Covid-19 Twitter Sentimental Analysis

Problem Statement

- The sentiment analysis of Indians after the extension of lockdown announcements to be analyzed with the relevant #tags on twitter and build a predictive analytics model to understand the behavior of people if the lockdown is further extended.
  Also develop a dashboard with visualization of people reaction to the govt announcements on lockdown extension.

Solution

- The complete project is done using **Node-Red** in IBM Cloud
- **Node-RED** is a flow-based development tool for visual programming developed originally by **IBM** for wiring together hardware devices, APIs and online services as part of the Internet of Things. IBM Tone analyzer is used for analyzing the sentiment of each tweets.
- For sentimental analysis I**BM Tone Analyzer** is used. The twitter data is streamed using twitter in node. The data is pre-processed and then sent to the Tone analyzer node. From there the the scores and sentiments are classified and sent to respective output nodes.
- Using **IBM Watson Text To Speech** the project further has a feature which converts the text(tweets) to speech(audio) and helps the visually challenged to know about the tweets based on the given input hashtag/trend

Technology Stack

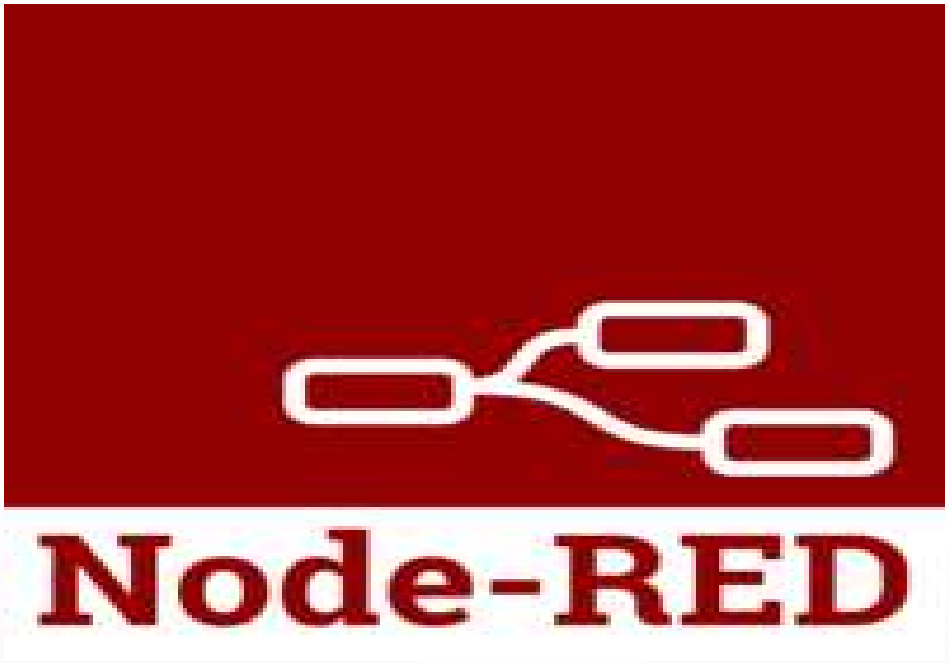
- **IBM Cloud**
- The entire project is done in IBM Cloud platform

- **IBM WatsonTone Analyzer**
- The **IBM Watson Tone Analyzer** service uses linguistic analysis to detect emotional and language tones in written text. The User Interface displays the sentiment score for the respective live tweets.

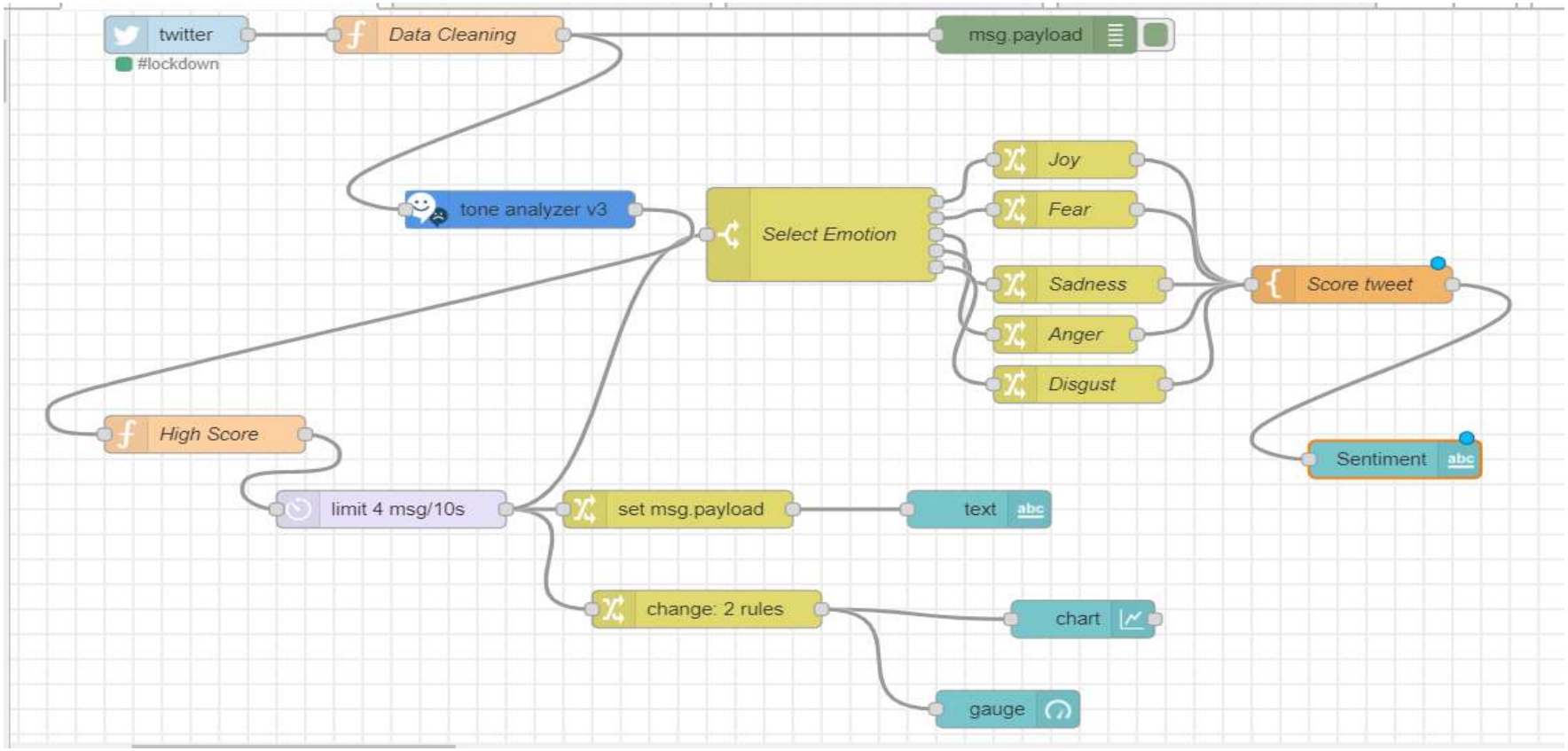
IBM Watson Text To Speech

- Using **IBM Watson Text To Speech** the project further has a feature which converts the text(tweets) to speech(audio) and helps the visually challenged to know about the tweets based on the given input hashtag/trend.

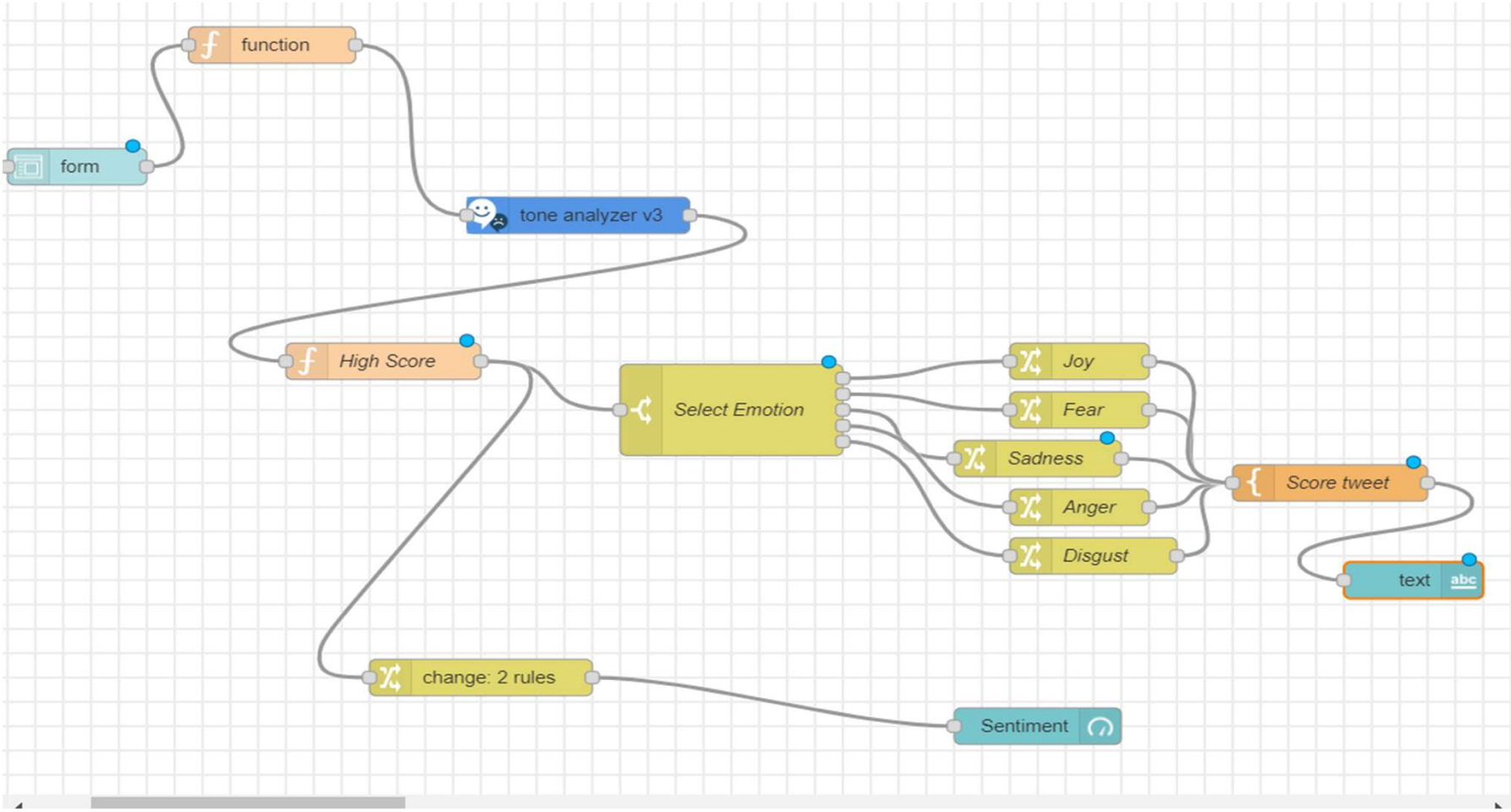
Node-Red Flows



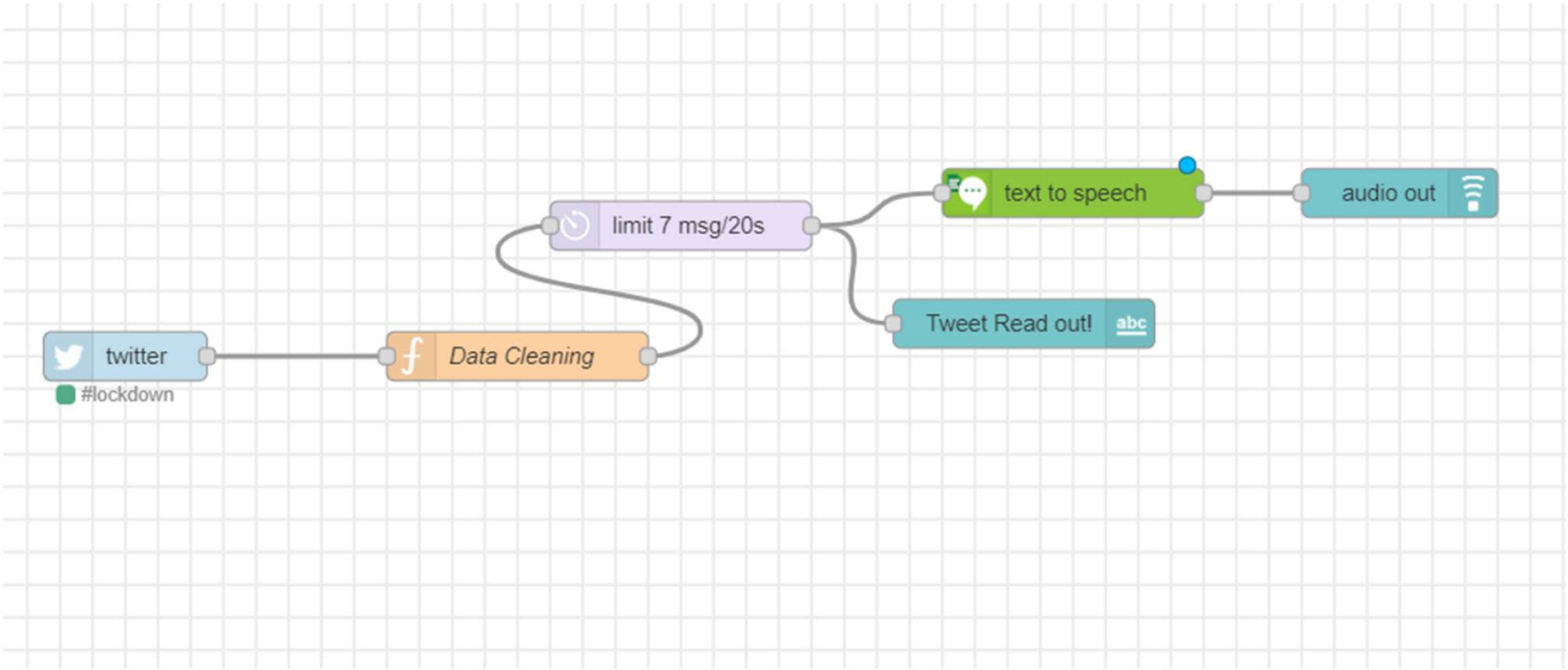
i)Live feed

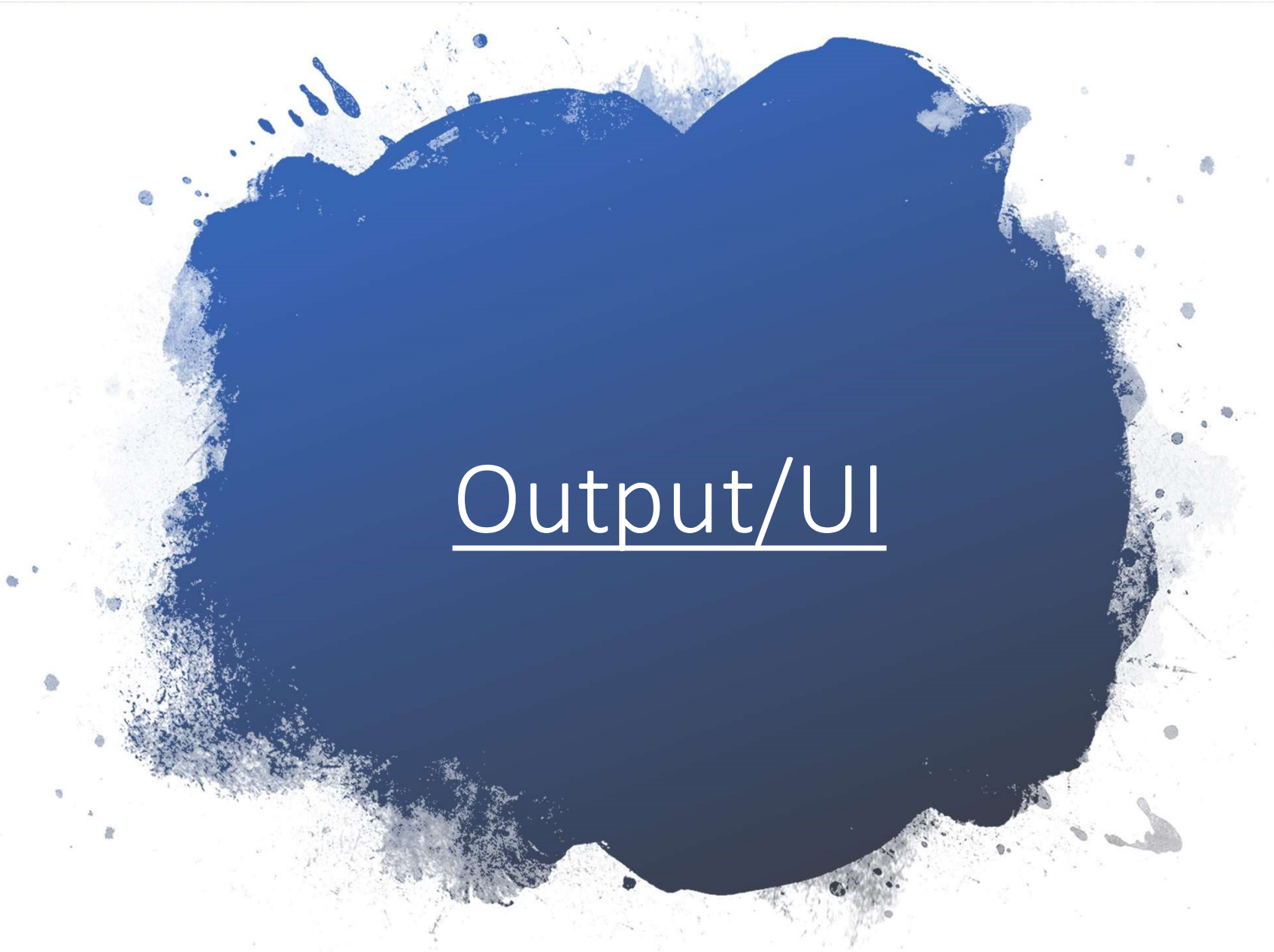

twitter
#lockdown
Data Cleaning
msg.payload
tone analyzer v3
Select Emotion
Joy
Fear
Sadness
Anger
Disgust
Score tweet
Sentiment
High Score
limit 4 msg/10s
set msg.payload
text
change: 2 rules
chart
gauge

ii)Manual Input



iii)Assistance For Visually challenged

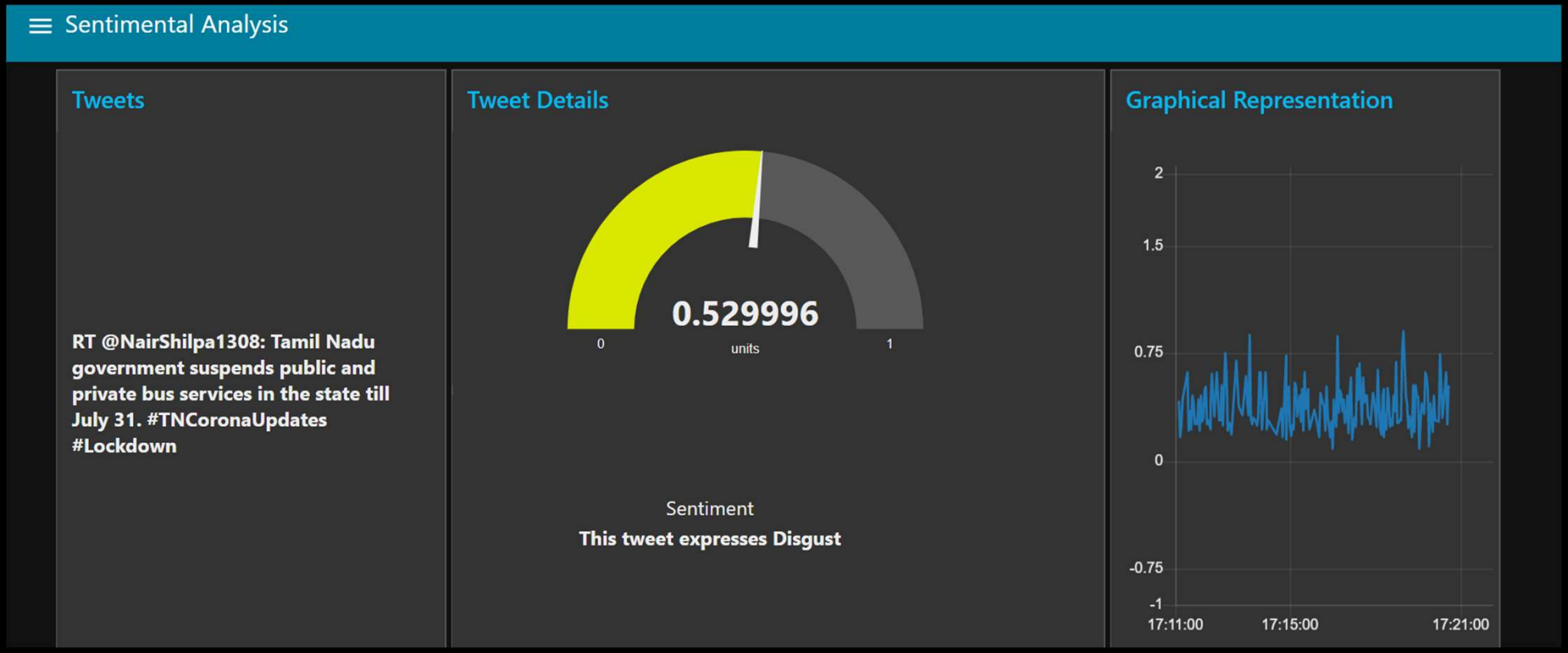



Output/UI

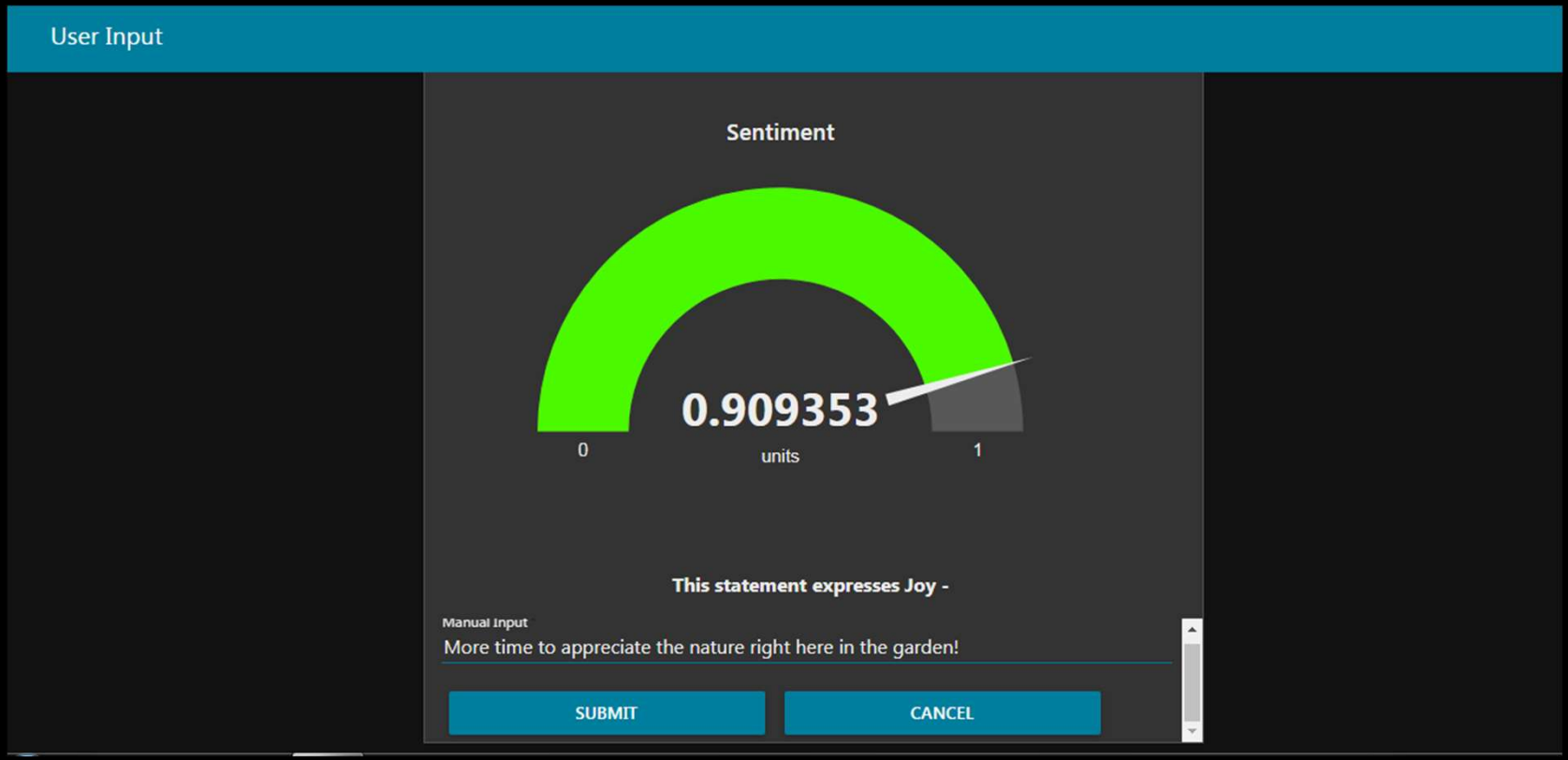
I)Home Page

IBM Hack Challenge 2020
Twitter Sentiment Analysis
Sentiment Analysis is the process of 'computationally' determining whether a piece of writing is positive, negative or neutral. It's also known as opinion mining, deriving the opinion or attitude of a speaker.
Try Here

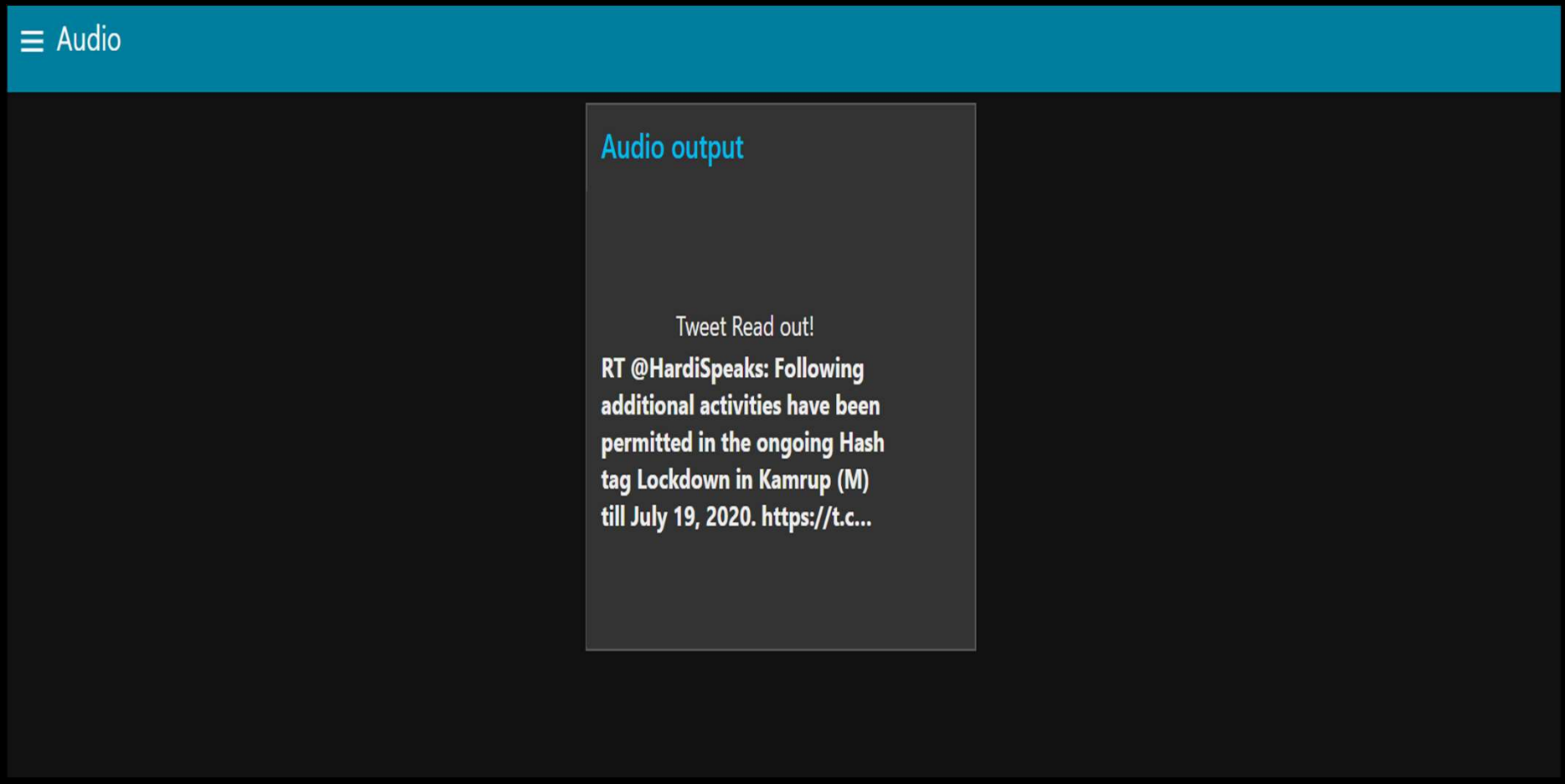
ii) Main UI


Sentimental Analysis
Tweets
RT @NairShilpa1308: Tamil Nadu government suspends public and private bus services in the state till July 31. #TNCoronaUpdates #Lockdown
Tweet Details
0.529996
0
units
1
Sentiment
This tweet expresses Disgust
Graphical Representation
2
1.5
0.75
0
-0.75
-1
17:11:00
17:15:00
17:21:00

iii) User Input



iv)Audio Output



ADVANTAGES

- Its easy to analyze the user's sentiment.
- It can provide valuable insights and thus help organizations to formulate effective business strategies.
- It can help firms to monitor brand and product performances, handle customer grievances, get in-depth information for strategic analysis.
- Helps government in strategic planning.

DISADVANTAGES

- ➤ The efficiency of results is relatively poor in the case of sarcastic statements.
- ➤ The configuration of nodes can be little complex.

APPLICATIONS:

- ➤ Can be used by government authorities.
- ➤ Can be used in business planning.
- ➤ Analyze trends and patterns.
- ➤ Historical track of public opinions.

CONCLUSION:

- We have tried different types of libraries and tools and finally arrived at a conclusion that IBM Tone analyzer was more accurate in the sentiment prediction. Using this we have performed further analysis on the extracted data from twitter and the results were visualized in the dashboard.

Thank you!