Presidential Race

TWEET SENTIMENT ANALYSIS

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Agenda

OBJECTIVES

MISSION AND VISION

METHODOLOGY

ABOUT THE DATA

DATA PREP

SENTIMENT

SUMMARY

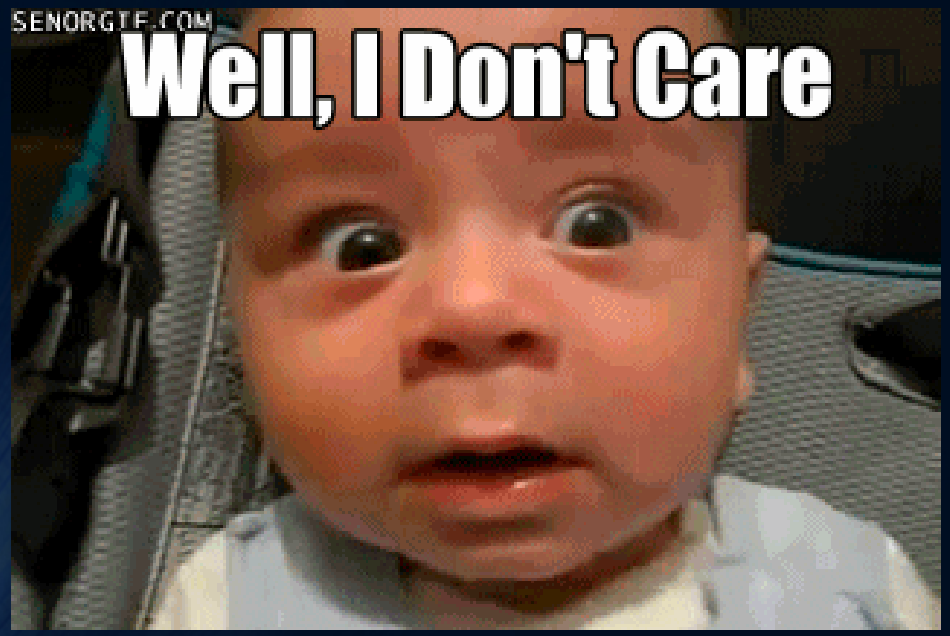
Objective

Capture Sentiment of tweets during

- Impeachment
- Democratic Primaries
- Corona Virus Pandemic

to provide an unbiased analysis of social media posts by National Leaders

Mission and Vision



- Why should you care?
  - Widely sourced by journalists
  - Current Trends
  - Supplementing Polls

Data Analysis methodology

Conduct initial Exploratory Data Analysis (EDA)

Prepare the Twitter API Data

Run the Sentiment Analysis

Cleaned Twitter Corpus

- Stop Words
- White Spaces
- Lower Case Transformation

Present Results

Models

- Temporal Analysis
- Utility Function to Classify Tweet Polarity
- Latent Dirichlet Allocation

About the Data

Sentiment Analysis of Twitter tweets on

- The President of the United States (POTUS) handle.
- Speaker of the House handle
- Senator Bernie Sanders handle
- Vice President Joe Biden handle

Data Source: Twitter API.

Data Analysis Platform: Anaconda, Jupyter Notebooks 6.0.2, colab, Python 3.8.

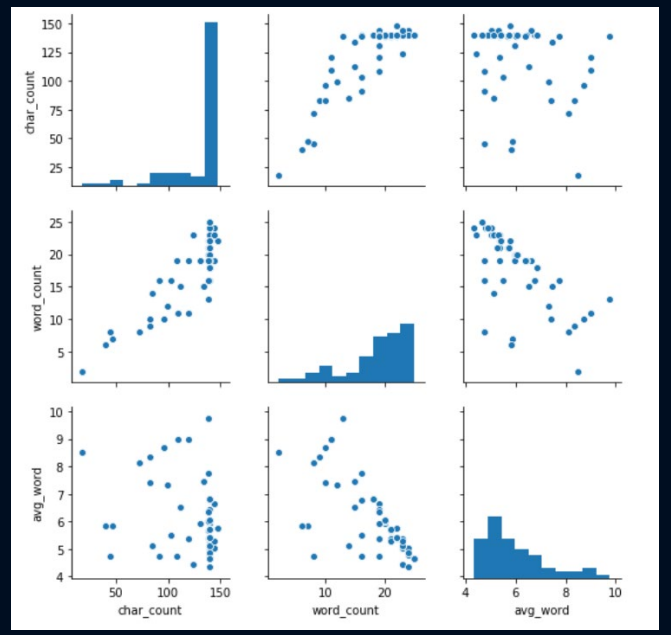
```
# Construct a "tweet" list based on the Mr. Trump's user handle
# Counts attempted: 2000, 1000, 4000 and 5000. 500 yielded 200 tweets
tweets = xtr.user_timeline(screen_name="realDonaldTrump", count=5000)
print("Number of tweets extracted: {}.\n".format(len(tweets)))

# From the tweet list, extract the most recent 10 tweets
print("The Ten Most Recent tweets from POTUS Twitter Handle:\n")
for tweet in tweets[:11]:
    print(tweet.text)
    print()
```

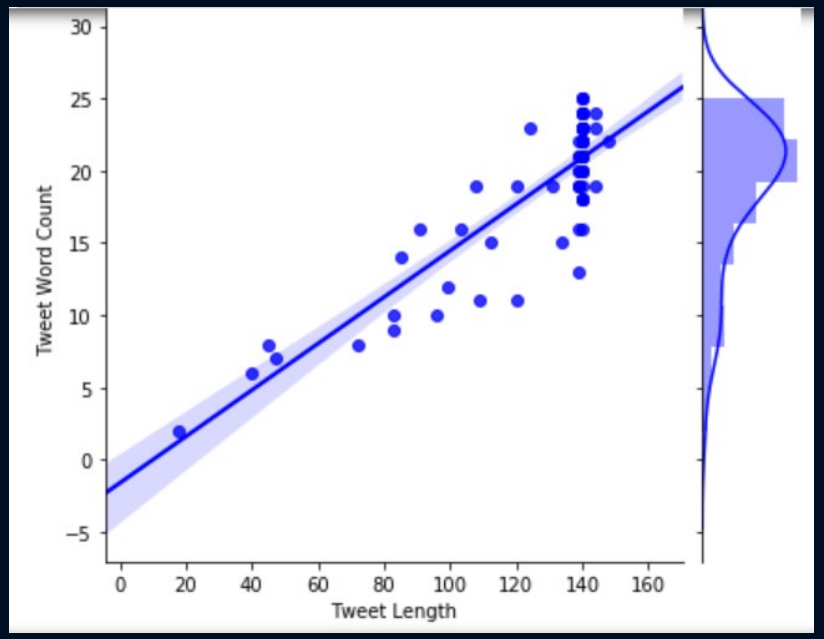
```
# Get tweets by username and bound dates

import GetOldTweets3 as got

tweetCriteria = got.manager.TweetCriteria().setUsername("SpeakerPelosi")\
                                           .setSince("2020-01-10")\
                                           .setUntil("2020-01-20")\
                                           .setMaxTweets(5000)\
                                           .setEmoji("unicode")
tweets = got.manager.TweetManager.getTweets(tweetCriteria)
```

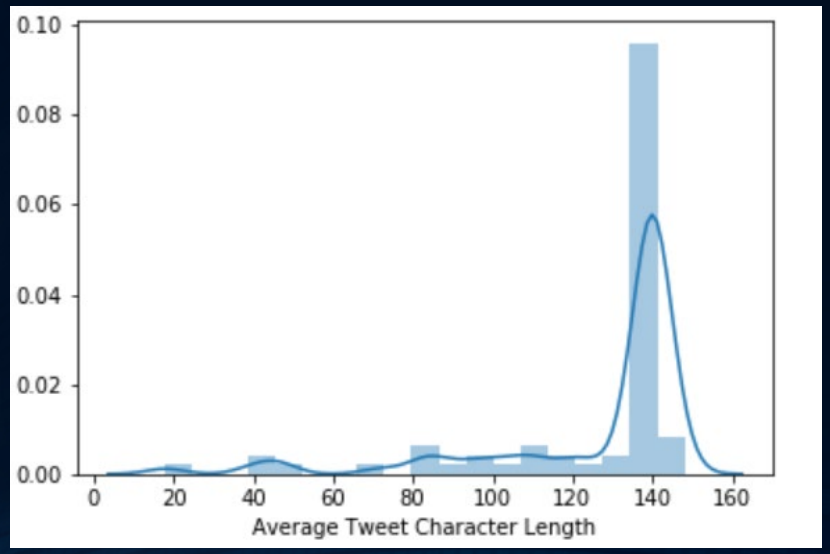
Data Preparation

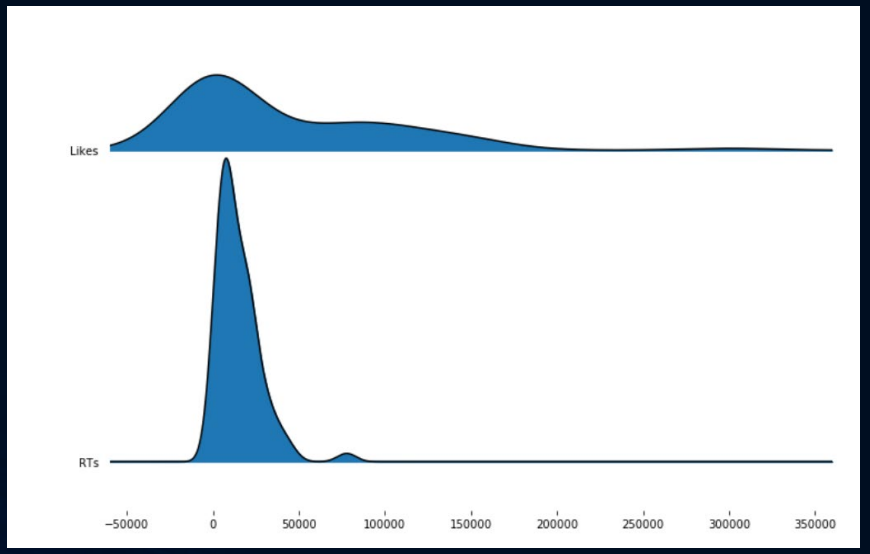
	Tweets	len	ID	Date	Source	Likes	RTs
0	We're building a campaign powered by the backbone and the base of the Democratic party. A campaign that will defeat... https://t.co/bXj5Vfw4AA	140	1238526488774938625	2020-03-13 18:05:00	TweetDeck	4189	1012
1	I believe this nation can overcome four years of Donald Trump. But if he's given eight years in the White House, he... https://t.co/WHJrBXL1w8	140	1238469865578606593	2020-03-13 14:20:00	TweetDeck	46407	8917
2	At a moment when there is so much fear around the world, we need honest, steady, trusted American leadership.\n\nIf I... https://t.co/o4HeFKVlHB	140	1238269797197987840	2020-03-13 01:05:00	Twitter Media Studio	19048	3927
3	A wall will not stop the coronavirus.\n\nBanning all travel from Europe — or any other part of the world — will not s... https://t.co/Rh2wOrWZQF	140	1238254697695326209	2020-03-13 00:05:00	TweetDeck	61246	10695
4	.@CoryBooker is right — this is our moment in history. We need your help to beat Donald Trump and set our nation on... https://t.co/RNHsSjWDI4	140	1238237081501130753	2020-03-12 22:55:00	Twitter Media Studio	6892	1603
5	No president can promise to prevent future outbreaks, but I can promise you this: When I'm president, we will be be... https://t.co/y0G8H5PFCR	140	1238212670660083712	2020-03-12 21:18:00	TweetDeck	133277	22203
6	We need to ensure that every person who needs a coronavirus test can get one — and that the test is free. Period.	113	1238182975109500929	2020-03-12 19:20:00	TweetDeck	92528	14435
7	Today, I'm releasing my plan to combat the coronavirus. We need:\n\n- A decisive public health response to curb the s... https://t.co/9SaJ7Woi4I	140	1238175676940853248	2020-03-12 18:51:00	TweetDeck	28511	7035
8	I'm about to address the nation on how we should confront the corona virus pandemic. Tune in to watch live: https://t.co/OdaeTNw40B	131	1238155901753683968	2020-03-12 17:32:25	Periscope	17376	3940
9	To all those who have been knocked down, counted out, or left behind — this is your campaign. We need you and we wa... https://t.co/2xGL5hoF2s	140	1238137676475359232	2020-03-12 16:20:00	Twitter Media Studio	6910	1446
10	At this moment — when there is so much fear in the country and all across the world — we need American leadership.... https://t.co/WVauzRHcBg	139	1238117544604680192	2020-03-12 15:00:00	TweetDeck	38862	7784

Data Collection



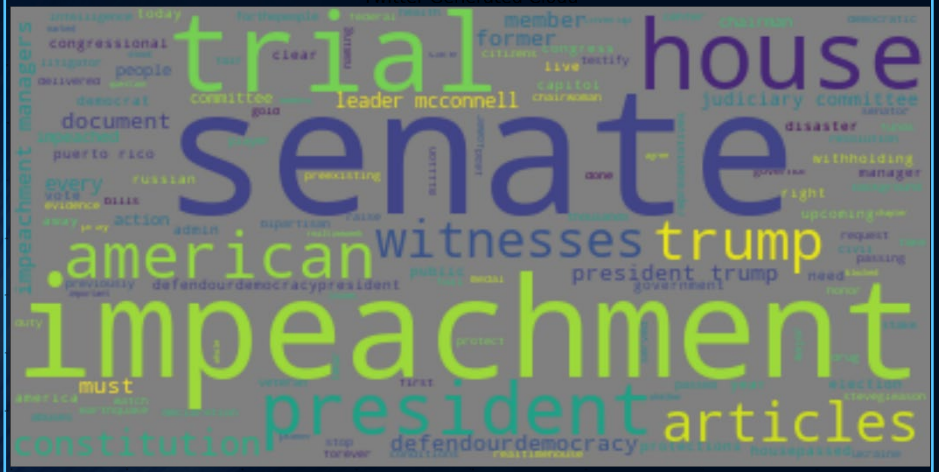




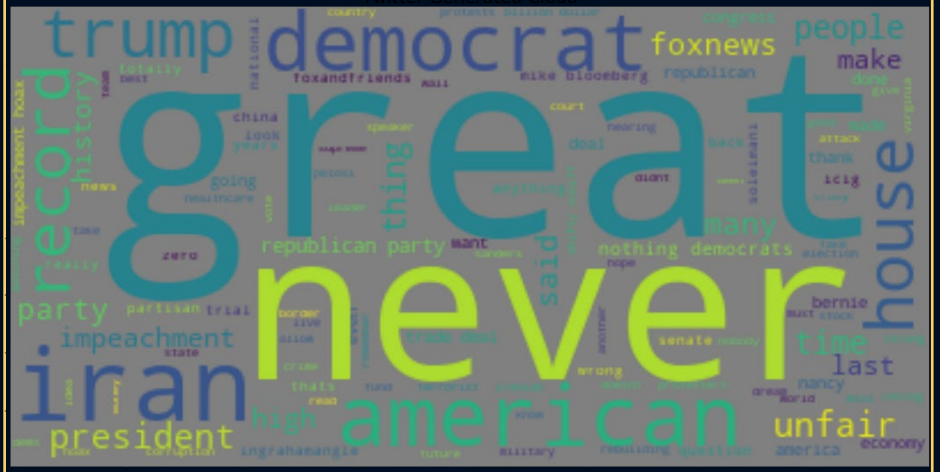


SENTIMENT:
Impeachment Frequent Words

PELOSI



TRUMP



SENTIMENT: Impeachment Themes

PELOSI

Theme 1: impeachment | trump | president | defendourdemocracy | house | senate | trial | manager | article | tune

Theme 2: american | must | trump | capitol | every | tune | defendourdemocracy | manager | document | people

Theme 3: american | every | president | people | action | manager | trump | must | document | former

Theme 4: trump | impeachment | manager | president | house | defendourdemocracy | trial | senate | must | article

Theme 5: president | senate | trump | witness | trial | defendourdemocracy | document | mcconnell | impeached | must

Theme 6: mcconnell | today | leader | people | must | senate | tune | member | committee | judiciary

Theme 7: defendourdemocracy | manager | trial | impeachment | president | today | constitution | house | senate | former

Theme 8: article | impeachment | capitol | tune | document | manager | people | committee | former | witness

Theme 9: committee | member | judiciary | defendourdemocracy | house | former | impeachment | constitution | manager | impeached

Theme 10: impeachment | article | capitol | tune | defendourdemocracy | manager | president | house | constitution | senate

TRUMP

Theme 1: iran | people | great | protester | trump | leader | america | another | going | back

Theme 2: party | american | republican | high | record | thank | never | crime | democrat | trump

Theme 3: thank | last | great | bernie | democrat | hoax | impeachment | thats | dems | mike

Theme 4: house | congress | president | democrat | senate | said | nancy | history | iran | thank

Theme 5: mini | time | foxnews | never | mike | bloomberg | want | democrat | like | bernie

Theme 6: ایران | great | record | deal | مردم | agree | trade | would | country | going

Theme 7: great | never | republican | many | house | hoax | partisan | dems | impeachment | even

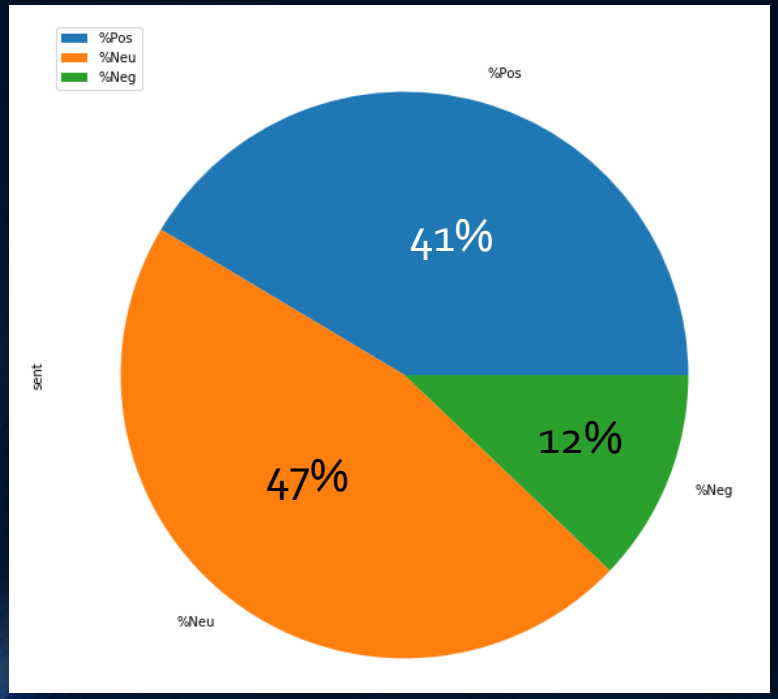
Theme 8: nancy | really | said | deal | foxnews | congress | thing | crazy | many | unfair

Theme 9: made | impeachment | democrat | thing | foxnews | ingrahamangle | dollar | fake | crime | trump

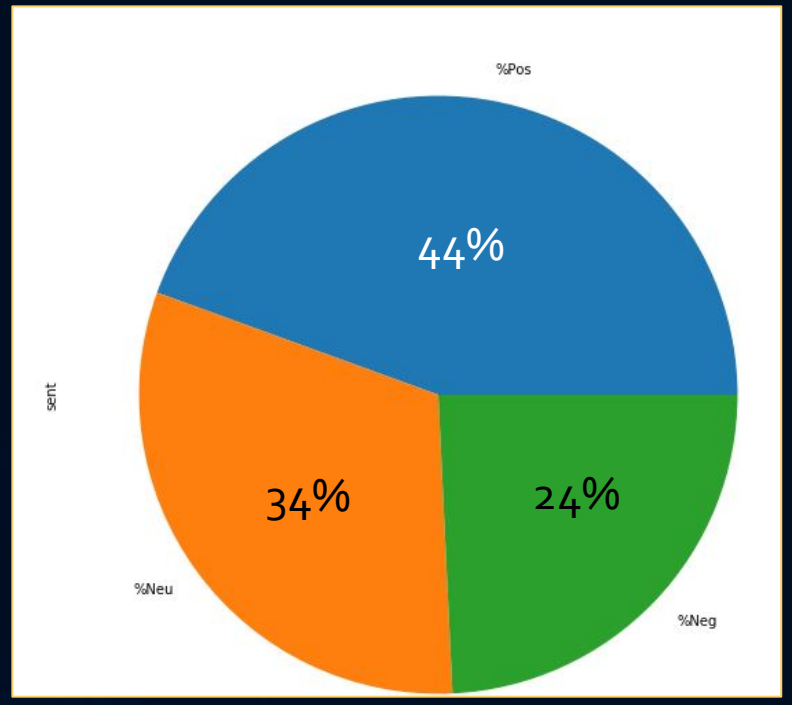
Theme 10: nothing | done | democrat | history | left | look | economy | year | wrong | soleimani

SENTIMENT:
Impeachment Tweet Sentiment

PELOSI

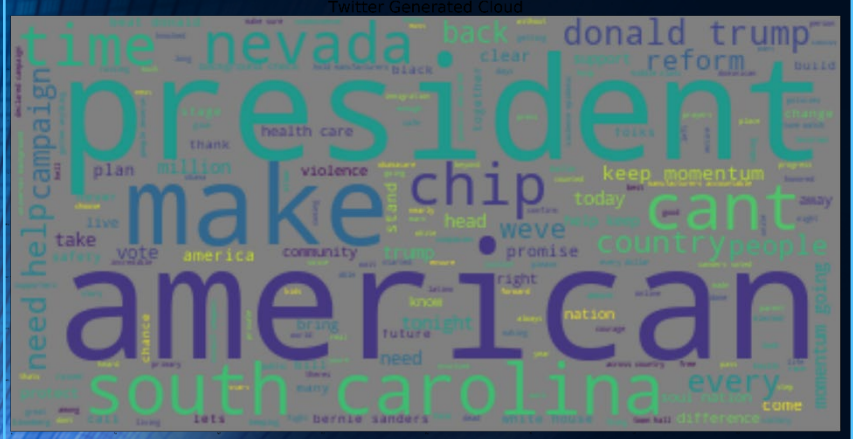


TRUMP

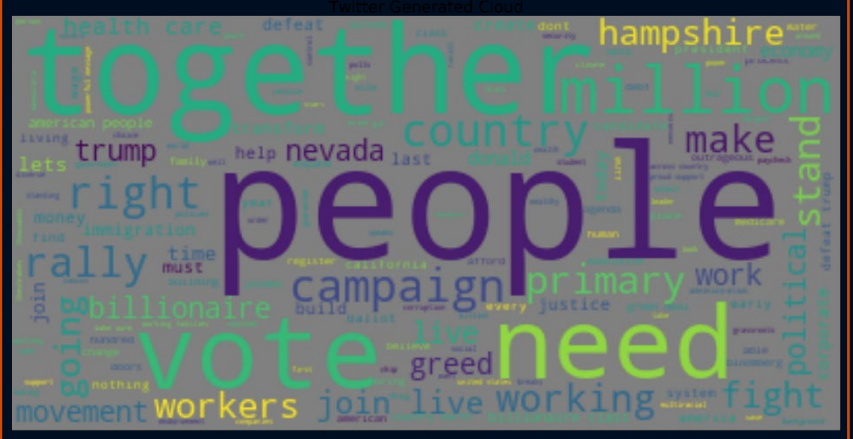


SENTIMENT:
Primaries Frequent Words

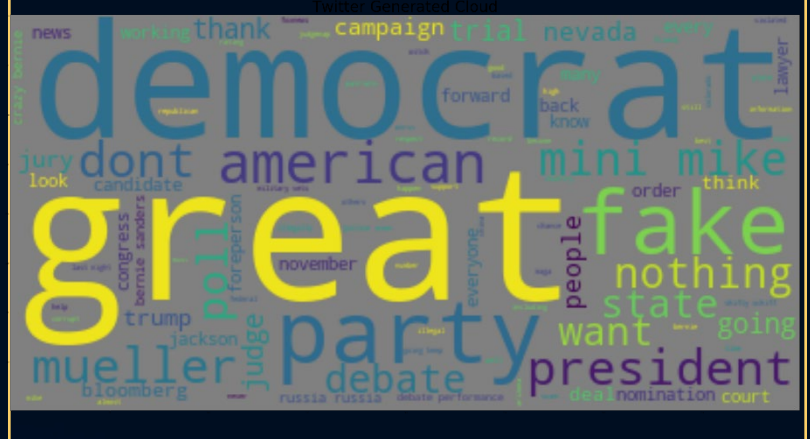
BIDEN



SANDERS



TRUMP



SENTIMENT: Primaries Themes

BIDEN

Theme 1: vote | background | check | deserve | much | american | like | time | make | sure

Theme 2: country | today | right | american | time | cant | change | many | campaign | promise

Theme 3: help | carolina | south | make | need | momentum | chip | going | keep | campaign

Theme 4: today | come | help | american | promise | country | health | president | honored | right

Theme 5: need | president | manufacturer | reform | take | cant | america | black | epidemic | demdebate

Theme 6: country | life | american | million | much | primary | today | south | carolina | head

Theme 7: stand | demdebate | make | president | sander | cant | every | many | clear | time

Theme 8: trump | donald | weve | nation | back | house | president | american | cant | never

SANDERS

Theme 1: dont | together | trump | campaign | vote | going | work | ballot | right | movement

Theme 2: people | campaign | nevada | working | live | care | vote | billionaire | class | fight

Theme 3: ballot | country | care | health | debt | student | must | today | working | last

Theme 4: trump | defeat | donald | candidate | create | money | billionaire | country | going | greed

Theme 5: health | make | right | care | need | medicare | immigration | people | profit | deal

Theme 6: together | hampshire | join | primary | live | rally | stand | make | vote | worker

Theme 7: people | movement | family | working | need | change | going | help | america | million

Theme 8: people | together | million | country | billionaire | justice | class | thank | nothing | fight

TRUMP

Theme 1: party | american | republican | democrat | maga | mini | mike | night | bernie | deal

Theme 2: campaign | friend | forward | must | place | mike | look | bloomberg | mini | great

Theme 3: thank | great | back | soon | going | american | judge | november | also | republican

Theme 4: thank | country | would | another | well | look | want | foxnews | working | like

Theme 5: kag2020 | maga | good | thank | also | must | foxnews | deal | like | forward

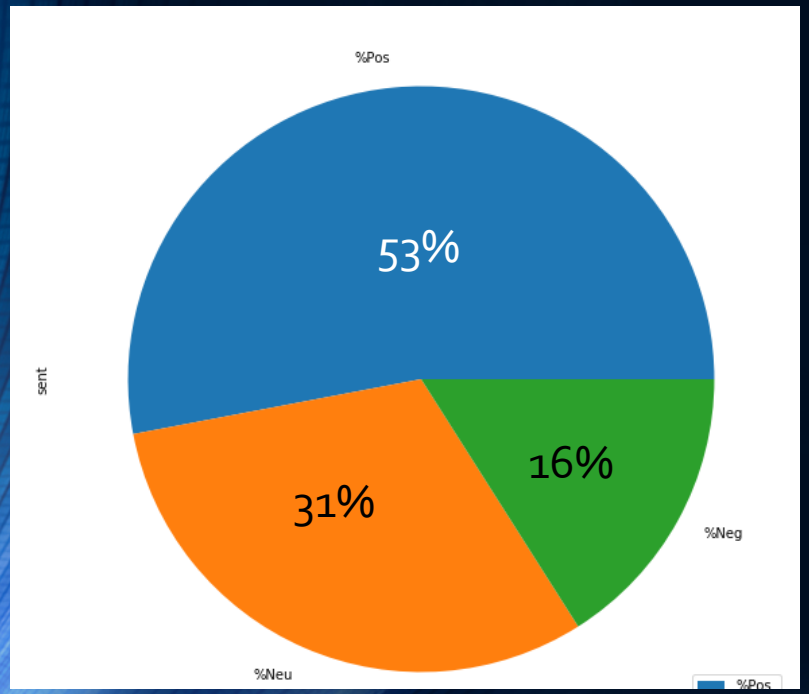
Theme 6: mini | mike | debate | performance | history | night | look | bernie | trump | dont

Theme 7: deal | everyone | bernie | president | want | congress | state | place | also | crazy

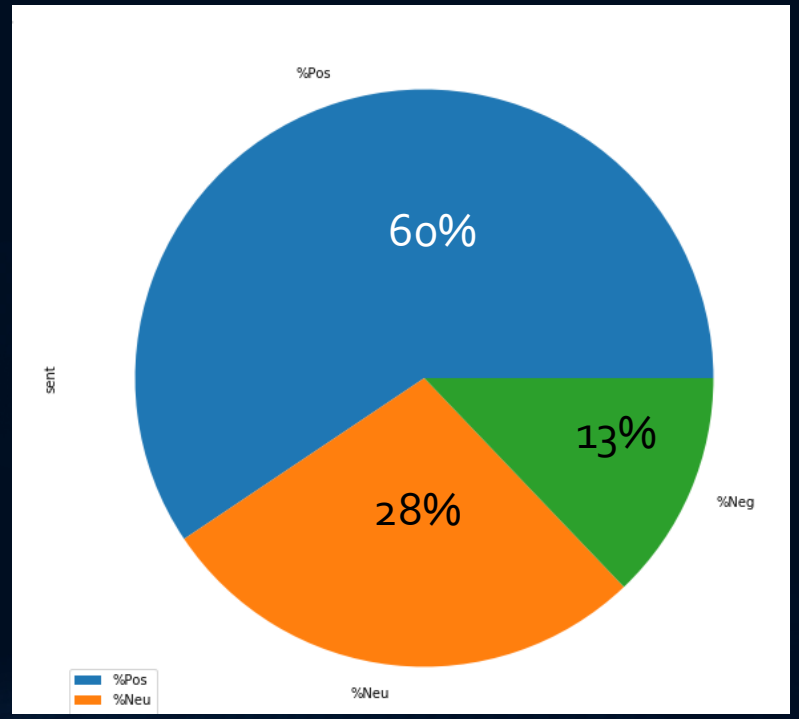
Theme 8: democrat | bernie | russia | sander | debate | foxnews | trump | mueller | number | poll

SENTIMENT:
Primaries Tweet Sentiments

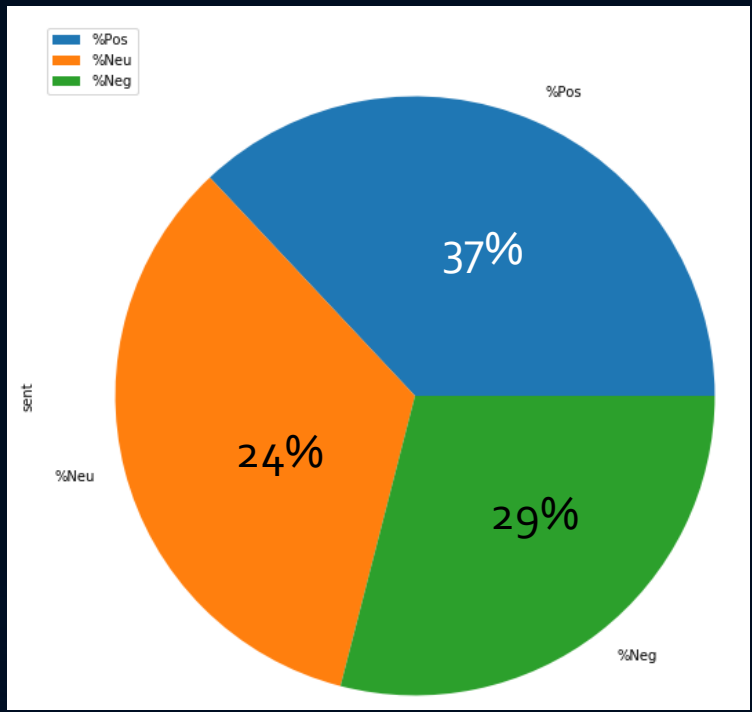
BIDEN



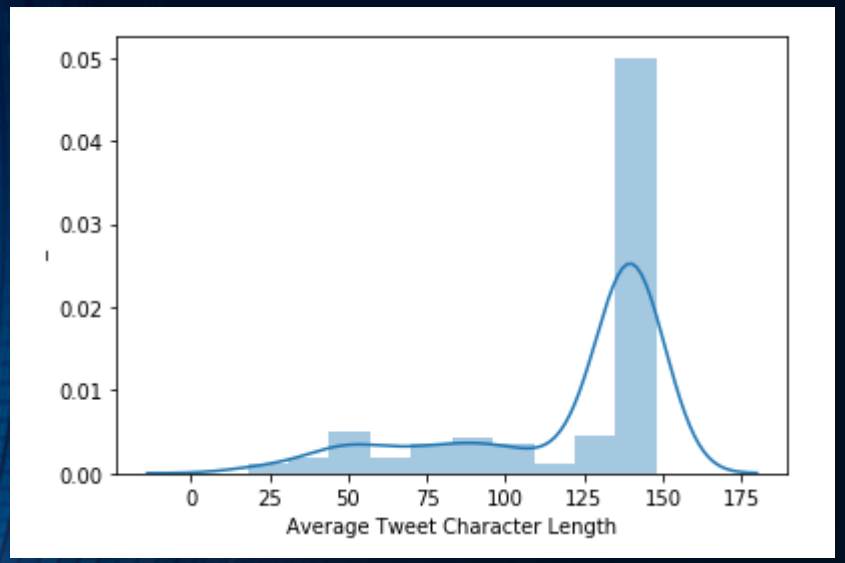
SANDERS

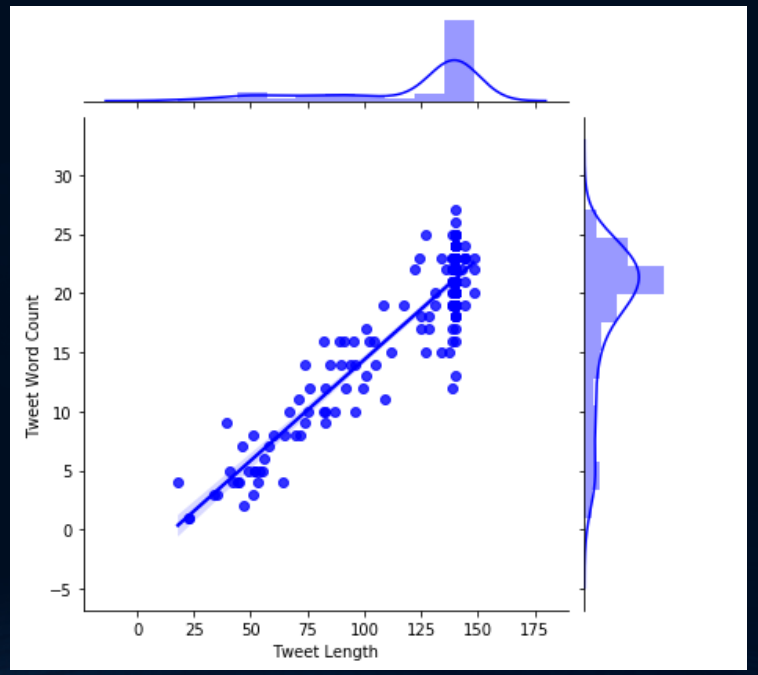


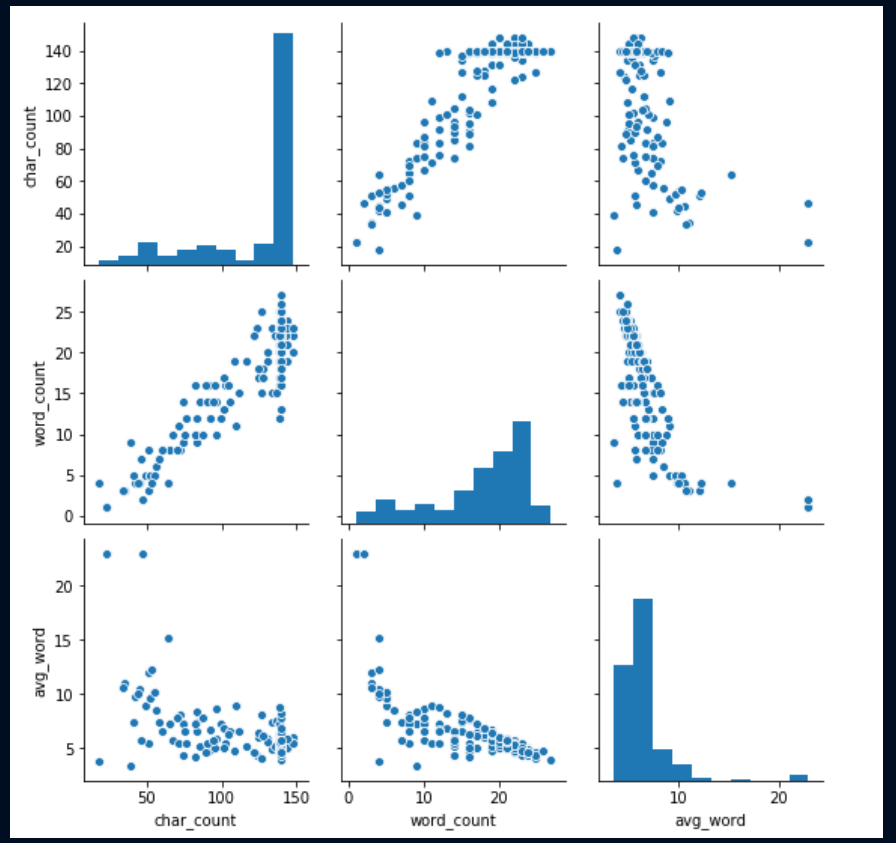
TRUMP



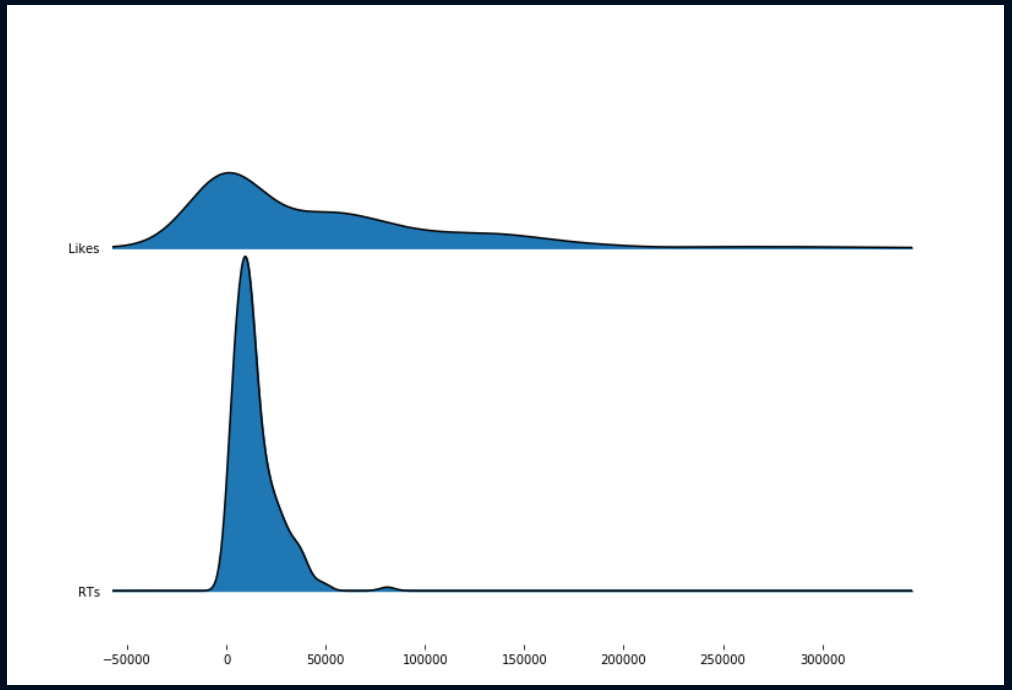
Corona Virus Tweet Analysis

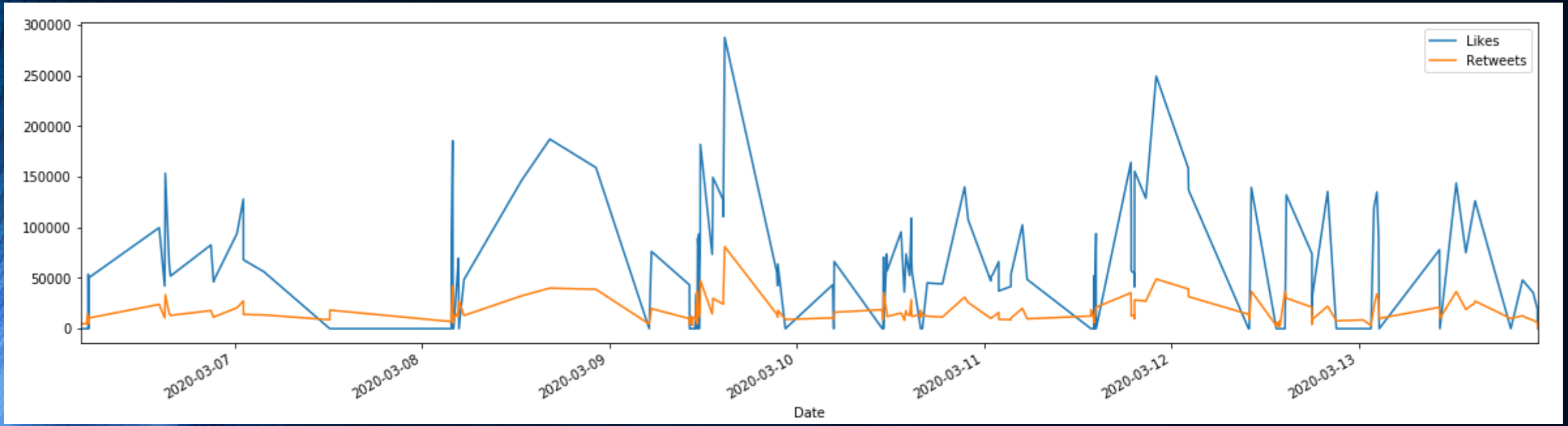






Likes & Retweets



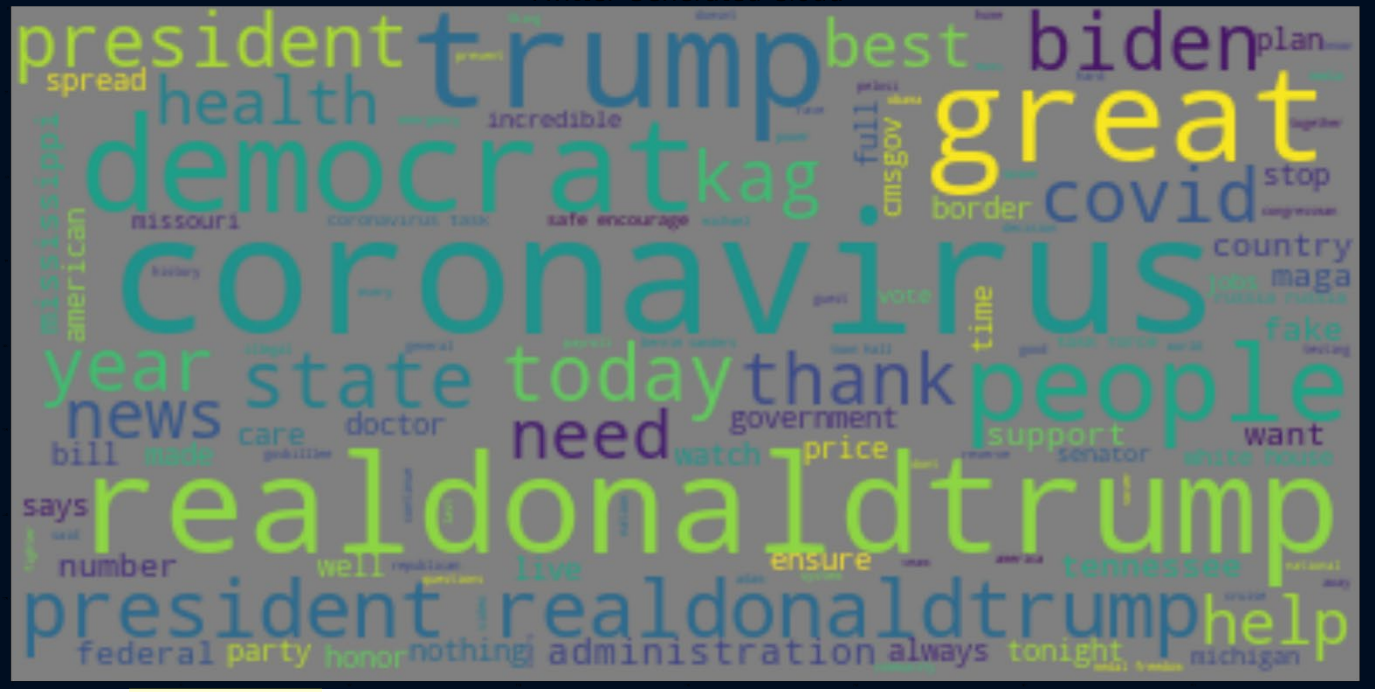


Today's Top 10 Tweets

	Tweets	len	ID	Date	Source	Likes	RTs	word_count	char_count	avg_word
0	RT @WhiteHouse: "The spirit and the will of our nation is unbreakable. We will defeat this threat. When America is tested, America rises to...	140	1238600318608384001	2020-03-13 22:58:22	Twitter for iPhone	0	1266	24	140	4.875000
1	RT @WhiteHouse: Today's emergency orders will allow the @HHSgov Secretary to waive applicable rules and regulations to give doctors, hospit...	140	1238600270659170304	2020-03-13 22:58:11	Twitter for iPhone	0	1610	20	140	6.050000
2	....No matter where you may be, I encourage you to turn towards prayer in an act of faith. Together, we will easily PREVAIL!	124	1238599373417787394	2020-03-13 22:54:37	Twitter for iPhone	10949	3027	23	124	4.434783
3	It is my great honor to declare Sunday, March 15th as a National Day of Prayer. We are a Country that, throughout o... https://t.co/Fk5kVI6uPw	140	1238599369466753026	2020-03-13 22:54:36	Twitter for iPhone	19536	5870	24	140	4.875000
4	At my request, effective midnight tonight, Carnival, Royal Caribbean, Norwegian, and MSC have all agreed to suspend... https://t.co/ZqGbQ0RVAp	140	1238590988593086464	2020-03-13 22:21:18	Twitter for iPhone	35691	8424	18	140	6.833333
5	We will remove or eliminate every obstacle necessary to deliver our people the care they need. No resource will be... https://t.co/yNdJRw3udL	139	1238575476916006915	2020-03-13 21:19:39	Twitter for iPhone	45112	11292	21	139	5.666667
6	To unleash the full power of the Federal Government in this effort, today I am officially declaring a National Emer... https://t.co/dOnYAypcm3	140	1238570595710836738	2020-03-13 21:00:16	Twitter for iPhone	48082	12836	21	140	5.714286
7	RT @WhiteHouse: LIVE: President @realDonaldTrump holds a news conference https://t.co/D975UkADhj	96	1238547947664609280	2020-03-13 19:30:16	Twitter for iPhone	0	10021	10	96	8.700000
8	I will be having a news conference today at 3:00 P.M., The White House. Topic: CoronaVirus!	91	1238478818135945216	2020-03-13 14:55:34	Twitter for iPhone	126169	27263	16	91	4.750000
9	To this point, and because we have had a very strong border policy, we have had 40 deaths related to CoronaVirus. I... https://t.co/P3NVR62BkM	140	1238478167695863817	2020-03-13 14:52:59	Twitter for iPhone	123972	25404	23	140	5.130435
10	The Federal Reserve must FINALLY lower the Fed Rate to something comparable to their competitor Central Banks. Jay... https://t.co/4RvGBiX3Ef	139	1238460927328075778	2020-03-13 13:44:29	Twitter for iPhone	75057	18975	19	139	6.368421

Frequent Words and Sentiment

Twitter Generated Cloud



Theme 1: thank | kag2020 | task | force | coronavirus | danscavino | great | best | maga | support

Theme 2: year | state | democrat | seemacms | realdonaldtrump | cmsgov | michigan | ensure | last | party

Theme 3: news | fake | keeping | know | encourage | price | safe | trump | democrat | well

Theme 4: trump | watch | tonight | like | president | trumptownhall | realdonaldtrump | nothing | ever | best

Theme 5: russia | today | federal | plan | charliekirk11 | full | democrat | bernie | medium | government

Theme 6: people | covid19 | well | want | thank | good | cdcgov | senator | support | maga

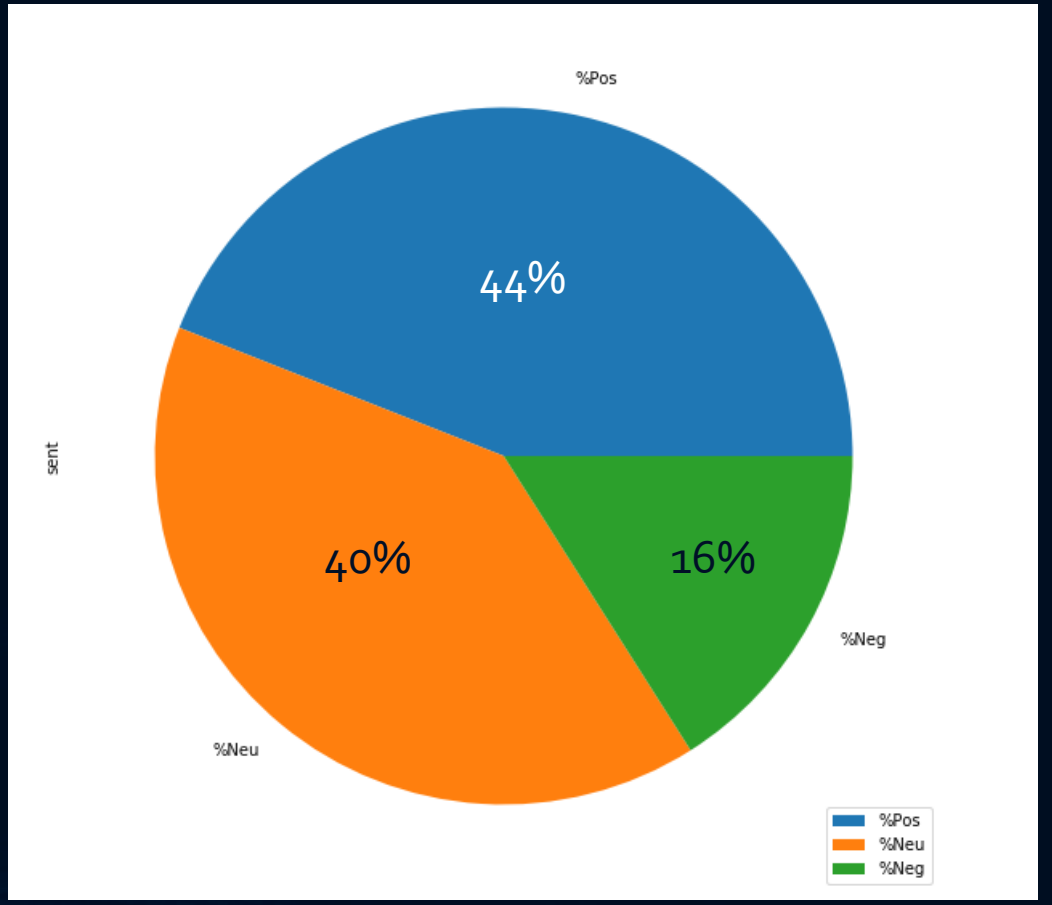
Theme 7: administration | congressman | mississippi | coronavirus | american | time | country | great | state | spread

Theme 8: great | realdonaldtrump | thank | missouri | number | always | tennessee | best | people | president

Theme 9: coronavirus | democrat | bernie | house | white | need | help | like | payroll | realdonaldtrump

Theme 10: president | realdonaldtrump | biden | charliekirk11 | whitehouse | year | say | health | trumptownhall | people

Sentiment of Today's Tweets



Conclusion

Impeachment

- Frequent Words
  - Great, Never, American, Iran, Democrat
- Themes
  - Iran, Party, Thank, House, Mini, Great, Nancy, Made, Nothing
- Sentiment
  - 44% positive & 24% negative

Democratic Primaries

- Frequent Words
  - Democrat, Great, Party, Fake, American
- Themes
  - Party, Campaign, Thank, kag2020, Mini, Deal, Democrat
- Sentiment
  - 37% positive & 29% negative

Coronavirus Pandemic

- Frequent Words
  - Coronavirus, realdonaldtrump, Great, People, Biden
- Themes
  - Thank, Year, News, Trump, Russia, People, Administration, Great, Coronavirus, President
- Sentiment
  - 44% positive & 16% negative

- Donald Trump tweets:
  - Focused on Iran, the parties, Nancy Pelosi during the Impeachment period.
  - Shifted the attention to the campaign and the democratic candidates during the democratic primaries.
  - Now focusing on Coronavirus.
  - About ¼ of the tweets expressed negative emotion, but the percentage became lower during the outbreak of Coronavirus in the US, probably with intention to calm the publics.