

TWEESENT

By NameTerror

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**REPORT ON SENTIMENT
ANALYSIS OF COVID-19
TWEETS -
VISUALIZATION
DASHBOARD**

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Introduction

- **Overview**

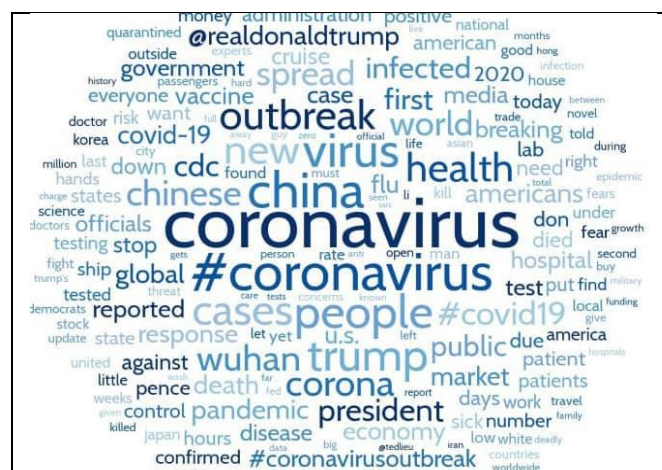
The task of sentiment analysis typically involves taking a piece of text, whether it's a sentence, a comment or an entire document and returning a "score" those measures how positive or negative the text is.

E.g.: Feedbacks given by customers can be segregated as positive, negative and neutral.

Customer Feedback Text	Sentiment
<i>"This café is great, the staff are really friendly and the coffee is delicious"</i>	Positive
<i>"I would not recommend this café to anyone. Their coffee is terrible and is really expensive"</i>	Negative

- **Purpose**

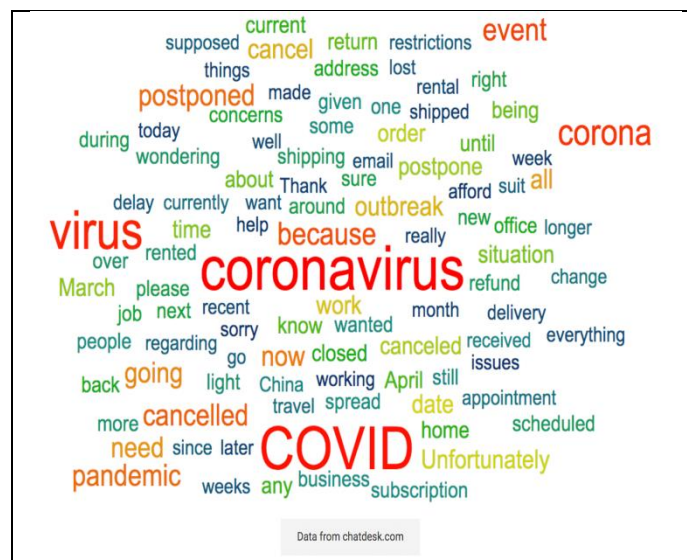
In order to implement better understanding of the situation in the minds of the public, we have used sentiment analysis technique for the same. Sentiment analysis provides some answers into what the most important issues are, from the perspective of customers, at least. Because sentiment analysis can be automated, decisions can be made based on a significant amount of data rather than plain intuition that isn't always right. Word cloud of this pandemic are-



Literature Survey

- **Existing Problem**

Along with the Corona virus pandemic, another crisis has manifested itself in the form of mass fear and panic phenomena, fuelled by incomplete and often inaccurate information. There is, therefore a tremendous need to address and better understand COVID-19's informational crisis and gauge public sentiment, so that appropriate messaging and policy decisions can be implemented. Impact of covid-19.

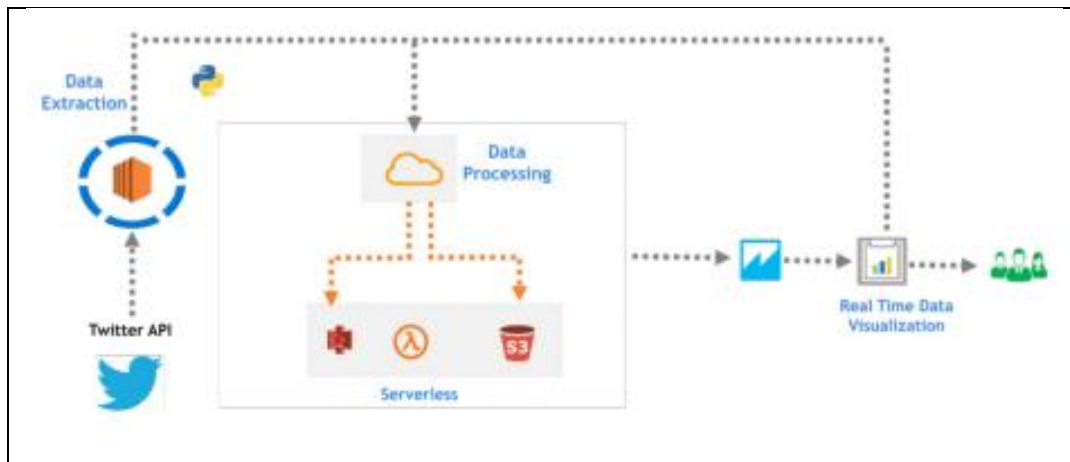


- **Proposed Solution**

Sentiment Analysis is known as “Opinion Mining”, it refers to the use of Natural Language Processing to determine the attitude, opinions and emotions of a speaker, writer, or other subject within an online mention.

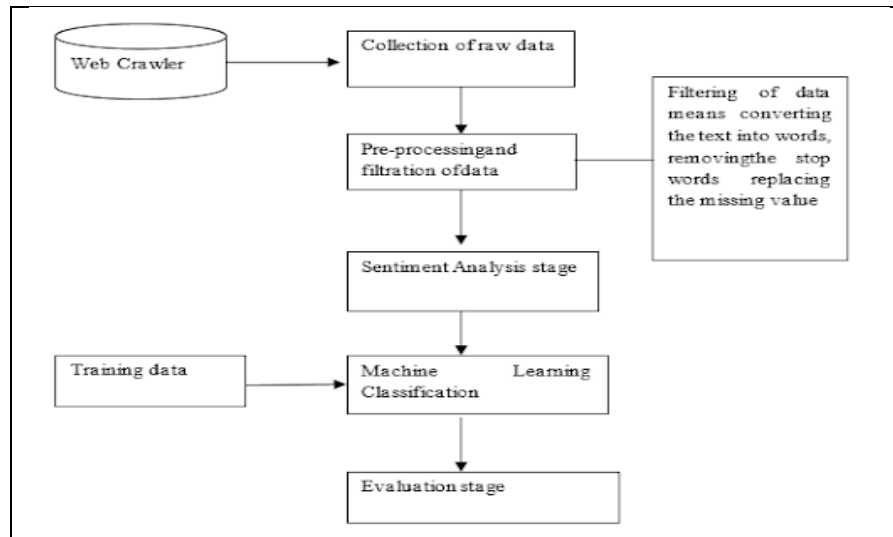
To study public sentiments, we chose Twitter as our target field. As one of the world's biggest social network platforms, Twitter hosts abundant user-generated posts, which closely reflect the public's reactions towards this pandemic with low latency. To build a predictive analytics model to understand the behaviour of people if new guidelines are introduced for example further extension of lockdown.

Also to develop a dashboard with visualization of people's reaction to the government announcements on lockdown extension.



Theoretical Analysis

- **Block Diagram**

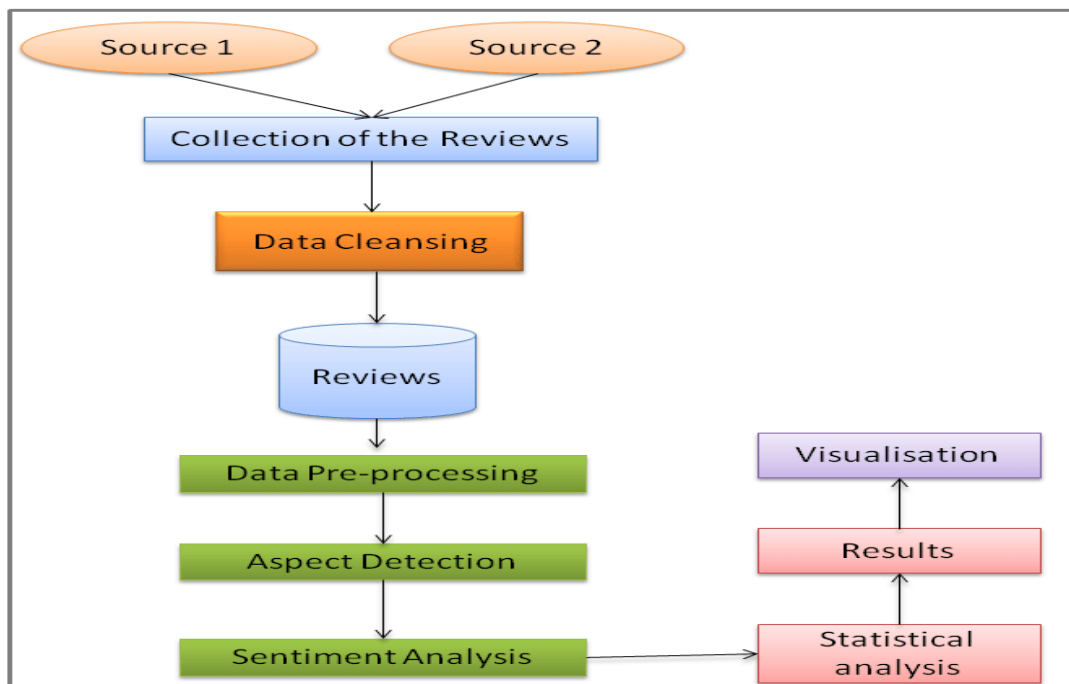
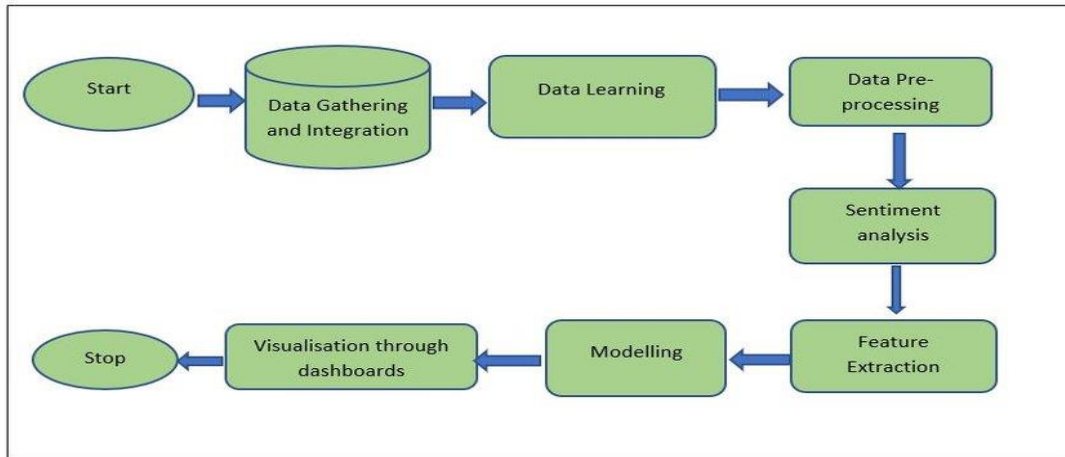


- **Hardware / Software designing :**

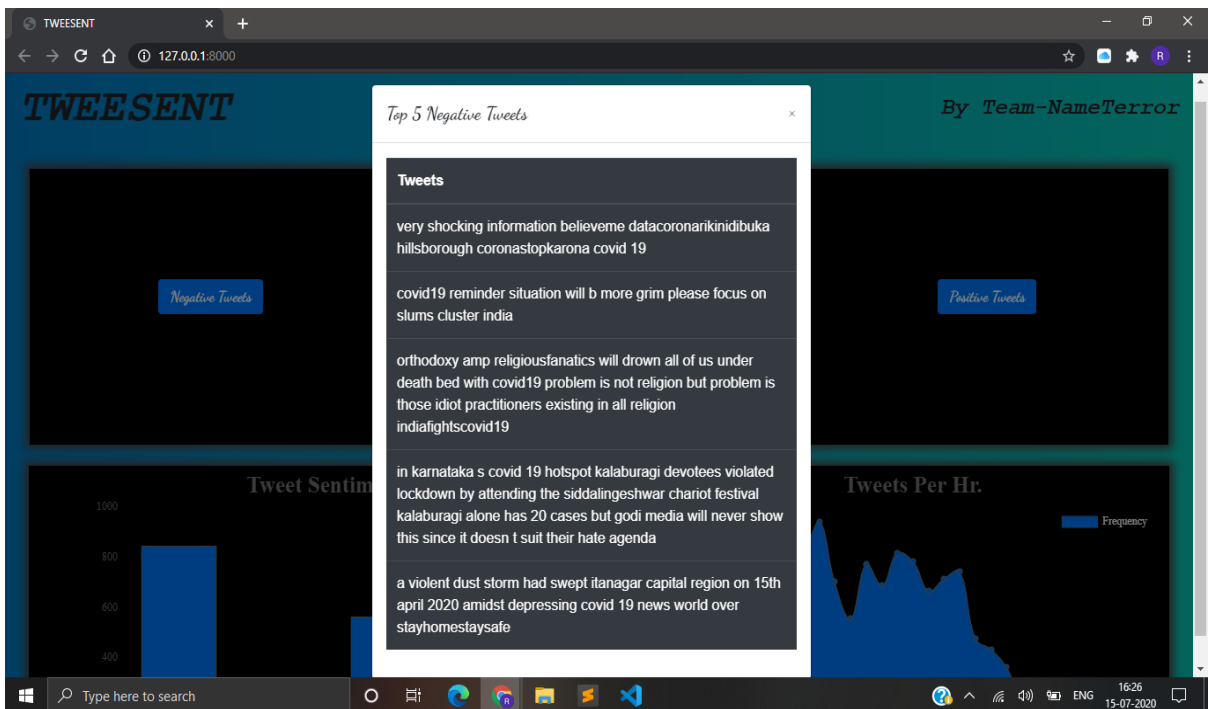
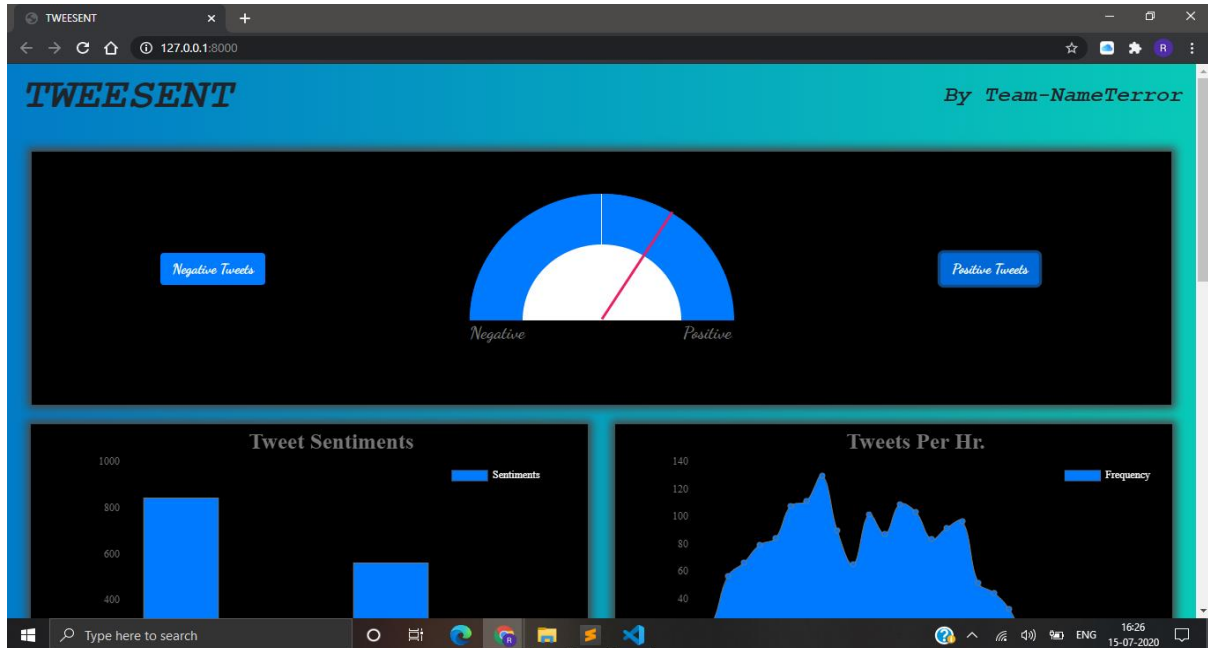
1. Used Django to host the Dashboard as a web app.
2. HTML,CSS,BOOTSTRAP is used for the front end development of dashboard.
3. Then we use IBM cloud to deploy our Django project.

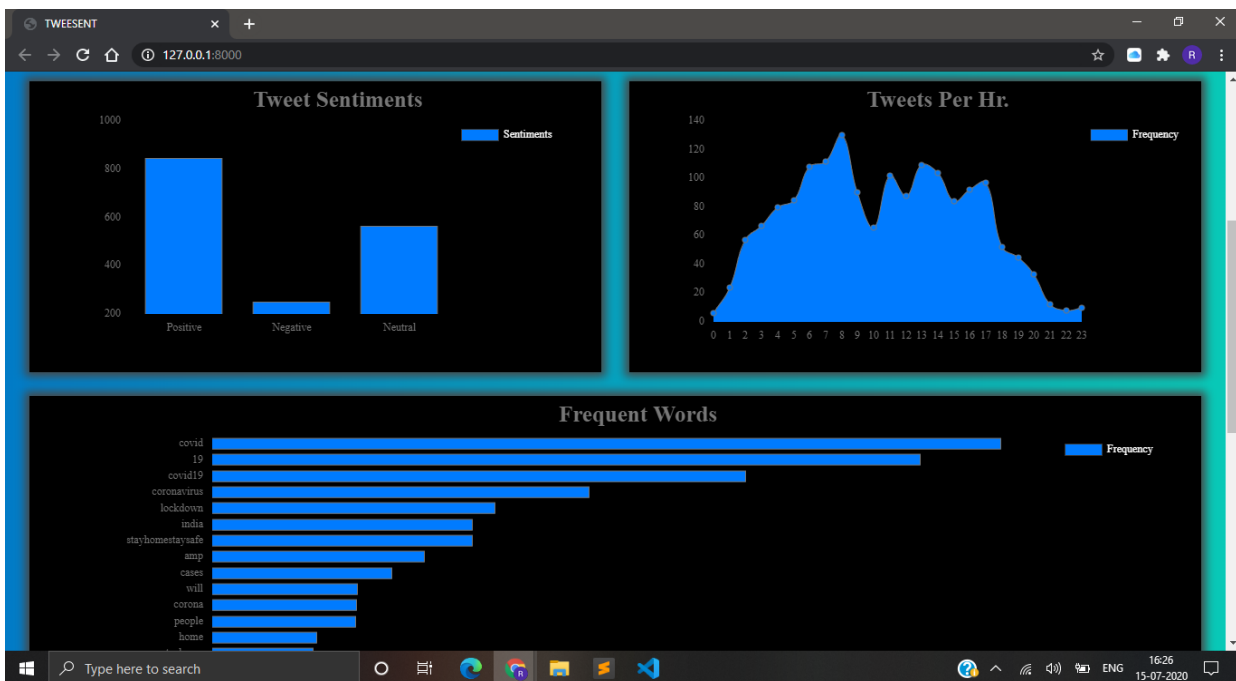
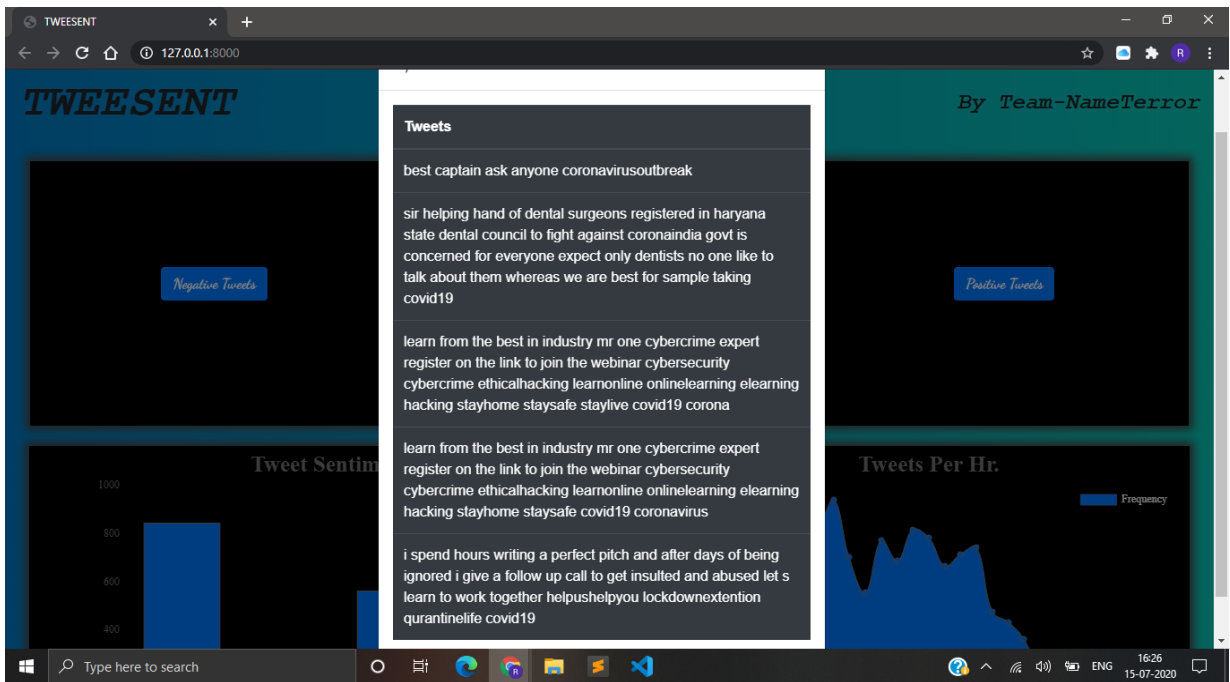
Flowchart

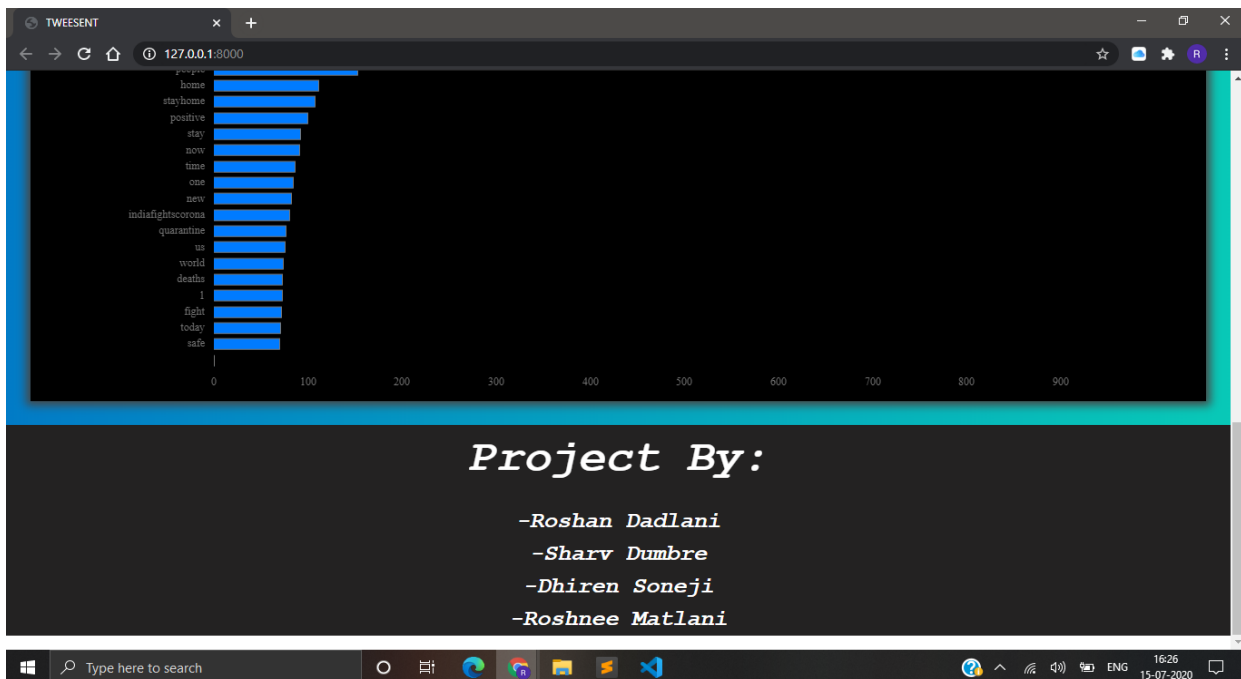
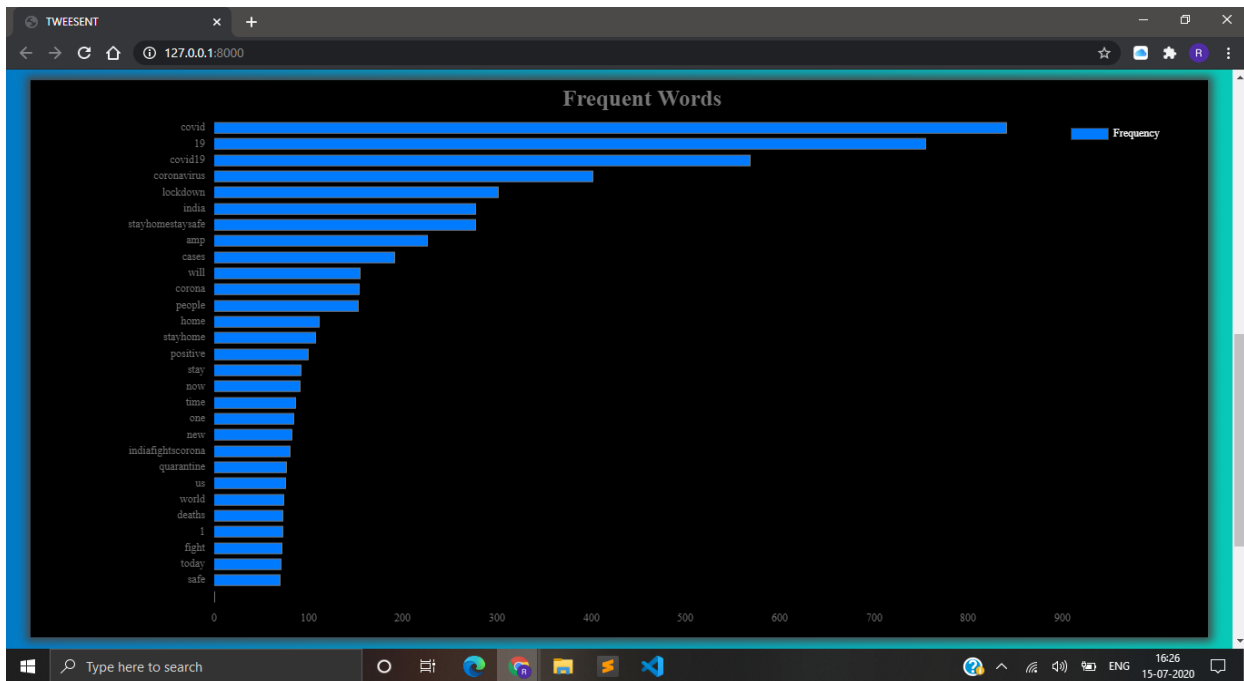
The basic flow chart of sentiment analysis is as follows-



Result







Advantages & Disadvantages

- **Advantages of Twitter Sentiment Analysis are -**

By using sentiment analysis, you gauge how customers feel about different areas of your business without having to read thousands of customer comments at once.

If you have thousands or even tens of thousands of survey responses per month, it is impossible for one person to read all of these responses and have an unbiased and consistent measure of customer sentiment. By using sentiment analysis and automating this process, you can easily drill down into different customer segments of your business and get a better understanding of sentiment in these segments.

- **Disadvantages Of Twitter Sentiment Analysis are-**

While sentiment analysis is useful, we do not believe it is a complete replacement for reading survey responses, as there are often useful nuances in the comments themselves. Where sentiment analysis can help you further are by identifying which of these comments you should read, for example allowing you to focus on the most negative comments. In an interview it was said that, “Like all opinions, sentiment is inherently subjective from person to person, and can even be outright irrational. It’s critical to mine a large — and relevant — sample of data when attempting to measure sentiment. No particular data point is necessarily relevant. It’s the aggregate that matters. An individual’s sentiment toward a brand or product may be influenced by one or more indirect causes; someone might have a bad day and tweet a negative remark about something they otherwise had a pretty neutral opinion about. With a large enough sample, outliers are diluted in the aggregate. Also, since sentiment very likely changes over time according to a person’s mood, world events, and so forth, it’s usually important to look at data from the standpoint of time.”

Applications

Since the Opinion based or feedback based application are more fashionable, now a days, the natural language processing community shows much interest in Sentiment Analysis system. The explosion of internet has changed the people's life style, now they are more expressive on their views and opinions and this tendency helped the researchers in getting user-generated content easily. The major applications of sentiment analysis are the following:

- **Purchasing Product or Service:** While purchasing a product or service, taking right decision is no longer a difficult task. By this technique, people can easily evaluate other's opinion and experience about any product or service and also he can easily compare the competing brands. Now people don't want to rely on external consultant. The Opinion mining and sentiment analysis extract people opinion form the huge collection of unstructured content, the internet, and analyze it and then present to them in highly structured and understandable manner.
- **Quality Improvement in Product or service:** By Opinion mining and sentiment analysis the manufactures can collect the critic's opinion as well as the favourable opinion about their product or service and thereby they can improve the quality of their product or service. They can make use of online product reviews from websites such as Amazon etc...
- **Marketing research:** The result of sentiment analysis techniques can be utilized in marketing research. By sentiment analysis techniques, the recent trend of consumers about some product or services can be analyzed. Similarly the recent attitude of general public towards some new government policy can also be easily analyzed. These all result can be contributed to collective intelligent research.
- **Recommendation Systems:** By classifying the people's opinion into positive and negative, the system can say which one should get recommended and which one should not get recommended.
- **Detection of "flame":** The monitoring of newsgroup and forums, blogs and social media is easily possible by sentiment analysis. Opinion mining and sentiment analysis can automatically detect arrogant words, over heated words or hatred language used in emails or forum entries or tweets on various internet sources.
- **Opinion spam detection:** Since internet is available to all, anyone can put anything on internet, this increased the possibility of spam content on the web. People may write spam content to mislead the people.

In essence, the sentiment analysis application brings additional flexibility and insight into the presentation of the brand and its products. It allows companies to:

- track the perception of the brand by the customers;
- point out the specific details about the attitude;
- Find patterns and trends;
- Keep a close eye on the presentation by the influencers.
- Automate media monitoring process and the accompanying alert system
- Monitor mentions or reviews of the brand on different platforms (blogs, social media, review sites, forums, etc.)
- Categorize urgency of mentions according to the relevancy scoring (i.e., which platform, type of user is vital to the brand)

All this allows us to adjust to the state of things accordingly and give the product a proper presentation.

Conclusion

Thus, Sentiment analysis has wide area of applications and it also facing many research challenges. Since the fast growth of internet and internet related applications, the Opinion Mining and Sentiment Analysis become a most interesting research area among natural language processing community. A more innovative and effective techniques required to be invented which should overcome the current challenges faced by Sentiment Analysis. However, World Health Organization (WHO) keeps issuing new guidelines for COVID-19 preventive measures to control the global outbreak. These guidelines are being updated every moment based on latest development of the nature of the disease, locations, and medical research outcomes. Twitter analytical Dashboards ML insights can contribute and support local authorities to discover hidden trends and patterns learn critical factors and provide timely alternatives and perform powerful analysis and forecasting. It can help in saving days of manual investigation and analysis.

Future Scope

Sentiment Analysis will have a lot to do with social forums/platforms where people express free opinion. Presently tweets are one such open medium, and then if face book at some point chooses to make the timeline updates/status messages open to search it will be gold mine of real-time sentiments. It is believed that the automatic sentiment analysis has a fair way to go before it can replace human coding of sentiment - though even human coding will have problems, as my idea of negative or somewhat negative may well be different from yours. It is known that machine learning techniques and sophisticated text analytics algorithms will be needed to improve the accuracy of automatic sentiment analysis. Sentiment analysis will only increase in importance as more and more people use online channels to communicate, both directly and indirectly, with corporations.

Present Sentiments hold a key to the future events. To make it sound a bit technical, you can say that the sentiments represent the "present value of future events". Now this value can have deep social, political and monetary significance. It can be "Expression of opinion about a public figure", "opinions expressed through tweets before elections", or "the buzz before a movie release", all these can be great cues for things to come.

Therefore when people comment about present news stories, the sentiment analysis can actually offer a key to predict the future outcomes or at least anticipate them better!

Bibliography

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- <https://arxiv.org/ftp/arxiv/papers/1509/1509.04219.pdf>

Appendix

Source Code: The Source code of the project is uploaded on drive and link is as follows:

https://drive.google.com/drive/u/3/folders/12kb4xmgjqW_76N5oJdjVQgbK8B57ZWRA

The Demonstration Video of project is uploaded on drive and link is as follows:

<https://drive.google.com/file/d/1Tag5PqeDx8PiplwaYEO-iaUkzMMF4Q1J/view>