The covid-19 Effects on businesses and unemployment

Group 8
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Problem

- Closure of business across the United States was necessary due to the Coronavirus pandemic
- Only essential businesses will remain open
  - There was an interruption in the labor sector
  - Decreasing Supply
- Business losing profits
  - Increasing unemployment in the nation
- Companies who are still operating have lost business as their clients have become too cautious
- People had to change their spending habits
- The education sector changed their way of operations

Process

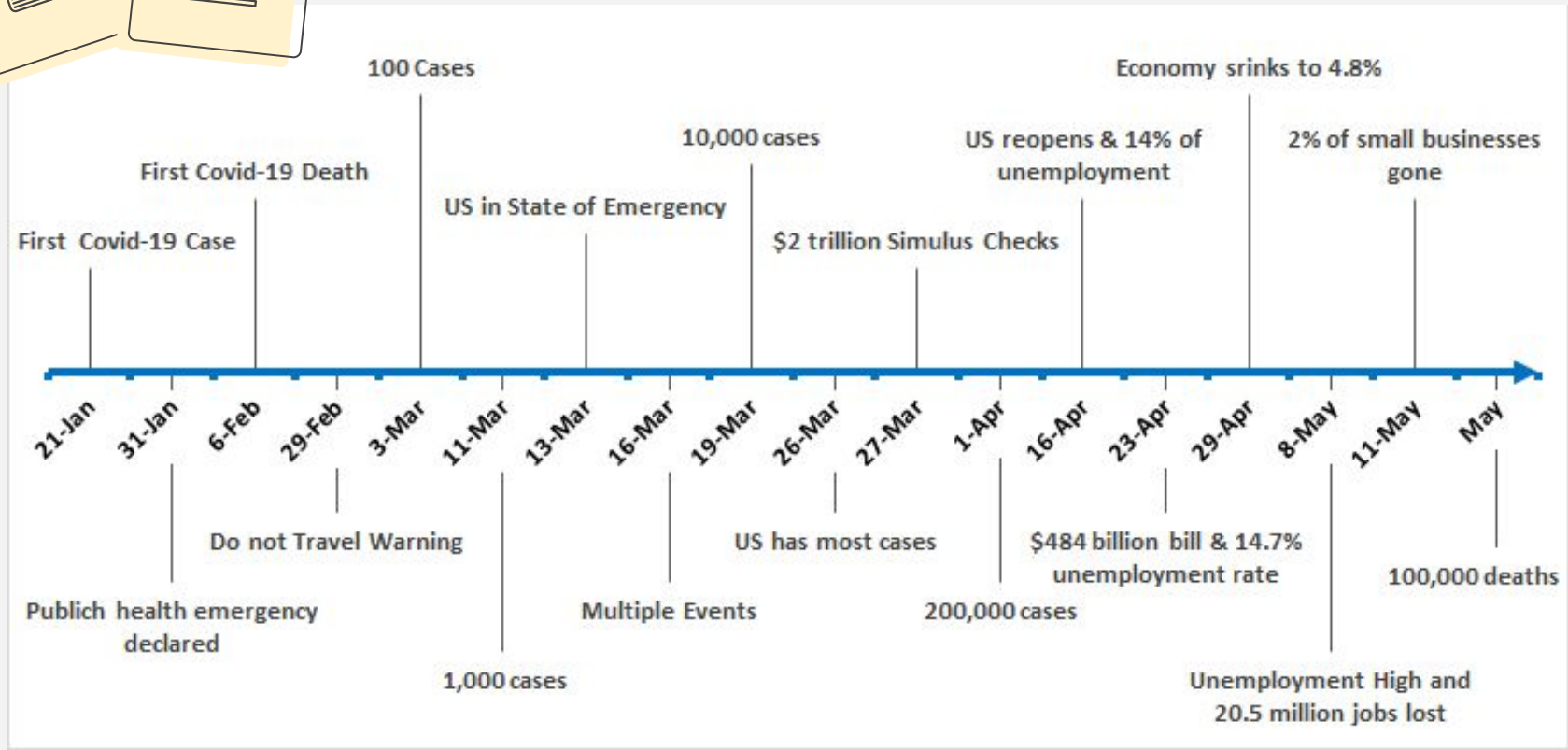
Index Funds

- How economy is doing
- How well the the businesses are doing
- Business performance and unemployment rate
- Real-time data

Tool

- Python
- Excel
- Tableau

Timeline


21-Jan
First Covid-19 Case
31-Jan
Publich health emergency declared
6-Feb
First Covid-19 Death
29-Feb
Do not Travel Warning
3-Mar
100 Cases
11-Mar
1,000 cases
13-Mar
US in State of Emergency
16-Mar
Multiple Events
19-Mar
10,000 cases
26-Mar
US has most cases
27-Mar
$2 trillion Simulus Checks
1-Apr
200,000 cases
16-Apr
US reopens & 14% of unemployment
23-Apr
$484 billion bill & 14.7% unemployment rate
29-Apr
Economy srinks to 4.8%
8-May
Unemployment High and 20.5 million jobs lost
11-May
2% of small businesses gone
May
100,000 deaths

DATA TYPES

Index funds

Stocks:

- S&P 500
- Russell 2000
- Dow Jones Industrial Average

Sectors:

- Health Care
- Consumer Staples
- Consumer Discretionary
- Energy
- Information Technology

Labor

Unemployment:

- National Unemployment
- State/County Unemployment

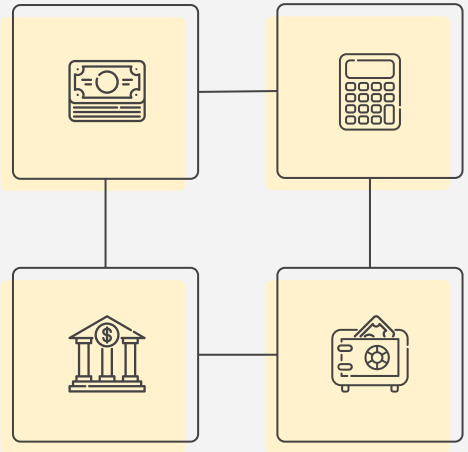
DATA Source

STEP 01

Find API, or open-source data set

STEP 02

Make script to download, clean, or interact with data sets



STEP 04

PROFIT

STEP 03

???

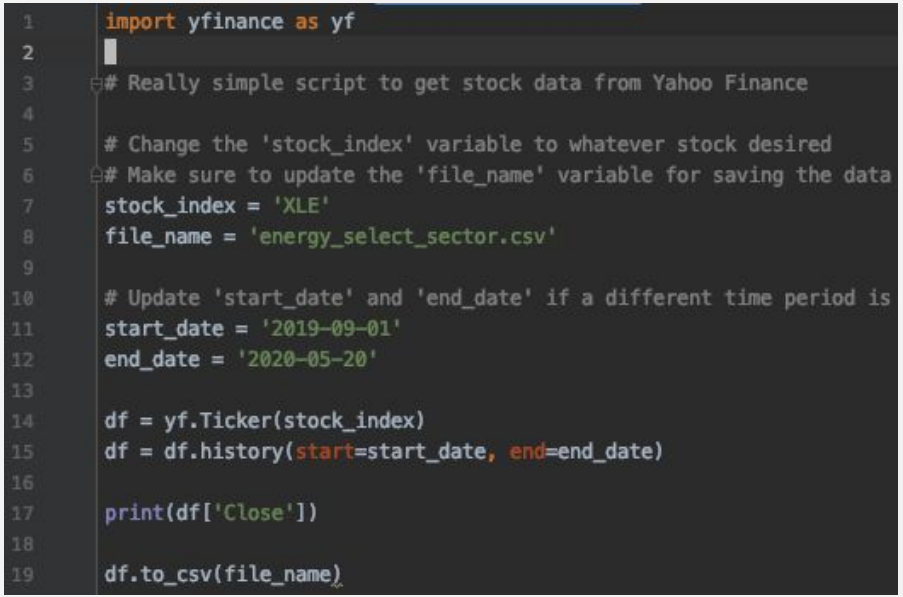
Yahoo FInance Script

Purpose:

- Download historical data from Yahoo Finance API with user defined stock symbol and period

Tools:

- Python
  - pandas
  - yfinance



```python
import yfinance as yf

# Really simple script to get stock data from Yahoo Finance

# Change the 'stock_index' variable to whatever stock desired
# Make sure to update the 'file_name' variable for saving the data
stock_index = 'XLE'
file_name = 'energy_select_sector.csv'

# Update 'start_date' and 'end_date' if a different time period is
start_date = '2019-09-01'
end_date = '2020-05-20'

df = yf.Ticker(stock_index)
df = df.history(start=start_date, end=end_date)

print(df['Close'])

df.to_csv(file_name)
```

Unemployment Data Script

Purpose:

- Takes unemployment data set, removes unnecessary period data and separates County and State columns

Tools:

- Python
  - Pandas
- U.S. Bureau of Labor and Statistics State/County data

```python
import pandas as pd

county_unemployment_file = "county_unemployment.xlsx"
search_item = "Sep-19"
cleaned_file = "unemployment.xlsx"

df = pd.read_excel(county_unemployment_file)

start_index = df["Period"].str.find(search_item).idxmax()
end_index = df["Unemployed"].str.find("-").idxmax()

cleaned_df = df.iloc[start_index:end_index]
cleaned_df = \
    cleaned_df.drop(columns=['LAUS Code', 'Code', 'Code.1']) \
              .rename(columns={"County Name/State Abbreviation": "deletion"})

cleaned_df["County"] = cleaned_df.deletion.str.partition(",")[0]
cleaned_df["State"] = cleaned_df.deletion.str.partition(",")[2]
cleaned_df = cleaned_df.drop(columns=['deletion'])

cleaned_df.to_excel(cleaned_file, index=False)
```

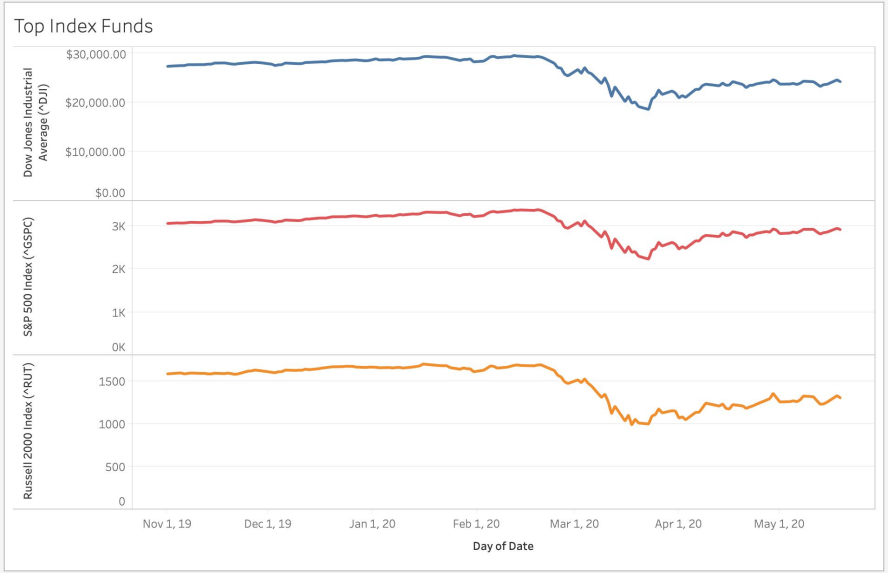
Business information tools

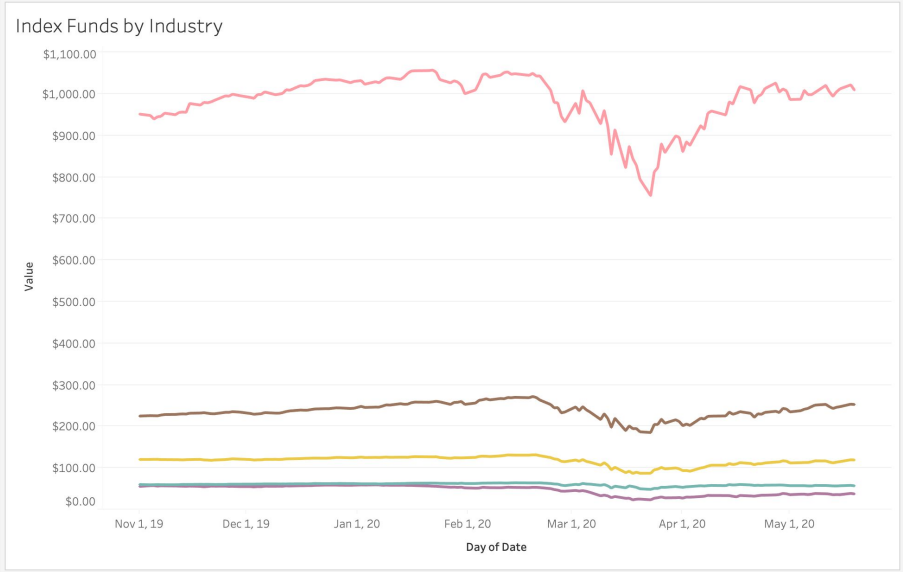
- Due to the extensive amount of data required, it was necessary to use one business information tool to convert the large amounts of data required and organize it into specific, more understandable concepts.
- Microsoft Excel was used to obtain raw data from index funds, unemployment reports, and Corona Virus reports as well
    a. create tables for all the dates recorded.
    b. to store all needed data and prepare it so that it can be imported into the Tableau application for further use.

Business information tools cont.

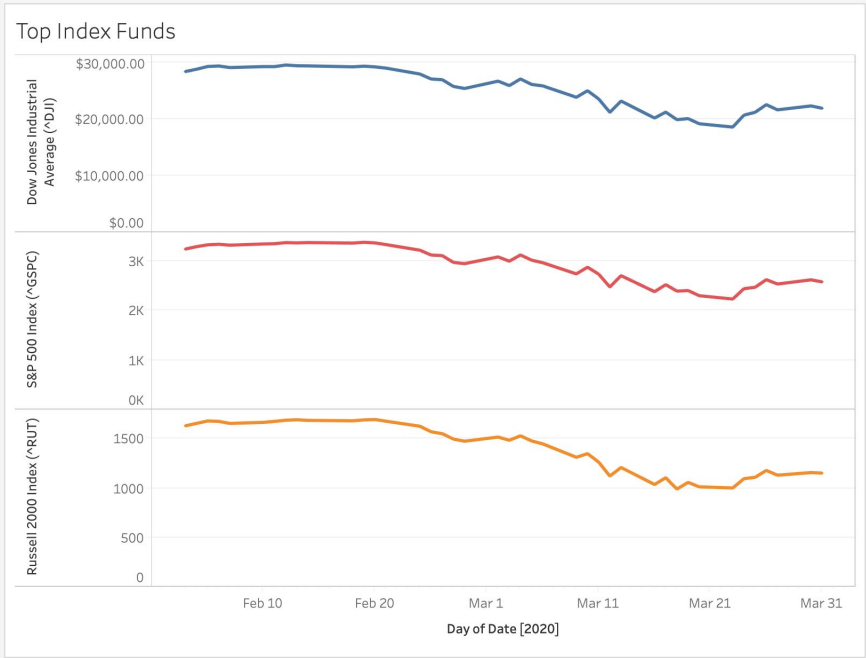
- **Tableau**: to digest all the raw data and create many graphs with different correlations to specifically understand the different impacts that the COVID-19 virus has had on businesses and how those impacts correlated with unemployment.
- Trend Line Graphs
    - Index Funds
    - Unemployment Rate
    - Index Funds and Unemployment
    - Successful Companies
- Bar Graphs
    - Unemployment Rate by State
- Geographical Displays
    - Unemployment Rate
    - Correlation between COVID-19 and Unemployment rate

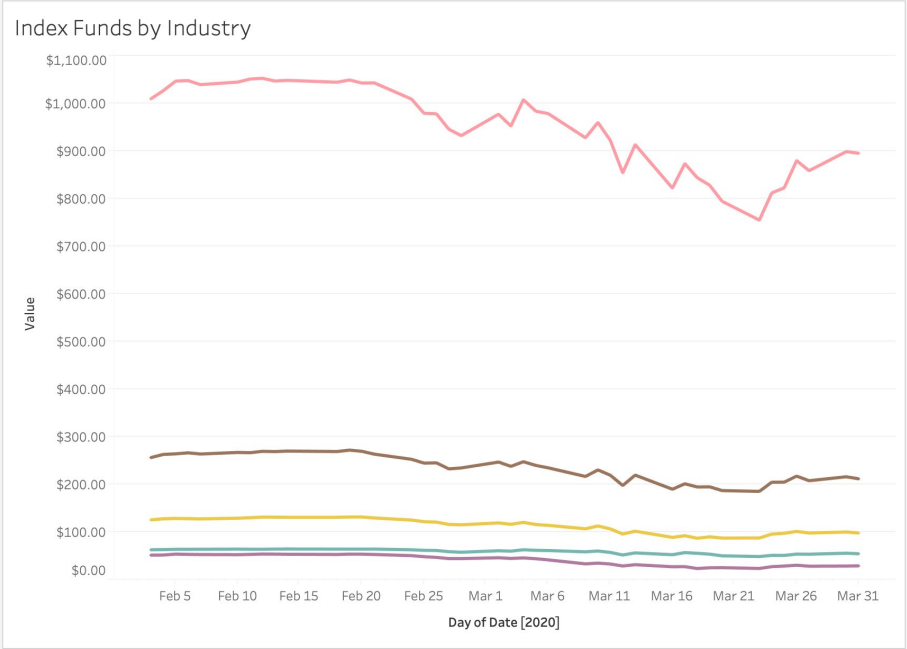
Data Analysis: Index Funds



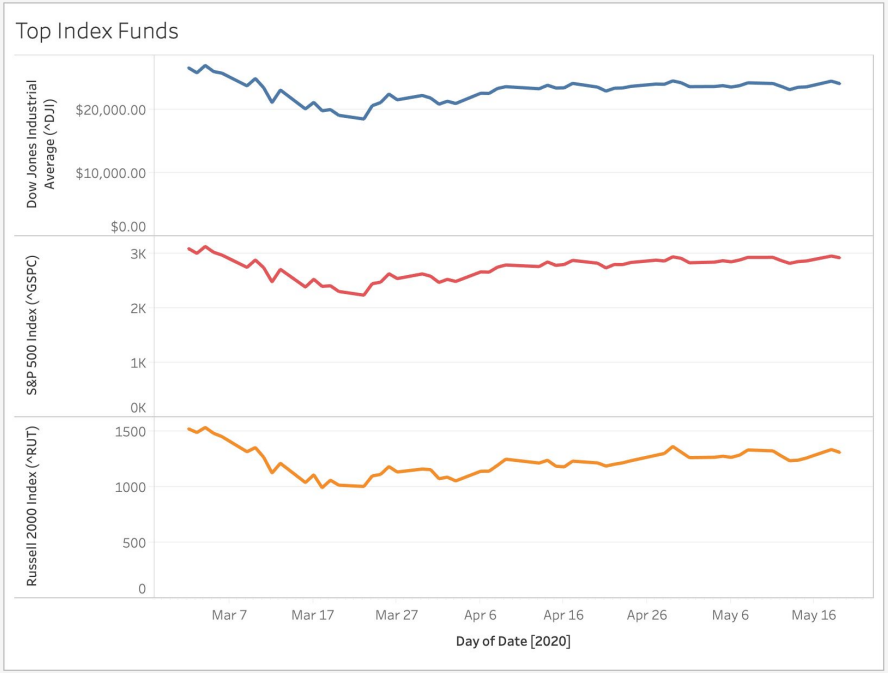


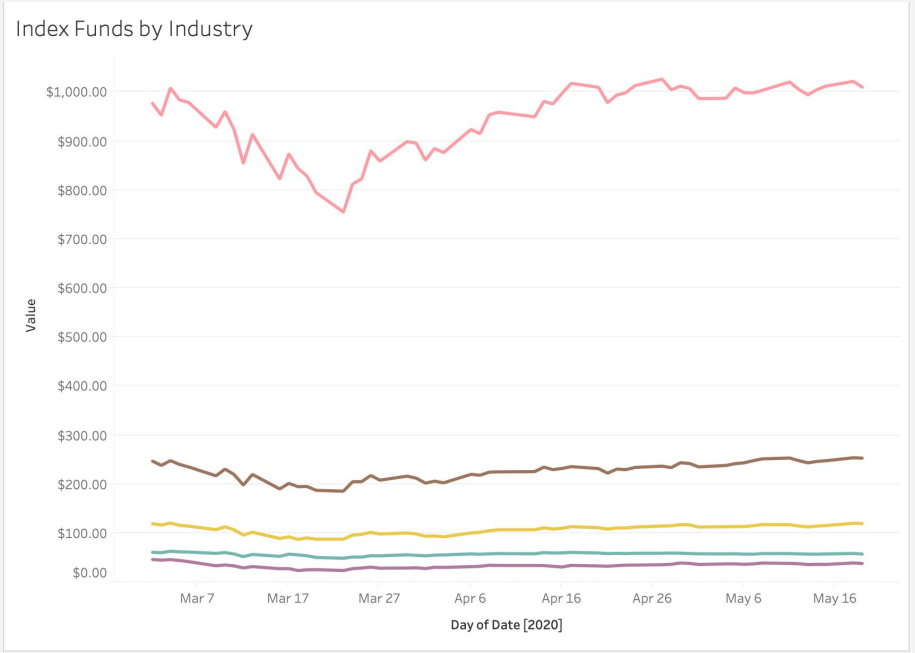
Index Funds Trend: february to march



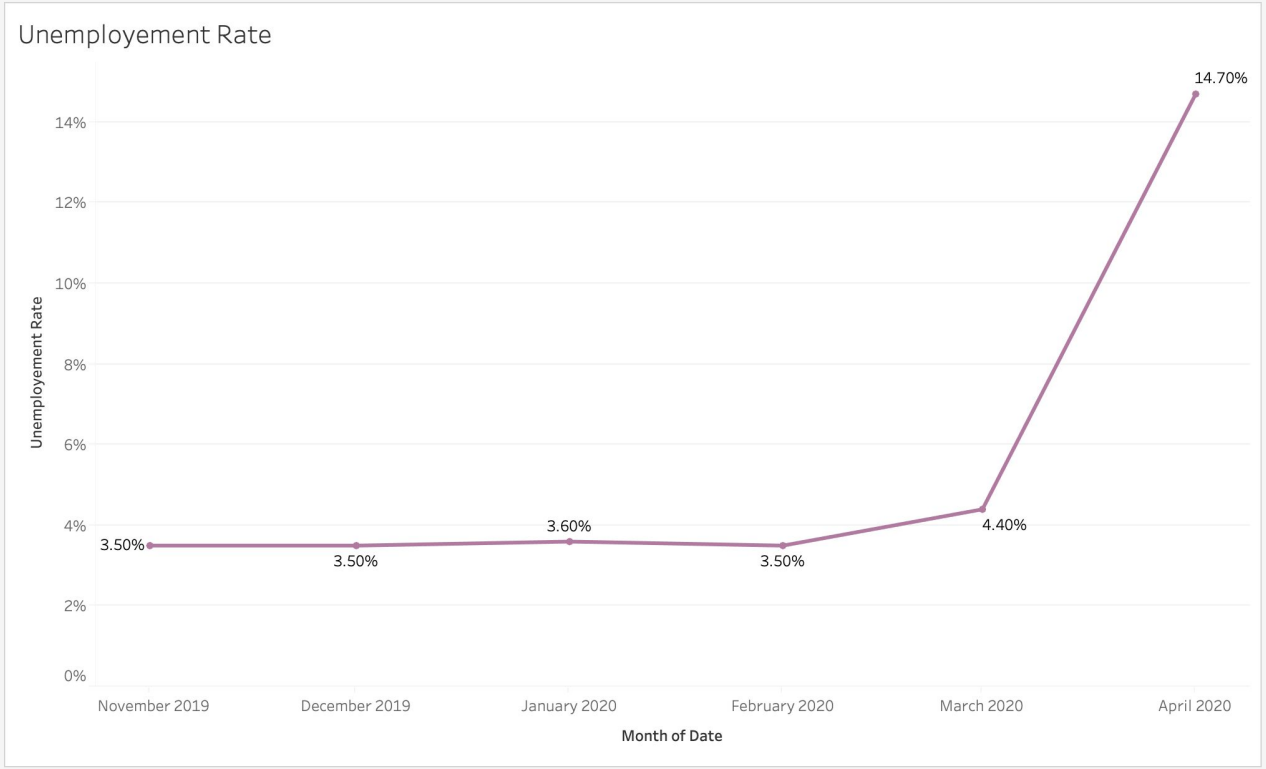


Index Funds Trend: march to May





Data Analysis: Unemployment Rate



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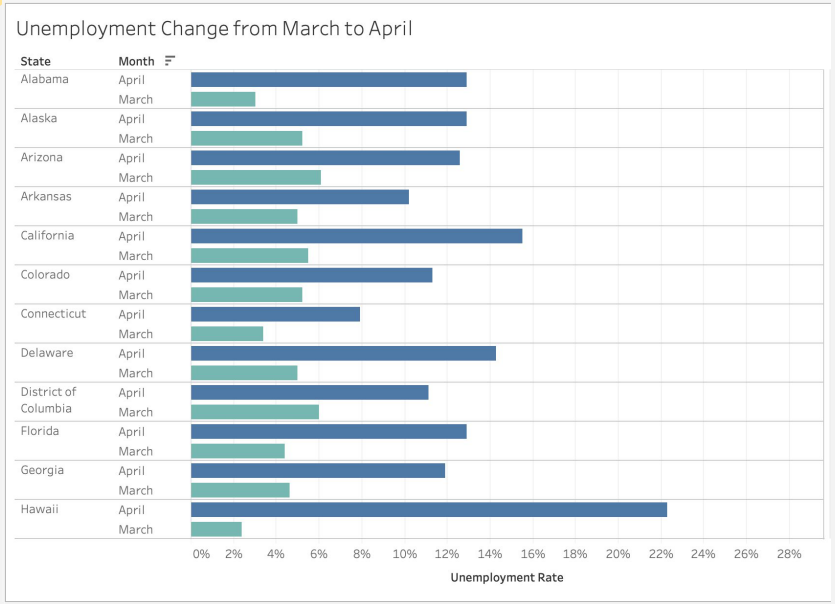
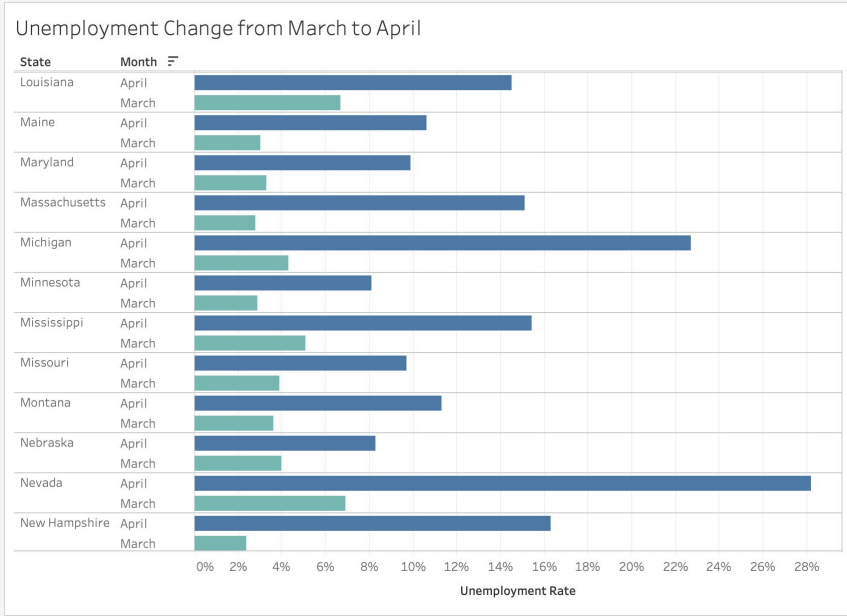
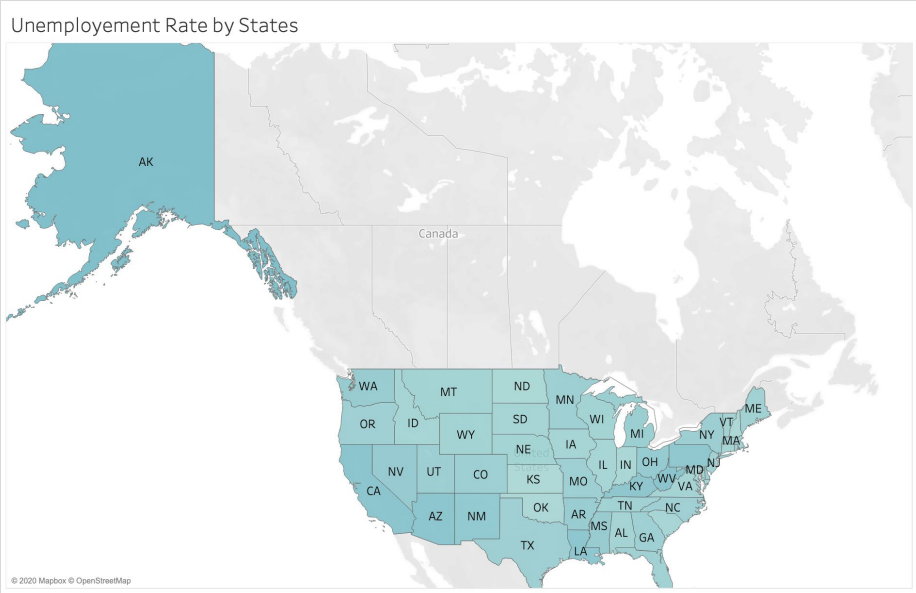


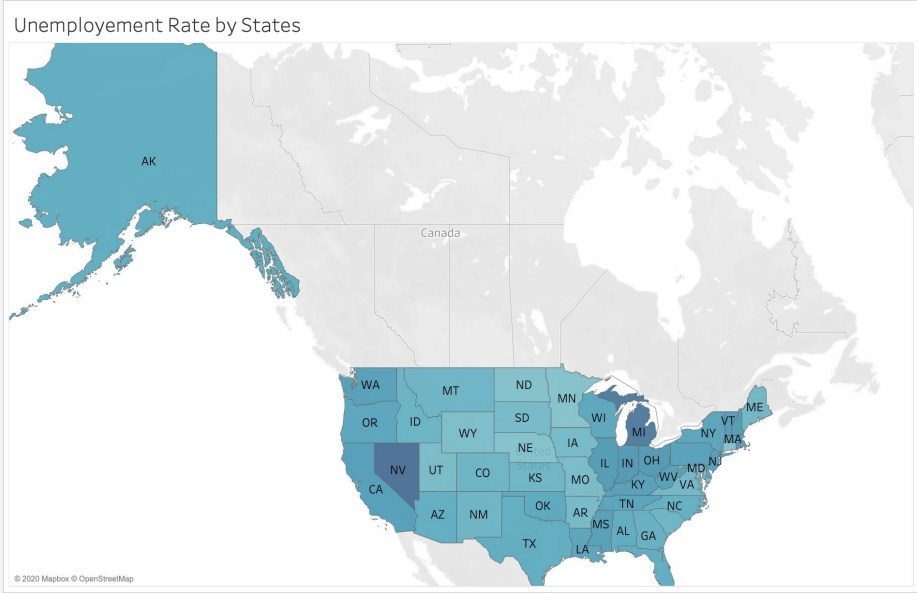


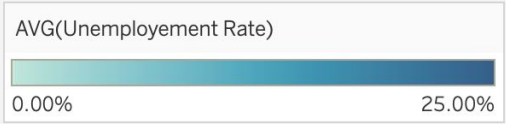
Data Analysis: Unemployment Rate

March

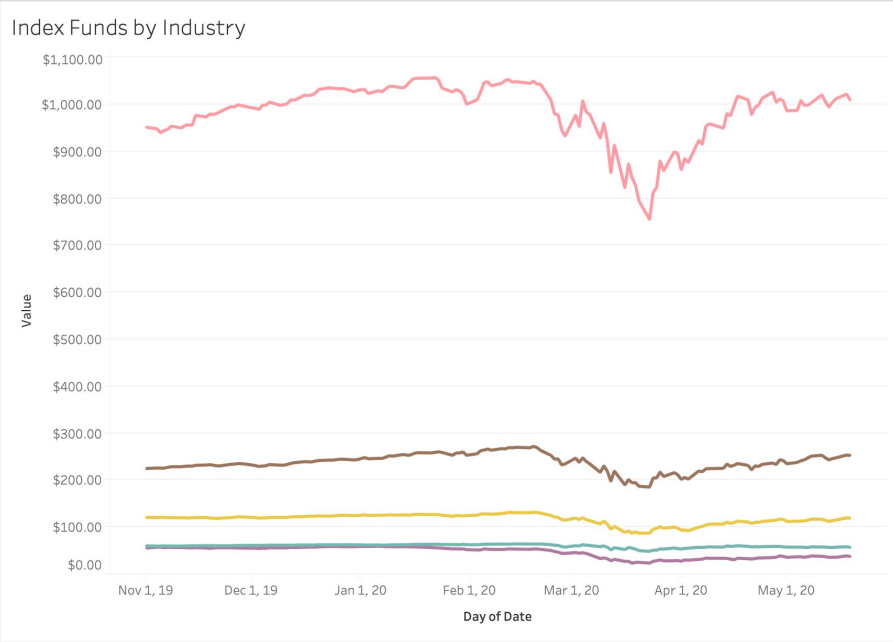


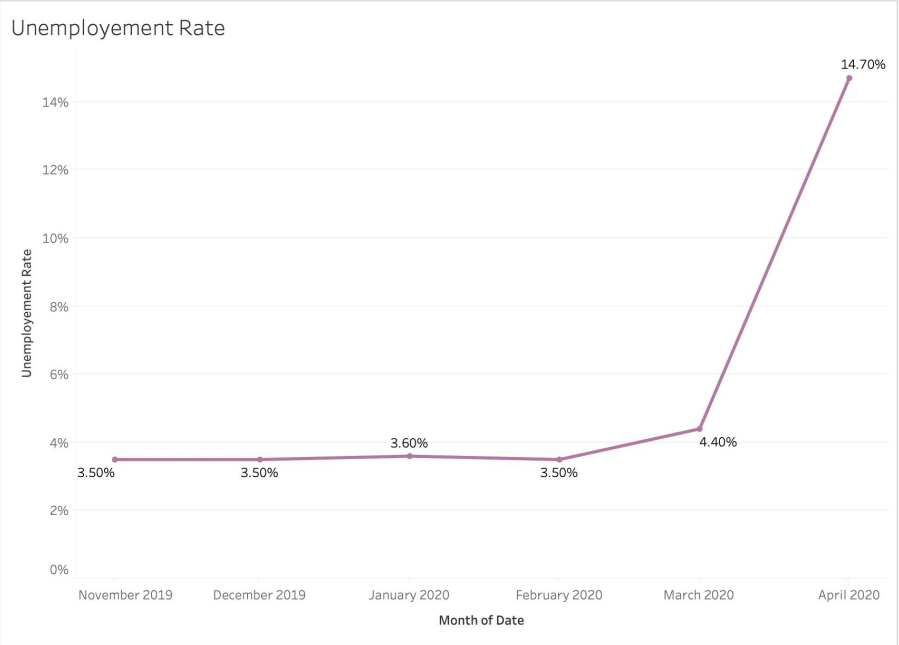
April



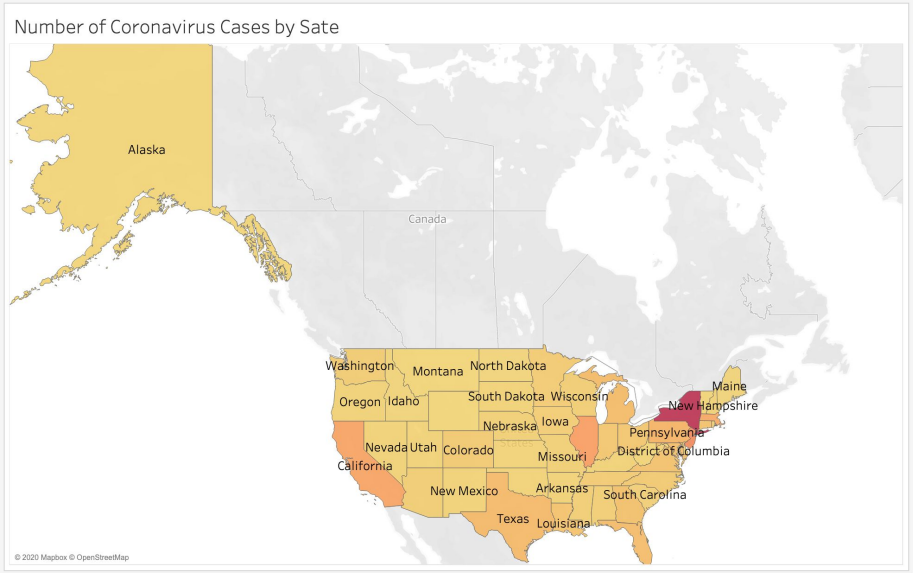


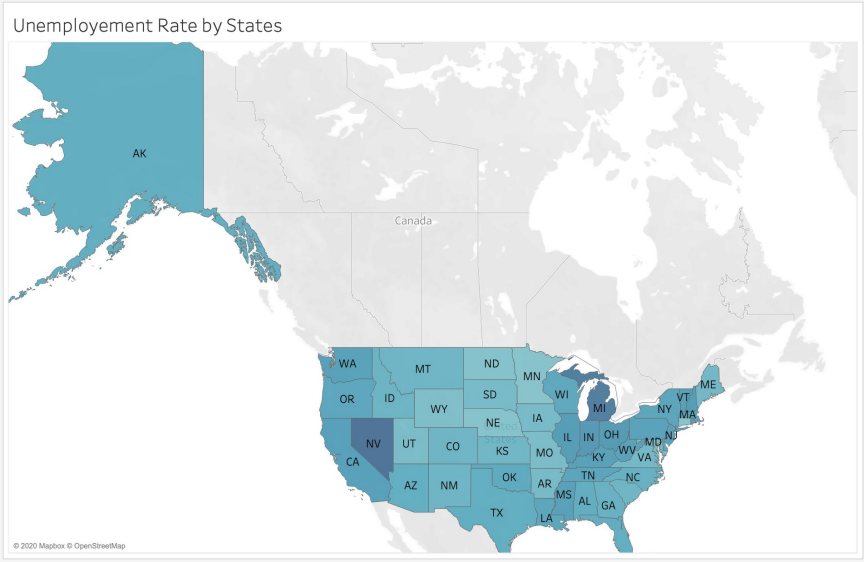
Data analysis:
Relationship between index funds & unemployment rate



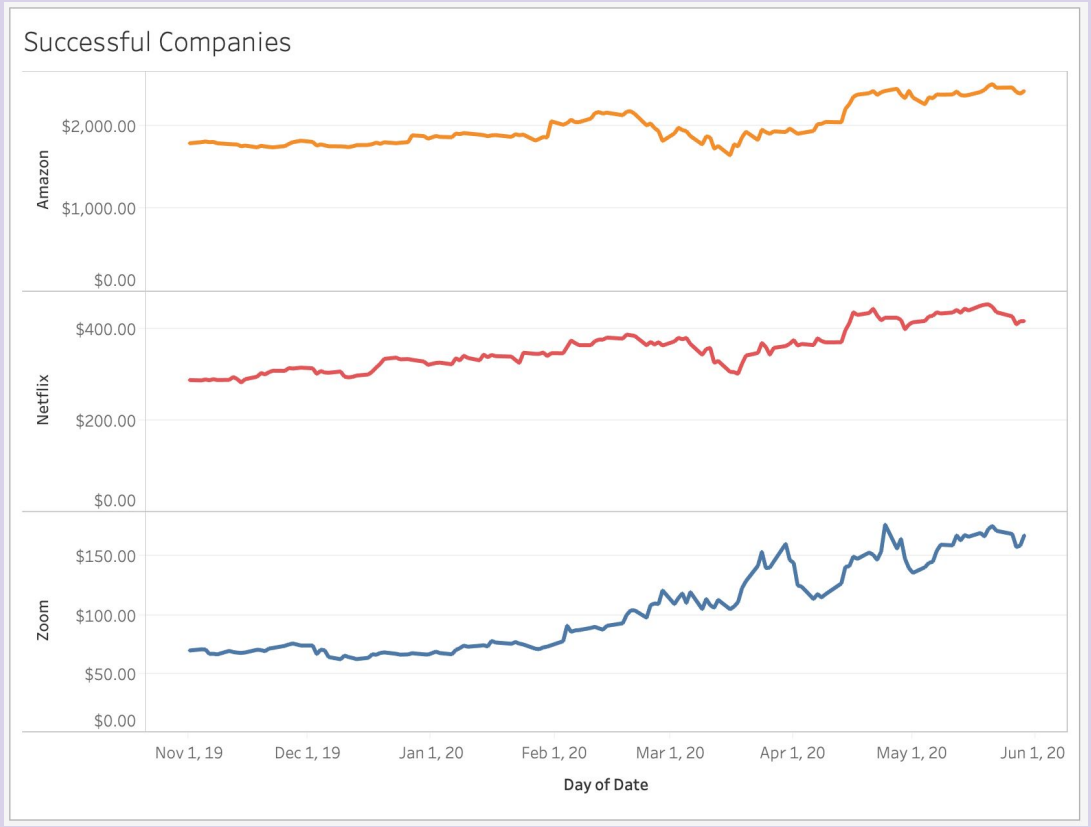


Data analysis: Relationship between Number of Coronavirus Cases & unemployment rate





Successful Companies



THANK S

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