Battle of the shorts: Studying the GameStop phenomenon in relation with Tesla

> Inspiration: IBM Developer Skills Network

This Notebook contains the algorithmic process involved in data analytics using classic API calls to extract data and the processing involved in visualising Stock Information

```
!pip install yfinance
!pip install bs4
```

```
    Requirement already satisfied: yfinance in /usr/local/lib/python3.7/dist-packages (0.1.55)
    Requirement already satisfied: lxml>=4.5.1 in /usr/local/lib/python3.7/dist-packages (from yfina
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    Requirement already satisfied: pytz>=2017.2 in /usr/local/lib/python3.7/dist-packages (from panc
    Requirement already satisfied: python-dateutil>=2.7.3 in /usr/local/lib/python3.7/dist-packages
    Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.7/dist-packages (from python-d
    Requirement already satisfied: bs4 in /usr/local/lib/python3.7/dist-packages (0.0.1)
    Requirement already satisfied: beautifulsoup4 in /usr/local/lib/python3.7/dist-packages (from bs
```

```
import yfinance as yf
import pandas as pd
import requests, re
from bs4 import BeautifulSoup
import plotly.graph_objects as go
from plotly.subplots import make_subplots


def make_graph(stock_data, revenue_data, stock):
    fig = make_subplots(rows=2, cols=1, shared_xaxes=True, subplot_titles=("Histori
    fig.add_trace(go.Scatter(x=pd.to_datetime(stock_data.Date, infer_datetime_forma
    fig.add_trace(go.Scatter(x=pd.to_datetime(revenue_data.Date, infer_datetime_for
    fig.update_xaxes(title_text="Date", row=1, col=1)#, matches='Date')
    fig.update_xaxes(title_text="Date", row=2, col=1)#, matches='Date')
    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()
```

- **Preparing Tesla Stocks Dataset**

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

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

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

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
2682	2021-02-24	711.849976	745.000000	694.169983	742.020020	36767000	0	0.0
2683	2021-02-25	726.150024	737.210022	670.580017	682.219971	39023900	0	0.0
2684	2021-02-26	700.000000	706.700012	659.510010	675.500000	41011300	0	0.0
2685	2021-03-01	690.109985	872.000000	685.049988	718.429993	27009700	0	0.0
2686	2021-03-02	718.280029	721.109985	685.000000	686.440002	23617600	0	0.0

```
html_data = requests.get('https://www.macrotrends.net/stocks/charts/TSLA/tesla/reve

soup = BeautifulSoup(html_data, 'html.parser')

tesla_revenue = pd.DataFrame(columns=["Date", "Revenue"])

for row in soup.find_all("tbody")[1].find_all("tr"):
    col = row.find_all("td")
    try:
      date = col[0].string
      revenue = col[1].string
    except Exception as e: print(e)

    if date==None or revenue==None or len(date)<1 or len(revenue)<1: continue
    date = date.replace(',', '')
    revenue = revenue.replace(',','').replace('$','')

    tesla_revenue = tesla_revenue.append({"Date":date,"Revenue":revenue}, ignore_in

tesla_revenue = tesla_revenue.dropna()

tesla_revenue.head()
```

	Date	Revenue
0	2020-12-31	10744
1	2020-09-30	8771
2	2020-06-30	6036
3	2020-03-31	5985
4	2019-12-31	7384

- **Preparing GameStop Stocks Dataset**

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

gme_data = gamestop.history(period="max")

gme_data.reset_index(inplace=True)
```

```
gme_data.tail()
```

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
4790	2021-02-24	44.700001	91.709999	44.700001	91.709999	83111700	0.0	0.0
4791	2021-02-25	169.559998	184.679993	101.000000	108.730003	150308800	0.0	0.0
4792	2021-02-26	117.459999	142.899994	86.000000	101.739998	91963000	0.0	0.0
4793	2021-03-01	104.540001	133.990005	99.970001	120.400002	49597300	0.0	0.0
4794	2021-03-02	116.930000	133.199997	112.199997	118.180000	33640400	0.0	0.0

```
html_data = requests.get('https://www.macrotrends.net/stocks/charts/GME/gamestop/re

soup = BeautifulSoup(html_data, 'html.parser')

gme_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].string
    revenue = col[1].string.replace('$','')


    if len(revenue) == 0 or len(date) == 0: continue
    date = date.replace(',', '')
    revenue = revenue.replace(',','')


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

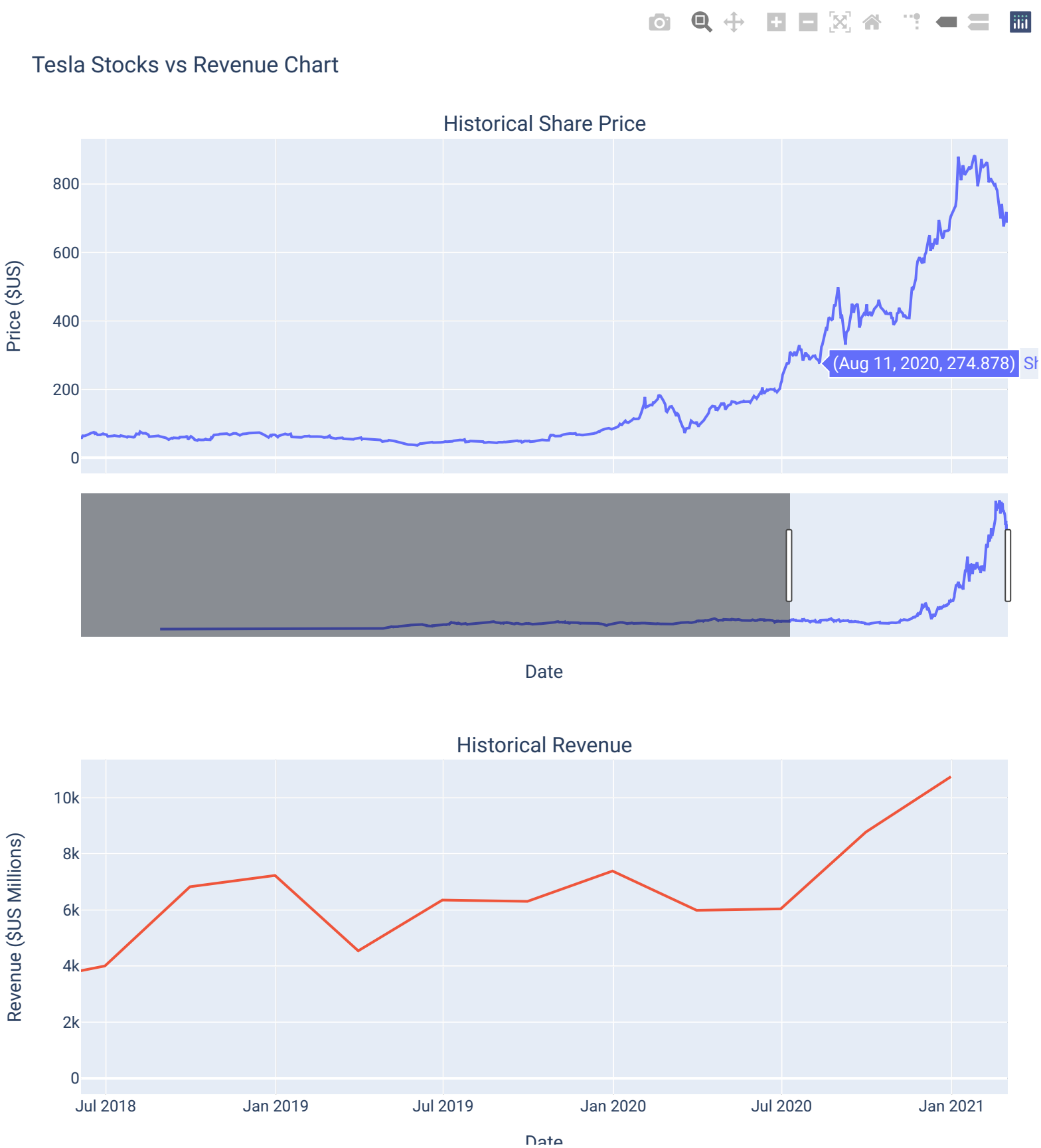
```
gme_revenue.head()
```

	Date	Revenue
0	2020-10-31	1005
1	2020-07-31	942
2	2020-04-30	1021
3	2020-01-31	2194
4	2019-10-31	1439

Plotting Tesla Stock Graph

> *Notice the bullish market after Tesla announced its 5-for-1 Stock split on August 11, 2020*

```
make_graph(tesla_data,tesla_revenue,"Tesla Stocks vs Revenue Chart")
```



Plotting GameStop Stock Graph

> *The phenomenal short squeeze of January, 2021, is hard to miss!*

```
make_graph(gme_data,gme_revenue,"GameStop Stocks vs Revenue Chart")
```

GameStop Stocks vs Revenue Chart