11]:

```
tesla_revenue.tail()
```

Out[11]:

	Date	Revenue
46	2010-09-30	31
47	2010-06-30	28
48	2010-03-31	21
50	2009-09-30	46
51	2009-06-30	27

Question 3: Use yfinance to Extract GME Stock Data

In [12]:

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

In [13]:

```
gamestop_data = gamestop.history(period="max")
```

In [14]:

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

Out[14]:

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2002-02-13	6.480514	6.773400	6.413183	6.766666	19054000	0.0	0.0
1	2002-02-14	6.850829	6.864295	6.682504	6.733002	2755400	0.0	0.0

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
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

Question 4: Use Webscraping to Extract GME Revenue Data

In [15]:

```
url1 = "https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue"
```

In [16]:

```
html_data = requests.get(url1).text
```

In [17]:

```
soup = BeautifulSoup(html_data, "html.parser")
soup.find_all('title')
```

Out[17]:

```
[<title>GameStop Revenue 2010-2022 | GME | MacroTrends</title>]
```

In [18]:

```
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}, ig
```

In [19]:

```
gme_revenue.tail()
```

Out[19]:

	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

In [20]:

```
import plotly.graph_objects as go
from plotly.subplots import make_subplots
```

In [21]:

```
def make_graph(stock_data, revenue_data, stock):
    fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Historica
    fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data.Date, infer_datetime_format=
    fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data.Date, infer_datetime_forma
    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 [22]:

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

Question 6: Plot GameStop Stock Graph

In [23]:

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

In [24]:

```
print("Completed")
```

```
Completed
```

In [ ]: