Use the make_graph function that we've already defined. You'll need to invoke it in questions 5 and 6 to display the graphs and create the dashboard.

> **Note: You don't need to redefine the function for plotting graphs anywhere else in this notebook; just use the existing function.**

Question 1: Use yfinance to Extract Stock Data

Using the `Ticker` function enter the ticker symbol of the stock we want to extract data on to create a ticker object. The stock is Tesla and its ticker symbol is `TSLA`.

```
ticker_symbol = "TSLA"
tsla=yf.Ticker("TSLA")
tsla_data=yf.Ticker("TSLA")
```

[48] ✓ 0.0s Python

```
tsla_data = tsla.history(period="max")
```

[49] ✓ 3.0s Python

Using the ticker object and the function `history` extract stock information and save it in a dataframe named `tesla_data`. Set the `period` parameter to `"max"` so we get information for the maximum amount of time.

```
tsla_data = tsla.history(period="max")
```

[50] ✓ 0.7s Python

Reset the index using the `reset_index(inplace=True)` function on the tesla_data DataFrame and display the first five rows of the `tesla_data` dataframe using the `head` function. Take a screenshot of the results and code from the beginning of Question 1 to the results below.

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

[51] ✓ 0.0s Python

	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	2010-06-29 00:00:00-04:00	1.266667	1.666667	1.169333	1.592667	281494500	0.0	0.0
1	2010-06-30 00:00:00-04:00	1.719333	2.028000	1.553333	1.588667	257806500	0.0	0.0
2	2010-07-01 00:00:00-04:00	1.666667	1.728000	1.351333	1.464000	123282000	0.0	0.0
3	2010-07-02 00:00:00-04:00	1.533333	1.540000	1.247333	1.280000	77097000	0.0	0.0
4	2010-07-06 00:00:00-04:00	1.333333	1.333333	1.055333	1.074000	103003500	0.0	0.0

Question 2: Use Webscraping to Extract Tesla Revenue Data

Search

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```
# Convert the list of dictionaries to a DataFrame
tesla_revenue = pd.DataFrame(data)
```

[82] ✓ 0.0s Python

Execute the following line to remove the comma and dollar sign from the `Revenue` column.

```
tesla_revenue["Revenue"] = tesla_revenue['Revenue'].str.replace(',|\$',"", regex=True)
```

[83] ✓ 0.0s Python

```
<>:1: SyntaxWarning: invalid escape sequence '\$'
<>:1: SyntaxWarning: invalid escape sequence '\$'
/var/folders/h0/0kms8dqj2q3_fm6zm8kf0kdw0000gq/T/ipykernel_95837/1877950674.py:1: SyntaxWarning: invalid escape sequence '\$'
  tesla_revenue["Revenue"] = tesla_revenue['Revenue'].str.replace(',|\$',"", regex=True)
```

Execute the following lines to remove an null or empty strings in the Revenue column.

```
tesla_revenue.dropna(inplace=True)

tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]
```

[84] ✓ 0.0s Python

Display the last 5 row of the `tesla_revenue` dataframe using the `tail` function. Take a screenshot of the results.

```
last_5_rows = tesla_revenue.tail(5)
print(last_5_rows)
```

[86] ✓ 0.0s Python

```
          Date Revenue
48  2010-09-30      31
49  2010-06-30      28
50  2010-03-31      21
52  2009-09-30      46
53  2009-06-30      27
```

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Question 3: Use yfinance to Extract Stock Data

Using the `Ticker` function enter the ticker symbol of the stock we want to extract data on to create a ticker object. The stock is GameStop and its ticker symbol is `GME`.

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

[87] ✓ 0.0s Python

Using the ticker object and the function `history` extract stock information and save it in a dataframe named `gme_data`. Set the `period` parameter to `"max"` so we get information for the maximum amount of time.

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

[88] ✓ 0.9s Python

Reset the index using the `reset_index(inplace=True)` function on the gme_data DataFrame and display the first five rows of the `gme_data` dataframe using the `head` function. Take a screenshot of the results and code from the beginning of Question 3 to the results below.

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

[90] ✓ 0.0s Python

	index	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
0	0	2002-02-13 00:00:00-05:00	1.620129	1.693350	1.603296	1.691667	76216000	0.0	0.0
1	1	2002-02-14 00:00:00-05:00	1.712707	1.716074	1.670626	1.683250	11021600	0.0	0.0
2	2	2002-02-15 00:00:00-05:00	1.683250	1.687458	1.658001	1.674834	8389600	0.0	0.0
3	3	2002-02-19 00:00:00-05:00	1.666418	1.666418	1.578047	1.607504	7410400	0.0	0.0
4	4	2002-02-20 00:00:00-05:00	1.615920	1.662210	1.603296	1.662210	6892800	0.0	0.0

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+ Code + Markdown | Run All | Restart | Clear All Outputs | Variables | Outline ··· Python 3.12.4

```
    if "GameStop Quarterly Revenue" in table.text:
        # Loop through rows of the relevant table
        for row in table.find_all('tr'):
            cols = row.find_all('td')
            if len(cols) >= 2:  # Ensure there are at least 2 columns
                date = cols[0].get_text(strip=True)  # Extract date
                revenue = cols[1].get_text(strip=True)  # Extract revenue

                # Append row data as a dictionary to the list
                data.append({"Date": date, "Revenue": revenue})

# Convert the list of dictionaries to a DataFrame
gme_revenue = pd.DataFrame(data)
```

[94] ✓ 0.0s Python

Display the last five rows of the `gme_revenue` dataframe using the `tail` function. Take a screenshot of the results.

```
tesla_revenue["Revenue"] = tesla_revenue['Revenue'].str.replace(',|\$',"", regex=True)

tesla_revenue.dropna(inplace=True)

tesla_revenue = tesla_revenue[tesla_revenue['Revenue'] != ""]

last_5_rows = tesla_revenue.tail(5)
print(last_5_rows)
```

[95] ✓ 0.0s Python

```
         Date Revenue
48  2010-09-30      31
49  2010-06-30      28
50  2010-03-31      21
52  2009-09-30      46
53  2009-06-30      27
<>:1: SyntaxWarning: invalid escape sequence '\$'
<>:1: SyntaxWarning: invalid escape sequence '\$'
/var/folders/h0/0kms8dqj2q3_fm6zm8kf0kdw0000gq/T/ipykernel_95837/4225939706.py:1: SyntaxWarning: invalid escape sequence '\$'
  tesla_revenue["Revenue"] = tesla_revenue['Revenue'].str.replace(',|\$',"", regex=True)
```

Question 5: Plot Tesla Stock Graph

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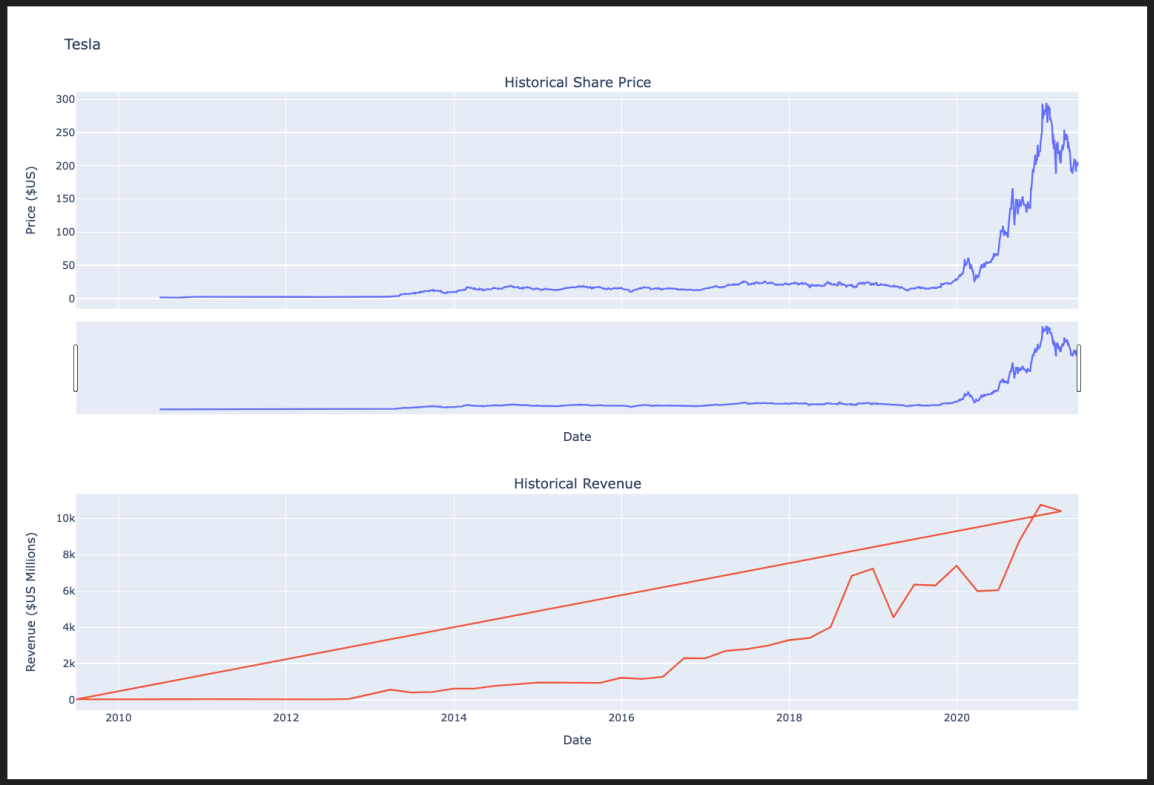
Python 3.12.4

```
...          ...          ...          ...          ...
3582  250.000000   86927200          0.0          0.0
3583  254.270004   88491000          0.0          0.0
3584  257.019989   65034300          0.0          0.0
3585  254.220001   67142200          0.0          0.0
3586  260.459991   70389017          0.0          0.0

[3587 rows x 8 columns]
```

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

[45] ✓ 0.4s Python



Question 6: Plot GameStop Stock Graph

Use the `make_graph` function to graph the GameStop Stock Data, also provide a title for the graph. The structure to call the `make_graph` function is `make_graph(gme_data, gme_revenue, 'GameStop')`. Note the graph will only show data upto June 2021.

▶ Hint

[107] Python

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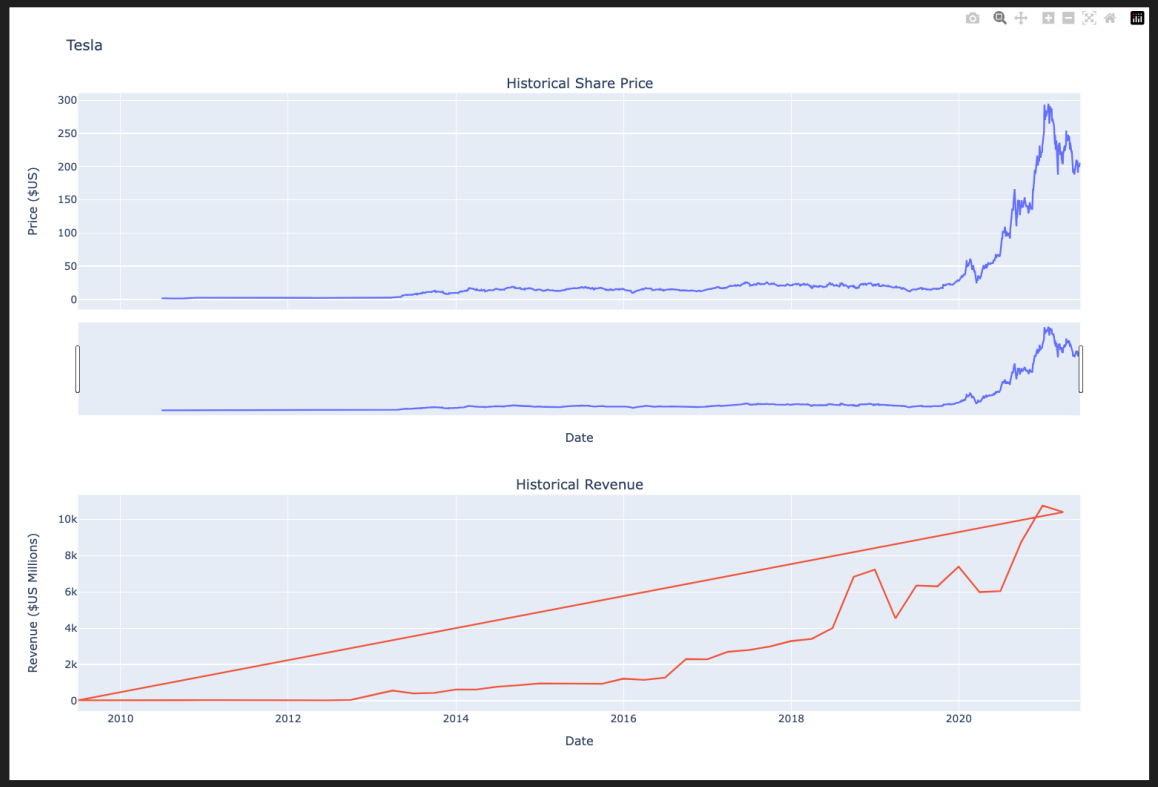
	Close	Volume	Dividends	Stock Splits
0	1.592667	281494500	0.0	0.0
1	1.588667	257806500	0.0	0.0
2	1.464000	123282000	0.0	0.0
3	1.280000	77097000	0.0	0.0
4	1.074000	103003500	0.0	0.0
...	...	...	...	...
3582	250.000000	86927200	0.0	0.0
3583	254.270004	88491000	0.0	0.0
3584	257.019989	65034300	0.0	0.0
3585	254.220001	67142200	0.0	0.0
3586	260.459991	70389017	0.0	0.0

[3587 rows x 8 columns]

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

[45] ✓ 0.4s Python



Question 6: Plot GameStop Stock Graph

Use the `make_graph` function to graph the GameStop Stock Data, also provide a title for the graph. The structure to call the `make_graph` function is `make_graph(gme_data, gme_revenue, 'GameStop')`. Note the graph will only show data upto June 2021.

▶ Hint

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```
            # Append row data as a dictionary to the list
            data.append({"Date": date, "Revenue": revenue})

    # Convert the list of dictionaries to a DataFrame
    gme_revenue = pd.DataFrame(data)
```

[47] ✓ 0.0s Python

Display the last five rows of the `gme_revenue` dataframe using the `tail` function. Take a screenshot of the results.

```
gme_revenue["Revenue"] = gme_revenue['Revenue'].str.replace(',|\$',"", regex=True)

gme_revenue.dropna(inplace=True)

gme_revenue = gme_revenue[gme_revenue['Revenue'] != ""]

last_5_rows = gme_revenue.tail(5)
print(last_5_rows)
```

[48] ✓ 0.0s Python

```
          Date Revenue
57  2006-01-31    1667
58  2005-10-31     534
59  2005-07-31     416
60  2005-04-30     475
61  2005-01-31     709
<>:1: SyntaxWarning:

invalid escape sequence '\$'

<>:1: SyntaxWarning:

invalid escape sequence '\$'

/var/folders/h0/0kms8dqj2q3_fm6zm8kf0kdw0000gq/T/ipykernel_2511/3580202678.py:1: SyntaxWarning:

invalid escape sequence '\$'
```

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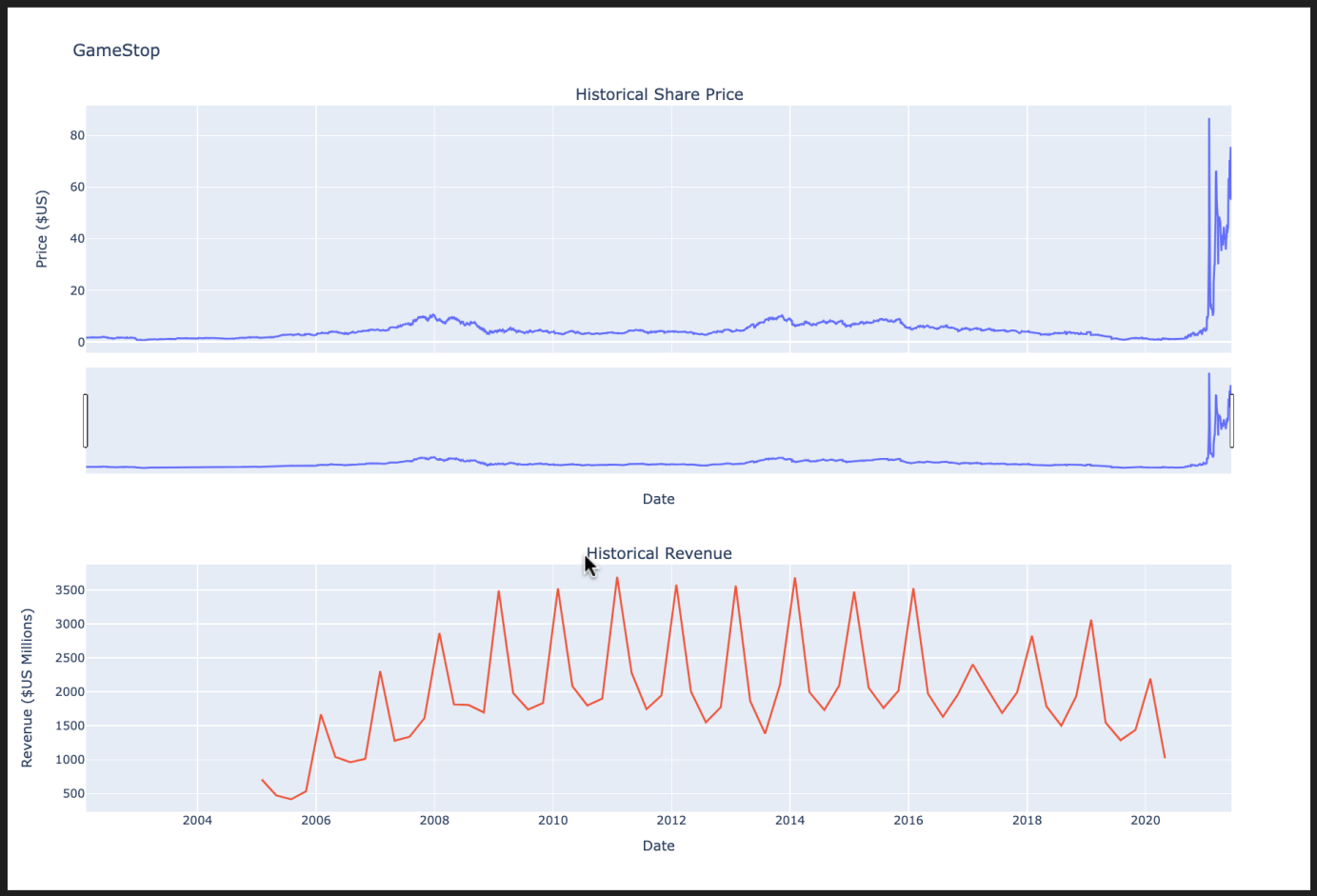
```
make_graph(gme_data,gme_revenue,'GameStop')
```

[49] ✓ 0.0s Python



About the Authors:

Joseph Santarcangelo has a PhD in Electrical Engineering, his research focused on using machine learning, signal processing, and computer vision to determine how videos impact human cognition. Joseph has been working for IBM since he completed his PhD.

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