Airline Outlook 2020

What does the COVID-19 coronavirus outbreak mean for tourism to the United States and where is the next growth?

Summary

- Decreasing Chinese tourists may bring down US airline growth
- Because of the disease profile, the COVID-19 may bring more uncertainty to tourism than SARS, and the airline industry may be slower to recover
- Indian tourists might be the rising market to watch for airline companies

Decreasing Chinese tourists
may **bring down** US airline growth

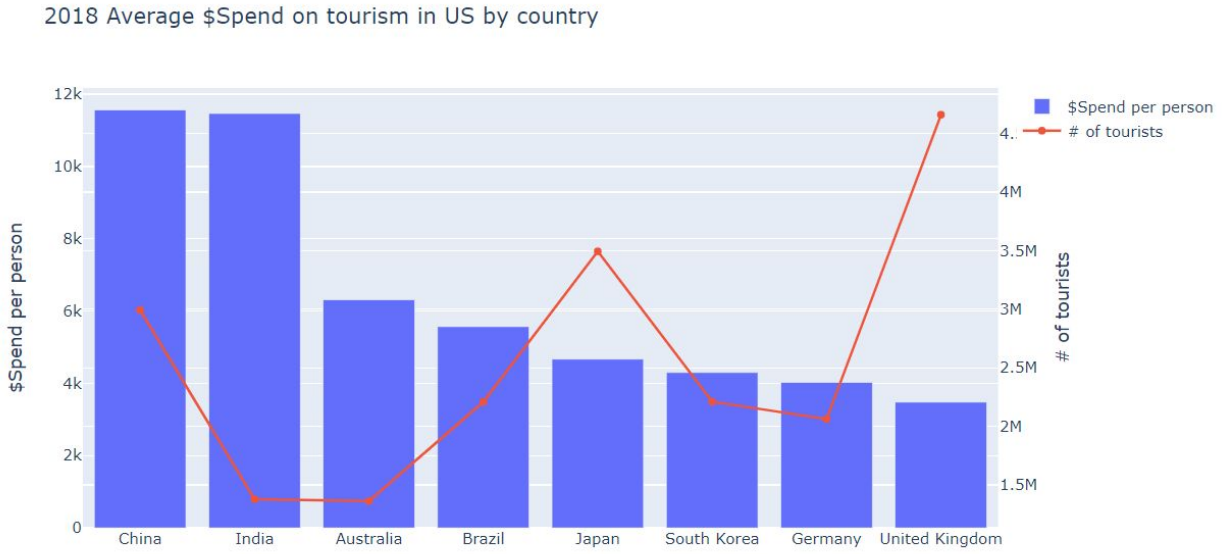
Chinese travellers play an important role in tourism money spent in the United States

Tourism Revenue =

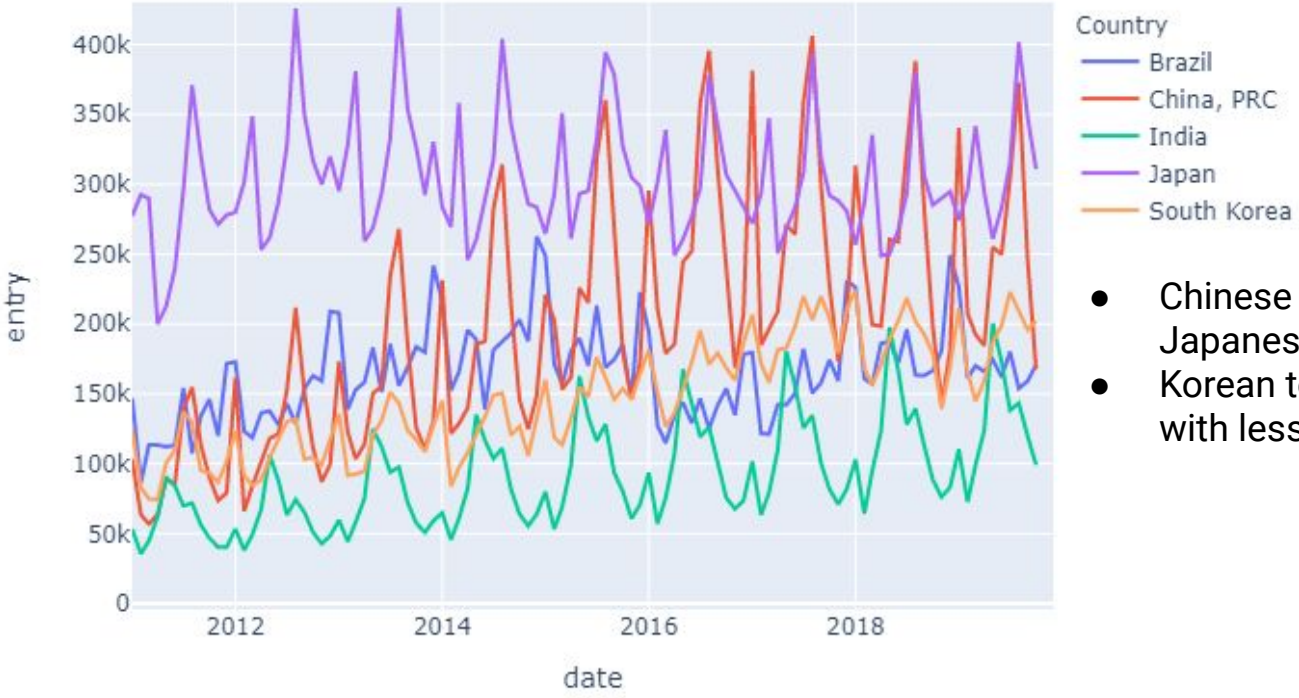
Number of Tourists

*****

Average Money Spent

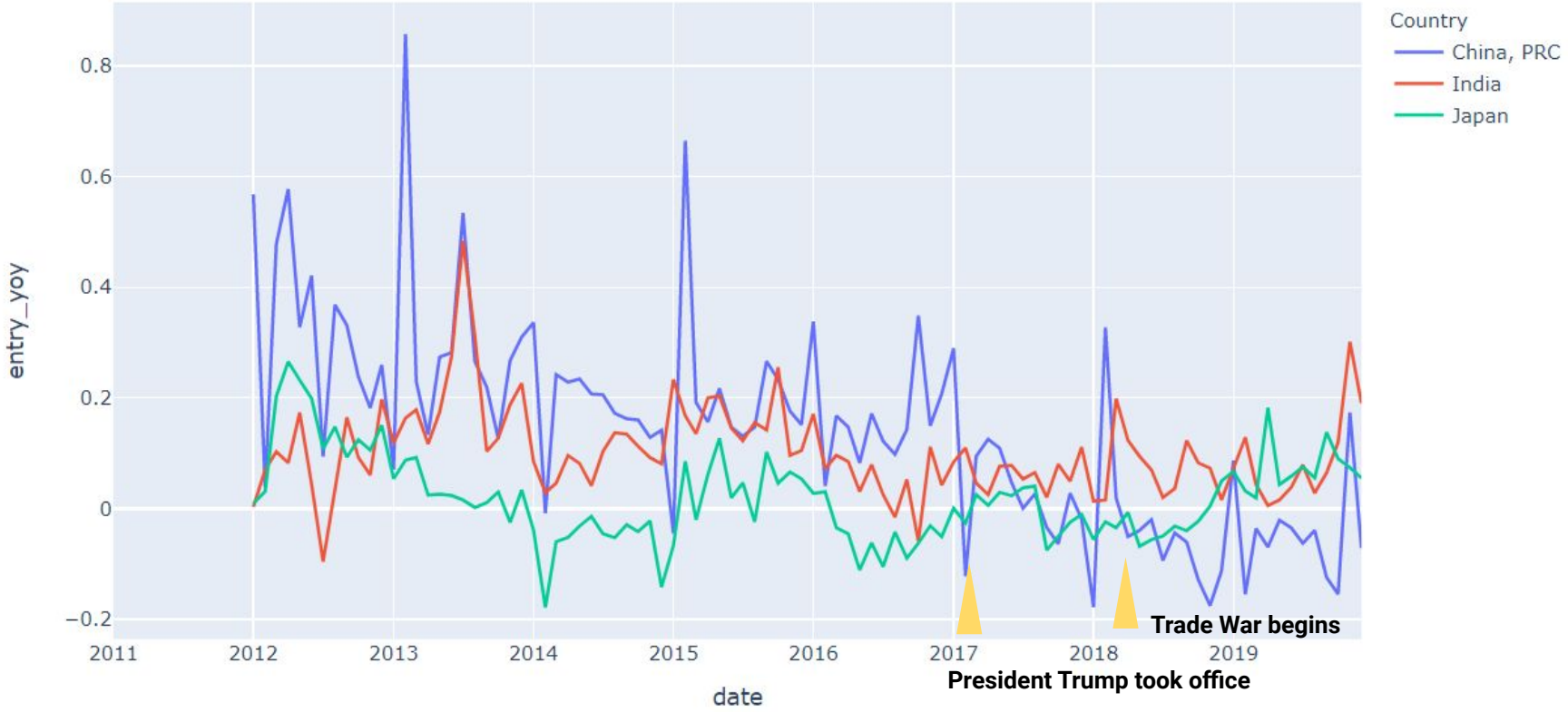


East Asian countries travelling to the United States show similar seasonal pattern



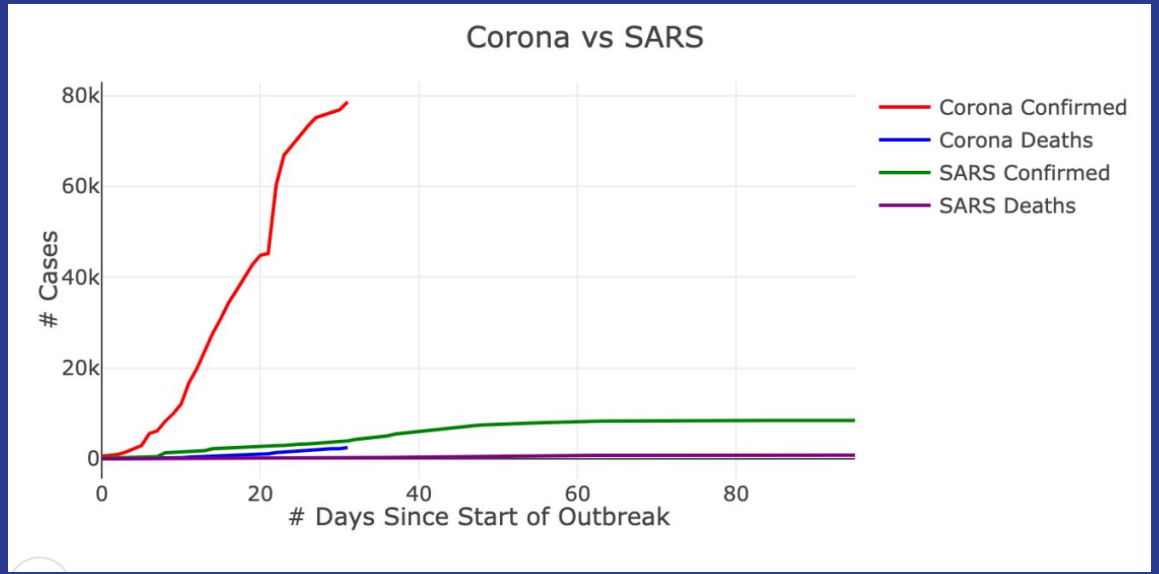
- Chinese tourists are catching up with Japanese tourists in number
- Korean tourists show steady growth with less seasonal volatility

Chinese tourism began decreasing after President Trump took office and the situation worsened after trade war began

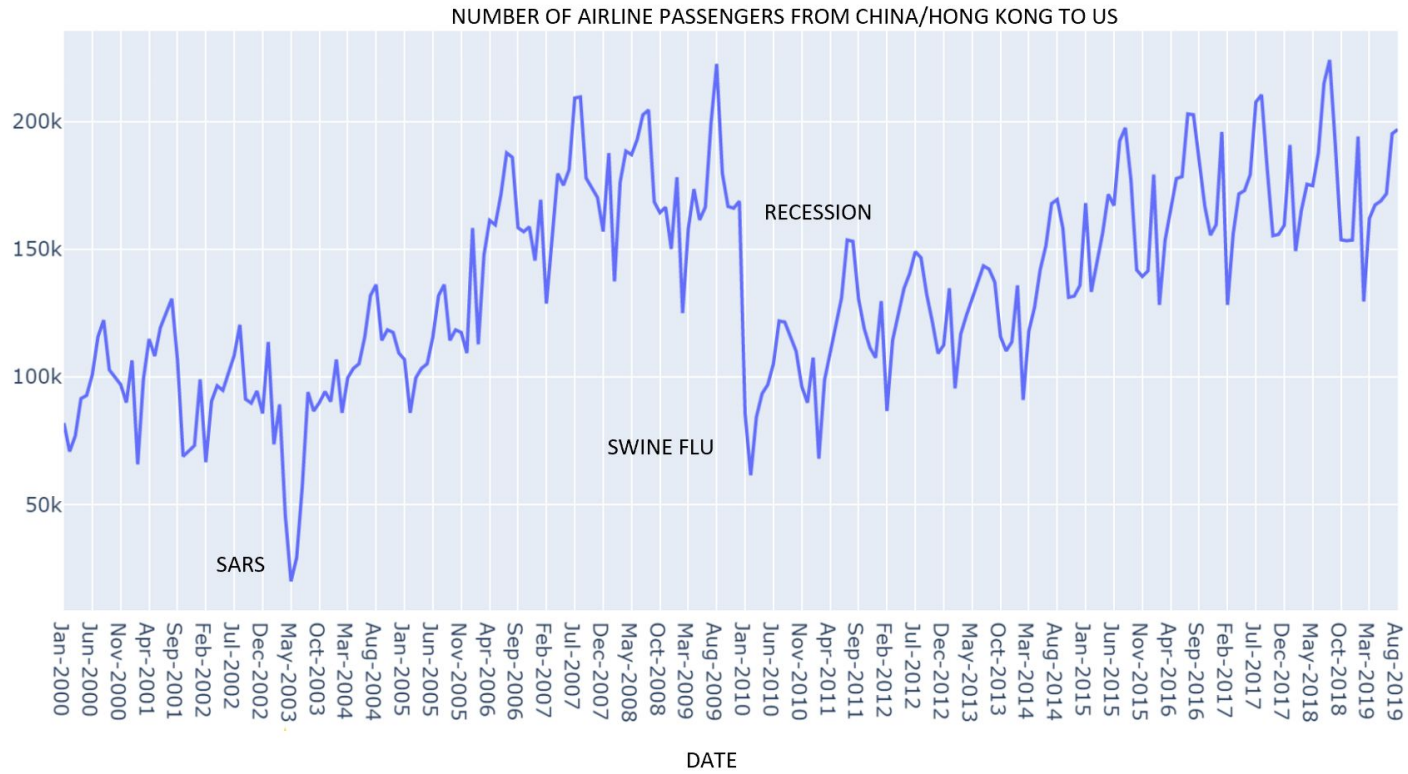


COVID-19 may bring more uncertainty to tourism than SARS did in 2003

The number of cases of COVID-19 is much higher than the 2003 SARS outbreak

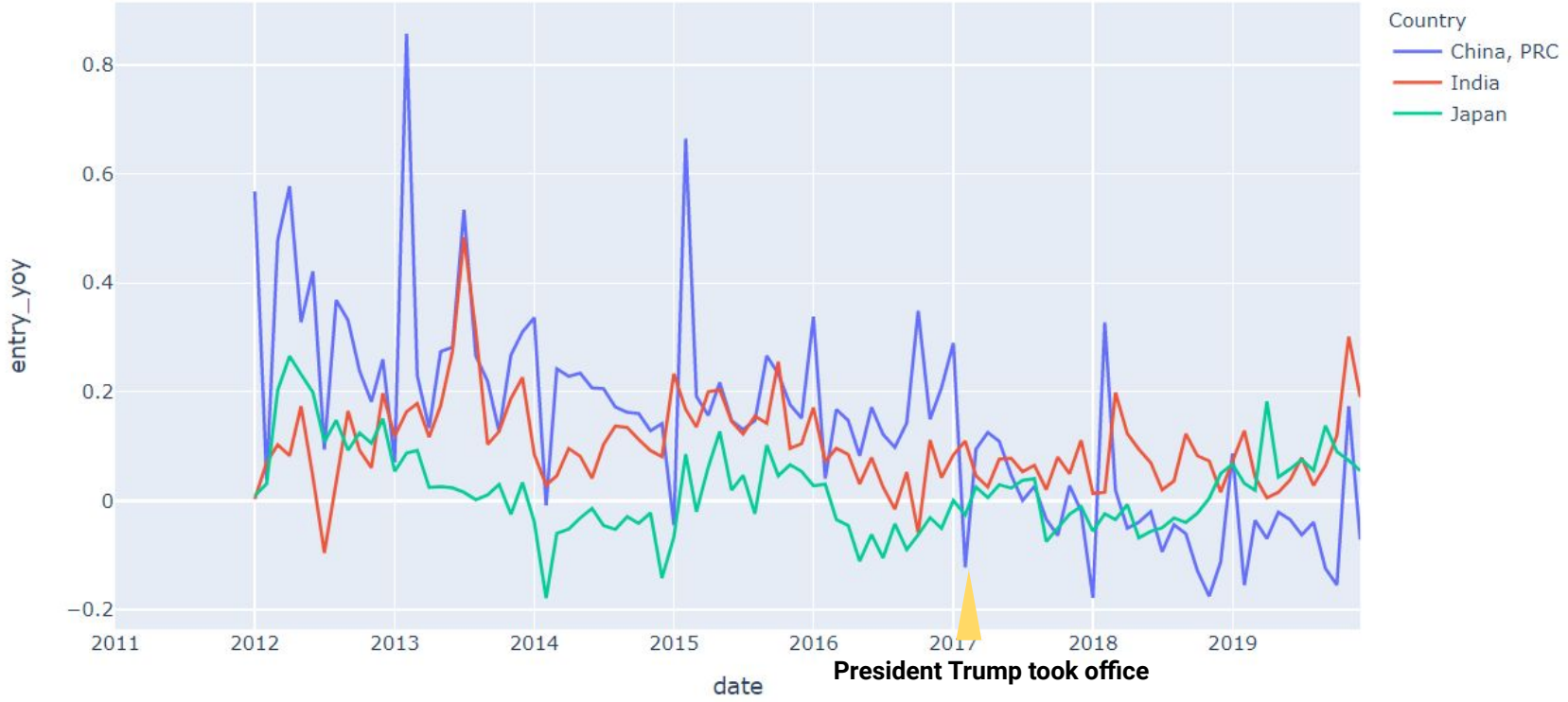


20 years of inbound flight data shows us that similar diseases have caused a drop in tourism from China, but that tourism rates recovered by the following summer

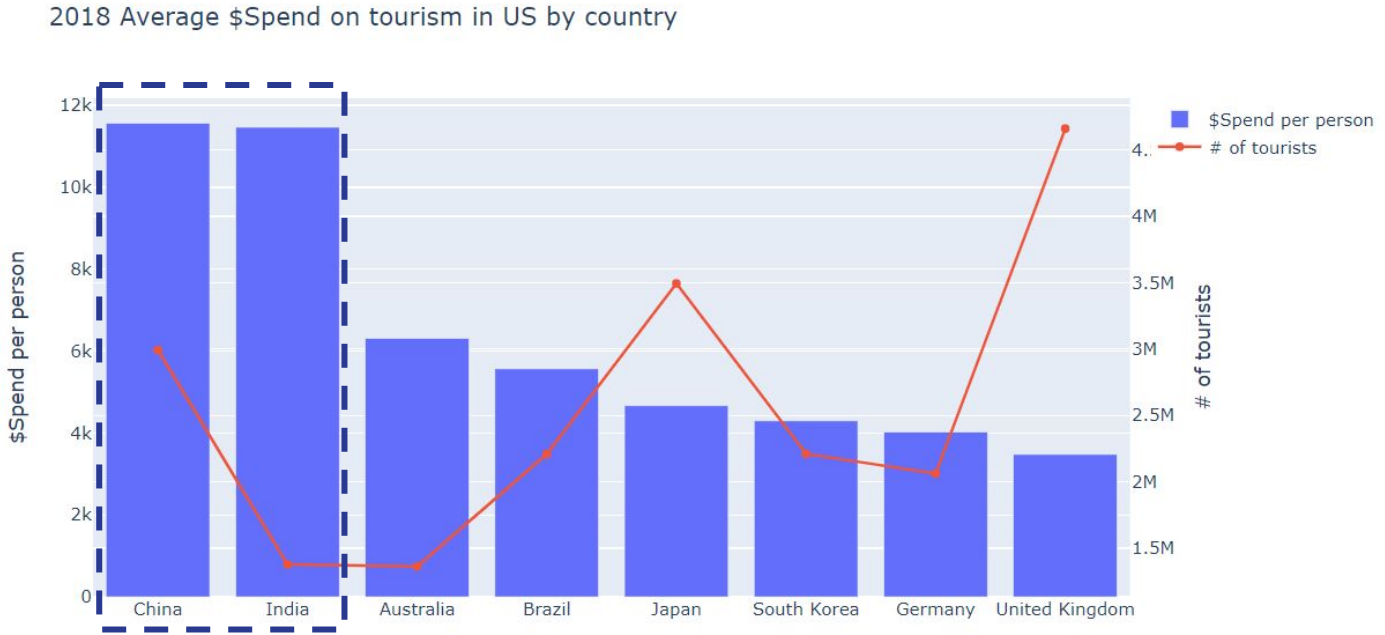


Indian tourism may be the rising market to watch for airline companies

- Indian tourism has shown strong growth over the past 7 years
- Chinese tourism began to decrease in 2017



With growing tourists and a similar high spending on tourism, India might be the next growth driver for US airlines



Very few passengers travelling from India to the United States are brought here by US airline companies

	Direct flight Duration	Direct Passengers to US by US airlines	Tourist Entry to US	**Serve Rate by US Airlines**
India	15h 0min (DEL-EWR)	171,285	1.38 Million	**0.124**
China	14h 55min (PVG-EWR)	1,611,061	2.99 Million	**0.539**

Major Airline coverage in India-US flights is low

Direct flights from India to USA

Flights	Air India	United Airlines	Delta Airlines
JFK to Delhi	YES	YES	NO
JFK to Mumbai	YES	YES	YES
SFO to Bangalore	YES	NO	NO
IAD to Delhi	YES	NO	NO
SFO to Delhi	YES	NO	NO
ORD to Delhi	YES	NO	NO
EWR to Delhi	YES	NO	NO
EWR to Mumbai	YES	NO	NO

https://www.bookotrip.com/sights-and-shores/direct-flights-to-india-from-usa

Source and Reference:

Airline Database: Bureau of Transportation Statistics

NTTO: National Travel and Tourism Office

Data Summaries & Method Descriptions

BTS Data

We scraped 20 years of air carrier statistics from the Bureau of Transportation Statistics. Once these datasets were downloaded, we cleaned each in R to select for only flights that originated in China or Hong Kong and arrived in the United States. These datasets were transformed into a more workable configuration in and flights with fewer than one passenger were dropped. We then ran a for loop that summed the total number of passengers coming in to the United States from Hong Kong and China per month for each year of data and added them to a new dataframe. These 20 dataframes were combined and a time series plot was created using plotly for Python.

Ports of Entry

We focused on visualizing the year over year percent change of foreign arrivals by ports of entry. The top 10 most visited ports of entry in the United States were selected for the purpose of data visualization. The dataset was a subset of the ‘Final COR Port of Entry’ provided by Fidelity. It was converted into a dataframe using pandas in Python. Then, we used Plotly to turn the percent changes into bar chart. Finally, the codes were integrated into dash for the dashboard.

GitHub

Public on github for further contribution! :)

https://github.com/acjin21/brown_datathon20.git

Thank you!