Micro-Credential Data Analytics

Final Presentation

By: Siming Deng (Baruch College) https://www.linkedin.com/in/siming-deng/
Chelsea Morales (City College) https://www.linkedin.com/in/chelsea-a-morales/
Desiree Jean (Baruch College) https://www.linkedin.com/in/desireejean/
Mustapha Bouchaqour - NYC College of Technology GitHub | Linkedin

Agenda

- Covid-19 impact for the year - Quarterly analysis
- Discover Patterns and Trends - Covid Test and Variants
- Perform Stock Market Data Analysis
- Q&A

Covid-19 impact for the year - Quarterly analysis”

- Data Source: New York Times' county-level COVID-19 database at https://github.com/nytimes/covid-19-data/blob/master/us-counties.csv,
- We answered these questions:
    - Filtering data using only New York State
    - Finding number of new cases and deaths reported in each month
    - Determining which month/week was the deadliest
    - Checking data for trend

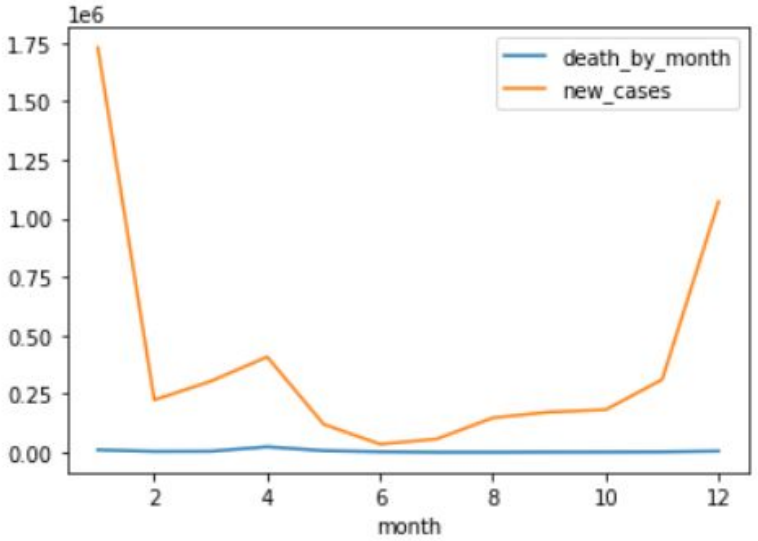
Filtering data using only New York State

```
1 ny_df=df[df['state']=='New York']
2 ny_df.head(5)
```

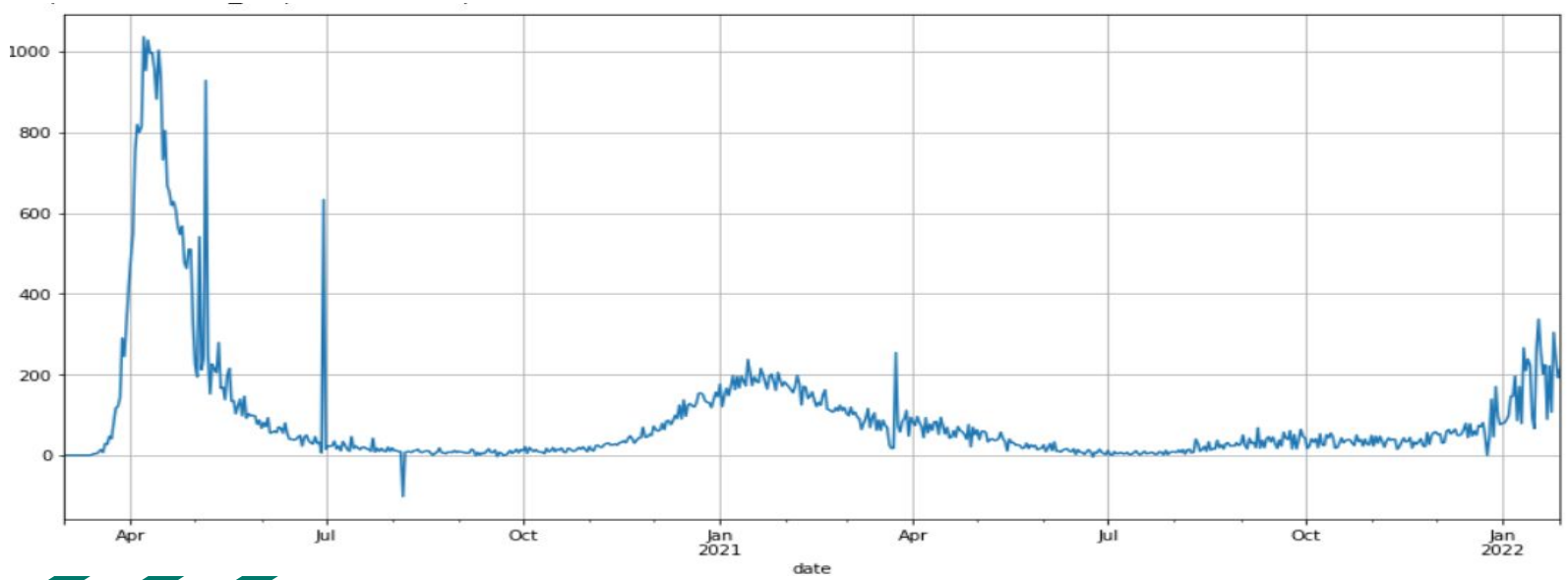
	date	state	fips	cases	deaths
246	2020-03-01	New York	36	1	0
261	2020-03-02	New York	36	1	0
276	2020-03-03	New York	36	2	0
293	2020-03-04	New York	36	11	0
313	2020-03-05	New York	36	22	0

Finding number of new cases and deaths reported in each month

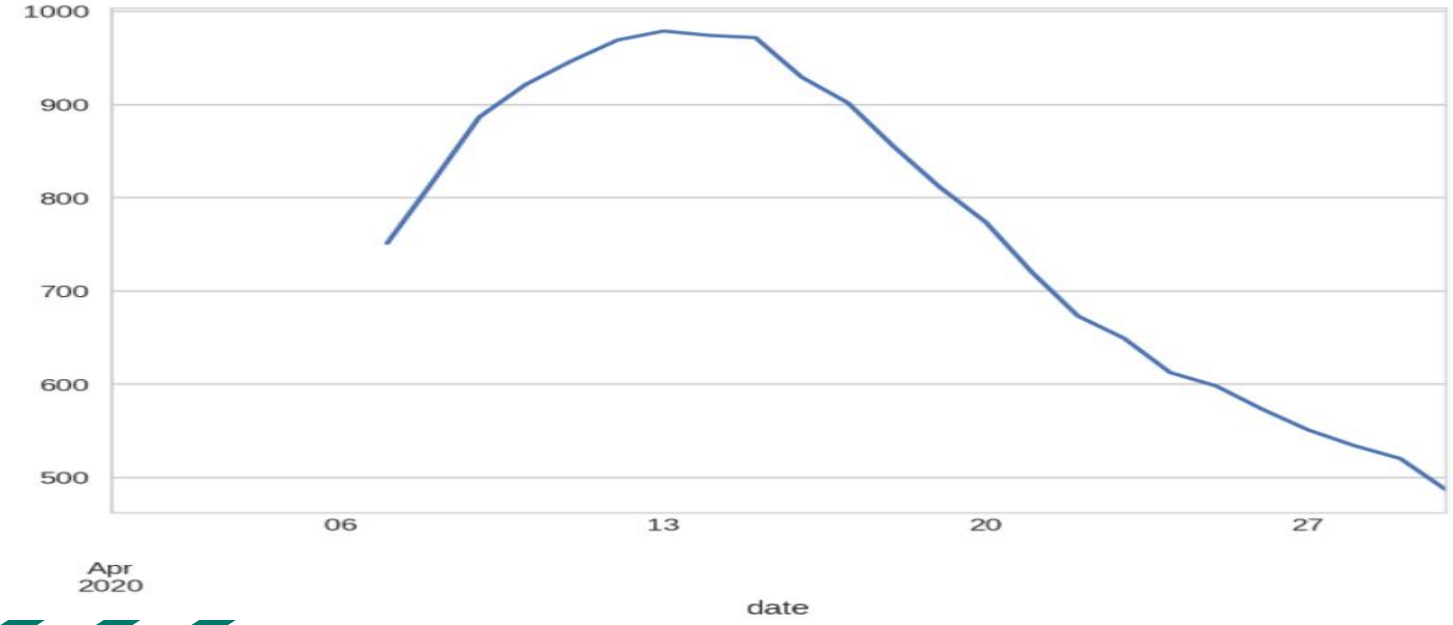
month	death_by_month	new_cases
1	10538	1728744
2	3965	223960
3	4576	303682
4	23625	408212
5	7113	120190
6	2414	35081
7	767	56879
8	750	147540
9	1302	172196
10	1457	182249
11	2052	311207
12	5351	1071650



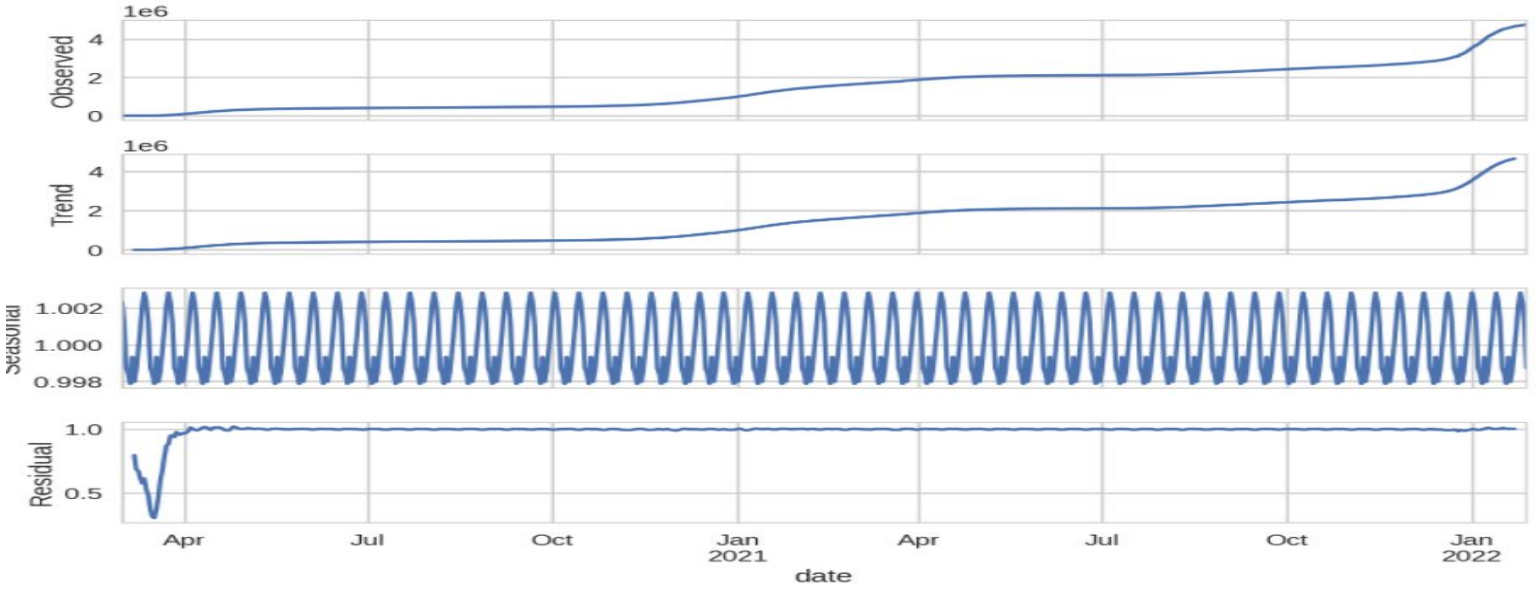
Determining which month/week was the deadliest: April, 2020 is the answer



More into April 2020

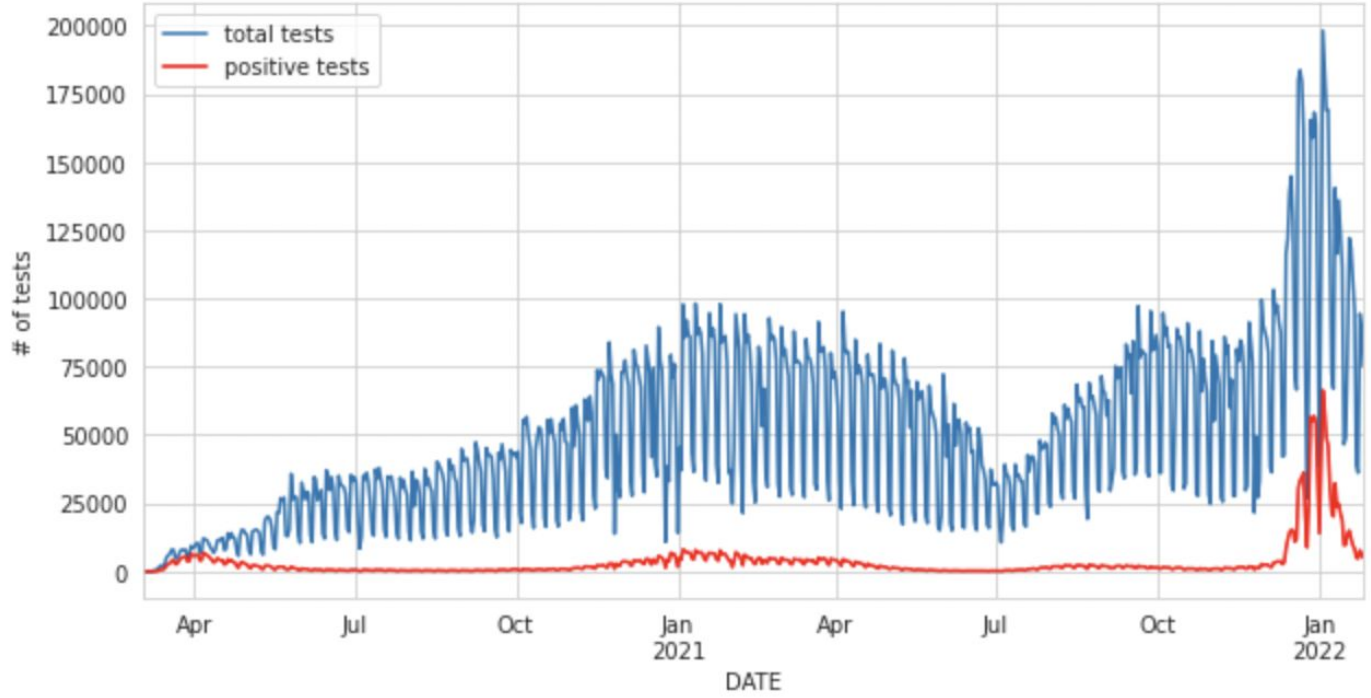


Checking data for trend: Go with cumulative_cases (cases attribute in old data)



Total tests vs positive tests

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f5180ef2550>
```



Total tests vs antigen tests

```
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```
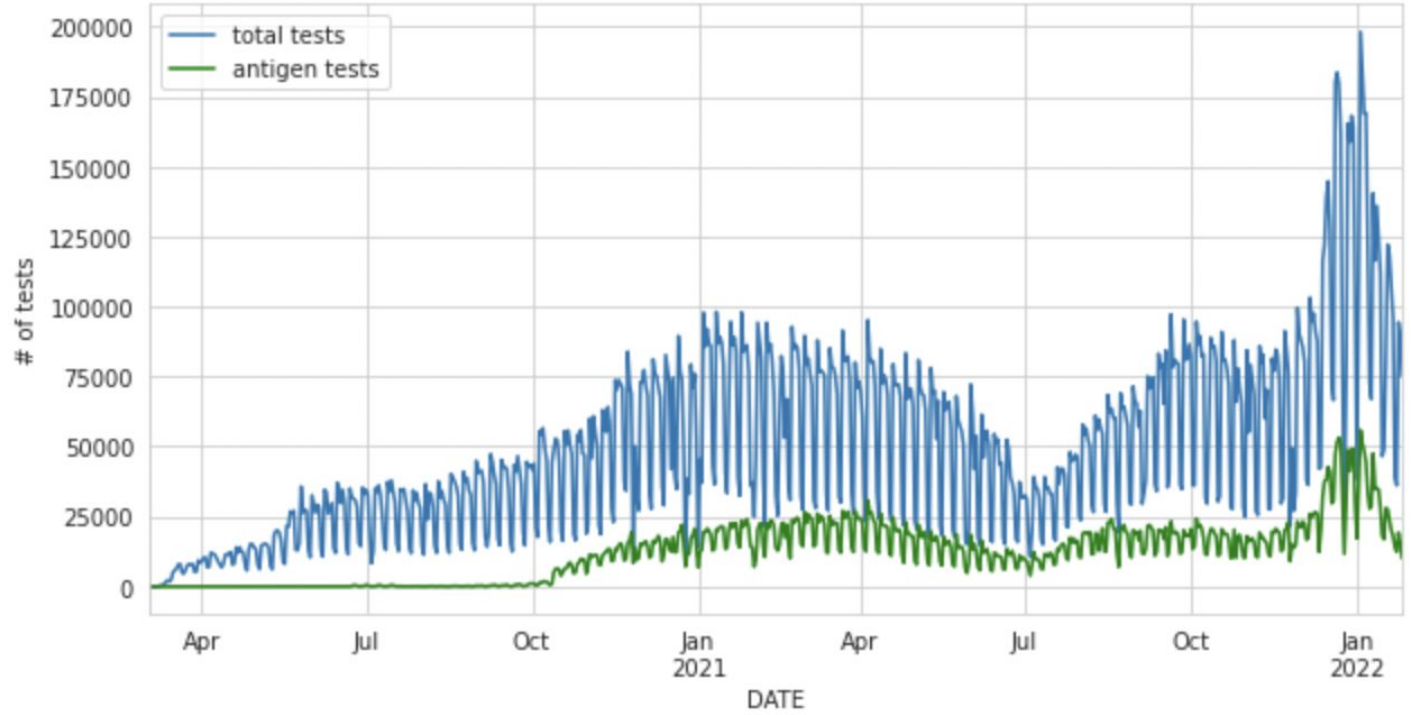
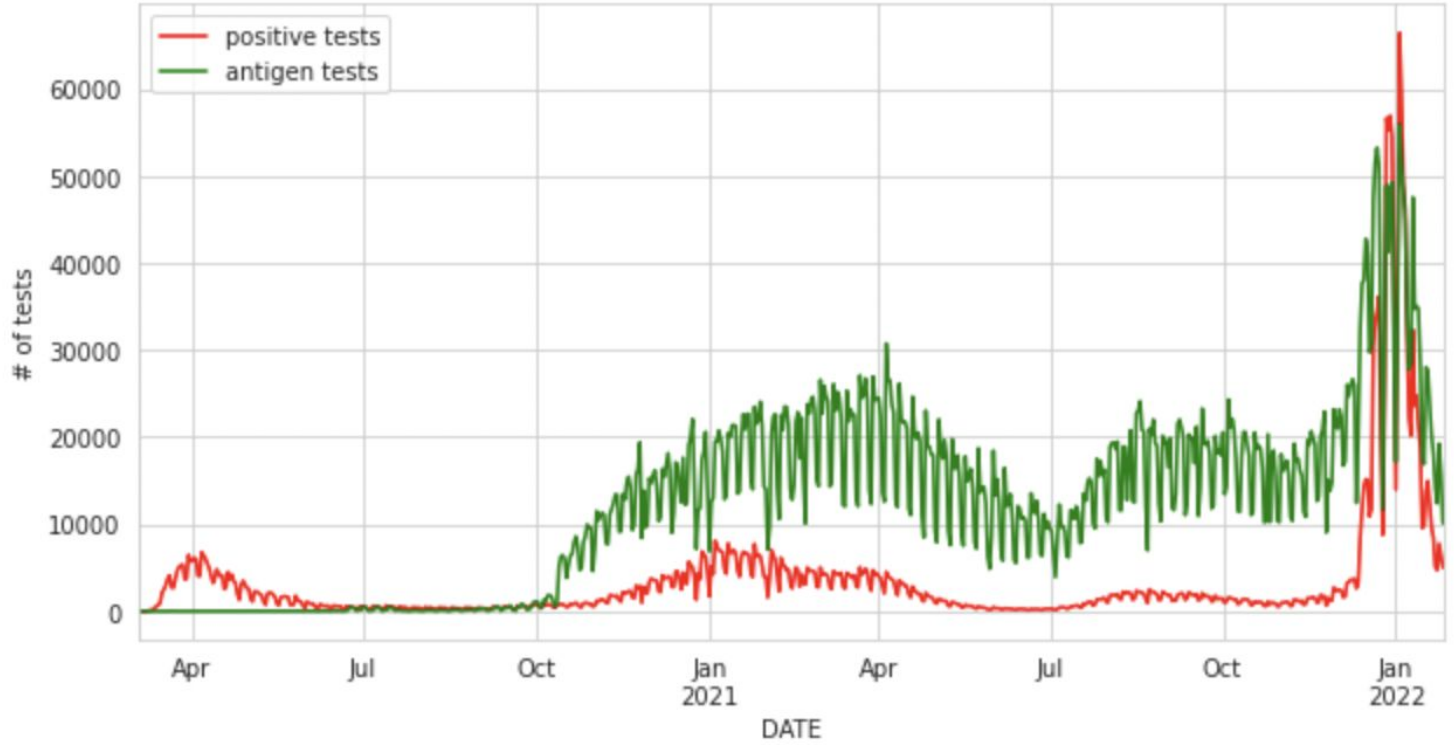



Antigen tests vs positive tests

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f51835baa50>
```



Positive tests percentage and antigen tests percentage

```
total_proportion_positive = test['POSITIVE_TESTS'].sum()/test['TOTAL_TESTS'].sum()
overall_positive_percent = round(total_proportion_positive * 100,2)
print(f'Overall positive percentage is {overall_positive_percent}%')
```

```
Overall positive percentage is 6.93%
```

```
test['TOTAL_ANTIGEN_TESTS'].sum()
```

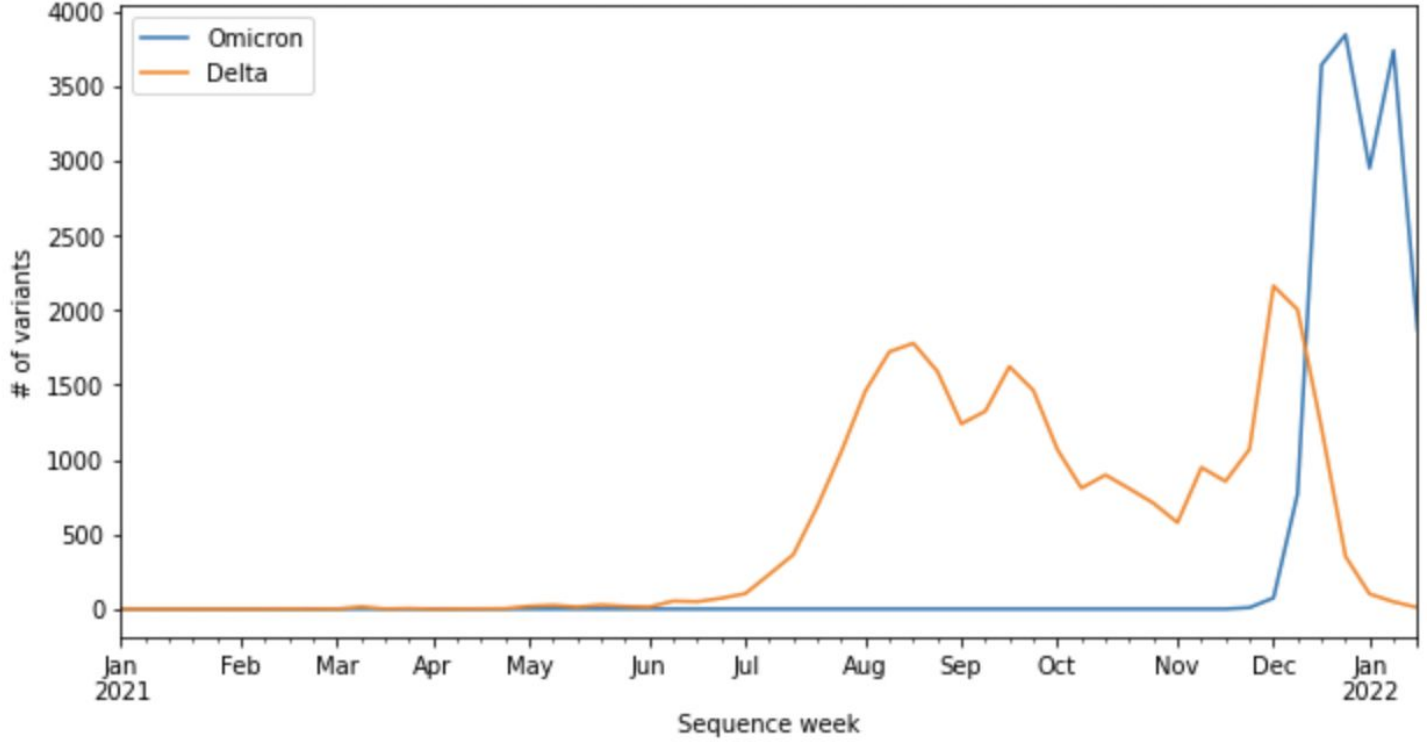
```
8236243
```

```
antigen_test_ratio = round(test['TOTAL_ANTIGEN_TESTS'].sum()/test['TOTAL_TESTS'].sum() * 100, 2)
print(f'Total Antigen tests percentage over time is {antigen_test_ratio}%')
```

```
Total Antigen tests percentage over time is 24.16%
```

Omicron vs Delta

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f602fd35950>
```

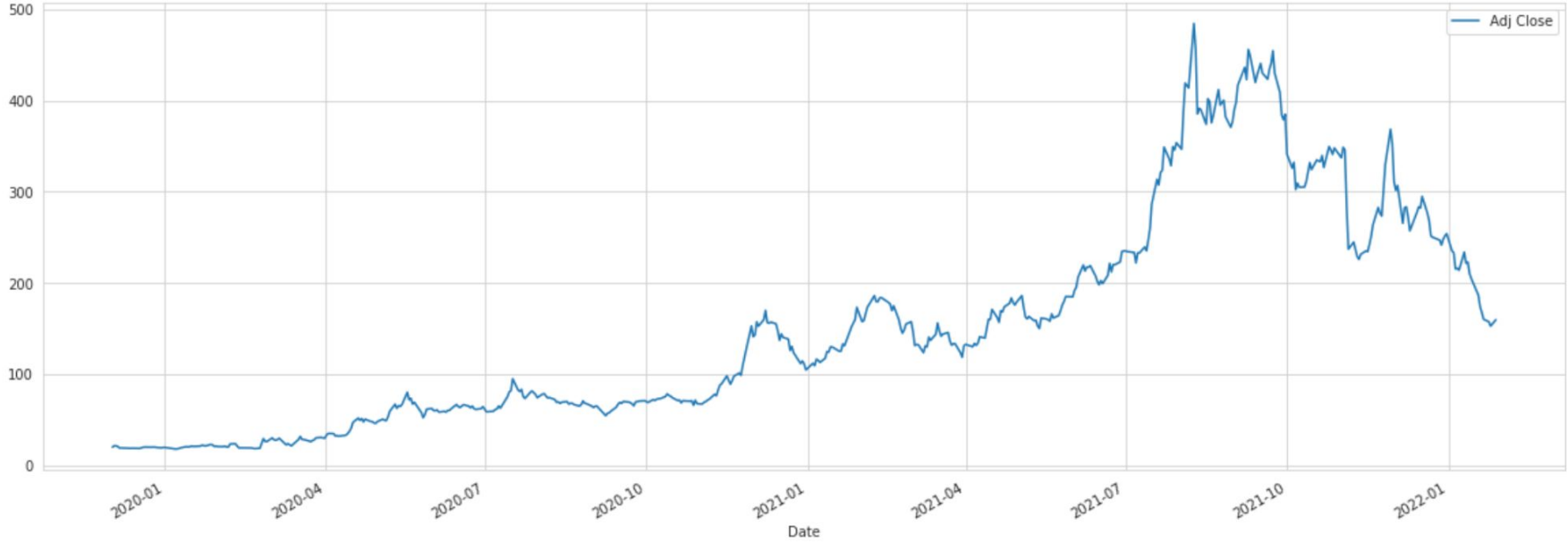


Stock Market Data Analysis

Selected Stocks:

- Moderna (MRNA)
- Amazon (AMZN)
- American Airlines (AAL)
- Restaurant Brands International (QSR)
- Carnival Corporation (CCL)

Moderna (MRNA) Adj Close Plot

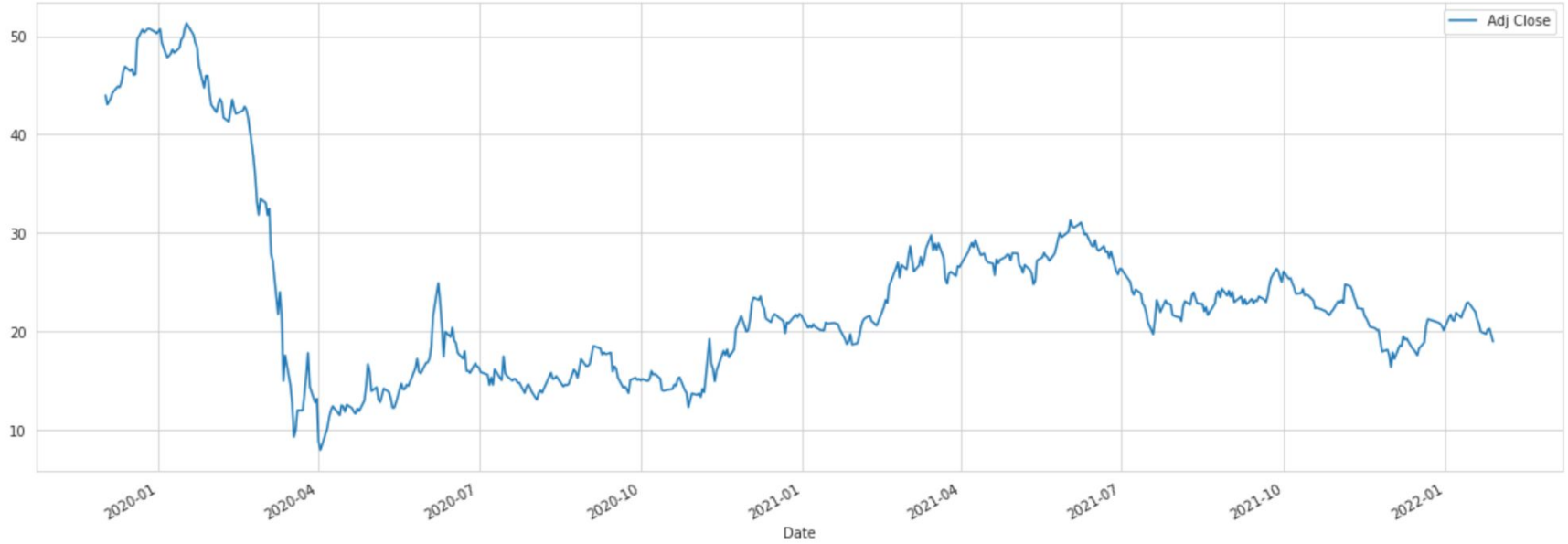


Amazon (AMZN) Adj Close Plot

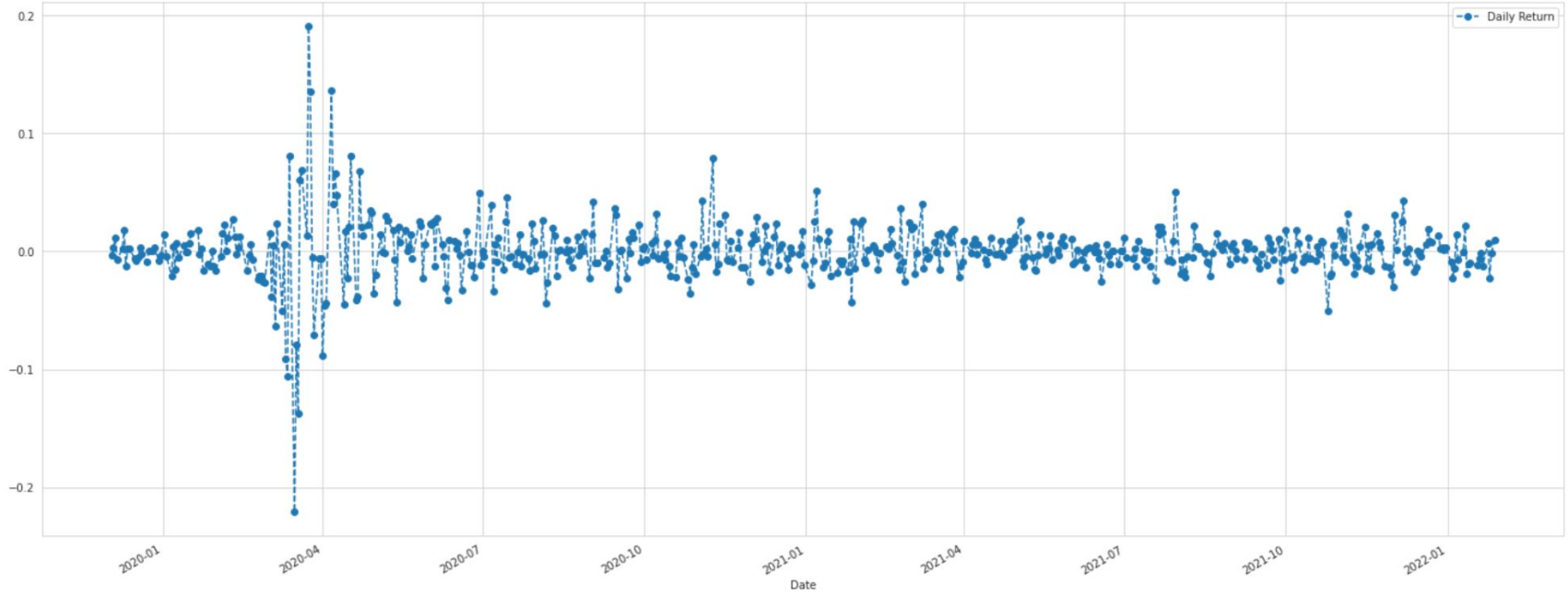
American Airlines (AAL)
Adj Close Plot

Restaurant Brands International (QSR) Adj Close Plot

Carnival Corporation (CCL)
Adj Close Plot

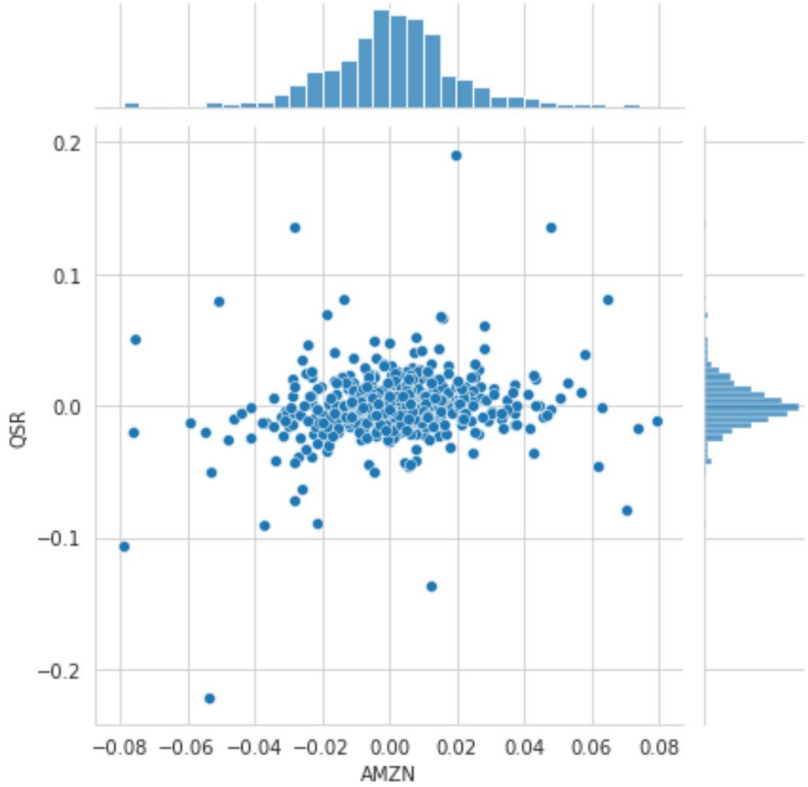


QSR Daily Returns

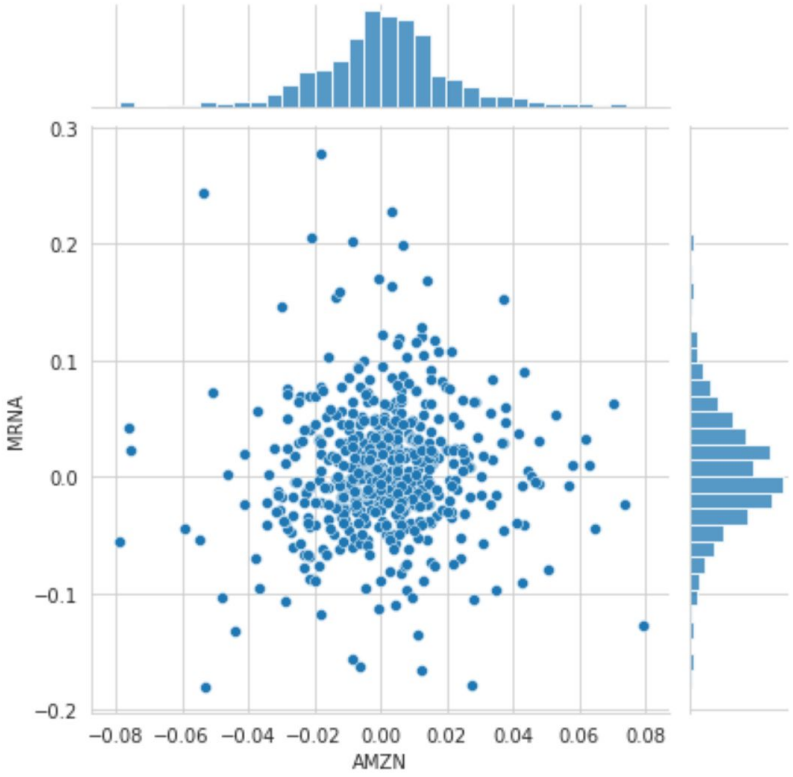


Moderna and Carnival Corp Comparison

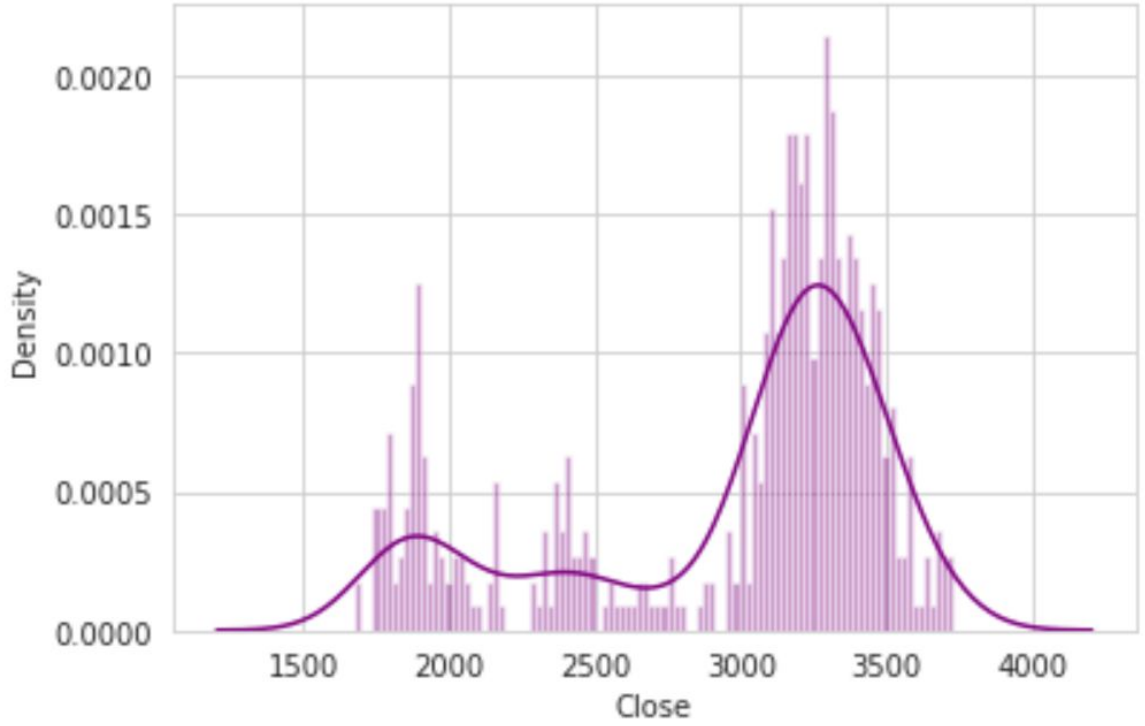
AMZN and QSR Join Plot



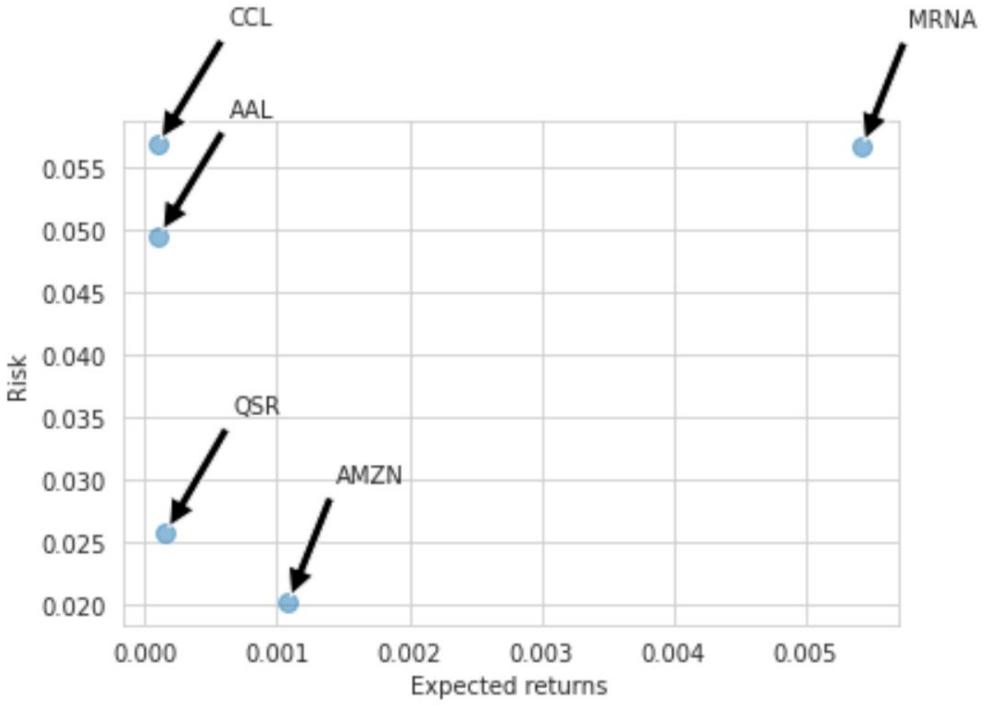
AMZN and MRNA Join Plot



AMZN Closing Price Distribution



Risk/Return Analysis



Thank you!

Questions?