

A microscopic image of a virus particle, likely COVID-19, showing its characteristic spherical shape and surface texture. The image is rendered in shades of red and orange, with a dark background.

COVID-19

DATA

VISUALIZATION



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Senior Design

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TEAM MEMBERS



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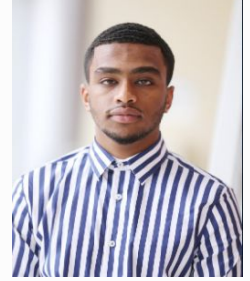
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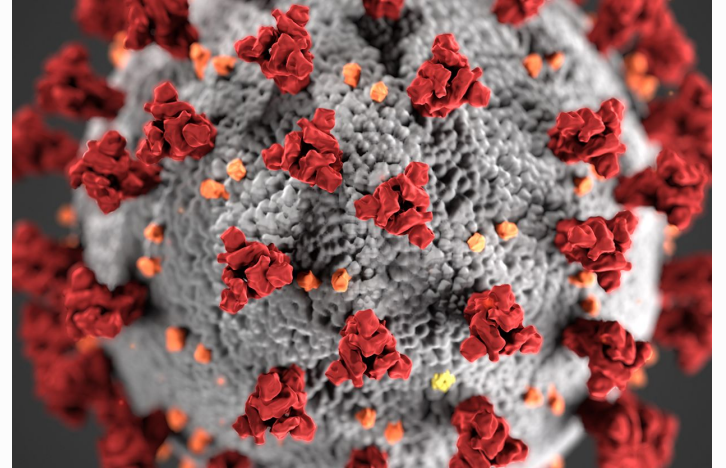


AGENDA

- What is COVID-19
- Dataset Visualizations
- Web Application
- The origin of COVID-19
- COVID-19 effect on the world
- Control Measures
- COVID-19 effect on the USA
- COVID-19 effect on California
- Conclusion

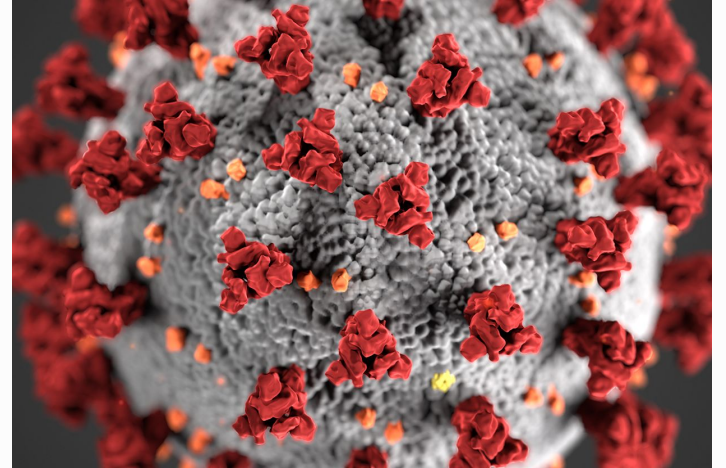
WHAT IS COVID-19

- Originated in Wuhan China
- Reported to the World Health Organization (WHO) on December 31, 2019
- Declared as a novel Coronavirus
- Identified as SARS-CoV-2



WHAT IS COVID-19

- Virus spread via air
- Only travels a few feet from an individual when they sneeze or cough
- Why we have been told to wear face masks
- Not much evidence to support that a concentration of people in a specific area, such as population density is the cause of the virus spread



DATASET DESCRIPTIONS



UNITED STATES DATASET

County Name,
Dynamic Date,
State,
Confirmed Cases,
CountyFIPS,
Number of Records,
County Population,
Total Confirmed Cases

(716,376 Entries)



WORLD DATASET

Country/Region,
Observation Date,
Province/State,
Confirmed Cases,
Deaths Cases,
Recovered Cases.

(93,059 Entries)



CHINA DATASET

Admission Date,
Confirmation Date,
Lives in Wuhan,
Province,
Sex,
Age,
Symptoms,
Symptoms Date,
Travel History,
Travel Date,
Outcome.

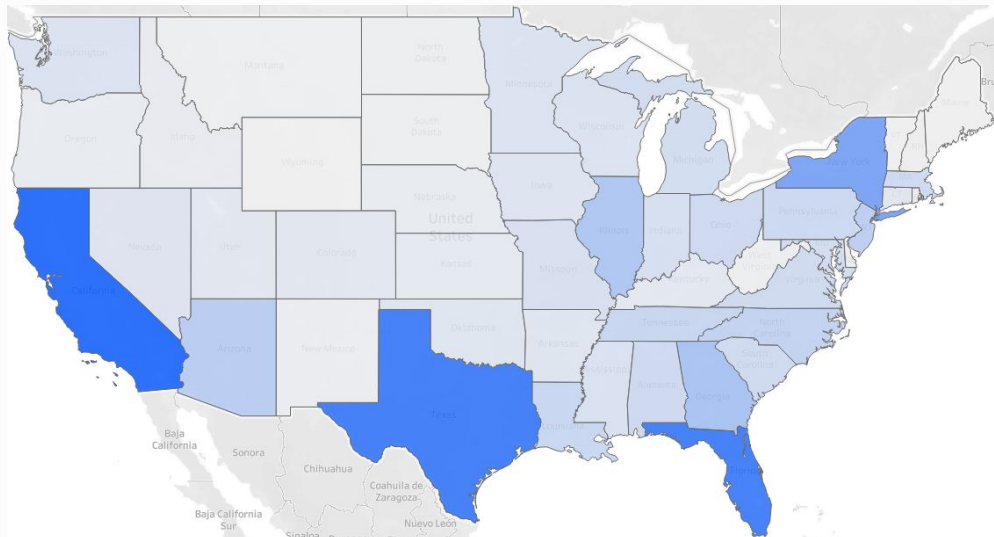
(14,127 Entries)

TABLEAU

- Well-known Data Visualization tool
- Simple and easy to use software
- Pay software and may be slow for

Web-Applications use

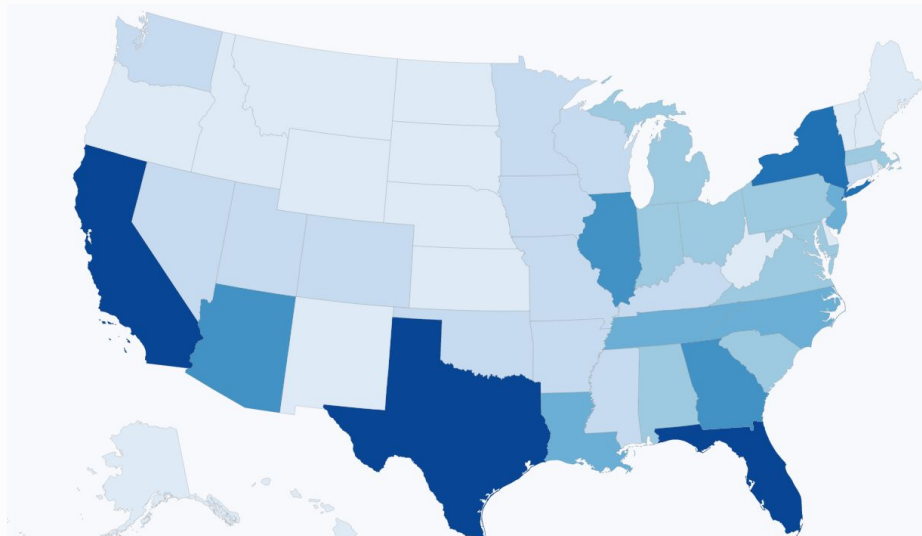
US Coronavirus Cases Map Using TABLEAU



D3.JS

- JavaScript Library for Data Visualization
- Limitless customization
- Web-Application based and free to use

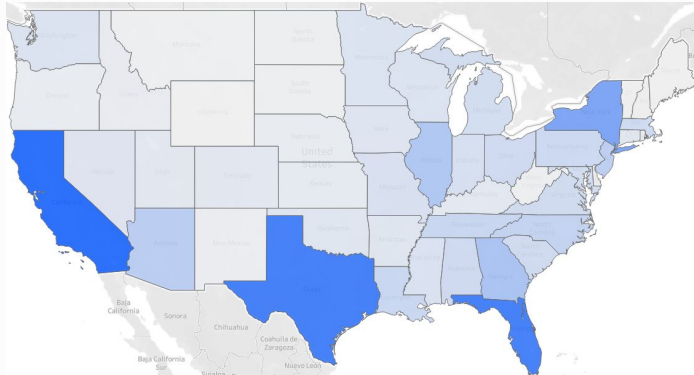
US Coronavirus Cases Map Using D3.JS



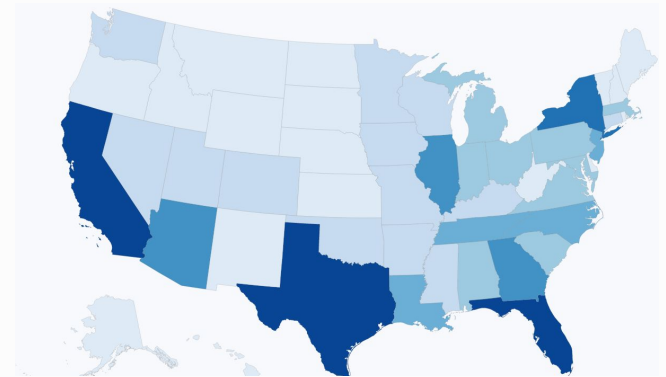
BEST OF BOTH WORLDS

- Tableau excels on what D3.JS doesn't and vice versa

US Coronavirus Cases Map Using TABLEAU



US Coronavirus Cases Map Using D3.JS



WEB DEVELOPMENT



HTML5



CSS



JavaScript



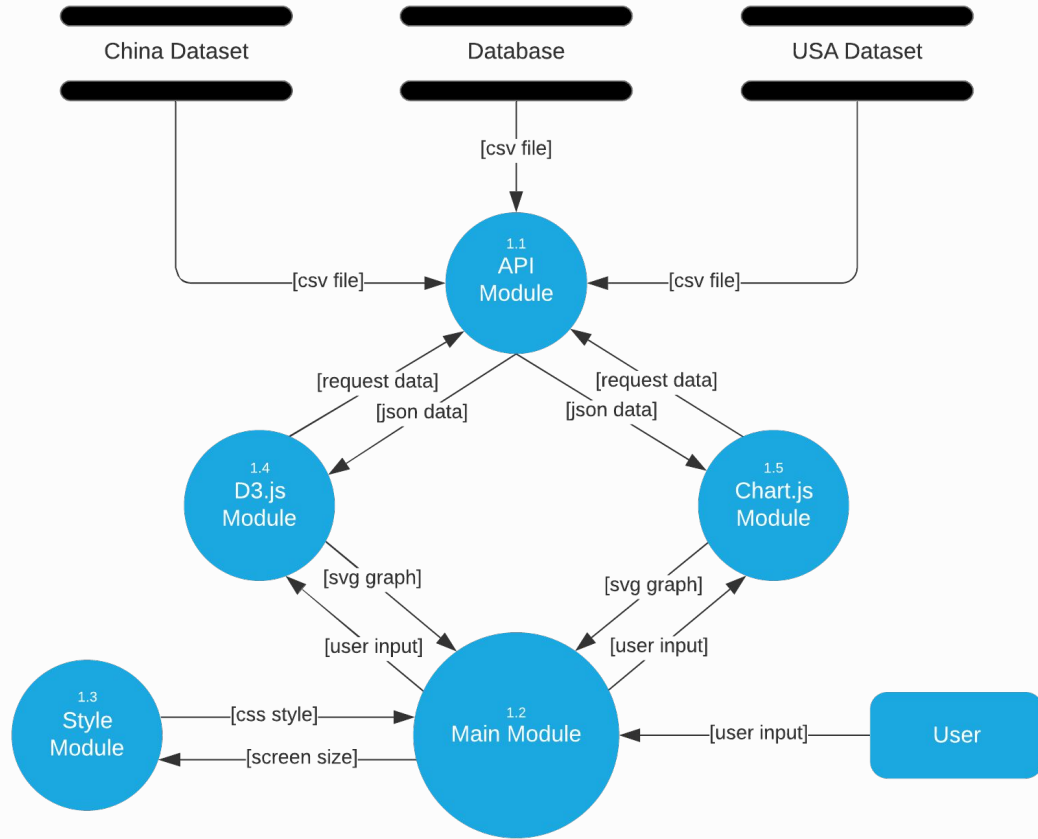
D3.JS



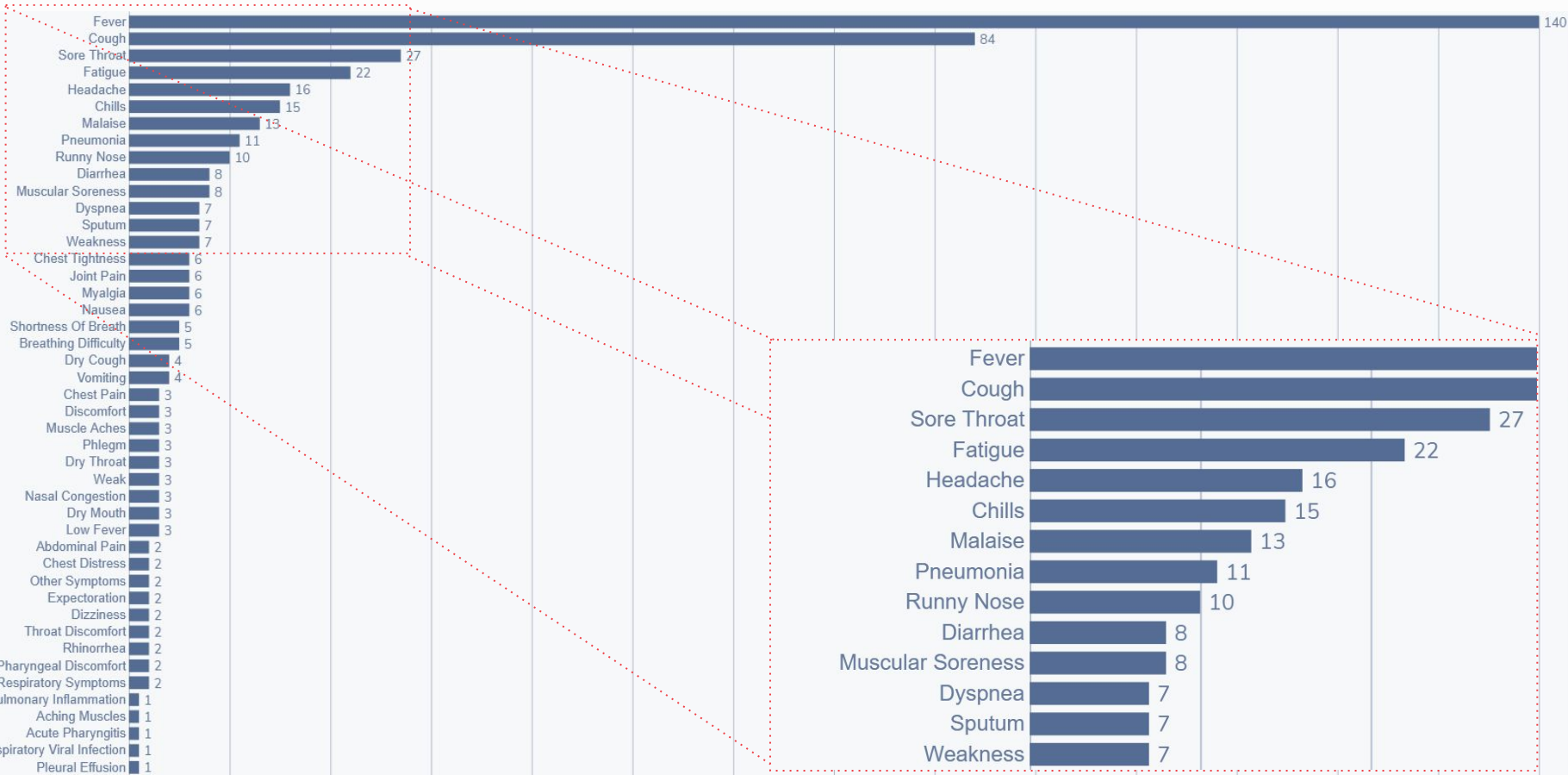
CHART.JS



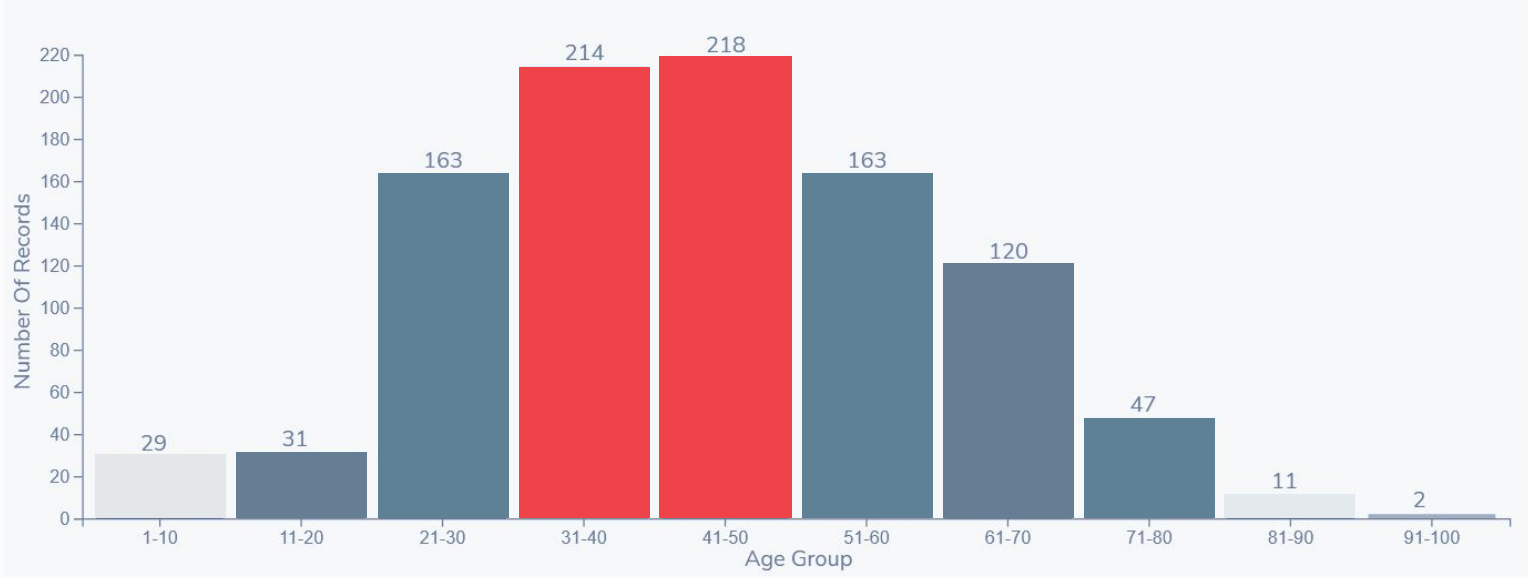
DFD 1



COVID-19 SYMPTOMS

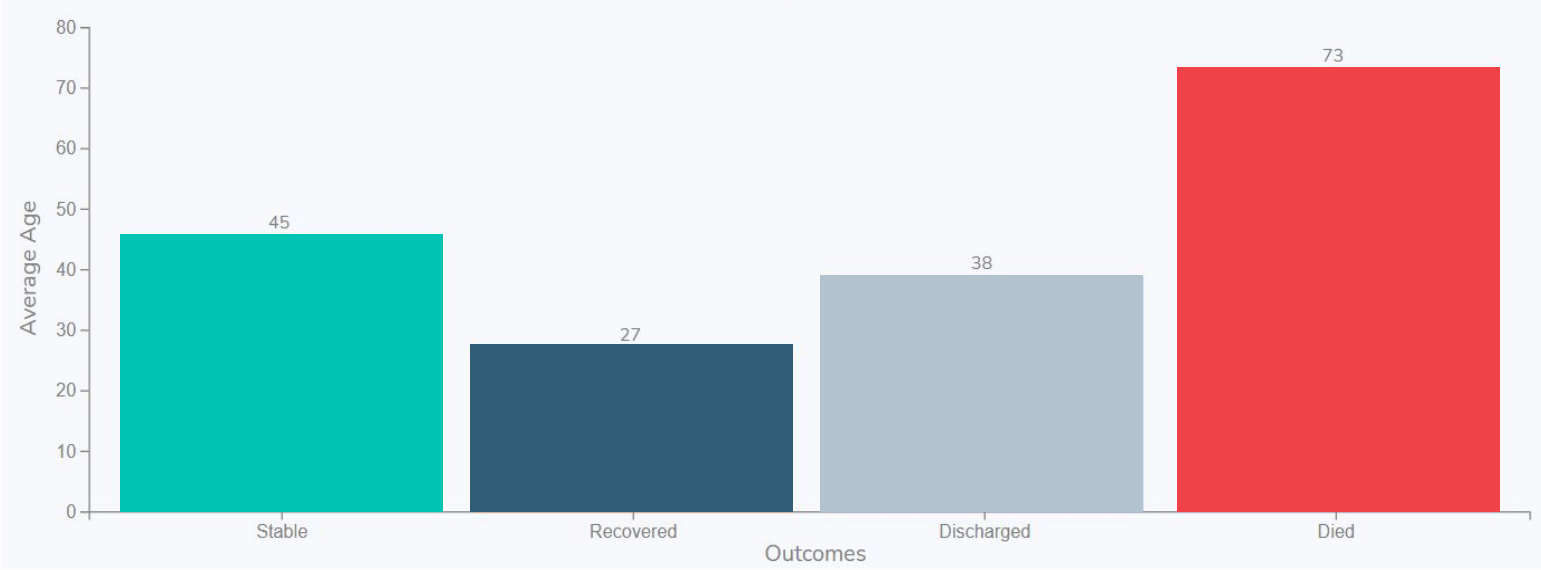


COVID-19 EFFECT ON AGE AVERAGE AGE GROUPS



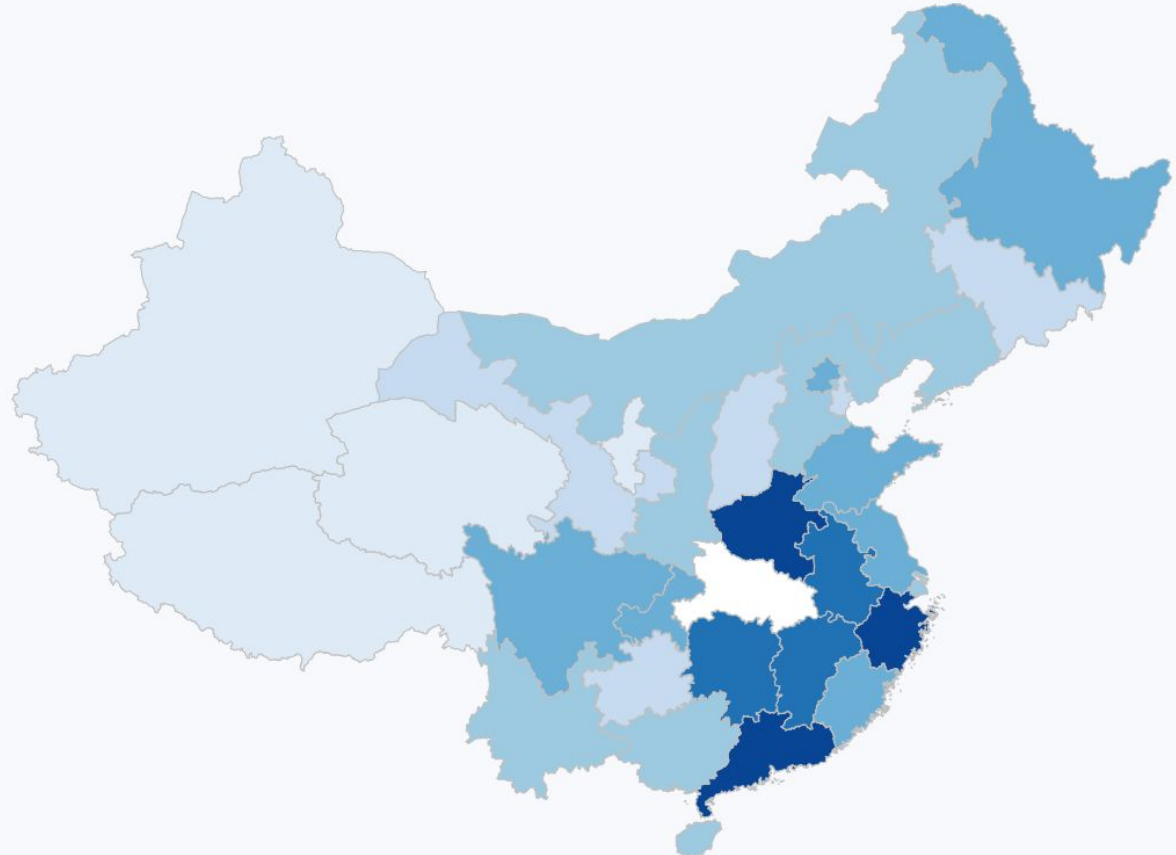
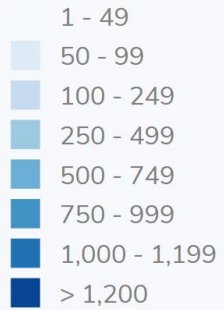
COVID-19 EFFECT ON AGE

OUTCOME AVERAGE AGE



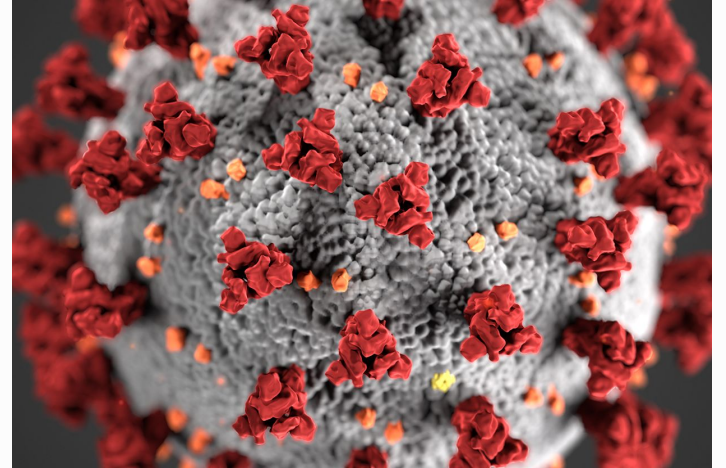
COVID-19 EFFECT ON CHINA

Confirmed Cases



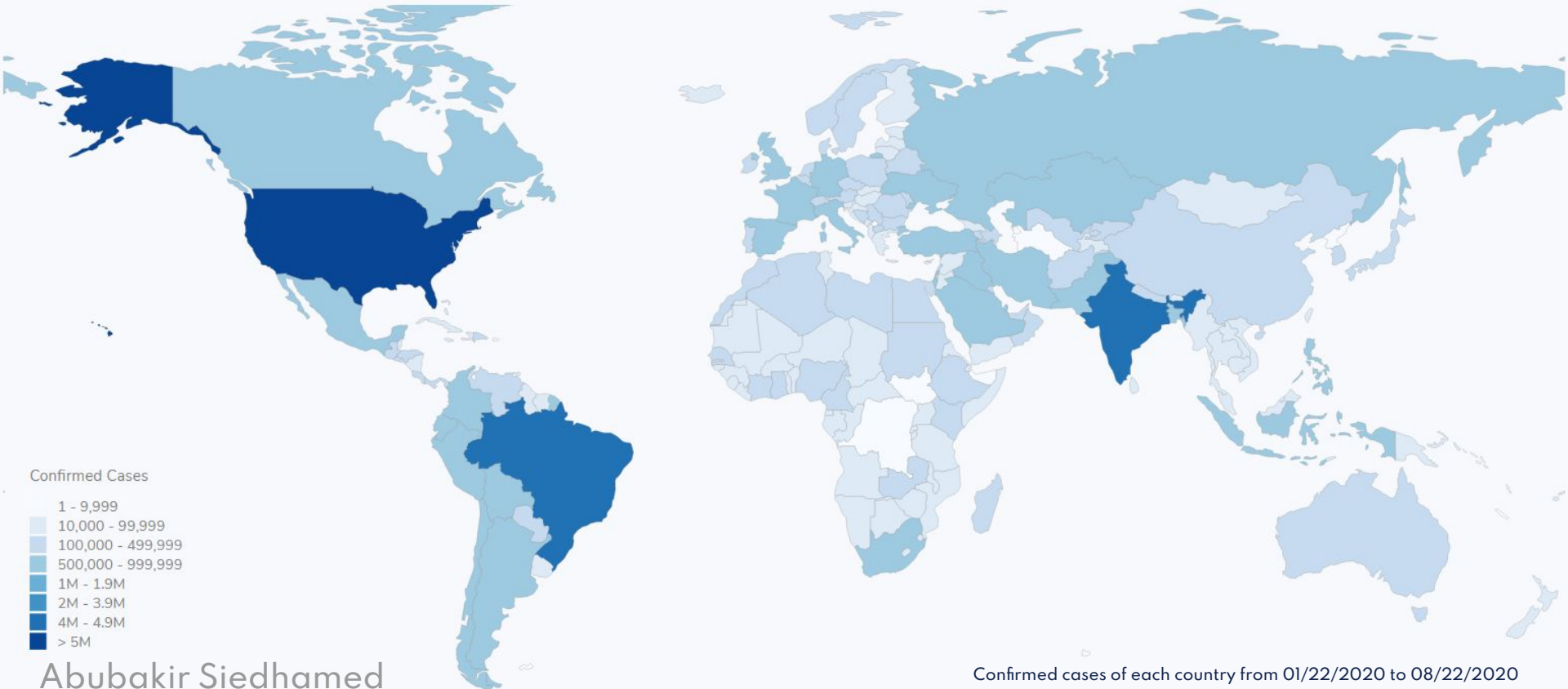
COVID-19 EFFECT ON THE WORLD

- Cases worldwide: 55.6 Million
- Recovered worldwide: 35.8 Million
- Deaths worldwide: 1.34 Million
- One third of the world practiced lock downs
- The United Nation said there may be more than \$2 trillion fall in the global income, and a \$220 billion hit to developing countries



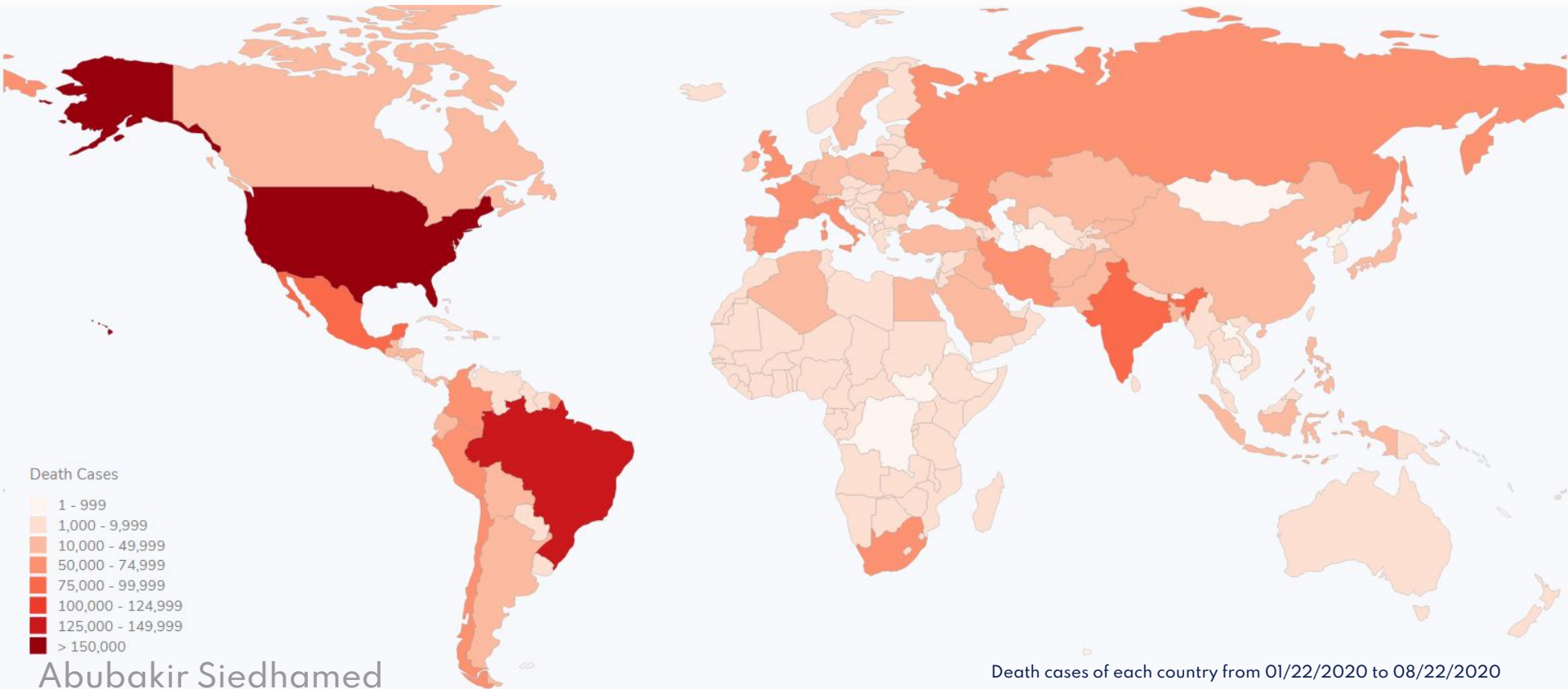
COVID-19 EFFECT ON THE WORLD

CONFIRMED CASES



COVID-19 EFFECT ON THE WORLD

DEATHS



Abubakir Siedhamed

Death cases of each country from 01/22/2020 to 08/22/2020

COUNTRIES CONTROL EFFICIENCY

Singapore
1997.0
56,266

Qatar
588.2
116,765

Oman
128.7
83,769

Belarus
107.7
70,285

Israel
96.0
101,933

Saudi Arabia
76.9
306,370

Kazakhstan
64.4
104,543

Russia
47.1
949,531

Bangladesh
44.9
292,625

Pakistan
44.2
292,174

Morocco
40.8
50,812

Japan
40.2
61,916

India
40.2
3,044,940

Dominican
38.6
90,561

Argentina
35.9
336,802

Chile
34.3
395,708

Panama
32.2
85,480

Nigeria
38.9
51,905

United Arab Emirates
157.0
66,617

South Africa
38.8
607,045

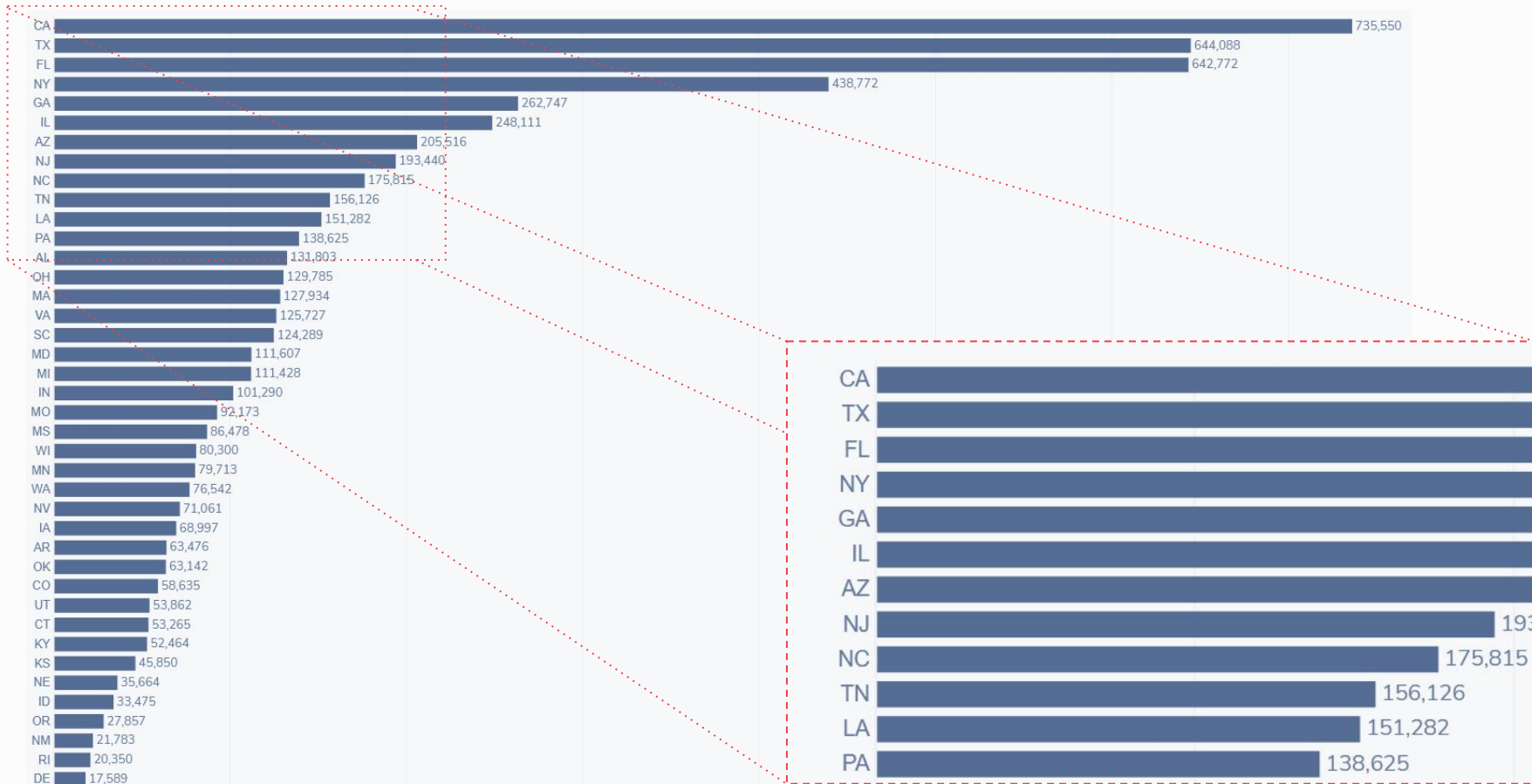
U.S.
11.3
5,667,112

Philippines
38.7
187,249

Kuwait
139.9
79,957

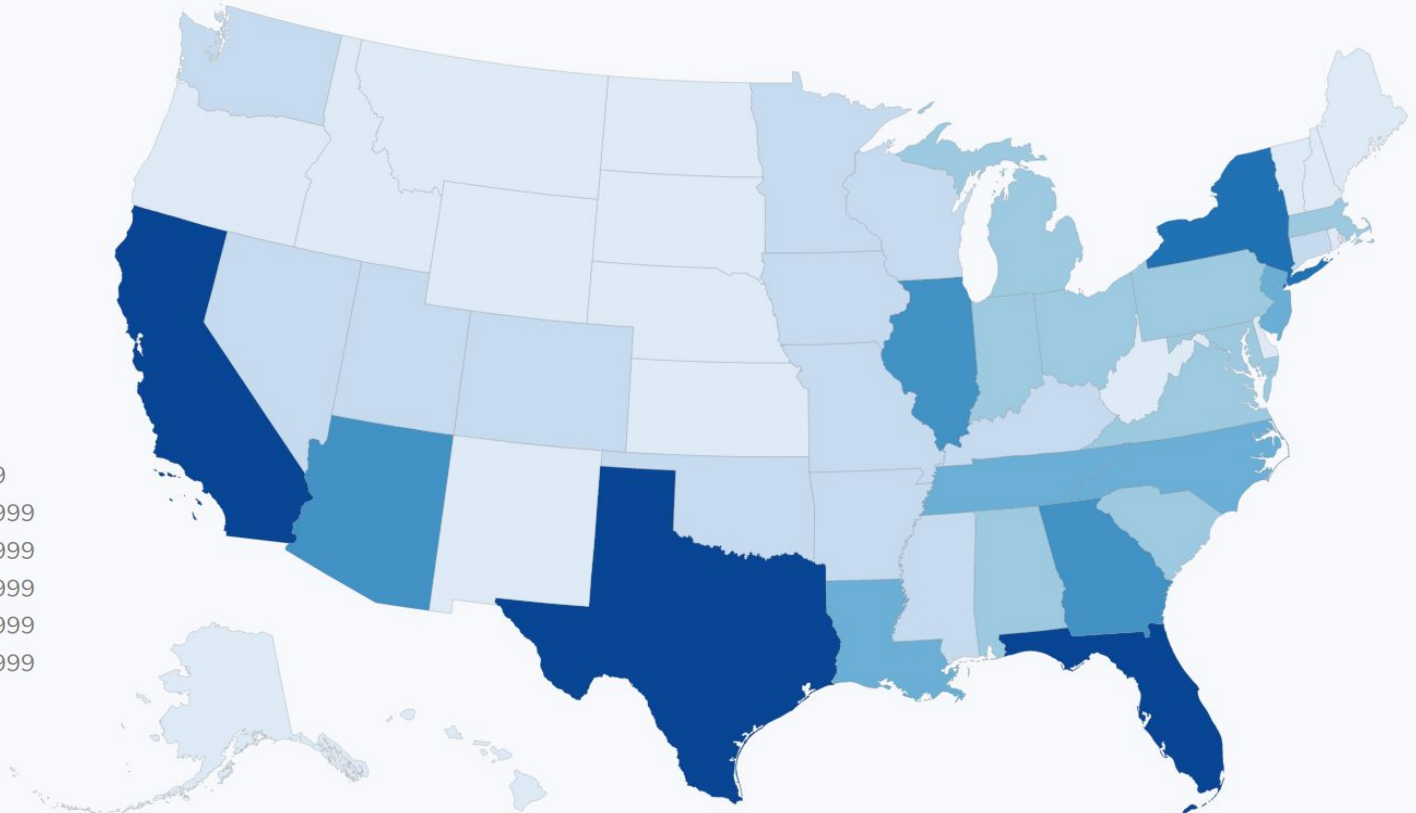
Turkey
38.7
257,032

COVID-19 EFFECT ON THE U.S



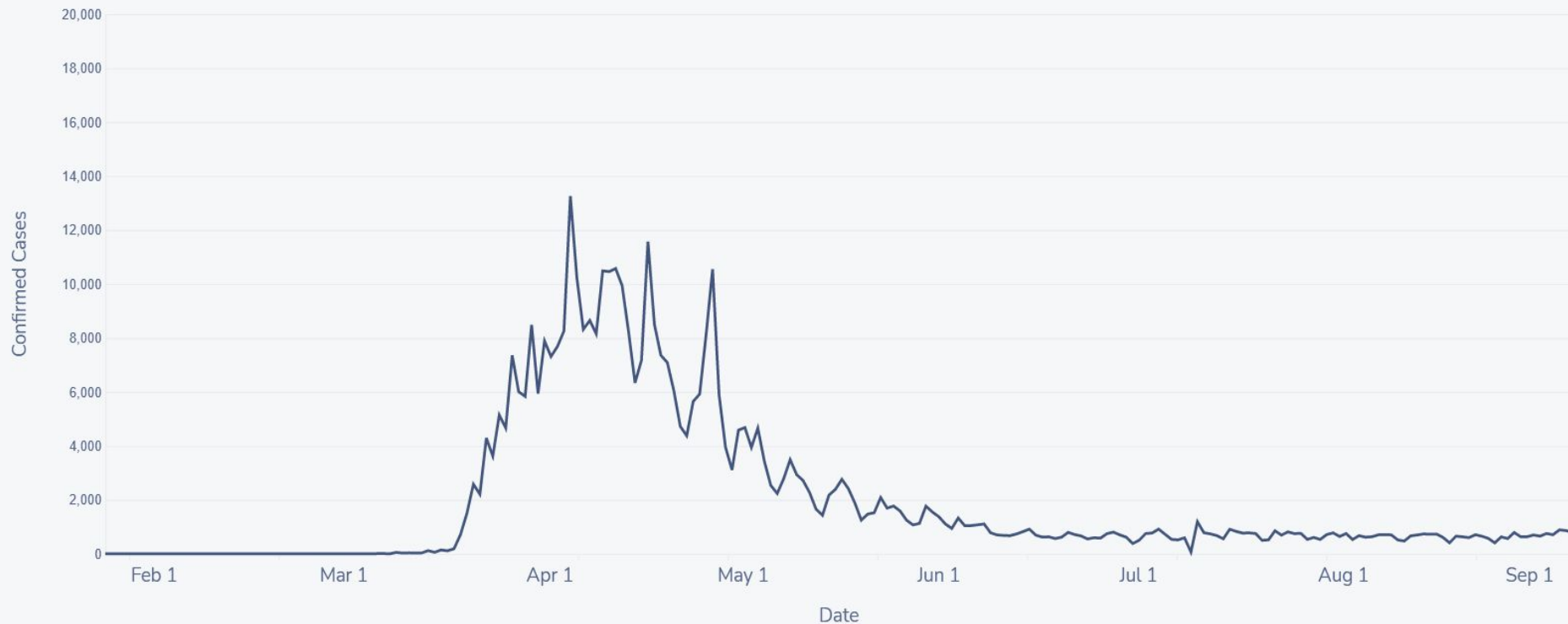
COVID-19 EFFECT ON THE U.S

Confirmed Cases



COVID-19 EFFECT ON THE U.S

NEW YORK



COVID-19 EFFECT ON THE U.S CALIFORNIA



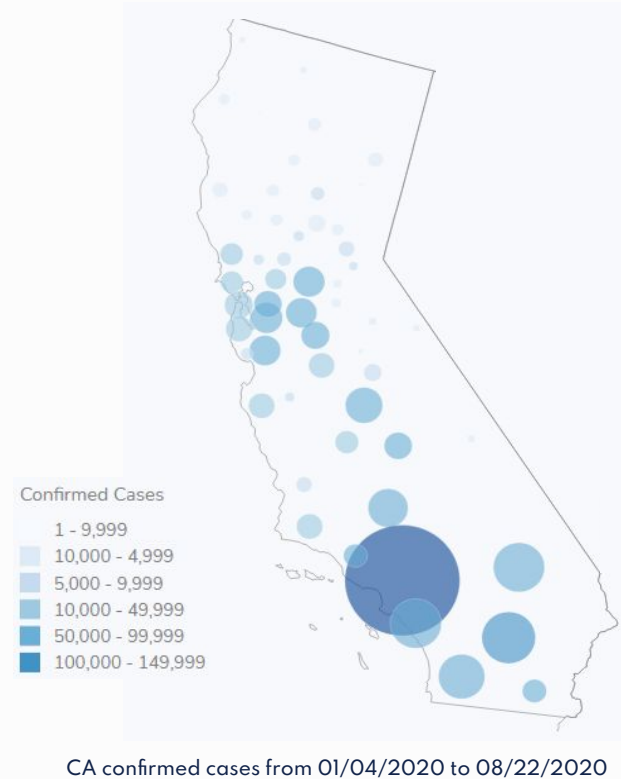
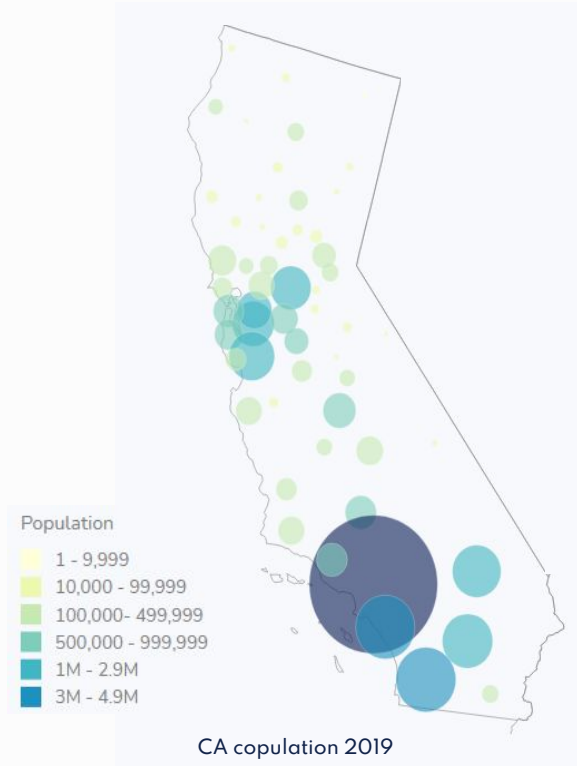
COVID-19 EFFECT ON THE U.S FLORIDA



COVID-19 EFFECT ON THE U.S TEXAS



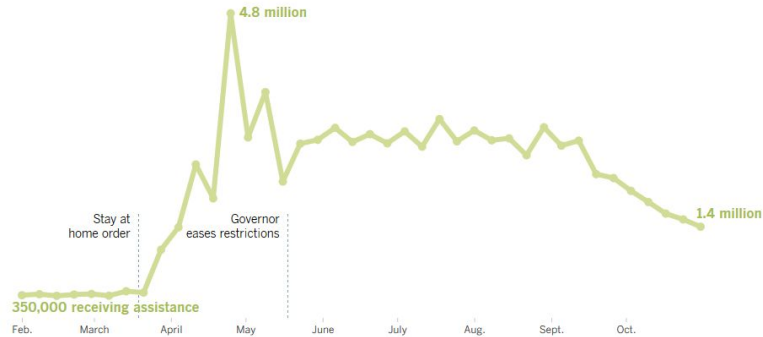
COVID-19 EFFECT ON CALIFORNIA (OVERCROWDED)



COVID-19 EFFECT ON CALIFORNIA

- Current death toll [~18,500](#) as of November 17th, 2020
- Total confirmed Case ~1 million
- Covid-19 has had these other “Second Hand” factors, factors not affecting only one’s own health:
 - Unemployment rates increasing
 - Increasing covid-19 risk in overcrowded “housing”

COVID-19 EFFECT ON CALIFORNIA (UNEMPLOYMENT)



1.4 million

on unemployment

11%

unemployment rate

157,657

new claims last week

California jobs lost since February, by category

Accommodation and food service

455,800

Government

155,500

Arts, entertainment and recreation

145,200

Health care and social assistance

121,400

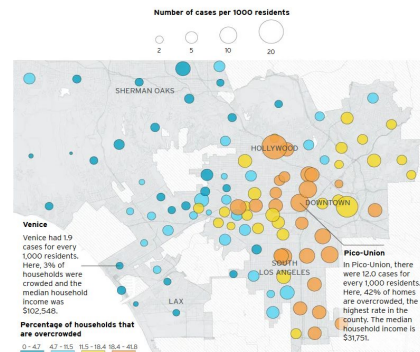
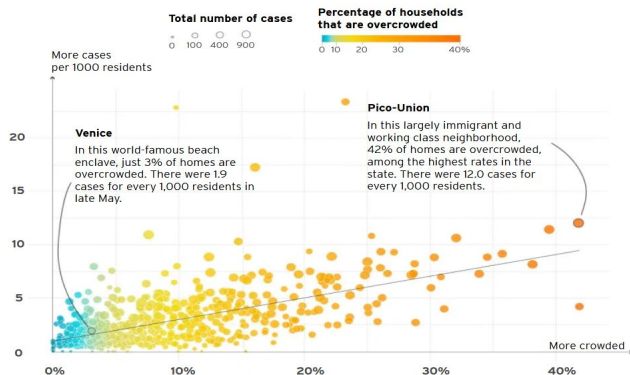
Retail trade

119,000

- [Chart above](#) depicts the number of people unemployed since the beginning of the year to present (as of November 17th 2020)
- The highest peak being mid-April with 4.8 million
- As of November 17th 2020, we are around 1.4 still unemployed

- So what jobs were hurt by this "stay at home order"
- These are the top 5 most affected but every sector was affected by the stay at home order

COVID-19 EFFECT ON CALIFORNIA [OVERCROWDED HOUSING]



- These overcrowded housing complexes have a higher chance of spreading the virus:
 - Studies done in these homes found that there is a 3.7 times more likely chance of contracting the virus

- The chart above demonstrates areas in which there is a higher chance of contracting covid-19 based on housing situations
- Areas such as:
 - Pico-union, 42% homes impacted
 - Venice, 3% homes impacted



CONCLUSIONS

- COVID-19 is deadly and highly contagious
- U.S has abnormally high amount of cases
- Elderly are most susceptible to severe reactions
- Areas with high population density requires strong COVID-19 preventative measures



FUTURE GOALS

- Add more data visualization content to Web-Application
- Improve graph interactivity and visuals
- Look at uncommon factors about Covid-19
- Use Python and Tableau in Analytics
- Use Logistic Regression in modeling probability.

The background of the slide is a blurred image of an industrial or construction site, possibly featuring a large building or structure. The image is heavily stylized with a color gradient, transitioning from a deep red on the left to a bright blue on the right. The text 'Thank you' is centered in a white, sans-serif font.

Thank you



Q. A