

# GLOBAL STOCK MARKET IN THE TIME OF COVID19

Project 2 – Team 10

Nick Prentkowski

Jon Simpson

Terrence Cummings

## OUR STORY

- COVID19 has had not only a massive impact on public health, but also on global equity markets due to disruption of the global supply chain, travel, amongst other key drivers of the global economy.
- Our objective is to visualize the impact on regional stock markets from the date of the first reported COVID19 case in that market until today.

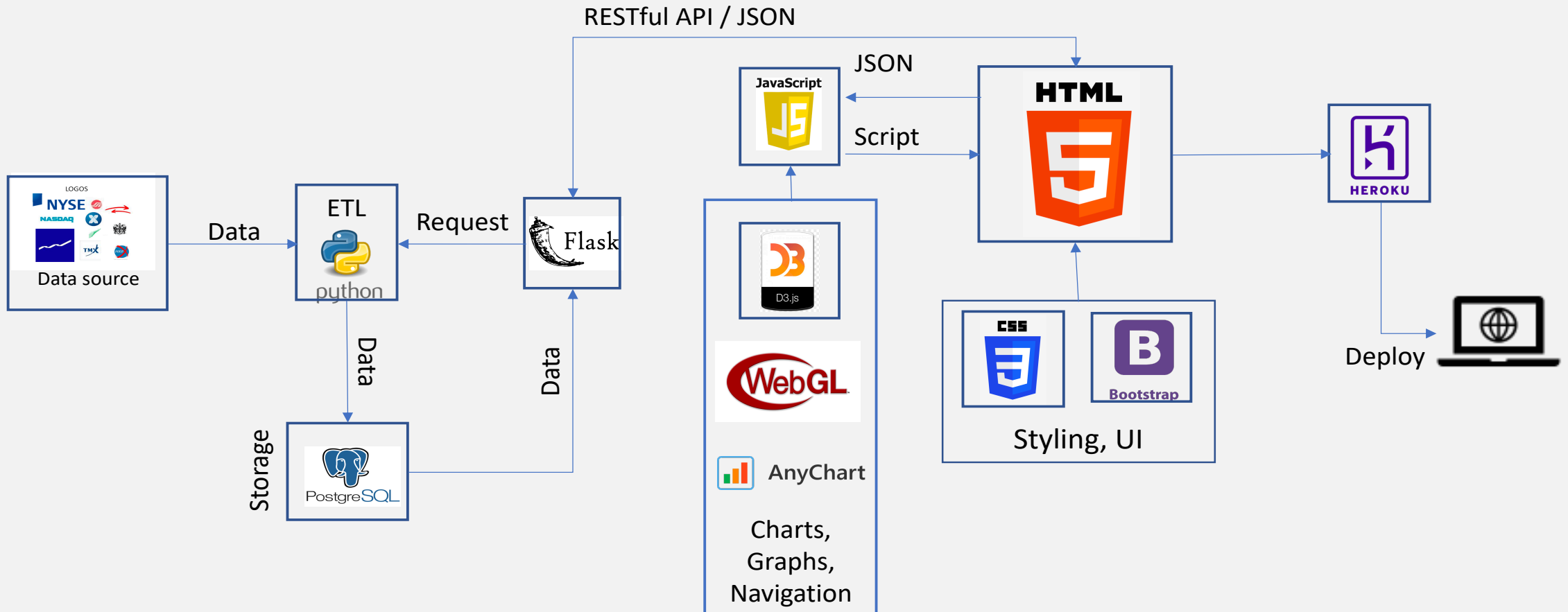
## DATA AND SOURCES

- We visualize data from 4 of the largest stock exchanges as represented by the major index for that exchange:
  1. USA – S&P 500 (ticker: GSPC)
  2. Hong Kong – Hang Seng Index (ticker: HSI)
  3. Japan – Nikkei 225 (ticker: N225)
  4. Shanghai – Shanghai Stock Exchange Index (ticker: SSEC)

Data was retrieved from Yahoo Finance using the Python library 'yfinance'.

Data points include daily Open, High, Low, Close, and Volume.

# TECHNOLOGY AND ARCHITECTURE



# PROCESS

## 1. ETL

1. EXTRACT data from Yahoo Finance using Python and the yfinance library.
2. TRANSFORM data into Pandas Dataframe for each stock.
3. LOAD data into four Postgres database tables.

## 2. Flask RESTful API

1. Read data from Postgres database tables
2. JSONify data
3. Place JSON data at URL endpoints to make available to Javascript for charting

## 3. Charting

1. Read JSON data from URL endpoints created by Flask
2. Use AnyChart stock chart d3/Javascript library to create candlestick charts for each stock.
3. Customize range selector to choose range beginning with first reported COVID19 case in that country
4. Customize chart titles.
5. Use Bootstrap to style chart webpages.

## 4. Home page

1. Use WebGL library to visualize global markets on a rotating globe.
2. Place markers for each market.
3. Create navigation from marker to the market chart

## 5. Deployment

1. Deploy app to Heroku