IBM Hack Challenge and Academic Initiative program- "GuruCool"

Project

On

Web based Dashboard for COVID-19 Twitter Sentiment Analysis

By:

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1. INTRODUCTION

1.1 Overview

As governments and organizations continue to work towards COVID-19 and stem the growing humanitarian toll it is exacting, the economic effects are also beginning to be felt. We can track sentiment to gauge how people's expectations, incomes, spending, and behaviors change throughout the crisis across the country over time and also predict their state if the lockdown is extended.

1.2 Purpose

The project mainly focuses on people's sentiment towards the pandemic, understands the sentiments of people on government's decisions to extend the lockdown and possibility to predict riots against the government.

In this Project, our server application subscribes to a Twitter feed as configured by the user. Each tweet received will be analyzed for emotional tone and sentiment, all data is stored in a Cloudant database, with the opportunity to store historical data as well. The resulting analysis is presented in a Node-Red based Web UI as a series of graphs and charts

- Tweets are pushed out by Twitter based on Hashtag.
- The Watson Tone Analyzer Service /Sentiment node performs an analysis of
- Sentiment and emotional tone.
- Tweets and metadata are stored in Cloudant
- The Web UI displays charts and graphs.

2. LITERATURE SURVEY

2.1 Existing Problem

There is a drastic change in people's sentiment towards the pandemic. Initially there was frear among the people, but now the fear is slowly gone and people started taking things for granted. There is a need to understands the sentiments of people on government's decisions to extend the lockdown and possibility to predict riots against the government

2.2 Proposed Solution

In this Project, our server application subscribes to a Twitter feed as configured by the user. Each tweet received will be analyzed for emotional tone and sentiment, all data is stored in a Cloudant database, with the opportunity to store historical data as well. The resulting analysis is presented in a Node-Red based Web UI as a series of graphs and charts

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- Sentiment and emotional tone.
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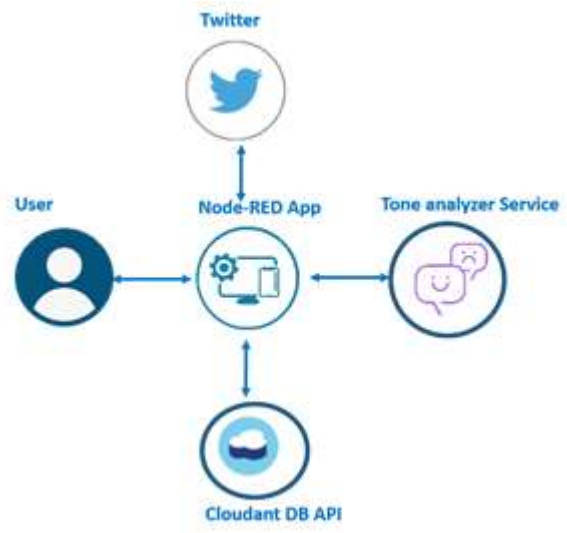
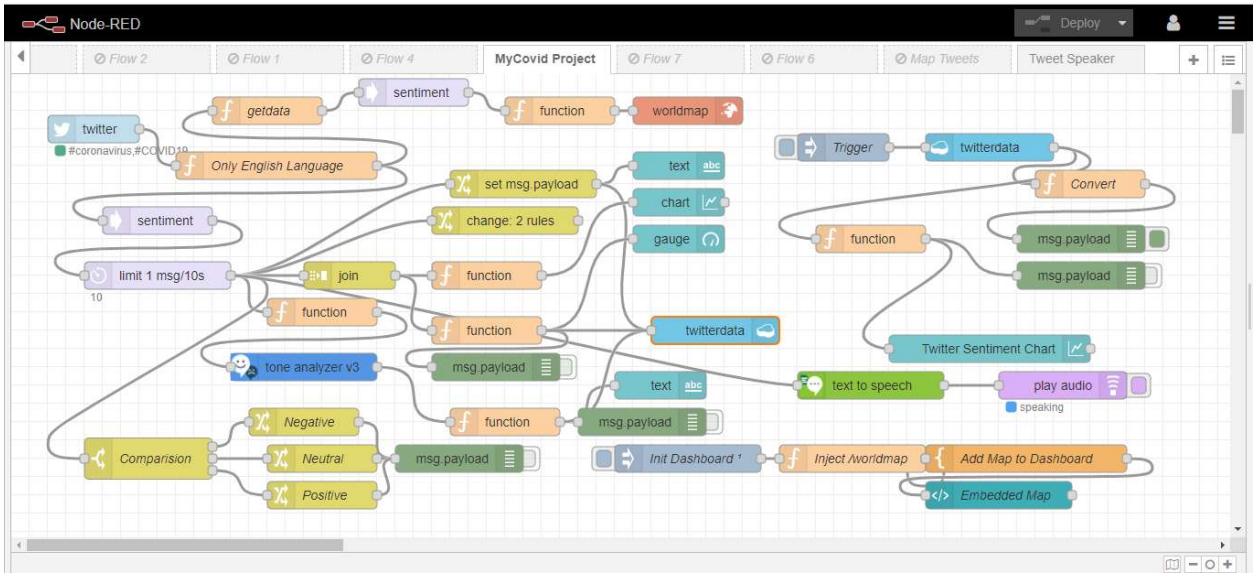
3. THEORITICAL ANALYSIS

3.1 Block diagram

The Proposed Technical Architecture is given as below:



And in Node Red UI the components are connected as given below:



The following nodes are used

- Worldmap node
- Sentiment node

- Twitter node
- Watson Text to speech node
- Template nodes for UI
- Cloudant databases to store and also fetch data
- Charts to display graphical analysis
- Gauge node to display sentiment as meter
- Watson Tone analyzer node

3.2 Hardware / Software designing

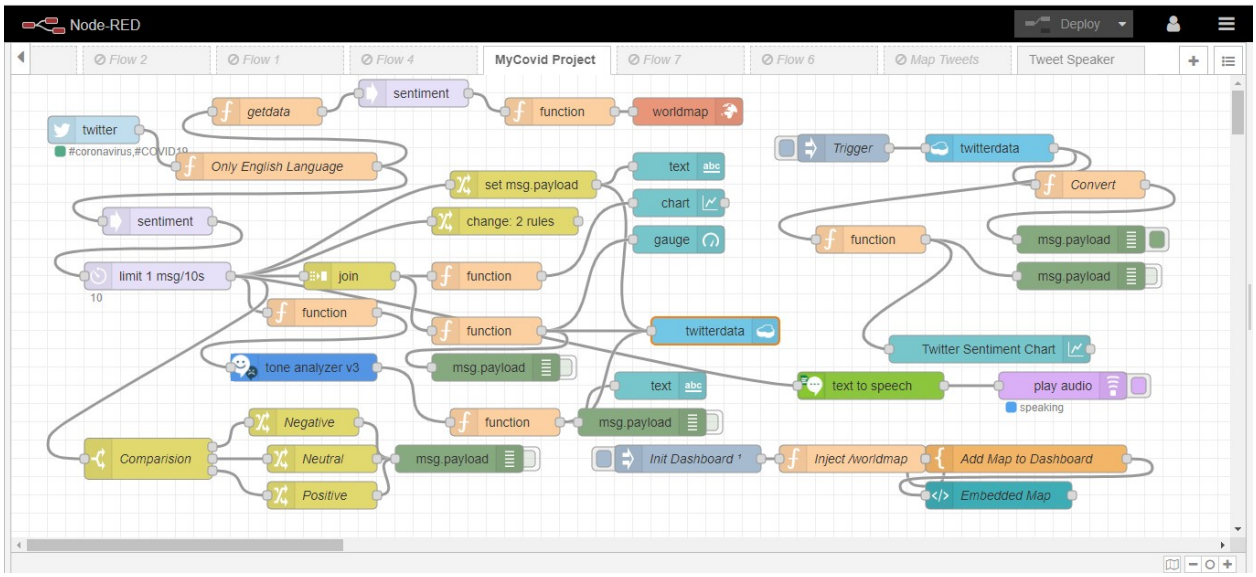
Software services required to implements this project are :

1. IBM Watson Tone Analyzer
2. IBM Nodered
3. IBM Cloudant databse
4. Twitter developer account

4. EXPERIMENTAL INVESTIGATIONS

The project consists of Node Red UI for building all the components required to represent all the analysis graphically.

The given figure shows each node of nodered interface. Each node has its own functionality.



Using twitter node, Tweets are pushed out by Twitter based on Hashtag. The hash tag given is #Coronavirus , #COVID19

For getting tweets first an account was created at developer.twitter.com. An application was sent to Twitter to accept me as developer so that I can create projects and use the tweets.

The application was accepted after review. Then API keys were generated at the twitter developer portal which is then placed as an attribute in the nodered twitter node. Once done, the tweets started to flow.

Tweets

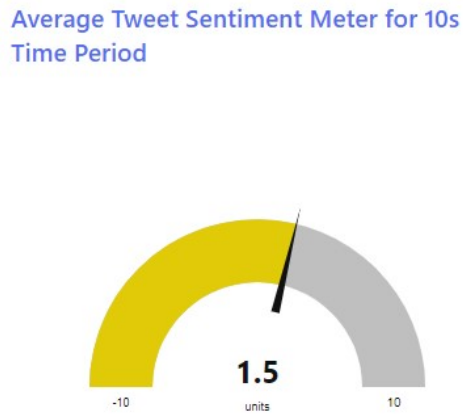
RT @Holbornlolz: Looks like the UK is settling into luxury Communism. "Stay home, do nothing, Boris will pay for everything"

Tweets

RT @DrEricDing: 📌RECAP: Key thing Kamala said at #VPDEBATE: 'On January 28, the Vice President & the President were informed that #COVID19...

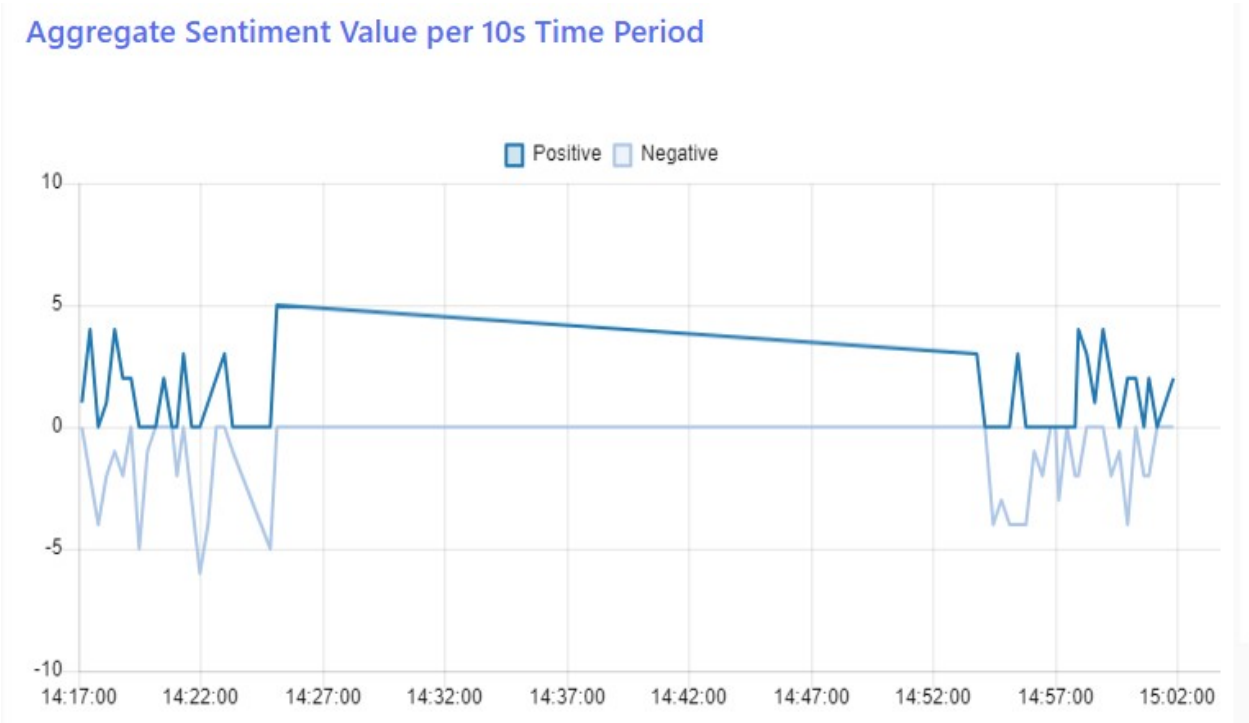
The sentiment was then calculated using sentiment node. The score usually varies between -5 to +5. When score is <0, it is considered to be negative sentiment. When it is >0, then the sentiment is a Positive sentiment else Neutral.

This score is aggregated over a period of 10 seconds and then is displayed using gauge node as Sentiment Meter.



The sentiment score is segregated as positive and negative, accumulated for a period of 10 seconds as the tweets keep on coming.

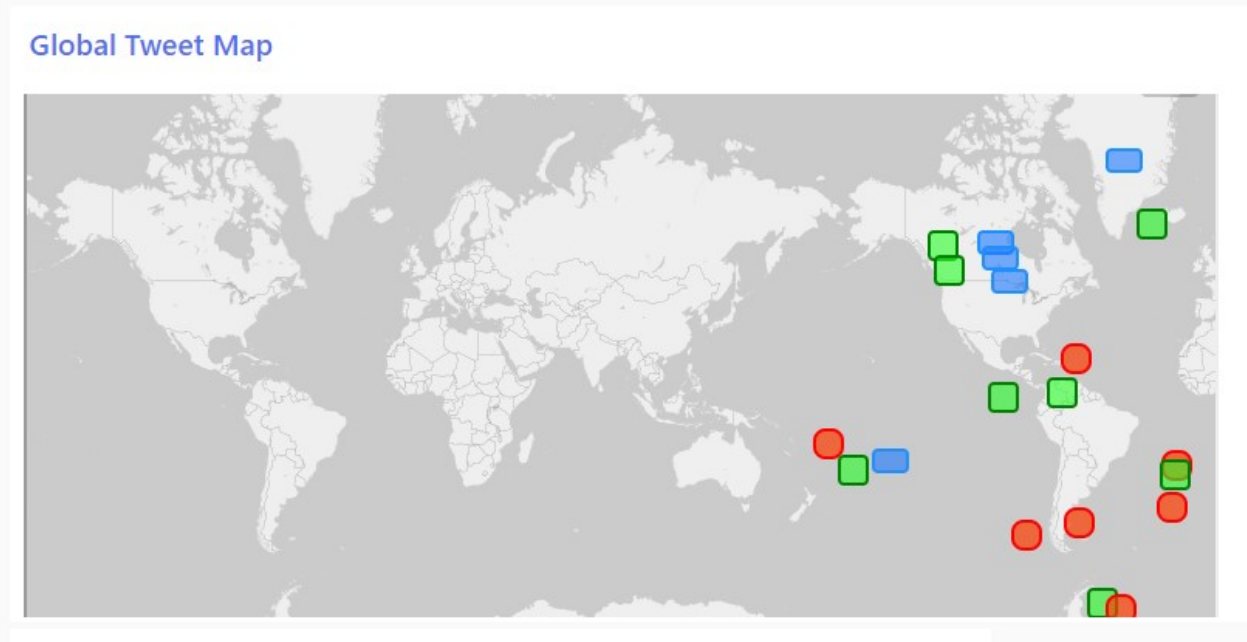
There are then plotted using chart node as shown below.



The tweets are analyzed for their tone using Watson Tone analyzer. Different tone names are associated with each tweet such as Joy, Confident, anger, Sadness, Fear etc. These tones are also stored in cloudant database along with tweet data and sentiment score data.

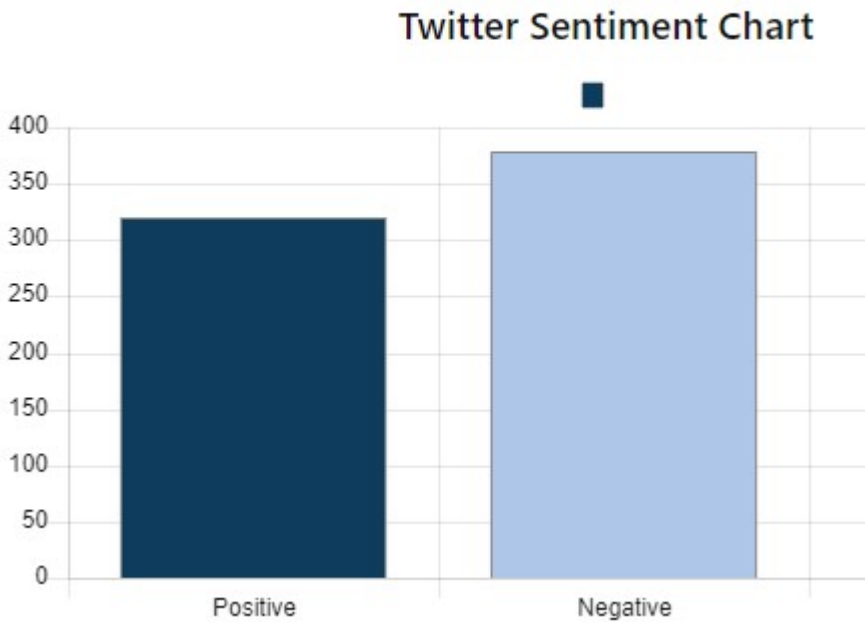
Tweets	Tone of the Tweet
RT @CochraneLibrary: An extraordinary week of published content relating to @cochranecollab response to the #COVID19 pandemic! https://t.co...	Confident

All the tweets which are geo-tagged are collected, and their locations are extracted in the form of latitude and longitude. These attributes along with the tweet and the sentiment score that is calculated previously are plotted on to the world map using world map node. Colors are given for different sentiments. Green pointers on the map are locations to neutral sentiment tweets. Blue ones are positive sentiment tweet locations and red are negative sentiment tweet locations. They are plotted only when we inject into the map node.

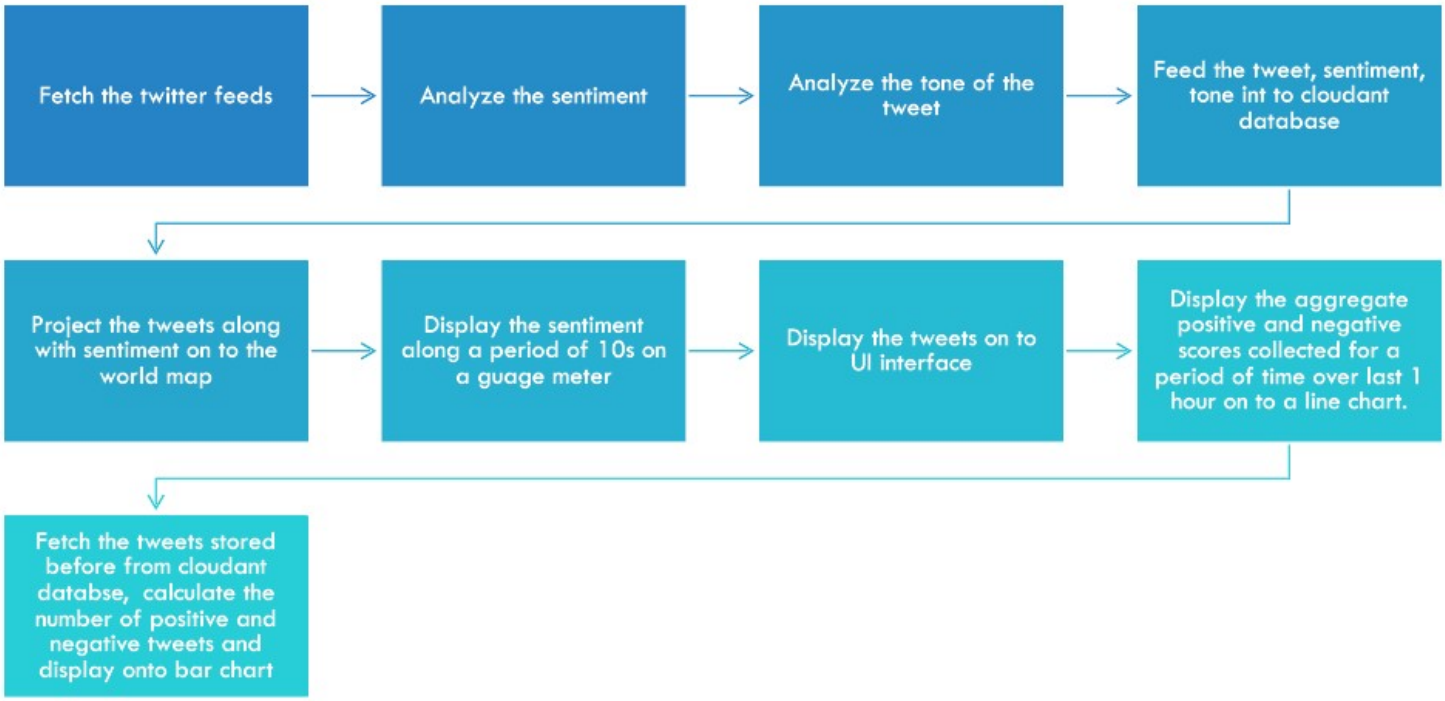


All the tweets are continuously fed into cloudant database named twitter data. After sufficient amount of tweets are collected into the database, we can analyze all the tweets collectively by fetching the sentiment score and finding the count of positive and negative scores. Here below you can see negative sentiment of people is more compared to positive sentiment.

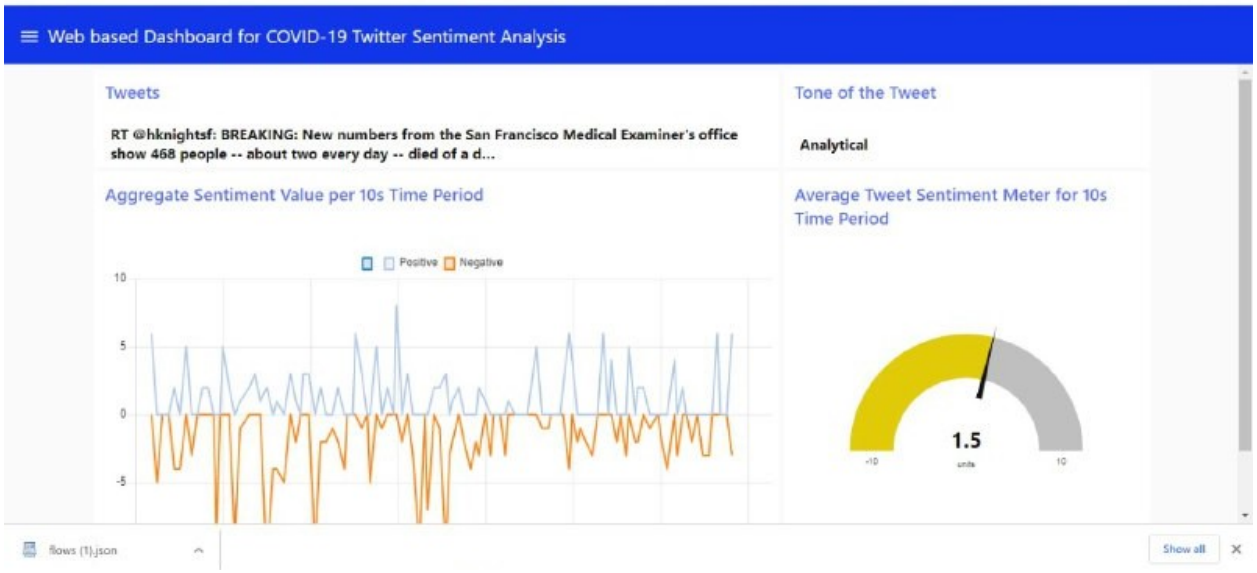
Twitter Sentiment Chart

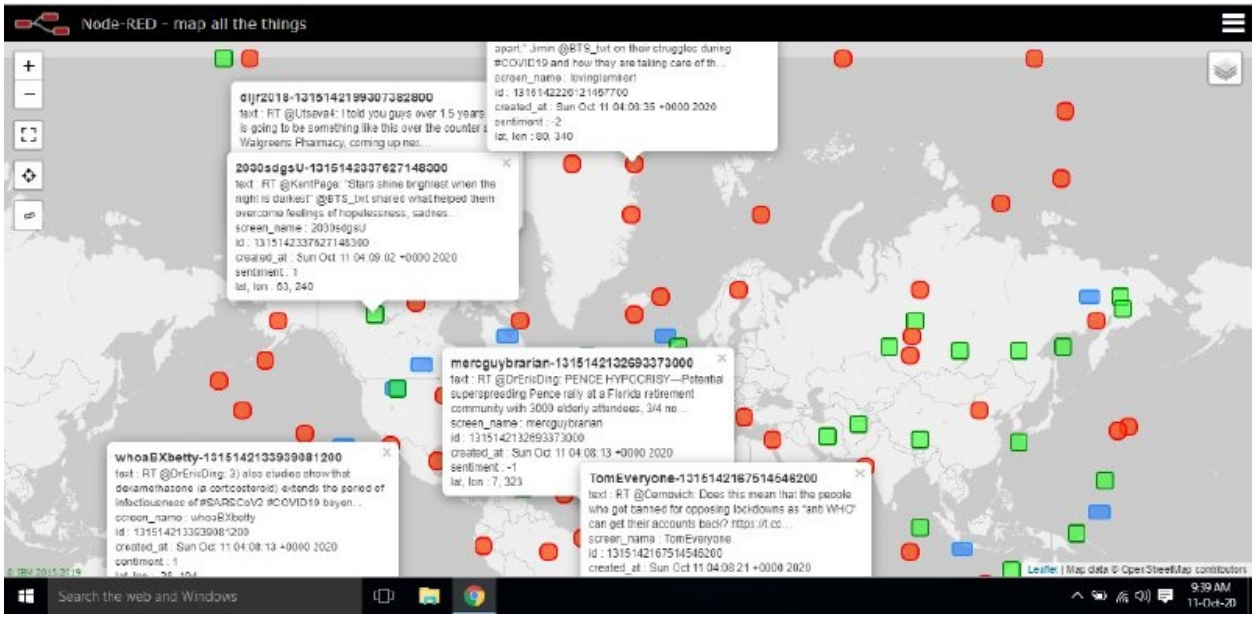


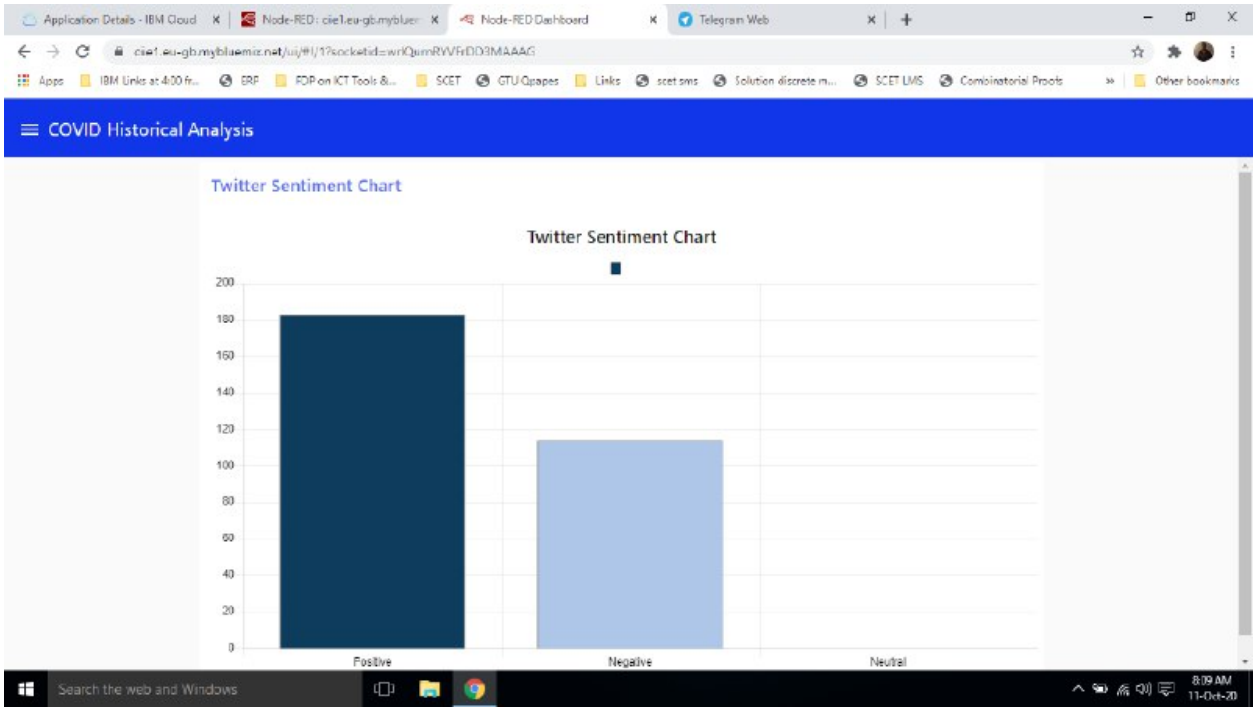
5. FLOWCHART

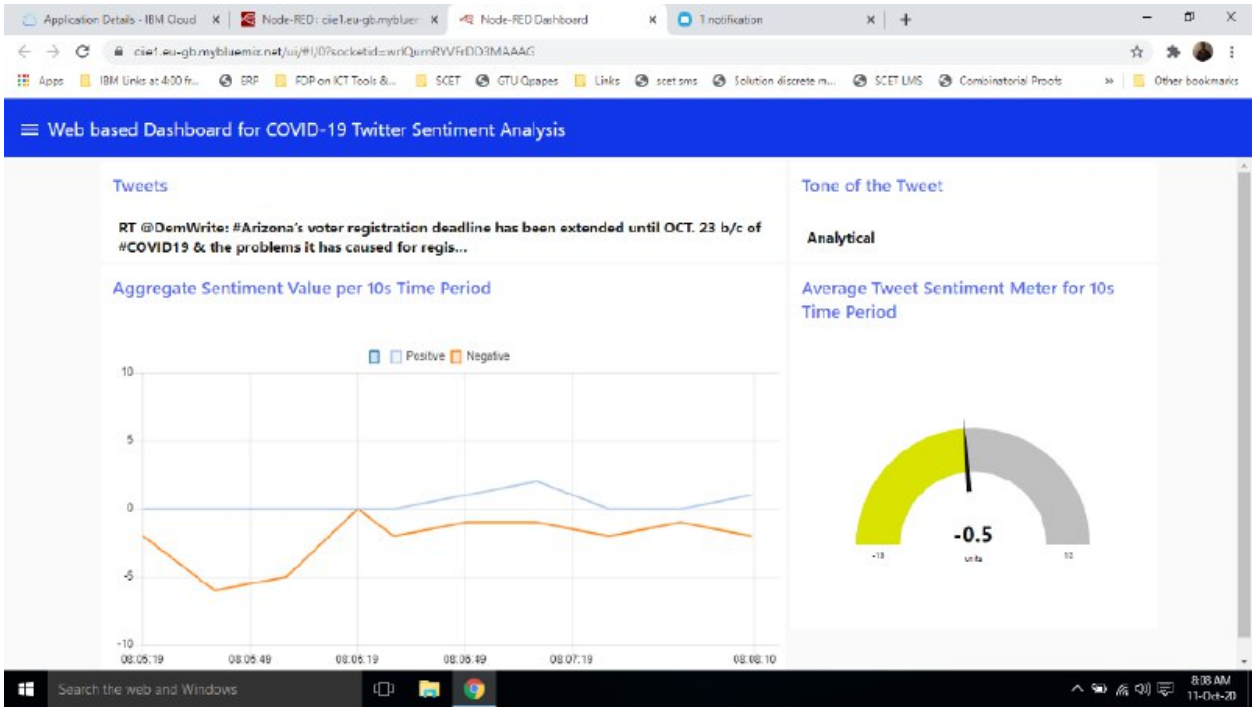

Fetch the twitter feeds
Analyze the sentiment
Analyze the tone of the tweet
Feed the tweet, sentiment, tone int to cloudant database
Project the tweets along with sentiment on to the world map
Display the sentiment along a period of 10s on a guage meter
Display the tweets on to UI interface
Display the aggregate positive and negative scores collected for a period of time over last 1 hour on to a line chart.
Fetch the tweets stored before from cloudant databse, calculate the number of positive and negative tweets and display onto bar chart

6. RESULT


Web based Dashboard for COVID-19 Twitter Sentiment Analysis
Tweets
RT @hknightsf: BREAKING: New numbers from the San Francisco Medical Examiner's office show 468 people -- about two every day -- died of a d...
Tone of the Tweet
Analytical
Aggregate Sentiment Value per 10s Time Period
Positive
Negative
10
5
0
-5
Average Tweet Sentiment Meter for 10s Time Period
1.5
flows (1).json
Show all


Node-RED - map all the things
mercguybrarian-1315142132693373000
text : RT @DrEricDing: PENCE HYPOCRISY—Potential superspreading Pence rally at a Florida retirement community with 3000 elderly attendees, 3/4 no...
screen_name : mercguybrarian
id : 1315142132693373000
created_at : Sun Oct 11 04:08:13 +0000 2020
sentiment : -1
lat, lon : 7, 323
whoaBXbetty-1315142133939081200
TomEveryone-1315142167514546200
text : RT @Carnovich: Does this mean that the people who got banned for opposing lockdowns as "anti WHO" can get their accounts back? https://t.co/...
screen_name : TomEveryone
id : 1315142167514546200
created_at : Sun Oct 11 04:08:21 +0000 2020
Leaflet | Map data © OpenStreetMap contributors
Search the web and Windows
9:39 AM
11-Oct-20


Application Details - IBM Cloud
Node-RED: cie1.eu-gb.mybluem
Node-RED Dashboard
Telegram Web
COVID Historical Analysis
Twitter Sentiment Chart
Twitter Sentiment Chart
200
180
160
140
120
100
80
60
40
20
0
Positive
Negative
Neutral
Search the web and Windows
8:09 AM
11-Oct-20


Application Details - IBM Cloud
Node-RED: cie1.eu-gb.mybluem
Node-RED Dashboard
1 notification
Web based Dashboard for COVID-19 Twitter Sentiment Analysis
Tweets
RT @DemWrite: #Arizona's voter registration deadline has been extended until OCT. 23 b/c of #COVID19 & the problems it has caused for regis...
Tone of the Tweet
Analytical
Aggregate Sentiment Value per 10s Time Period
Positive
Negative
10
5
0
-5
-10
08:05:19
08:05:49
08:06:19
08:06:49
08:07:19
08:08:10
Average Tweet Sentiment Meter for 10s Time Period
-0.5
Search the web and Windows
8:08 AM
11-Oct-20

7. ADVANTAGES & DISADVANTAGES

Advantages:

- Accurate analysis of sentiment of people as live twitter feed is considered.
- Sentiment scores and tweets are displayed on an attractive dashboard with all graphics plots and charts which can be easily understood by layman user.

Disadvantages:

- All 100% tweets are not fetched from all over the world due to limitation of twitter developer portal. Hence it may happen sometime that the sentiment varies from the actual value.

8. APPLICATIONS

The applications of this project are in

- Governments
- Healthcare
- Companies
- Politics.

We can get the sentiment of the user regarding any new restrictions imposed by the governments and analyze the overall reaction of the people. Many decisions can be made or reverted by carefully checking the sentiment of the people regarding that decision.

Also the same sentiment analysis can be changed easily to be used in various other domains such as health care, politics, administration etc, just by changing the hashtags of twitter feed.

9. CONCLUSION

After completing this project the conclusion that I can make is that majority of the people have negative sentiment regarding COVID-19, Coronavirus. The decisions made, the rules violated, restrictions imposed, all in all the overall sentiment that I got from analyzing the tweets is more negative than positive.

We can get the sentiment of the user regarding any new restrictions imposed by the governments and analyze the overall reaction of the people. Many decisions can be made or reverted by carefully checking the sentiment of the people regarding that decision.

Also the same sentiment analysis can be changed easily to be used in various other domains such as health care, politics, administration etc, just by changing the hashtags of twitter feed

10. FUTURE SCOPE

For future scope we can perform much deeper analysis by targeting specific locations in the twitter region. We can get the sentiment of the user regarding any new restrictions imposed by the governments and analyze the overall reaction of the people. Many decisions can be made or reverted by carefully checking the sentiment of the people regarding that decision.

Also the same sentiment analysis can be changed easily to be used in various other domains such as health care, politics, administration etc, just by changing the hashtags of twitter feed.

11. BIBILOGRAPHY

1. **https://cloud.ibm.com/docs?tab=tutorials**
2. **https://nodered.org/docs/tutorials/**
3. **https://flows.nodered.org/**
4. **https://github.com/node-red**

12. APPENDIX

A. Source code

[{"id":"d64bfadf.c2edc8","type":"tab","label":"MyCovid Project","disabled":false,"info":""},{"id":"f443c4d6.ce7f88","type":"twitter in","z":"d64bfadf.c2edc8","twitter":"","tags":"#coronavirus,#COVID19","user":"false","name":"","inputs":0,"x":90,"y":60,"wires":[["4f35e4bd.68deec"]]},{"id":"8ef16132.d0f4","type":"switch","z":"d64bfadf.c2edc8","name":"Comparision","property":"sentiment.score","propertyType":"msg","rules":[{"t":"lt","v":"0","vt":"num"},{"t":"eq","v":"0","vt":"num"},{"t":"gt","v":"0","vt":"num"}],"checkall":"true","repair":false,"outputs":3,"x":150,"y":420,"wires":[["d2cc4679.d64a38"],["16c89c61.db2dc4"],["e0639c48.ede5"]]},{"id":"d2cc4679.d64a38","type":"change","z":"d64bfadf.c2edc8","name":"Negative","rules":[{"t":"set","p":"payload","pt":"msg","to":"Anger","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":320,"y":380,"wires":[["91a073f9.4124a"]]},{"id":"16c89c61.db2dc4","type":"change","z":"d64bfadf.c2edc8","name":"Neutral","rules":[{"t":"set","p":"payload","pt":"msg","to":"Sadness","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":340,"y":420,"wires":[["91a073f9.4124a"]]},{"id":"e0639c48.ede5","type":"change","z":"d64bfadf.c2edc8","name":"Positive","rules":[{"t":"set","p":"payload","pt":"msg","to":"Joy","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":340,"y":460,"wires":[["91a073f9.4124a"]]},{"id":"8325ecd7.3024f","type":"delay","z":"d64bfadf.c2edc8","name":"","pauseType":"rate","timeout":"5","timeoutUnits":"seconds","rate":"1","nbRateUnits":"10","rateUnits":"second","randomFirst":"1","randomLast":"5","randomUnits":"seconds","drop":false,"x":160,"y":220,"wires":[["d856ed16.4f8f6","9b9f806f.af36d","af9b4c9e.e0dfd","41d8bcb8.6d6da4","8ef16132.d0f4","2f28d222.f20b7e"]]},{"id":"9b9f806f.af36d","type":"change","z":"d64bfadf.c2edc8","name":"","rules":[{"t":"set","p":"payload","pt":"msg","to":"sentiment.score","tot":"msg"},{"t":"set","p":"topic","pt":"msg","to":"","tot":"str"}],"action":"","property":"","from":"","to":"","reg":false,"x":540,"y":160,"wires":[[]]},{"id":"14f92e19.71a482","type":"ui_gauge","z":"d64bfadf.c2edc8","name":"","group":"db8f83fc.7dbeb","order":2,"width":0,"height":0,"gtype":"gage","title":"","label":"units","format":"{{value}}","min":"-10","max":10,"colors":["#00b500","#e6e600","#ca3838"],"seg1":"","seg2":"","x":730,"y":180,"wires":[]},{"id":"47bc1992.6e2488","type":"ui_chart","z":"d64bfadf.c2edc8","name":"","group":"24e1679d.3d50a8","order":1,"width":0,"height":0,"label":"","chartType":"line","legend":"true","xformat":"HH:mm:ss","interpolate":"linear","nodata":"","dot":false,"ymin":"-10","ymax":"10","removeOlder":1,"removeOlderPoints":"","removeOlderUnit":"3600","cutout":0,"useOneColor":false,"useUTC":false,"colors":["#1f77b4","#aec7e8","#ff7f0e","#2ca02c","#98df8a","#d62728","#ff9896","#9467bd","#c5b0d5"],"useOldStyle":true,"outputs":1,"x":730,"y":140,"wires":[[]]},{"id":"d856ed16.4f8f6","type":"change","z":"d64bfadf.c2edc8","name":"","rules":[{"t":"set","p":"payload","pt":"msg","to":"tweet.text","tot":"msg"}],"action":"","property":"","from":"","to":"","reg":false,"x":560,"y":120,"wires":[["c985f4ad.1519d8","502bd81e.91bf38"]]},{"id":"c985f4ad.1519d8","type":"ui_text","z":"d64bfadf.c2edc8","group":"c3baaa3d.dc9478","order":1,"width":0,"height":0,"name":"","label":"","format":"{{msg.payload}}","layout":"row-

left","x":730,"y":100,"wires":[]},{"id":"5ea367c4.5113e8","type":"ui_text","z":"d64bfadf.c2edc8","group":"2f6fde2d.1b8802","order":1,"width":0,"height":0,"name":"","label":"","format":"{{msg.payload.document_tone.tones[0].tone_name}}","layout":"row-left","x":710,"y":340,"wires":[]},{"id":"4f35e4bd.68deec","type":"function","z":"d64bfadf.c2edc8","name":"Only English Language","func":"if (msg.lang === 'en') {\n return msg;\n} else {\n return null;\n}\n","outputs":1,"noerr":0,"initialize":"","finalize":"","x":290,"y":100,"wires":[["39d25b6.871dca4","814cd324.99cb5"]]},{"id":"af9b4c9e.e0dfd","type":"function","z":"d64bfadf.c2edc8","name":"","func":"msg.payload = msg.tweet\nreturn msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","x":340,"y":260,"wires":[["89d917a6.94cdb8"]]},{"id":"89d917a6.94cdb8","type":"watson-tone-analyzer-v3","z":"d64bfadf.c2edc8","name":"","tones":"emotion","sentences":"true","contentType":"false","tone-method":"generalTone","interface-version":"2017-09-21","inputlang":"en","service-endpoint":"https://api.eu-gb.tone-analyzer.watson.cloud.ibm.com/instances/e532b622-6607-433c-9ce8-36afba9429d8","x":320,"y":320,"wires":[["4705cac3.480024"]]},{"id":"4705cac3.480024","type":"function","z":"d64bfadf.c2edc8","name":"","func":"msg.payload = msg.response;\nreturn msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","x":540,"y":380,"wires":[["127e4ad8.b60d45","5ea367c4.5113e8","502bd81e.91bf38"]]},{"id":"127e4ad8.b60d45","type":"debug","z":"d64bfadf.c2edc8","name":"","active":false,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":690,"y":380,"wires":[]},{"id":"502bd81e.91bf38","type":"cloudant out","z":"d64bfadf.c2edc8","name":"","cloudant":"","database":"twitterdata","service":"ciie-cloudant-1601444301880-83966","payonly":false,"operation":"insert","x":770,"y":280,"wires":[]},{"id":"84f1122a.a4e12","type":"cloudant in","z":"d64bfadf.c2edc8","name":"","cloudant":"","database":"twitterdata","service":"ciie-cloudant-1601444301880-83966","search":"_all_","design":"","index":"","x":1070,"y":80,"wires":[["b6302bb2.b830d8","913479dc.1f2ad8"]]},{"id":"9b2cb8da.3ba098","type":"inject","z":"d64bfadf.c2edc8","name":"Trigger","props":[{"p":"payload"}],"repeat":"","crontab":"","once":false,"onceDelay":"5","topic":"","payload":"","payloadType":"date","x":910,"y":80,"wires":[["84f1122a.a4e12"]]},{"id":"b6302bb2.b830d8","type":"function","z":"d64bfadf.c2edc8","name":"Convert","func":"var new_result = msg.payload;\nvar place ={};\nvar loc=[];\nvar senti=[];\nvar j=0;\nfor (var i in new_result)\n{\n if(new_result[i].location!==null && new_result[i].location!==undefined)\n {\n senti[j]=new_result[i][\"sentiment\"][\"score\"];\n loc[j]=new_result[i].location.place;\n \n j=j+1;\n \n }\n}\nplace={senti,loc};\n/*\nfor(var k=0; k<10; k++) \n{\n place.push({senti: senti[k],loc: loc[k]});\n}*/\n/*var filteredplace = place.filter(function (el) { \n return el !== null; \n }); \nmsg.payload=filteredplace;*/\nmsg.payload=place;\nreturn

msg;\n\n","outputs":1,"noerr":0,"initialize":"","finalize":"","x":1180,"y":120,"wires":[["164788bd.f5cef7"]]},{"id":"164788bd.f5cef7","type":"debug","z":"d64bfadf.c2edc8","name":"","active":true,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":1170,"y":180,"wires":[]},{"id":"913479dc.1f2ad8","type":"function","z":"d64bfadf.c2edc8","name":"","func":"var new_result =msg.payload;\nvar countpositive=0;\nvar countnegative=0;\nvar countzero=0;\nfor (var i in new_result) {\n if(new_result[i][\"sentiment\"][\"score\"]>0)\n countpositive=countpositive+1;\n else if(new_result[i][\"sentiment\"][\"score\"]<0)\n countnegative=countnegative+1;\n else\n countcount=countzero+1;\n}\nvar m = [\n {label:\"Positive\", payload:countpositive},\n {label:\"Negative\", payload:countnegative},\n {label:\"Neutral\", payload:countzero},\n];\n\nreturn
[m];","outputs":1,"noerr":0,"initialize":"","finalize":"","x":940,"y":180,"wires":[["a14177fd.3bc358","432c91ec.92348"]]},{"id":"a14177fd.3bc358","type":"debug","z":"d64bfadf.c2edc8","name":"","active":false,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":1170,"y":220,"wires":[]},{"id":"432c91ec.92348","type":"ui_chart","z":"d64bfadf.c2edc8","name":"","group":"d929fb67.9be938","order":1,"width":0,"height":0,"label":"Twitter Sentiment Chart","chartType":"bar","legend":"true","xformat":"auto","interpolate":"linear","nodata":"","dot":false,"ymin":"","ymax":"","removeOlder":1,"removeOlderPoints":"","removeOlderUnit":"3600","cutout":0,"useOneColor":false,"useUTC":false,"colors":["#0e3c5d","#aec7e8","#ff7f0e","#2ca02c","#98df8a","#d62728","#ff9896","#9467bd","#c5b0d5"],"useOldStyle":false,"outputs":1,"x":1070,"y":300,"wires":[[]]},{"id":"814cd324.99cb5","type":"function","z":"d64bfadf.c2edc8","name":"getdata","func":"if(msg.tweet.hasOwnProperty('coordinates'))\n{\n //if(msg.tweet.coordinates!==null) \n {\n msg.payload={};\n var m_p=msg.payload;\n m_p.lat= Math.floor(Math.random() * (90 + 90)) - 90;\n m_p.lon= Math.floor(Math.random() * (180 + 180)) + 180;\n m_p.text = msg.tweet.text;\n m_p.screen_name = msg.tweet.user.screen_name\n m_p.name = msg.tweet.user.screen_name+'-'+msg.tweet.id;\n m_p.id = msg.tweet.id;\n m_p.created_at = msg.tweet.created_at;\n delete(msg.tweet);\n delete(msg.location);\n }\n}\nreturn
msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","x":280,"y":40,"wires":[["2cec6cf4.b22d94"]]},{"id":"2b8d3a91.4b8b56","type":"function","z":"d64bfadf.c2edc8","name":"","func":"if(msg.hasOwnProperty('sentiment')) {\nif(msg.sentiment.hasOwnProperty('score')) {\nif(msg.sentiment.score<0) {\nmsg.payload.icon='hostile';\n} else if (msg.sentiment.score>1) {\nmsg.payload.icon='friend';\n} else {\nmsg.payload.icon='neutral';\n}\nmsg.payload.sentiment = msg.sentiment.score;\nreturn msg;\n}\n}","outputs":1,"noerr":0,"initialize":"","finalize":"","x":600,"y":40,"wires":[["6474b694.628d98"]]},{"id":"41d8bcb8.6d6da4","type":"join","z":"d64bfadf.c2edc8","name":"","mode":"custom","build":"array","property":"sentiment.score","propertyType":"msg","key":"topic","joiner":"\\n","joinerType":"str","accumulate":false,"timeout":"10","count":"","reduceRight":false,"red

uceExp":"","reduceInit":"","reduceInitType":"","reduceFixup":"","x":370,"y":220,"wires":[["4084439.2ffadbc","7e9fb9dd.2db128"]]},{"id":"4084439.2ffadbc","type":"function","z":"d64bfadf.c2edc8","name":"","func":"var scores = msg.sentiment.score;\nvar posMsg = {\n topic: \"Positive\",\n payload: 0\n}\nvar negMsg = {\n topic: \"Negative\",\n payload: 0\n}\nfor (var i=0; i < scores.length; i++) {\n var score = scores[i];\n if (score > 0) {\n posMsg.payload = posMsg.payload + score\n } else {\n negMsg.payload = negMsg.payload + score\n }\n}\nreturn [[posMsg, negMsg]];","outputs":1,"noerr":0,"initialize":"","finalize":"","x":520,"y":220,"wires":[["47bc1992.6e2488"]]},{"id":"7e9fb9dd.2db128","type":"function","z":"d64bfadf.c2edc8","name":"","func":"var scores = msg.sentiment.score;\nvar avg = 0;\nvar score=0;\nfor (var i=0; i < scores.length; i++) {\n score = score + scores[i];\n}\navg =score/scores.length;\nmsg.payload=avg;\nreturn msg;","outputs":1,"noerr":0,"initialize":"","finalize":"","x":520,"y":280,"wires":[["14f92e19.71a482","9f545927.3a5928","502bd81e.91bf38"]]},{"id":"9f545927.3a5928","type":"debug","z":"d64bfadf.c2edc8","name":"","active":false,"tosidebar":true,"console":false,"tostatus":false,"complete":"false","statusVal":"","statusType":"auto","x":530,"y":320,"wires":[]},{"id":"91a073f9.4124a","type":"debug","z":"d64bfadf.c2edc8","name":"","active":false,"tosidebar":true,"console":false,"tostatus":false,"complete":"payload","targetType":"msg","statusVal":"","statusType":"auto","x":490,"y":420,"wires":[]},{"id":"2f28d222.f20b7e","type":"watson-text-to-speech","z":"d64bfadf.c2edc8","name":"","lang":"en-GB","langhidden":"en-GB","langcustom":"NoCustomisationSetting","langcustomhidden":"","voice":"en-GB_KateVoice","voicehidden":"en-GB_KateVoice","format":"audio/wav","password":"ecSspTWx6w1V0AfS9uGA6mOldVO1NxFvkHsDdVHT_u87","apikey":"ecSspTWx6w1V0AfS9uGA6mOldVO1NxFvkHsDdVHT_u87","payload-response":false,"service-endpoint":"","x":940,"y":340,"wires":[["398d29bd.ec5976"]]},{"id":"39d25b6.871dca4","type":"sentiment","z":"d64bfadf.c2edc8","name":"","property":"payload","x":160,"y":160,"wires":[["8325ecd7.3024f"]]},{"id":"2cec6cf4.b22d94","type":"sentiment","z":"d64bfadf.c2edc8","name":"","property":"payload.text","x":440,"y":20,"wires":[["2b8d3a91.4b8b56"]]},{"id":"6474b694.628d98","type":"worldmap","z":"d64bfadf.c2edc8","name":"","lat":"","lon":"","zoom":"","layer":"","cluster":"","maxage":"","usermenu":"show","layers":"show","panit":"false","panlock":"false","zoomlock":"false","hiderightclick":"false","coords":"none","showgrid":"false","path":"/worldmap","x":740,"y":40,"wires":[]},{"id":"398d29bd.ec5976","type":"play audio","z":"d64bfadf.c2edc8","name":"","voice":"4","x":1150,"y":340,"wires":[]},{"id":"b153ec91.54c8b","type":"inject","z":"d64bfadf.c2edc8","name":"Init Dashboard","props":[{"p":"payload"},{"p":"topic","vt":"str"}],"repeat":"","crontab":"","once":true,"onceDelay":"","topic":"","payload":"true","payloadType":"bool","x":740,"y":420,"wires":[["f66c19a3.0be458"]]},{"id":"f66c19a3.0be458","type":"function","z":"d64bfadf.c2edc8","name":"Inject /worldmap","func":"msg.payload = \"/worldmap\";\nmsg.payload.command = {};\n\nvar u = 'http://{s}.tile.openstreetmap.org/hot/{z}/{x}/{y}.png';\nvar o = JSON.stringify({ maxZoom: 19, attribution: '© OpenStreetMap'});\n\nmsg.payload.command = {\n

layer:\"Esri\",\n lat:18.44081,\n lon:-66.08068, \n zoom:2,\n map: {name:\"Esri\", url:u, opt:o},\n };\nreturn msg;\n","outputs":1,"noerr":0,"initialize":"","finalize":"","x":920,"y":420,"wires":[["af2c57d0.77d628"]]},{"id":"af2c57d0.77d628","type":"template","z":"d64bfadf.c2edc8","name":"Add Map to Dashboard","field":"payload","fieldType":"msg","format":"handlebars","syntax":"mustache","template":"<iframe src={{{payload}}} height=624px width=768px></iframe>","x":1110,"y":420,"wires":[["fc71ff4a.66c96"]]},{"id":"fc71ff4a.66c96","type":"ui_template","z":"d64bfadf.c2edc8","group":"8e57a51e.ee7278","name":"Embedded Map","order":2,"width":16,"height":6,"format":"<div ng-bind-html=\"msg.payload | trusted\"> ","storeOutMessages":true,"fwdInMessages":true,"resendOnRefresh":false,"templateScope":"local","x":1080,"y":460,"wires":[[]]},{"id":"db8f83fc.7dbeb","type":"ui_group","z":"","name":"Average Tweet Sentiment Meter for 10s Time Period","tab":"26e82e7e.932ef2","order":4,"disp":true,"width":7,"collapse":false},{"id":"24e1679d.3d50a8","type":"ui_group","z":"","name":"Aggregate Sentiment Value per 10s Time Period","tab":"26e82e7e.932ef2","order":3,"disp":true,"width":13,"collapse":false},{"id":"c3baaa3d.dc9478","type":"ui_group","z":"","name":"Tweets","tab":"26e82e7e.932ef2","order":1,"disp":true,"width":"13","collapse":false},{"id":"2f6fde2d.1b8802","type":"ui_group","z":"","name":"Tone of the Tweet","tab":"26e82e7e.932ef2","order":2,"disp":true,"width":"7","collapse":false},{"id":"d929fb67.9be938","type":"ui_group","z":"","name":"Twitter Sentiment Chart","tab":"1b6abcde.2a2503","order":2,"disp":true,"width":11,"collapse":false},{"id":"8e57a51e.ee7278","type":"ui_group","z":"","name":"Global Tweet Map","tab":"1b6abcde.2a2503","order":1,"disp":true,"width":"16","collapse":false},{"id":"26e82e7e.932ef2","type":"ui_tab","z":"","name":"Web based Dashboard for COVID-19 Twitter Sentiment Analysis","icon":"dashboard","order":1,"disabled":false,"hidden":false},{"id":"1b6abcde.2a2503","type":"ui_tab","z":"","name":"COVID Historical Analysis","icon":"dashboard","disabled":false,"hidden":false}]