SMARTBRIDGE

LET'S BRIDGE THE GAP

PROJECT NAME - Sentiment Analysis of COVID-19 Tweets - Visualization Dashboard

PROJECT ID - SPS_PRO_351

TEAM NAME: COOKIE ARMY

TEAM MEMBERS - (1) Dhruvilsinh Jhala

(2) Manasi Bendale

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1. INTRODUCTION

1.1 OVERVIEW

Sentiment analysis is the automated process of analyzing text data and sorting it into sentiments positive, negative, or neutral. On 11thMarch 2020, World Health Organization announced COVID19 outbreak as a pandemic. This virus has infected and killed thousands of people from many European Countries and other countries as well.

While this pandemic has continued to affect the lives of millions, a number of countries have resorted to complete lockdown. During this lockdown, people have taken social networks to express their feelings and find a way to calm themselves down.

In this project, sentiment analysis of the tweets related to covid-19 has been done. Tweets from many places is taken into account.

1.2 PURPOSE

- **Business:** In marketing field companies use it to develop their strategies, to understand customers' feelings towards products or brand, how people respond to their campaigns or product launches and why consumers don't buy some products.
- **Politics:** In political field, it is used to keep track of political view, to detect consistency and inconsistency between statements and actions at the government level. It can be used to predict election results as well.
- **Public Actions:** Sentiment analysis also is used to monitor and analyse social phenomena, for the spotting of potentially dangerous situations and determining the general mood of the blogosphere.

2. LITERATURE SURVEY

2.1 EXISTING PROBLEM

Sentiment Analysis is the process of determining whether a piece of writing is positive, negative or neutral. A sentiment analysis system for text analysis combines natural language processing (NLP) and machine learning techniques to assign weighted sentiment scores to the entities, topics, themes and categories within a sentence or phrase.

The Sentiment Analysis of COVID-19 Tweets reveals the sentiments 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 behaviour of people if the lockdown is further extended. The prediction of the sentiment will be based on the words used by the twitter user.

India is one of the most diverse nations in the world having various cultures. So this project revolves around revealing people's reaction on extension of lockdown by segregating them on the basis of the state they live in.

2.2 PROPOSED SOLUTION

This project is to build a model while considering covid-19 tweets.

The model trained in this project will be able to predict the polarity of sentiment of the tweet user based on the words or #tags they used in their covid-19 tweets.

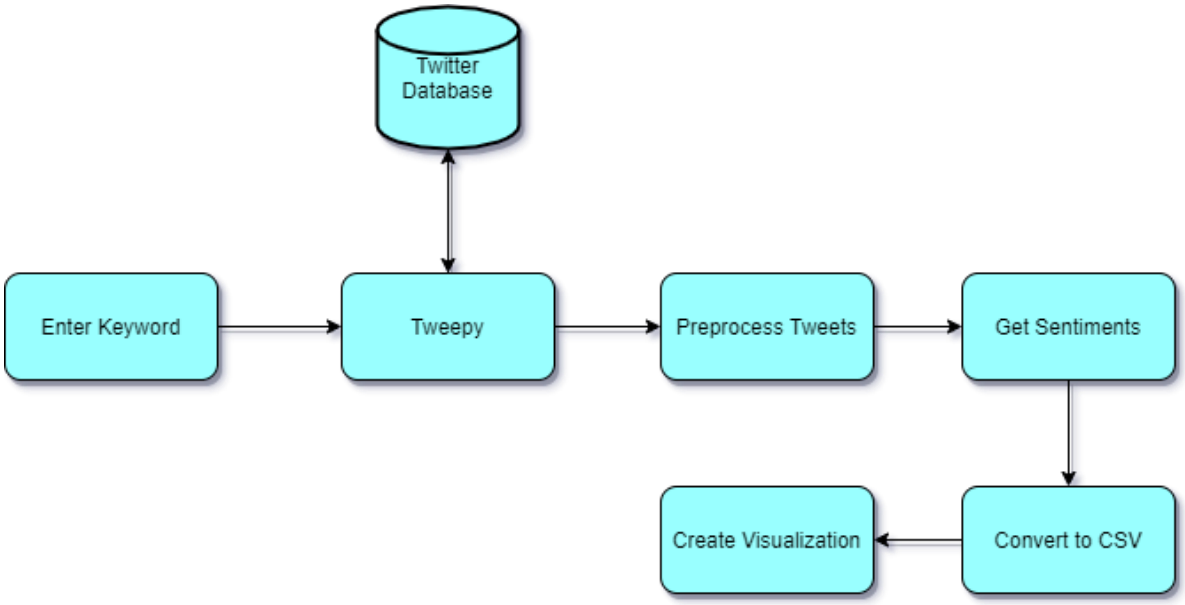
With the help of this project we are able to predict the sentiment of the citizen regarding the situations they face during the pandemic and then accordingly take measures towards the extension of lockdown.

As we can see there is a current on-going trade-off between the economic and financial sector of the country versus the health sector of the country.

Hence, this sentiment analysis helps the country to make correct decision regarding extension of lockdown by considering the impact it will make on different sectors of the country.

3. THEORETICAL ANALYSIS

3.1 BLOCK DIAGRAM



3.2 HARDWARE / SOFTWARE DESIGNING

1) Model Designing (Watson Studio) :

Steps: New Project, Create an empty Project, Give project name, Click Create, Add to Project, Notebook

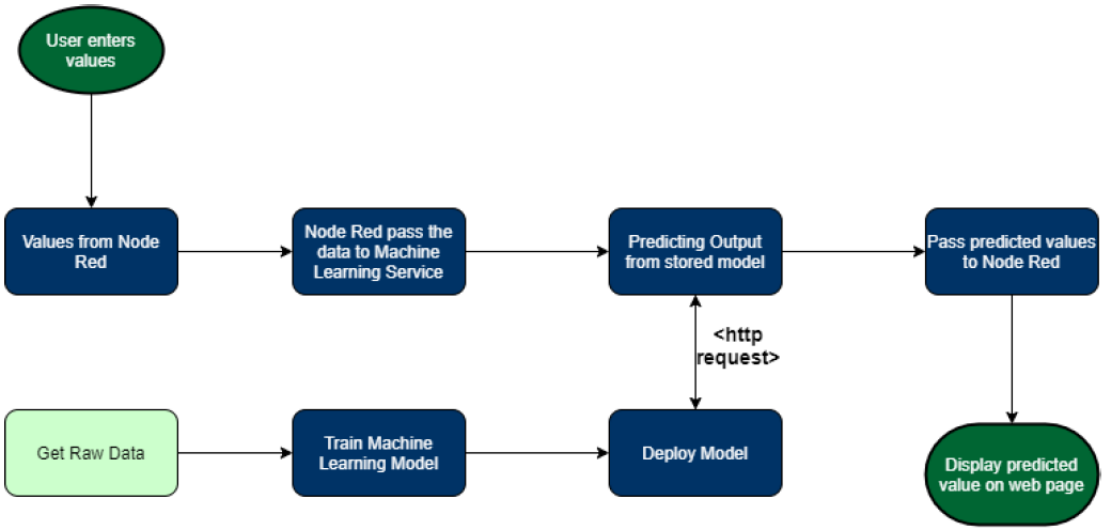
2) Model Deployment (Machine Learning Service):

Services, Machine Learning Service, Click Create, Service Credentials, Copy the credentials

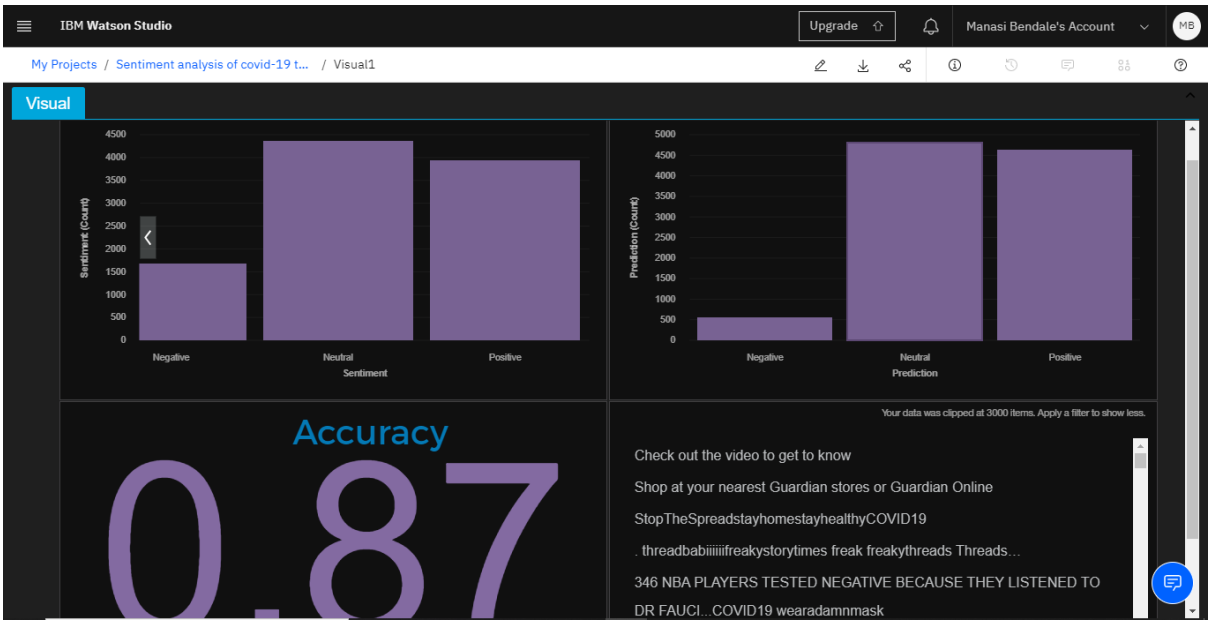
3) User Interface Integration with ML Model (Node Red) :

Search Node Red and open, Click Create , Go to URL, Design Flow

4. FLOWCHART



5. RESULT



6. ADVANTAGES & DISADVANTAGES

ADVANTAGES:

1. Revising marketing strategy

2. Measuring ROI of marketing campaigns

4. Give better customer service depending upon the result of the current strategy

5. Better crisis management

DISADVANTAGES:

1. Sometimes classification on the basis of humor and sarcasm becomes an issue.

7. APPLICATIONS

Sentiment Analysis of tweets has many applications in various Fields.

1.Applications that use Reviews from Websites:

Today Internet has a large collection of reviews and feedbacks on almost everything. This includes product reviews, feedbacks on political issues, comments about services, etc. Thus there is a need for a sentiment analysis system that can extract sentiments about a particular product or services. It will help us to automate in provision of feedback or rating for the given product, item, etc. This would serve the needs of both the users and the vendors.

2. Applications as a Sub-component Technology :

A sentiment predictor system can be helpful in recommender systems as well. The recommender system will not recommend items that receive a lot of negative feedback or fewer ratings. In online communication, we come across abusive language and other negative elements. These can be detected simply by

identifying a highly negative sentiment and correspondingly taking action against it.

3. Applications in Business Intelligence:

It has been observed that people nowadays tend to look upon reviews of products which are available online before they buy them. And for many businesses, the online opinion decides the success or failure of their product. Thus, Sentiment Analysis plays an important role in businesses. Businesses also wish to extract sentiment from the online reviews in order to improve their products and in turn their reputation and help in customer satisfaction .

8. CONCLUSION

In this project, we analyzed the sentiments of COVID-19-related tweets in several ways. The overall trend shows that the public has been more optimistic over time. Digging into the multi-dimensional sentiment analysis, we found that the sentiment “Assertive” went up, and “Fearful” went down through the time. At last, the topics behind the sentiments unfolded more details.

To fight the coronavirus not only needs the guidance from the government but also a positive attitude from the public. Our analysis provides a potential approach to reveal the public’s sentiment status and help institutions respond timely to it.

9. FUTURE SCOPE

In future, this work can be used to analyze the changing emotions and sentiments of people from various countries and check whether there are major shifts in them over the period of time. It is expected that as the spread of this pandemic will increase, the sentiments and emotions in the tweets may change on the lines.

10. BIBLIOGRAPHY

https://developer.ibm.com/tutorials/how-to-create-a-node-red-starter-application/

https://www.ibm.com/watson/products-services

https://www.kaggle.com/smid80/coronavirus-covid19-tweets

https://ieee-dataport.org/open-access/corona-virus-covid-19-tweets-data

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7152888/