Question 1 Use yfinance to Extract Stock Data

In [5]:
```
pip install yfinance
```

Requirement already satisfied: yfinance in c:\users\91939\anaconda3\lib\site-pack
ages (0.2.40)Note: you may need to restart the kernel to use updated packages.

Requirement already satisfied: pandas>=1.3.0 in c:\users\91939\anaconda3\lib\site
-packages (from yfinance) (2.1.4)
Requirement already satisfied: numpy>=1.16.5 in c:\users\91939\anaconda3\lib\site
-packages (from yfinance) (1.26.4)
Requirement already satisfied: requests>=2.31 in c:\users\91939\anaconda3\lib\sit
e-packages (from yfinance) (2.31.0)
Requirement already satisfied: multitasking>=0.0.7 in c:\users\91939\anaconda3\li
b\site-packages (from yfinance) (0.0.11)
Requirement already satisfied: lxml>=4.9.1 in c:\users\91939\anaconda3\lib\site-p
ackages (from yfinance) (4.9.3)
Requirement already satisfied: platformdirs>=2.0.0 in c:\users\91939\anaconda3\li
b\site-packages (from yfinance) (3.10.0)
Requirement already satisfied: pytz>=2022.5 in c:\users\91939\anaconda3\lib\site-
packages (from yfinance) (2023.3.post1)
Requirement already satisfied: frozendict>=2.3.4 in c:\users\91939\anaconda3\lib
\site-packages (from yfinance) (2.4.4)
Requirement already satisfied: peewee>=3.16.2 in c:\users\91939\anaconda3\lib\sit
e-packages (from yfinance) (3.17.5)
Requirement already satisfied: beautifulsoup4>=4.11.1 in c:\users\91939\anaconda3
\lib\site-packages (from yfinance) (4.12.2)
Requirement already satisfied: html5lib>=1.1 in c:\users\91939\anaconda3\lib\site
-packages (from yfinance) (1.1)
Requirement already satisfied: soupsieve>1.2 in c:\users\91939\anaconda3\lib\site
-packages (from beautifulsoup4>=4.11.1->yfinance) (2.5)
Requirement already satisfied: six>=1.9 in c:\users\91939\anaconda3\lib\site-pack
ages (from html5lib>=1.1->yfinance) (1.16.0)
Requirement already satisfied: webencodings in c:\users\91939\anaconda3\lib\site-
packages (from html5lib>=1.1->yfinance) (0.5.1)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\91939\anaconda3
\lib\site-packages (from pandas>=1.3.0->yfinance) (2.8.2)
Requirement already satisfied: tzdata>=2022.1 in c:\users\91939\anaconda3\lib\sit
e-packages (from pandas>=1.3.0->yfinance) (2023.3)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\91939\anacond
a3\lib\site-packages (from requests>=2.31->yfinance) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in c:\users\91939\anaconda3\lib\site-
packages (from requests>=2.31->yfinance) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\91939\anaconda3\lib
\site-packages (from requests>=2.31->yfinance) (2.0.7)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\91939\anaconda3\lib
\site-packages (from requests>=2.31->yfinance) (2024.2.2)

In [6]:
```python
import yfinance as yf

# Download Tesla stock data
tesla_data = yf.download('TSLA')

# Reset the index
tesla_data.reset_index(inplace=True)

# Display the first five rows
```

```
tesla_data_head = tesla_data.head()
print(tesla_data_head)
```

```
[*********************100%%**********************]  1 of 1 completed
        Date      Open      High       Low     Close  Adj Close     Volume
0 2010-06-29  1.266667  1.666667  1.169333  1.592667   1.592667  281494500
1 2010-06-30  1.719333  2.028000  1.553333  1.588667   1.588667  257806500
2 2010-07-01  1.666667  1.728000  1.351333  1.464000   1.464000  123282000
3 2010-07-02  1.533333  1.540000  1.247333  1.280000   1.280000   77097000
4 2010-07-06  1.333333  1.333333  1.055333  1.074000   1.074000  103003500
```

Question2 the last five rows of the tesla_revenue

In [7]:
```
pip install requests beautifulsoup4 pandas
```

```
Requirement already satisfied: requests in c:\users\91939\anaconda3\lib\site-pack
ages (2.31.0)
Requirement already satisfied: beautifulsoup4 in c:\users\91939\anaconda3\lib\sit
e-packages (4.12.2)
Requirement already satisfied: pandas in c:\users\91939\anaconda3\lib\site-packag
es (2.1.4)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\91939\anacond
a3\lib\site-packages (from requests) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in c:\users\91939\anaconda3\lib\site-
packages (from requests) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\91939\anaconda3\lib
\site-packages (from requests) (2.0.7)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\91939\anaconda3\lib
\site-packages (from requests) (2024.2.2)
Requirement already satisfied: soupsieve>1.2 in c:\users\91939\anaconda3\lib\site
-packages (from beautifulsoup4) (2.5)
Requirement already satisfied: numpy<2,>=1.23.2 in c:\users\91939\anaconda3\lib\s
ite-packages (from pandas) (1.26.4)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\91939\anaconda3
\lib\site-packages (from pandas) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in c:\users\91939\anaconda3\lib\site-
packages (from pandas) (2023.3.post1)
Requirement already satisfied: tzdata>=2022.1 in c:\users\91939\anaconda3\lib\sit
e-packages (from pandas) (2023.3)
Requirement already satisfied: six>=1.5 in c:\users\91939\anaconda3\lib\site-pack
ages (from python-dateutil>=2.8.2->pandas) (1.16.0)
Note: you may need to restart the kernel to use updated packages.
```

In [14]:
```python
import yfinance as yf
import pandas as pd

# Get Tesla's financial data
tesla = yf.Ticker("TSLA")

# Get the revenue data
financials = tesla.financials
revenue = financials.loc['Total Revenue']

# Create a dataframe
tesla_revenue = pd.DataFrame(revenue).reset_index()
tesla_revenue.columns = ['Date', 'Revenue']

# Display the last five rows
```

```
tesla_revenue_tail = tesla_revenue.tail()
print(tesla_revenue_tail)
```

```
        Date        Revenue
0 2023-12-31  96773000000.0
1 2022-12-31  81462000000.0
2 2021-12-31  53823000000.0
3 2020-12-31  31536000000.0
```

In [15]:
```
pip install selenium
```

```
Collecting selenium
  Downloading selenium-4.21.0-py3-none-any.whl.metadata (6.9 kB)
Requirement already satisfied: urllib3<3,>=1.26 in c:\users\91939\anaconda3\lib\s
ite-packages (from urllib3[socks]<3,>=1.26->selenium) (2.0.7)
Collecting trio~=0.17 (from selenium)
  Downloading trio-0.25.1-py3-none-any.whl.metadata (8.7 kB)
Collecting trio-websocket~=0.9 (from selenium)
  Downloading trio_websocket-0.11.1-py3-none-any.whl.metadata (4.7 kB)
Requirement already satisfied: certifi>=2021.10.8 in c:\users\91939\anaconda3\lib
\site-packages (from selenium) (2024.2.2)
Requirement already satisfied: typing_extensions>=4.9.0 in c:\users\91939\anacond
a3\lib\site-packages (from selenium) (4.9.0)
Collecting attrs>=23.2.0 (from trio~=0.17->selenium)
  Downloading attrs-23.2.0-py3-none-any.whl.metadata (9.5 kB)
Requirement already satisfied: sortedcontainers in c:\users\91939\anaconda3\lib\s
ite-packages (from trio~=0.17->selenium) (2.4.0)
Requirement already satisfied: idna in c:\users\91939\anaconda3\lib\site-packages
(from trio~=0.17->selenium) (3.4)
Collecting outcome (from trio~=0.17->selenium)
  Downloading outcome-1.3.0.post0-py2.py3-none-any.whl.metadata (2.6 kB)
Requirement already satisfied: sniffio>=1.3.0 in c:\users\91939\anaconda3\lib\sit
e-packages (from trio~=0.17->selenium) (1.3.0)
Requirement already satisfied: cffi>=1.14 in c:\users\91939\anaconda3\lib\site-pa
ckages (from trio~=0.17->selenium) (1.16.0)
Collecting wsproto>=0.14 (from trio-websocket~=0.9->selenium)
  Downloading wsproto-1.2.0-py3-none-any.whl.metadata (5.6 kB)
Requirement already satisfied: pysocks!=1.5.7,<2.0,>=1.5.6 in c:\users\91939\anac
onda3\lib\site-packages (from urllib3[socks]<3,>=1.26->selenium) (1.7.1)
Requirement already satisfied: pycparser in c:\users\91939\anaconda3\lib\site-pac
kages (from cffi>=1.14->trio~=0.17->selenium) (2.21)
Collecting h11<1,>=0.9.0 (from wsproto>=0.14->trio-websocket~=0.9->selenium)
  Downloading h11-0.14.0-py3-none-any.whl.metadata (8.2 kB)
Downloading selenium-4.21.0-py3-none-any.whl (9.5 MB)
   ------------------------------------- 0.0/9.5 MB ? eta -:--:--
   ------------------------------------- 0.0/9.5 MB ? eta -:--:--
   ------------------------------------- 0.0/9.5 MB ? eta -:--:--
   ------------------------------------- 0.1/9.5 MB 2.3 MB/s eta 0:00:05
   - ----------------------------------- 0.4/9.5 MB 4.9 MB/s eta 0:00:02
   --- --------------------------------- 0.9/9.5 MB 7.2 MB/s eta 0:00:02
   ------ ------------------------------ 1.5/9.5 MB 8.6 MB/s eta 0:00:01
   -------- ---------------------------- 2.0/9.5 MB 9.0 MB/s eta 0:00:01
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   ------- ----------------------------- 2.1/9.5 MB 8.8 MB/s eta 0:00:01
   ---------- -------------------------- 2.7/9.5 MB 7.6 MB/s eta 0:00:01
   -------------- ---------------------- 3.6/9.5 MB 8.7 MB/s eta 0:00:01
   ---------------- -------------------- 4.3/9.5 MB 9.6 MB/s eta 0:00:01
   --------------------- --------------- 5.6/9.5 MB 11.1 MB/s eta 0:00:01
   ----------------------- ------------- 6.0/9.5 MB 11.6 MB/s eta 0:00:01
   ----------------------- ------------- 6.0/9.5 MB 11.6 MB/s eta 0:00:01
   ----------------------- ------------- 6.1/9.5 MB 9.3 MB/s eta 0:00:01
   --------------------------- --------- 7.0/9.5 MB 10.2 MB/s eta 0:00:01
   ----------------------------- ------- 7.9/9.5 MB 10.5 MB/s eta 0:00:01
   ----------------------------------- - 9.2/9.5 MB 11.7 MB/s eta 0:00:01
   ------------------------------------- 9.5/9.5 MB 11.6 MB/s eta 0:00:00
Downloading trio-0.25.1-py3-none-any.whl (467 kB)
   ------------------------------------- 0.0/467.7 kB ? eta -:--:--
   ------------------------------------- 467.7/467.7 kB 30.5 MB/s eta 0:00:00
Downloading trio_websocket-0.11.1-py3-none-any.whl (17 kB)
Downloading attrs-23.2.0-py3-none-any.whl (60 kB)
   ------------------------------------- 0.0/60.8 kB ? eta -:--:--
```

```
                   ---------------------------------------- 60.8/60.8 kB 3.4 MB/s eta 0:00:00
       Downloading wsproto-1.2.0-py3-none-any.whl (24 kB)
       Downloading outcome-1.3.0.post0-py2.py3-none-any.whl (10 kB)
       Downloading h11-0.14.0-py3-none-any.whl (58 kB)
                   ---------------------------------------- 0.0/58.3 kB ? eta -:--:--
                   ---------------------------------------- 58.3/58.3 kB 3.0 MB/s eta 0:00:00
       Installing collected packages: h11, attrs, wsproto, outcome, trio, trio-websocke
       t, selenium
         Attempting uninstall: attrs
           Found existing installation: attrs 23.1.0
           Uninstalling attrs-23.1.0:
             Successfully uninstalled attrs-23.1.0
       Successfully installed attrs-23.2.0 h11-0.14.0 outcome-1.3.0.post0 selenium-4.21.
       0 trio-0.25.1 trio-websocket-0.11.1 wsproto-1.2.0
       Note: you may need to restart the kernel to use updated packages.
```

In [16]:
```python
from selenium import webdriver
from selenium.webdriver.common.by import By
import pandas as pd
import time

# Set up the webdriver
driver = webdriver.Chrome()  # or another browser driver

# Go to the website
url = 'https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue'
driver.get(url)

# Wait for the page to load completely
time.sleep(5)

# Locate the revenue table
tables = driver.find_elements(By.TAG_NAME, 'table')

# Inspect the tables and find the correct one (based on headers or other charact
for i, table in enumerate(tables):
    if 'Tesla Quarterly Revenue' in table.text:
        revenue_table = table
        break

# Parse the table rows
rows = revenue_table.find_elements(By.TAG_NAME, 'tr')
data = []
for row in rows[1:]:  # Skipping the header row
    cols = row.find_elements(By.TAG_NAME, 'td')
    date = cols[0].text.strip()
    revenue = cols[1].text.strip().replace('$', '').replace(',', '')
    data.append([date, revenue])

# Create a dataframe
tesla_revenue = pd.DataFrame(data, columns=['Date', 'Revenue'])

# Display the last five rows
tesla_revenue_tail = tesla_revenue.tail()
print(tesla_revenue_tail)

# Close the browser
driver.quit()
```

```
       Date Revenue
55  2010-06-30      28
56  2010-03-31      21
57  2009-12-31
58  2009-09-30      46
59  2009-06-30      27
```

In [17]: `pip install yfinance`

Requirement already satisfied: yfinance in c:\users\91939\anaconda3\lib\site-pack
ages (0.2.40)Note: you may need to restart the kernel to use updated packages.

Requirement already satisfied: pandas>=1.3.0 in c:\users\91939\anaconda3\lib\site
-packages (from yfinance) (2.1.4)
Requirement already satisfied: numpy>=1.16.5 in c:\users\91939\anaconda3\lib\site
-packages (from yfinance) (1.26.4)
Requirement already satisfied: requests>=2.31 in c:\users\91939\anaconda3\lib\sit
e-packages (from yfinance) (2.31.0)
Requirement already satisfied: multitasking>=0.0.7 in c:\users\91939\anaconda3\li
b\site-packages (from yfinance) (0.0.11)
Requirement already satisfied: lxml>=4.9.1 in c:\users\91939\anaconda3\lib\site-p
ackages (from yfinance) (4.9.3)
Requirement already satisfied: platformdirs>=2.0.0 in c:\users\91939\anaconda3\li
b\site-packages (from yfinance) (3.10.0)
Requirement already satisfied: pytz>=2022.5 in c:\users\91939\anaconda3\lib\site-
packages (from yfinance) (2023.3.post1)
Requirement already satisfied: frozendict>=2.3.4 in c:\users\91939\anaconda3\lib
\site-packages (from yfinance) (2.4.4)
Requirement already satisfied: peewee>=3.16.2 in c:\users\91939\anaconda3\lib\sit
e-packages (from yfinance) (3.17.5)
Requirement already satisfied: beautifulsoup4>=4.11.1 in c:\users\91939\anaconda3
\lib\site-packages (from yfinance) (4.12.2)
Requirement already satisfied: html5lib>=1.1 in c:\users\91939\anaconda3\lib\site
-packages (from yfinance) (1.1)
Requirement already satisfied: soupsieve>1.2 in c:\users\91939\anaconda3\lib\site
-packages (from beautifulsoup4>=4.11.1->yfinance) (2.5)
Requirement already satisfied: six>=1.9 in c:\users\91939\anaconda3\lib\site-pack
ages (from html5lib>=1.1->yfinance) (1.16.0)
Requirement already satisfied: webencodings in c:\users\91939\anaconda3\lib\site-
packages (from html5lib>=1.1->yfinance) (0.5.1)
Requirement already satisfied: python-dateutil>=2.8.2 in c:\users\91939\anaconda3
\lib\site-packages (from pandas>=1.3.0->yfinance) (2.8.2)
Requirement already satisfied: tzdata>=2022.1 in c:\users\91939\anaconda3\lib\sit
e-packages (from pandas>=1.3.0->yfinance) (2023.3)
Requirement already satisfied: charset-normalizer<4,>=2 in c:\users\91939\anacond
a3\lib\site-packages (from requests>=2.31->yfinance) (2.0.4)
Requirement already satisfied: idna<4,>=2.5 in c:\users\91939\anaconda3\lib\site-
packages (from requests>=2.31->yfinance) (3.4)
Requirement already satisfied: urllib3<3,>=1.21.1 in c:\users\91939\anaconda3\lib
\site-packages (from requests>=2.31->yfinance) (2.0.7)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\91939\anaconda3\lib
\site-packages (from requests>=2.31->yfinance) (2024.2.2)

Question 3

In [19]:
```python
import yfinance as yf

# Download GameStop stock data
gme_data = yf.download('GME')
```

```python
# Reset the index
gme_data.reset_index(inplace=True)

# Display the first five rows
gme_data_head = gme_data.head()
print(gme_data_head)
```

```
[*********************100%%**********************]  1 of 1 completed
        Date     Open     High      Low    Close  Adj Close    Volume
0 2002-02-13  2.40625  2.51500  2.38125  2.51250   1.691667  76216000
1 2002-02-14  2.54375  2.54875  2.48125  2.50000   1.683250  11021600
2 2002-02-15  2.50000  2.50625  2.46250  2.48750   1.674834   8389600
3 2002-02-19  2.47500  2.47500  2.34375  2.38750   1.607504   7410400
4 2002-02-20  2.40000  2.46875  2.38125  2.46875   1.662210   6892800
```

Question 4: Use Webscraping to Extract GME Revenue Data

In [27]:
```python
from selenium import webdriver
from selenium.webdriver.common.by import By
import pandas as pd
import time

# Set up the webdriver
driver = webdriver.Chrome()  # or specify the path to your chromedriver

# Go to the website
url = 'https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue'
driver.get(url)

# Wait for the page to load completely
time.sleep(5)

# Locate the revenue table
revenue_table = driver.find_element(By.XPATH, "//table[contains(@class, 'histori

# Extract the table rows
rows = revenue_table.find_elements(By.TAG_NAME, 'tr')

# Parse the table data
data = []
for row in rows[1:]:  # Skipping the header row
    cols = row.find_elements(By.TAG_NAME, 'td')
    date = cols[0].text.strip()
    revenue = cols[1].text.strip().replace('$', '').replace(',', '')
    data.append([date, revenue])

# Create a dataframe
gme_revenue = pd.DataFrame(data, columns=['Date', 'Revenue'])

# Display the last five rows
gme_revenue_tail = gme_revenue.tail()
print(gme_revenue_tail)

# Close the browser
driver.quit()
```
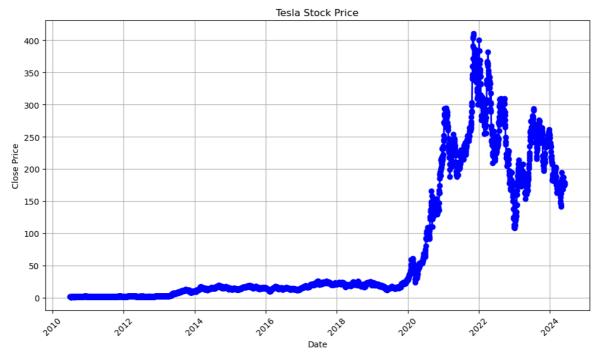
```
      Date  Revenue
11    2013     8887
12    2012     9551
13    2011     9474
14    2010     9078
15    2009     8806
```

Question 5: Plot Tesla Stock Graph

```python
In [31]:  import matplotlib.pyplot as plt

          def make_graph(data, title):
              plt.figure(figsize=(10, 6))
              plt.plot(data['Date'], data['Close'], color='blue', marker='o', linestyle='-
              plt.title(title)
              plt.xlabel('Date')
              plt.ylabel('Close Price')
              plt.xticks(rotation=45)
              plt.grid(True)
              plt.tight_layout()
              plt.show()

          # Assuming you have a DataFrame named tesla_data
          title = "Tesla Stock Price"
          make_graph(tesla_data, title)
```


Question 6 Plot GameStop Stock Graph

```python
In [32]:  # Download GameStop stock data
          gme_data = yf.download('GME')

          # Reset the index
          gme_data.reset_index(inplace=True)
```

```python
# Display the first five rows
print(gme_data.head())
```

```
[*********************100%%**********************]  1 of 1 completed
        Date     Open     High      Low    Close  Adj Close    Volume
0 2002-02-13  2.40625  2.51500  2.38125  2.51250   1.691667  76216000
1 2002-02-14  2.54375  2.54875  2.48125  2.50000   1.683250  11021600
2 2002-02-15  2.50000  2.50625  2.46250  2.48750   1.674834   8389600
3 2002-02-19  2.47500  2.47500  2.34375  2.38750   1.607504   7410400
4 2002-02-20  2.40000  2.46875  2.38125  2.46875   1.662210   6892800
```

In [33]:
```python
# Assuming you have a DataFrame named gme_data
title = "GameStop Stock Price"
make_graph(gme_data, title)
```


In [ ]: