

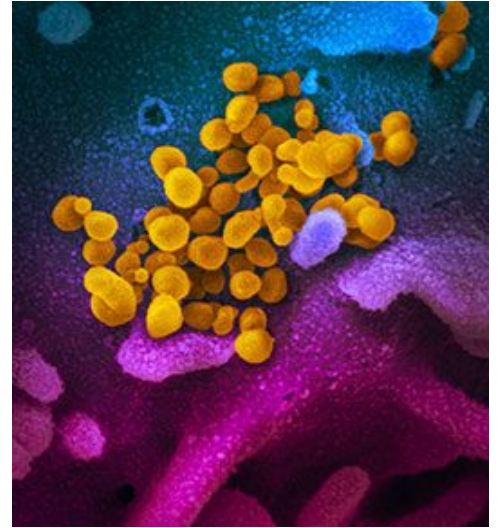
COVID-19



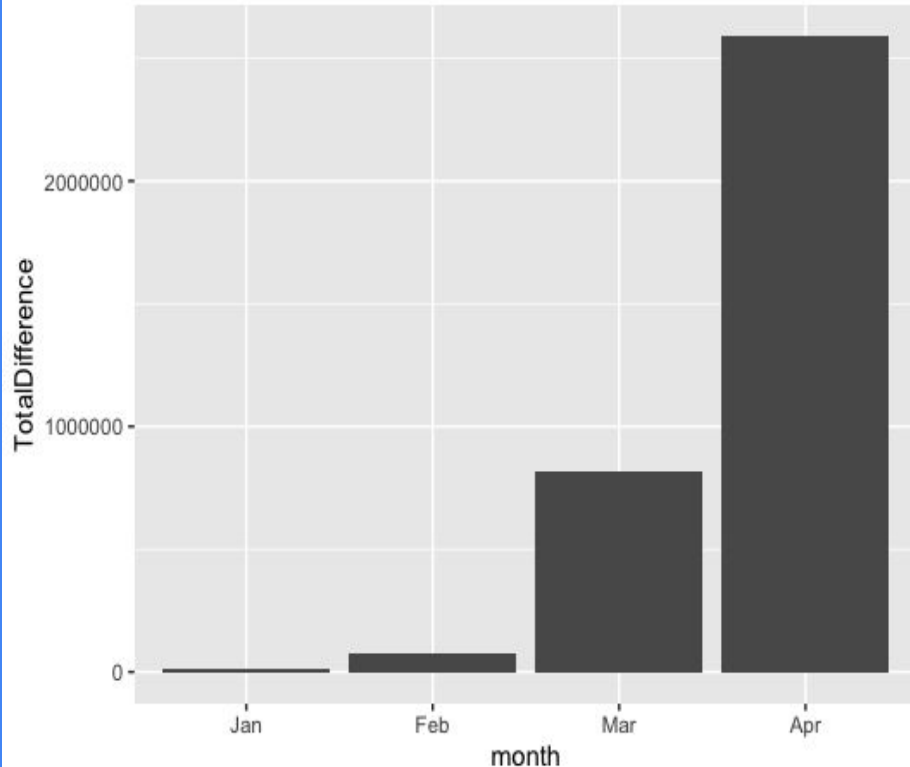
By: Sacha, Ray, Kadeem, and Shawn

COVID 19

- COVID-19 caused by a coronavirus called SARS-COV-2.
 - The virus has origins in bats and is believed to have started in the Wuhan region of China.
- Virus is spread from person to person mainly through respiratory droplets produced when an infected person coughs or sneezes.
- COVID-19 is more deadly than the flu and no one is currently immune



Covid Cases Jan-April 2020



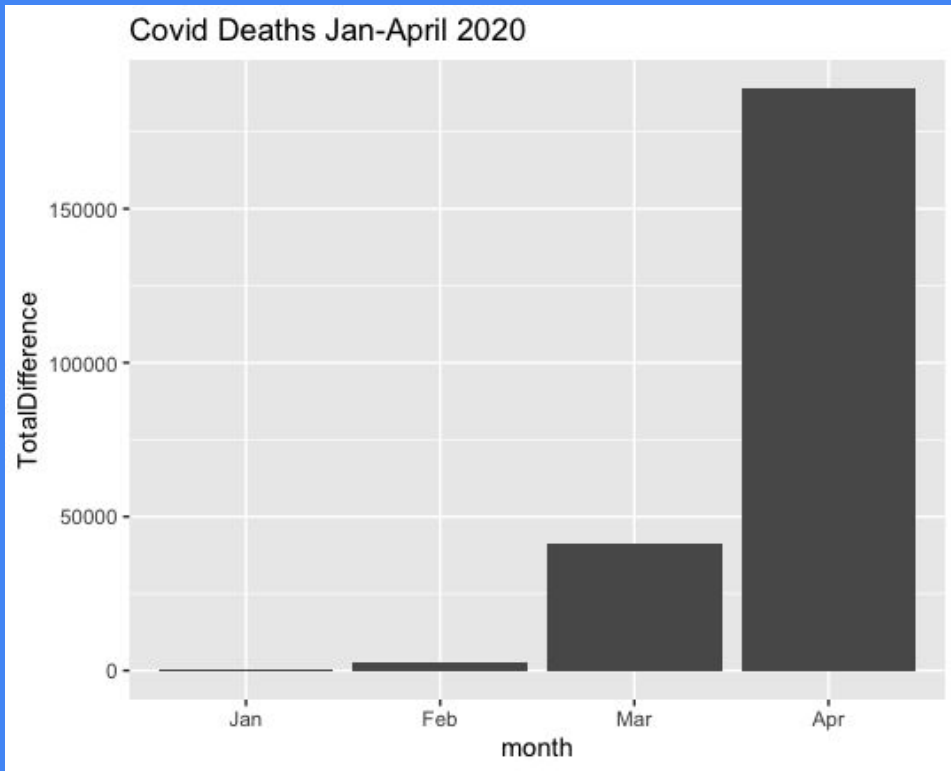
Total Cases

- **January**
 - 10,140
- **February**
 - 78,768
- **March**
 - 812,947
- **April**
 - 2,588,260

Rapid Outbreak

- COVID-19 has spread so quickly now because of globalization
- Easily transmittable and also can be spread through asymptomatic carriers
- COVID-19 is more deadly than the flu and no one is currently immune



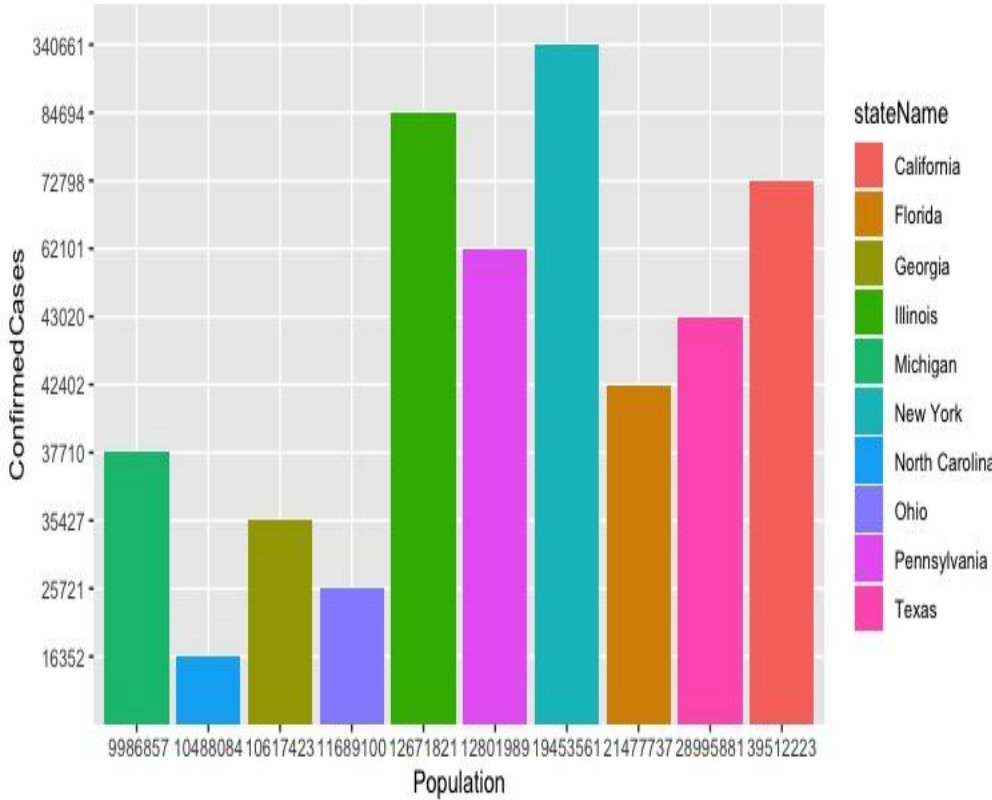


Total Deaths

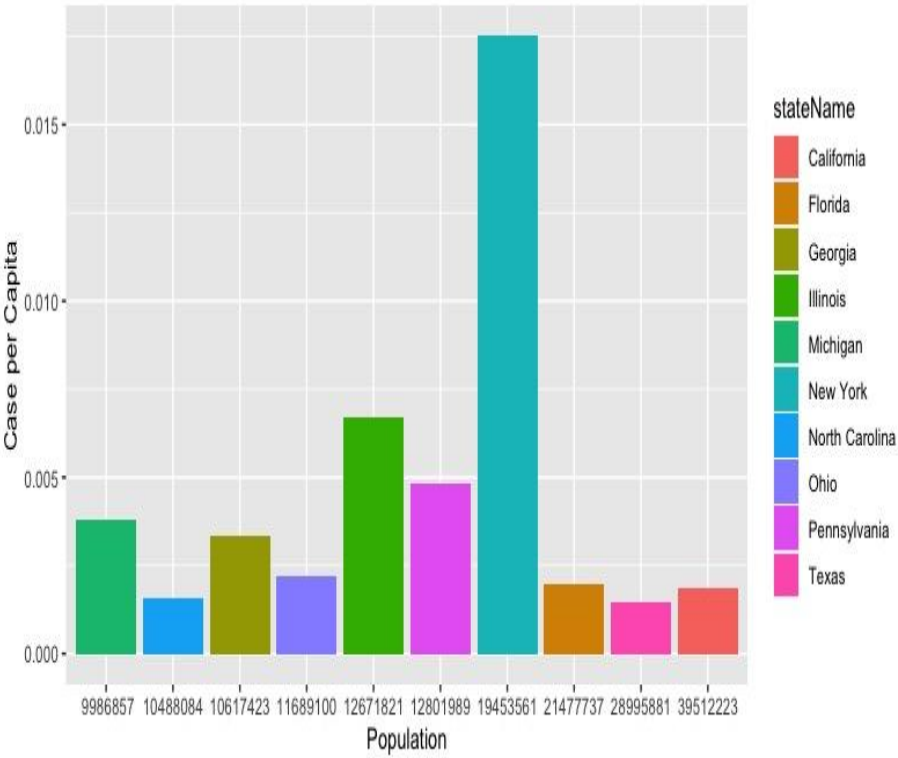
- **January**
 - 213
- **February**
 - 2748
- **March**
 - 41,458
- **April**
 - 188,958

Bar Graphs of the Top 10 States(as of 5/14/20)

Top 10 Population compared to Confirmed Cases Bar



Top 10 Population compared to Case per Capita Bar



Case per Capita Rankings of The Top 10 Most Populated States(as of 5/14/20)

Top 10 Most Populated States	Case per Capita	Rank(50)	Confirmed Cases	Rank(50)
California	.0018	33rd	72798	5th
Texas	.0015	40th	43020	7th
Florida	.0019	31st	42402	8th
New York	.0175	1st	340661	1st
Pennsylvania	.0049	12th	62101	6th
Illinois	.0067	9th	84692	3rd
Ohio	.0022	26th	25721	16th
Georgia	.0033	20th	35427	11th
North Carolina	.0016	37th	16352	22nd
Michigan	.0038	17th	37710	9th

Mean of Case per Capita(50 states): 0.0038

Mean of Case per Capita(Top 10 Most Populated States): .0045

Top 10 States COVID-19 Cases per Capita(as of 5/14/20)

Case per capita: confirmed cases/population

State Name	Case per Capita	Population Rank(50 States)	Cases Rank
1.New York	0.017511498	4th	1st
2.New Jersey	0.015937511	11th	2nd
3.Massachusetts	0.011678921	15th	4th
4.Rhode Island	0.011171829	44th	25th
5.Connecticut	0.009776212	29th	12th
6.New Mexico	0.007994453	36th	20th
7.Delaware	0.007139307	45th	33rd
8.Louisiana	0.007025908	25th	14th
9.Illinois	0.006683649	6th	3rd
10.Minnesota	0.006384459	22nd	10th

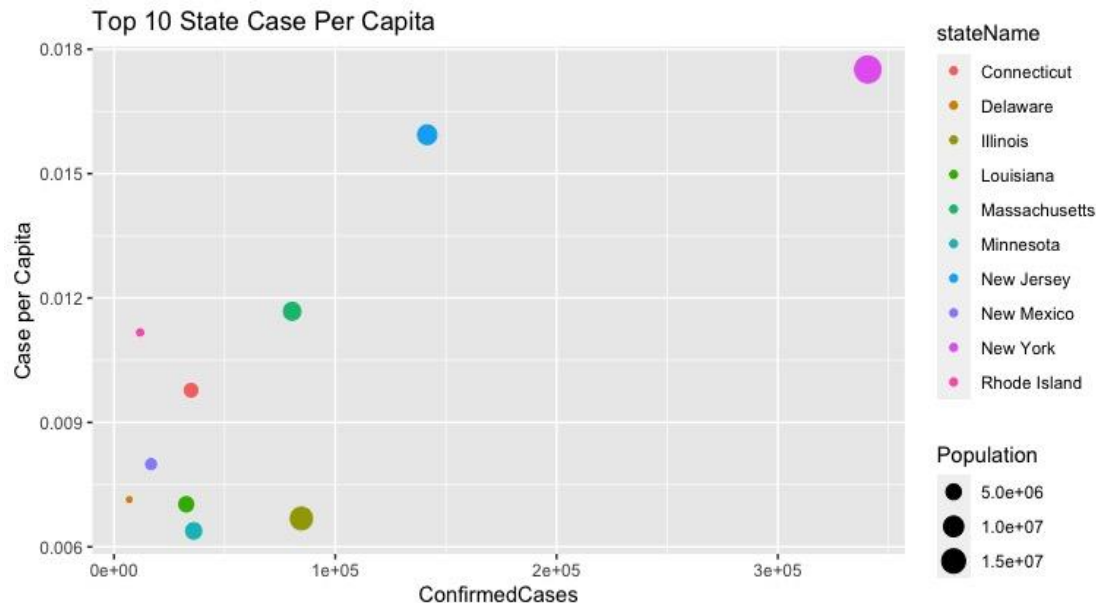
Statistics:

The average Case per capita for the top 10 states was 0.0101 and .0038 for the 50 states

New York and Illinois were the only two states in the top 10 population that were in the top 10 cases per capita.

70% of the states in the top 10 case per capita ranked in the top 20 of either population rank or confirmed cases rank.

Rhode Island and Delaware are ranked 44th and 45th in population but are both in the top 7 for Case per Capita

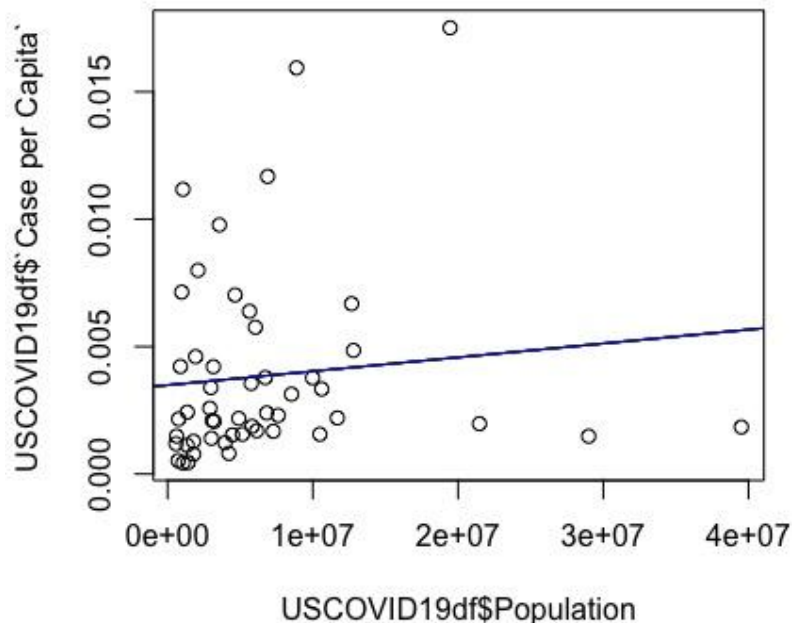


Key Takeaways:

- The states with highest case per capita were not necessarily the states with the highest populations. Only 30% of the top 10 case per capita states were ranked in the top 10 for population. 4 states were ranked 29th or fewer.
- The states with the highest amount of confirmed cases in the top 10 were a better indicator to have a higher case per capita. Half of the states that were in the top 10 for case per capita were in the top 5 overall for confirmed cases rank.

Simple Linear Regression Model

ScatterPlot of States Population and CPC



```
> summary(model1)
```

Call:

```
lm(formula = USCOVID19df$`Case per Capita` ~ USCOVID19df$Population)
```

Residuals:

	Min	1Q	Median	3Q	Max
	-0.0037953	-0.0022895	-0.0015085	0.0006777	0.0129647

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	3.489e-03	7.205e-04	4.842	1.38e-05 ***
USCOVID19df\$Population	5.439e-11	7.338e-11	0.741	0.462

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.003795 on 48 degrees of freedom

Multiple R-squared: 0.01131, Adjusted R-squared: -0.009283

F-statistic: 0.5493 on 1 and 48 DF, p-value: 0.4622

Highest Number of Cases by Location and Date

Date of Highest number of confirmed cases reported: 04-30-2020

Top 10 Countries with highest number of confirmed cases (April 30 2020)

<u>State Name</u>	<u>Number of Confirmed Cases</u>
• US	1069272
• Spain	213435
• Italy	205463
• United Kingdom	172481
• France	167299
• Germany	163009
• Turkey	120204
• Russia	106498
• Iran	94640
• Brazil	87187



-US Shows a significantly higher amount of confirmed COVID 19 cases
oppose to other countries

-US leads with 855,837 cases over Spain

-This data comes shortly after the increase in availability of testing
centers for the US

Top 10 US States for Confirmed COVID-19 Cases

Top 10 States with highest number of confirmed cases (April 30 2020)

<u>State Name</u>	<u>Number of Confirmed Cases</u>
• New York	23587
• New Jersey	7228
• Michigan	3789
• Massachusetts	3562
• Pennsylvania	2475
• Illinois	2355
• Connecticut	2257
• California	2031
• Louisiana	1905
• Florida	1268

USA COVID Cases by State (April 30th 2020)



-New York leads the US in the number of confirmed cases

-Majority of the cases are located in the North-East region of the US (5/10)

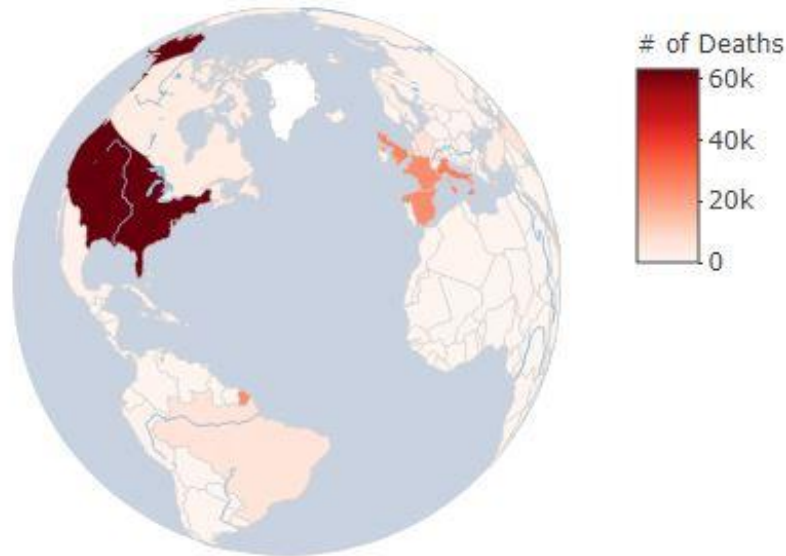
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Highest Number of Deaths by Location and Date

Date of Highest number of deaths reported: 04-30-2020

Top 10 Countries with highest number of deaths cases (April 30 2020)

<u>State Name</u>	<u>Number of Deaths</u>
• US	62993
• Italy	27967
• United Kingdom	26842
• Spain	24543
• France	24379
• Belgium	7594
• Germany	6623
• Iran	6028
• Brazil	6006
• Netherlands	4811



-US Shows a significantly higher amount of COVID 19 deaths oppose to other countries

-US leads with 35,026 deaths over Spain

-The death-to-case ratios are not evenly spread among countries, as some regions cases are ranked in the top 10 cases, but not top 10 deaths

Top 10 US States for COVID-19 Deaths

Top 10 States with highest number of COVID-19 deaths (April 30 2020)

<u>State Name</u>	<u>Number of Deaths</u>
• New York	23587
• New Jersey	7228
• Michigan	3789
• Massachusetts	3562
• Pennsylvania	2475
• Illinois	2355
• Connecticut	2257
• California	2031
• Louisiana	1905
• Florida	1268

USA COVID Deaths by State (April 30th 2020)

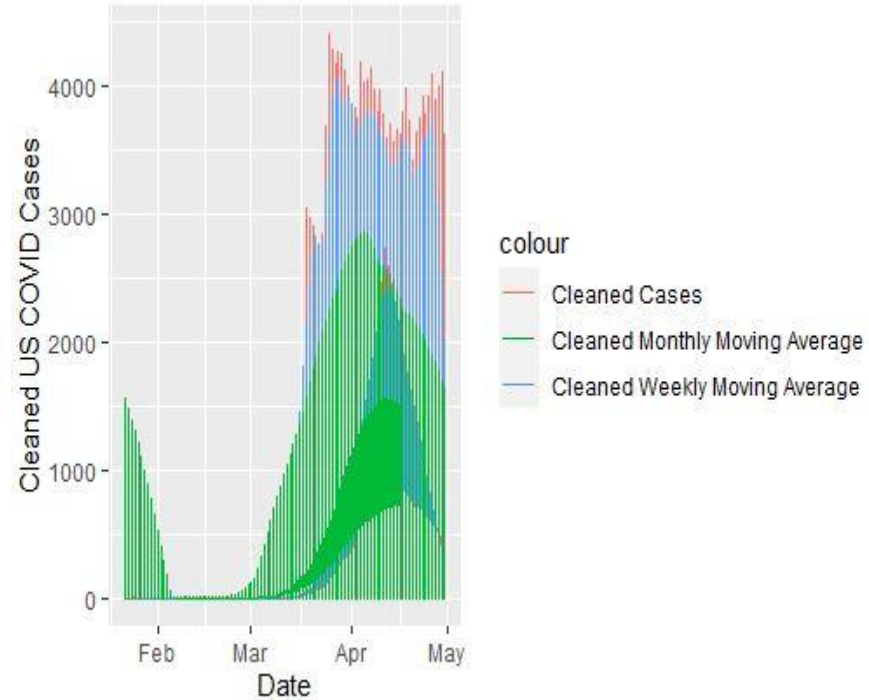
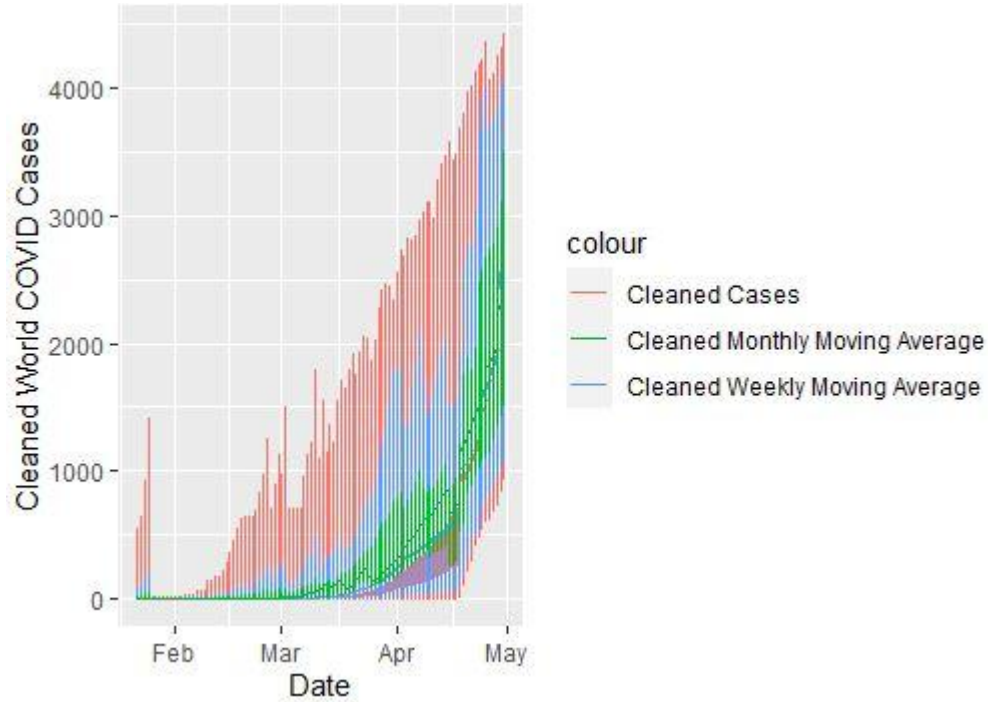


-New York leads the US in the number of COVID-19 related deaths

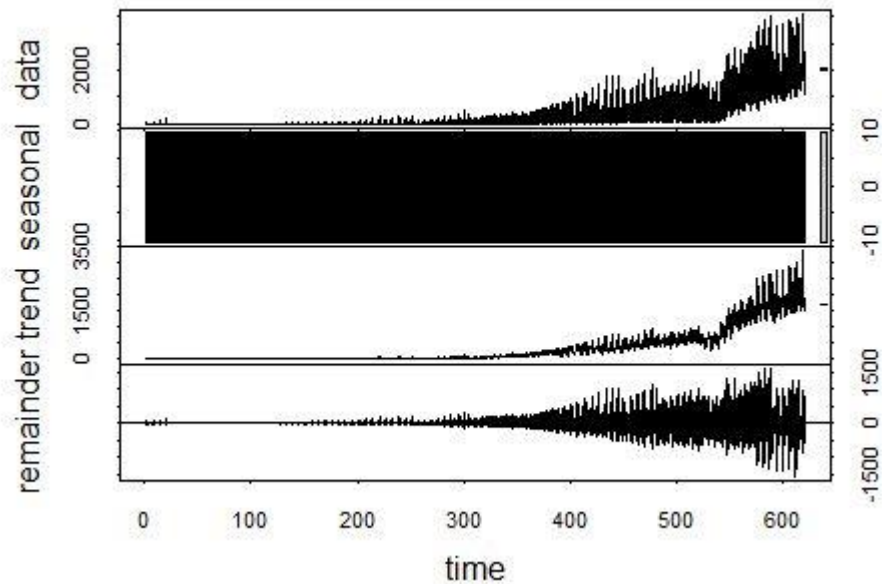
-New York has the highest number of confirmed cases and deaths

-The number of cases and the number of deaths by state are ranked in the same order

Time Series Analysis - Moving Average

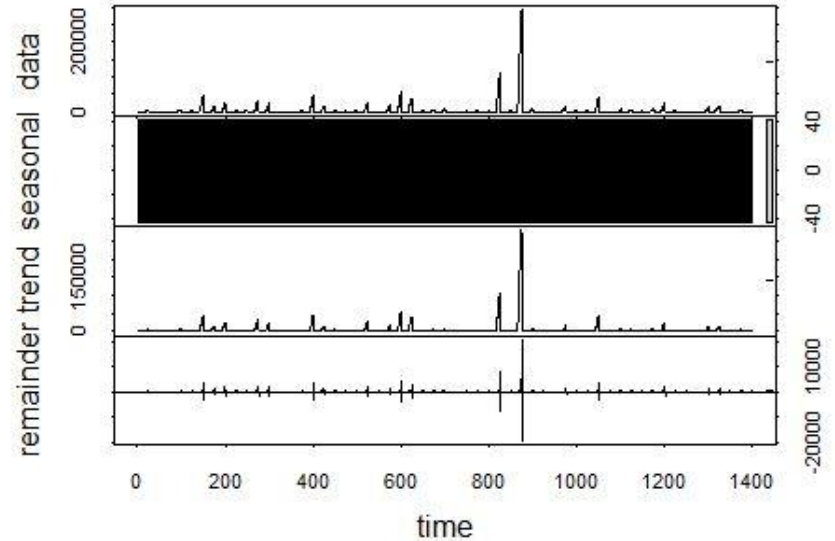


Time Series Analysis - Trend & Stationarity



Augmented Dickey-Fuller Test

data: cases_ma2
Dickey-Fuller = -11.116, Lag order = 26, p-value = 0.01
alternative hypothesis: stationary

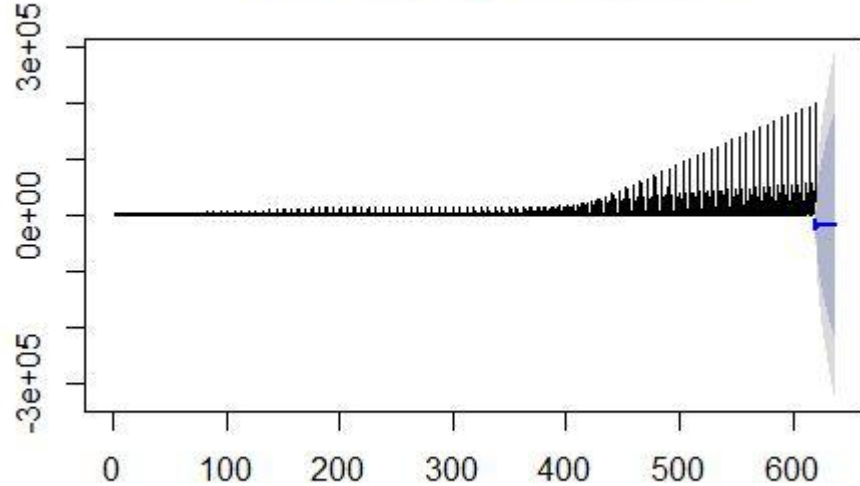


Augmented Dickey-Fuller Test

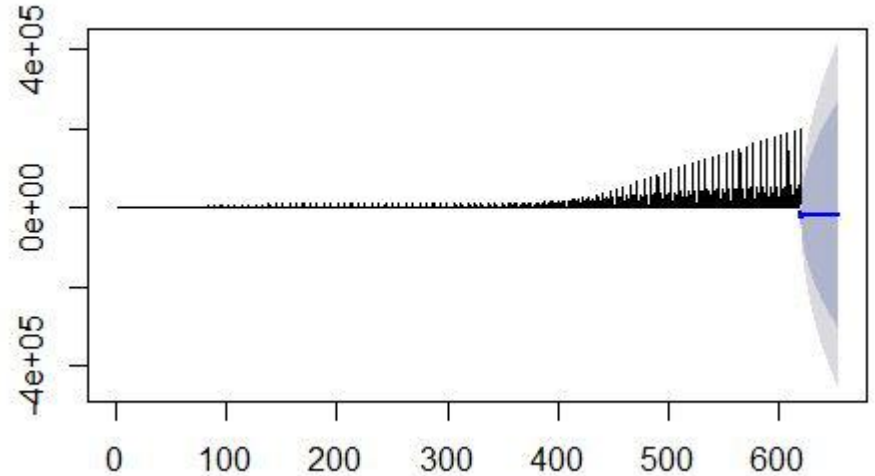
data: UScases_ma2
Dickey-Fuller = -14.019, Lag order = 17, p-value = 0.01
alternative hypothesis: stationary

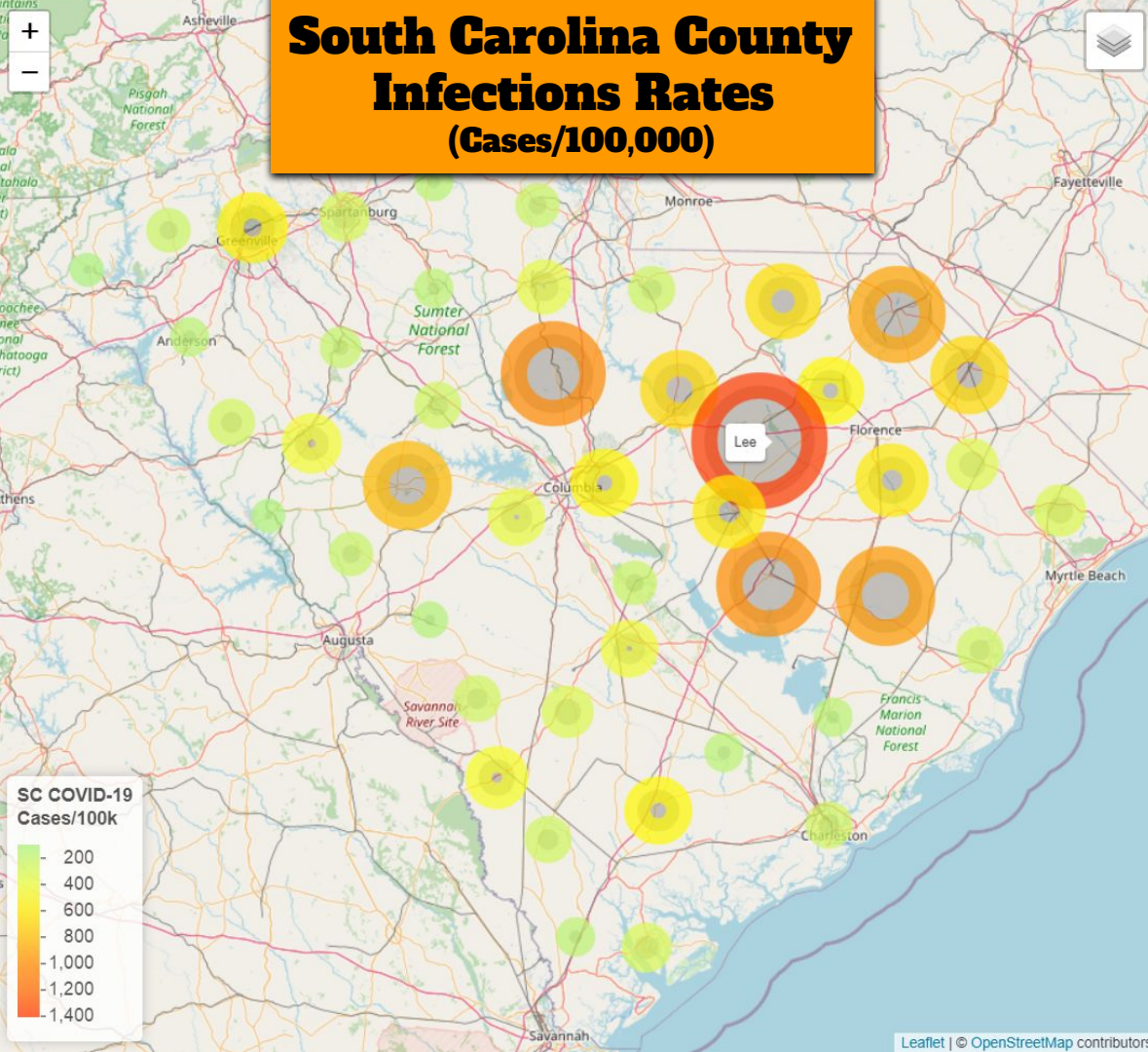
Time Series Analysis ARIMA

Forecasts from ARIMA(2,1,2)



Forecasts from ARIMA(2,1,2)





Top 10 Case-to-Population Radios (June 15, 2020)

County Name	Cases per 100,000
• Lee	1,402
• Fairfield	1,016
• Clarendon	993
• Williamsburg	942
• Marlboro	904
• Saluda	801
• Kershaw	667
• Dillon	659
• Chesterfield	637
• Florence	589



Data Courtesy of South Carolina Department of Health and Environmental Control

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What people are saying

**With this app,
I'm confident to
plan a trip to
rural Vietnam**

Wendy Writer, CA

**Visual
translation feels
like magic**

Ronny Reader, NYC

**Translate has
officially
inspired me to
learn French**

Abby Author, NYC



Know a 2nd language? Make Google Translate even better by joining the community.



Tip

Inspire your audience to act on the information they just learned.

Depending on your idea, this can be anything from downloading an app to joining an organization.



Good luck!

We hope you'll use these tips to go out and deliver a memorable pitch for your product or service!

For more (free) presentation tips relevant to other types of messages, go to heathbrothers.com/presentations

For more about making your ideas stick with others, check out our book!

