

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

/opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages/secretstorage/dhcrypto.py:16: CryptographyDeprecationWarning: int_from_bytes is deprecated, use int.from_bytes instead
  from cryptography.utils import int_from_bytes
/opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages/secretstorage/util.py:25: CryptographyDeprecationWarning: int_from_bytes is deprecated, use int.from_bytes instead
  from cryptography.utils import int_from_bytes
Collecting yfinance
  Downloading yfinance-0.1.63.tar.gz (26 kB)
Requirement already satisfied: pandas>=0.24 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from yfinance) (1.0.5)
Requirement already satisfied: numpy>=1.15 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from yfinance) (1.18.5)
Requirement already satisfied: requests>=2.20 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from yfinance) (2.24.0)
Collecting multitasking>=0.0.7
  Downloading multitasking-0.0.9.tar.gz (8.1 kB)
Requirement already satisfied: lxml>=4.5.1 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from yfinance) (4.6.3)
Requirement already satisfied: python-dateutil>=2.6.1 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from pandas>=0.24->yfinance) (2.8.1)
Requirement already satisfied: pytz>=2017.2 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from pandas>=0.24->yfinance) (2020.1)
Requirement already satisfied: idna<3,>=2.5 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from requests>=2.20->yfinance) (2.9)
Requirement already satisfied: certifi>=2017.4.17 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from requests>=2.20->yfinance) (2021.5.30)
Requirement already satisfied: chardet<4,>=3.0.2 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from requests>=2.20->yfinance) (3.0.4)
Requirement already satisfied: urllib3!=1.25.0,!1.25.1,<1.26,>=1.21.1 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from requests>=2.20->yfinance) (1.25.9)
Requirement already satisfied: six>=1.5 in /opt/conda/envs/Python-3.7-main/lib/python3.7/site-packages (from python-dateutil>=2.6.1->pandas>=0.24->yfinance) (1.15.0)
Building wheels for collected packages: yfinance, multitasking
  Building wheel for yfinance (setup.py) ... done
  Created wheel for yfinance: filename=yfinance-0.1.63-py2.py3-none-any.whl size=23910 sha256=501271c125af62e839521751d4827fd14bb051ed61e324fc39c44c08223fe529
  Stored in directory: /tmp/wsuser/.cache/pip/wheels/fe/87/8b/7ec24486e001d3926537f5f7801f57a74d181be25b11157983
  Building wheel for multitasking (setup.py) ... done
  Created wheel for multitasking: filename=multitasking-0.0.9-py3-none-any.whl size=8366 sha256=b0c29d9ebd1d48a56c16fdc915f6dbcd57bad93322b125b75dcb8f8fc903f158
  Stored in directory: /tmp/wsuser/.cache/pip/wheels/ae/25/47/4d68431a7ec1b6c4b5233365934b74c1d4e665bf5f968d363a
Successfully built yfinance multitasking
Installing collected packages: multitasking, yfinance
Successfully installed multitasking-0.0.9 yfinance-0.1.63
```

```
In [7]: 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
```

Question 1

tesla_data dataframe using the head function

```
In [8]: Tesla = yf.Ticker('TSLA')

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

```
In [10]: tesla_data.reset_index(inplace = True)
tesla_data.head()
```

Out[10]:

	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

tesla_revenue dataframe using the tail function

```
In [11]: url = "https://www.macrotrends.net/stocks/charts/TSLA/tesla/revenue"
html_data = requests.get(url).text
```

```
In [12]: soup = BeautifulSoup(html_data, "html.parser")
soup.find_all('title')
```

Out[12]: [<title>Tesla Revenue 2009-2021 | TSLA | MacroTrends</title>]

```
In [13]: tesla_revenue = pd.DataFrame(columns = ['Date', 'Revenue'])

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

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

```
In [14]: tesla_revenue.dropna(inplace=True)
tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]
```

```
In [15]: tesla_revenue.tail()
```

Out[15]:

	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

Question 3

gme_data dataframe using the head function

```
In [16]: gme = yf.Ticker("GME")

In [17]: gme_data = gme.history(period = 'max')

In [18]: gme_data.reset_index(inplace = True)
gme_data.head()
```

Out[18]:

	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

Question 4

gme_revenue dataframe using the tail function.

```
In [19]: url = "https://www.macrotrends.net/stocks/charts/GME/gamestop/revenue"
html_data = requests.get(url).text

In [20]: soup = BeautifulSoup(html_data, "html.parser")
soup.find_all('title')
```

Out[20]: [<title>GameStop Revenue 2006-2021 | GME | MacroTrends</title>]

```
In [21]: gme_revenue = pd.DataFrame(columns = ['Date', 'Revenue'])

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

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

```
In [22]: tesla_revenue.dropna(inplace=True)
tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]
gme_revenue.tail()
```

Out[22]:

	Date	Revenue
61	2006-01-31	1667
62	2005-10-31	534
63	2005-07-31	416
64	2005-04-30	475
65	2005-01-31	709

make_graph function

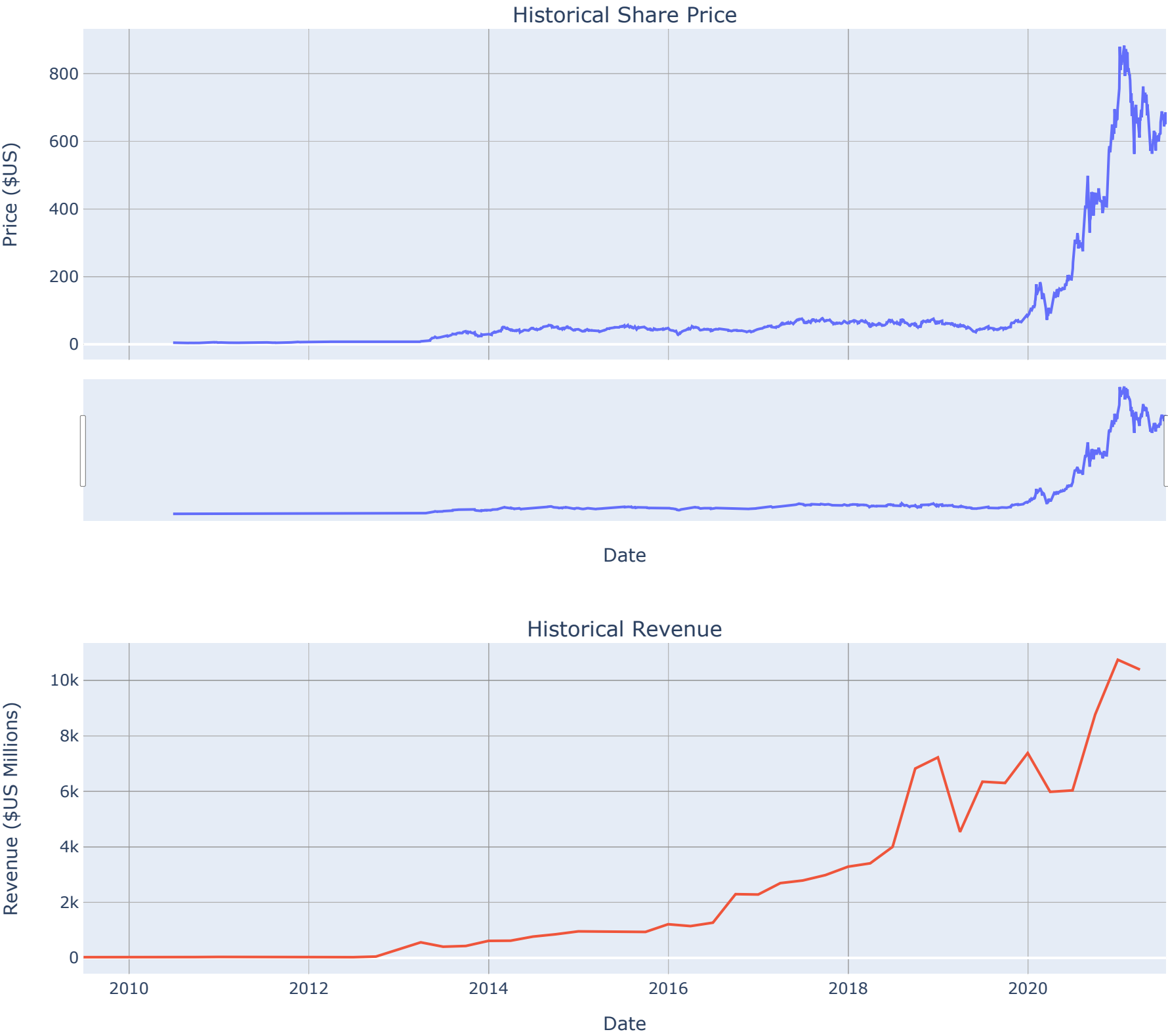
```
In [23]: def make_graph(stock_data, revenue_data, stock):
fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Historical Share Price", "Historical Revenue"), vertical_spacing = .3)
fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data.Date, infer_datetime_format=True), y=stock_data.Close.astype("float"), 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()
```

Question 5

make_graph function to graph the Tesla Stock Data

```
In [24]: make_graph(tesla_data, tesla_revenue, 'Tesla')
```

Tesla

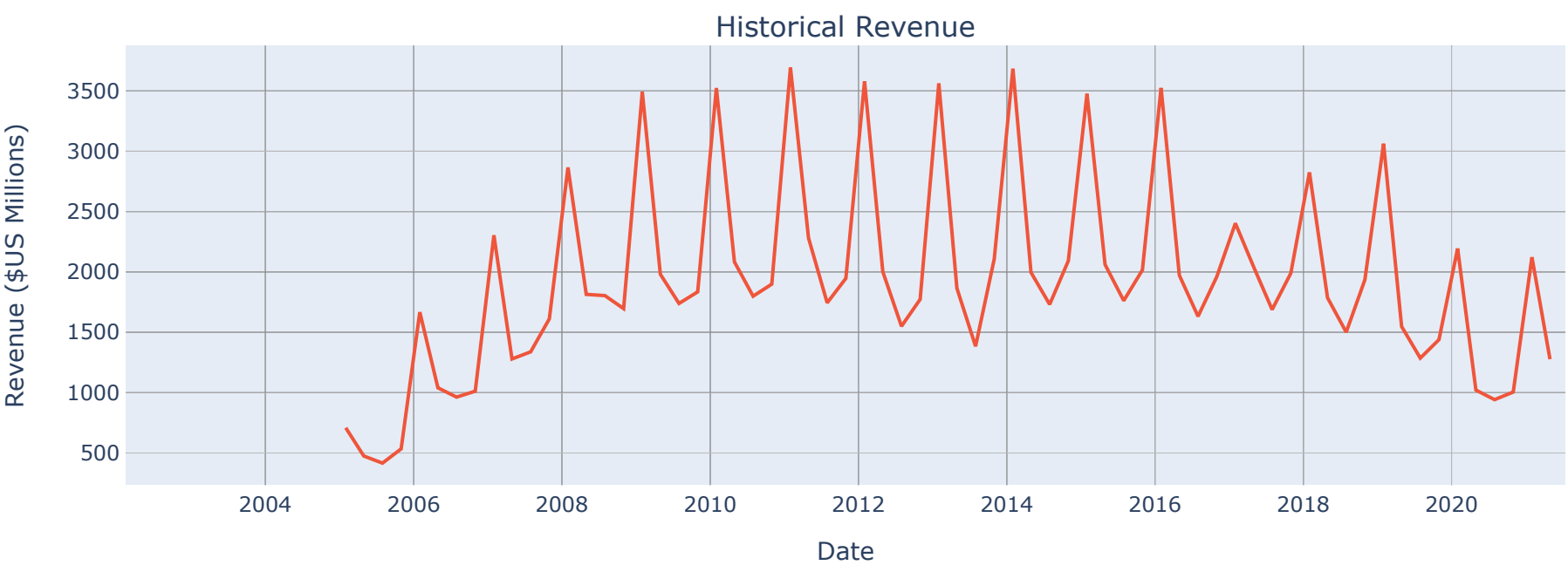
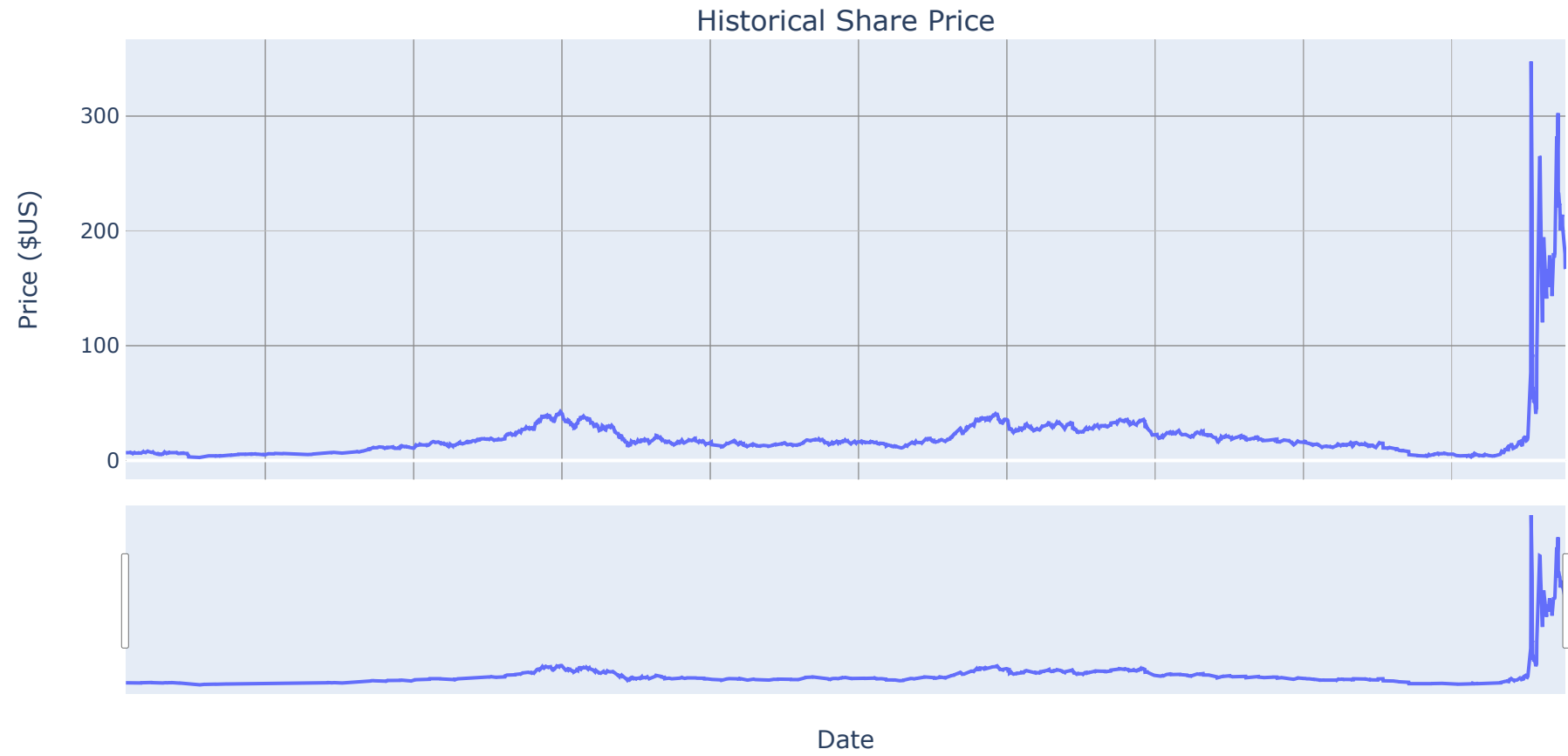


Question 6

make_graph function to graph the **GameStop Stock Data**

```
In [25]: make_graph(gme_data, gme_revenue, 'GameStop')
```

GameStop



In []:

In []:

In []: