VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI – 590018, Karnataka

INTERNSHIP REPORT

ON

"Sentiment Analysis Of Lockdown In USA During Covid-19"

Submitted in partial fulfilment for the award of degree(18CSI85)

BACHELOR OF ENGINEERING IN
YOUR BRANCH

Submitted by:

Adbhutha B

4VM19IS001

Conducted at

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CERTIFICATE

This is to certify that the Internship titled **"**Sentiment Analysis Of Lockdown In USA During Covid-19**"** carried out by **Ms . Adbhutha B,** a bonafide student of Vidya Vikas Institute of Technology, in partial fulfillment for the award of **Bachelor of Engineering**, in **Information Science** under Visvesvaraya Technological University,Belagavi, during the year 2022-2023. It is certified that all corrections/suggestions indicated have been incorporated in the report.

The project report has been approved as it satisfies the academic requirements in respect of Internship prescribed for the course Internship / Professional Practice (18CSI85)

Signature of Guide **Signature of HOD** **Signature of Principal**

External Viva:

Name of the Examiner Signature with Date

1)_____

2)_____

D E C L A R A T I O N

I, **Adbhutha B**, final year student of Information Science, Vidya Vikas Institute Of Engineering And Technology - 560 082, declare that the Internship has been successfully completed, in VARCONS TECHNOLOGIES. This report is submitted in partial fulfillment of the requirements for award of Bachelor Degree in Branch name, during the academic year 2022-2023.

Date : :

Place : Mysore

USN : 4VM19IS001

NAME : Adbhutha B

OFFER LETTER

A C K N O W L E D G E M E N T

This Internship is a result of accumulated guidance, direction and support of several important persons. We take this opportunity to express our gratitude to all who have helped us to complete the Internship.

We express our sincere thanks to our Principal, for providing usadequate facilities to undertake this Internship.

We would like to thank our Head of Dept – branch code, for providing us an opportunity to carry out Internship and for his valuable guidance and support.

We would like to thank our (Lab assistant name) Software Services for guiding us during the period of internship.

We express our deep and profound gratitude to our guide, Guide name, Assistant/Associate Prof, for her keen interest and encouragement at every step in completing the Internship.

We would like to thank all the faculty members of our department for the support extended during the course of Internship.

We would like to thank the non-teaching members of our dept, forhelping us during the Internship.

Last but not the least, we would like to thank our parents and friends without whose constant help, the completion of Internship would have not been possible.

Adbhutha B

4VM19IS001

ABSTRACT

Sentiment analysis is a popular approach to figure out people's thoughts by digging into human-generated text content from online users. This study focuses on tweets from the Twitter platform to investigate people's sentiments and emotions related to COVID-19 pandemic. Tweets from USA users have been collected and preprocessed on three periods of time, April 22-28, July 15-21, and October 14-20, to study the changes in sentiments, subjectivities, and emotions. Two sentiment analysis approaches, TextBlob and NRCLex, have been used and compared in this study: TextBlob has strength in sentiment classifications and defining subjectivities, while the NRC Lexicon method provides more detailed emotional states analysis. The results from both methods show that neutral sentiments are the majority and positive sentiments outweigh negative sentiments. However, TextBlob indicates a more significant difference between positive and negative than NRC. We also observe that the positive attitudes decrease during the week in July and increase back in October.

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CHAPTER 1

COMPANY PROFILE

1. COMPANY PROFILE

A Brief History of Compsoft Technologies

Compsoft Technologies, was incorporated with a goal ”To provide high quality and optimal Technological Solutions to business requirements of our clients”. Every business is a different and has a unique business model and so are the technological requirements. They understand this and hence the solutions provided to these requirements are different as well. They focus on clients requirements and provide them with tailor made technological solutions. They also understand that Reach of their Product to its targeted market or the automation of the existing process into e-client and simple process are the key features that our clients desire from Technological Solution they are looking for and these are the features that we focus on while designing the solutions for their clients.

Sarvamoola Software Services. is a Technology Organization providing solutions for all web design and development, MYSQL, PYTHON Programming, HTML, CSS, ASP.NET and LINQ. Meeting the ever increasing automation requirements, Sarvamoola Software Services. specialize in ERP, Connectivity, SEO Services, Conference Management, effective web promotion and tailor-made software products, designing solutions best suiting clients requirements.

Compsoft Technologies, strive to be the front runner in creativity and innovation in software development through their well-researched expertise and establish it as an out of the box software development company in Bangalore, India. As a software development company, they translate this software development expertise into value for their customers through their professional solutions.

They understand that the best desired output can be achieved only by understanding the clients demand better. Compsoft Technologies work with their clients and help them todefiine their exact solution requirement. Sometimes even they wonder that they have completely redefined their solution or new application requirement during the brainstormingsession, and here they position themselves as an IT solutions consulting group comprising of high caliber consultants.

They believe that Technology when used properly can help any business to scale and achieve new heights of success. It helps Improve its efficiency, profitability, reliability; to put itin one sentence ” Technology helps you to Delight your Customers” and that is what we wantto achieve.

CHAPTER 2

ABOUT THE COMPANY

2. ABOUT THE COMPANY

Compsoft Technologies is a Technology Organization providing solutions for all web design and development, MYSQL, PYTHON Programming, HTML, CSS, ASP.NET and LINQ. Meeting the ever increasing automation requirements, Compsoft Technologies specialize in ERP, Connectivity, SEO Services, Conference Management, effective web promotion and tailor-made software products, designing solutions best suiting clients requirements. The organization where they have a right mix of professionals as a stakeholders to help us serve our clients with best of our capability and with at par industry standards.They have young, enthusiastic, passionate and creative Professionals to develop technological innovations in the field of Mobile technologies, Web applications as well as Business and Enterprise solution. Motto of our organization is to "Collaborate with our clients to provide them with best Technological solution hence creating Good Present and Better Future for our client which will bring a cascading a positive effect in their business shape as well". Providing a Complete suite of technical solutions is not just our tag line, it is Our Vision for Our Clients and for Us, We strive hard to achieve it.

Products of Compsoft Technologies.

Android Apps

It is the process by which new applications are created for devices running the Android operating system. Applications are usually developed in Java (and/or Kotlin; or other such option) programming language using the Android software development kit (SDK), but other development environments are also available, some such as Kotlin support the exact same Android APIs (and bytecode), while others such as Go have restricted API access.

The Android software development kit includes a comprehensive set of development tools. These include a debugger, libraries, a handset emulator based on QEMU, documentation, sample code, and zutorials. Currently supported development platforms include computers running Linux (any modern desktop Linux distribution), Mac OS X 10.5.8 or later, and Windows 7 or later. As of March 2015, the SDK is not available on Android itself, but softwaredevelopment is possible by using specialized Android applications.

Web Application

It is a client–server computer program in which the client (including the user interface and client- side logic) runs in a web browser. Common web applications include web mail, online

retail sales, online auctions, wikis, instant messaging services and many other functions. web applications use web documents written in a standard format such as HTML and JavaScript,which are supported by a variety of web browsers. Web applications can be considered as a specifific variant of client–server software where the client software is downloaded to the client machine when visiting the relevant web page, using standard procedures such as HTTP. The Client web software updates may happen each time the web page is visited. During the session, the web browser interprets and displays the pages, and acts as the universal client for any web application. The use of web application frameworks can often reduce the number of errors in a program, both by making the code simpler, and by allowing one team to concentrate on the framework while another focuses on a specifified use case. In applications which are exposed to constant hacking attempts on the Internet, security-related problems can be caused by errors in the program.

Frameworks can also promote the use of best practices such as GET after POST. There are some who view a web application as a two-tier architecture. This can be a “smart” client that performs all the work and queries a “dumb” server, or a “dumb” client that relies on a “smart” server. The client would handle the presentation tier, the server would have the database (storage tier), and the business logic (application tier) would be on one of them or on both. While this increases the scalability of the applications and separates the display and the database, it still doesn‟t allow for true specialization of layers, so most applications will outgrow this model. An emerging strategy for application software companies is to provide web access to software previously distributed as local applications. Depending on the type of application, it may require the development of an entirely different browser-based interface, or merely adapting an existing application to use different presentation technology. These programs allow the user to pay a monthly or yearly fee for use of a software application without having to install it on a local hard drive. A company which follows this strategy is known as an application service provider (ASP), and ASPs are currently receiving much attention in the software industry.

Security breaches on these kinds of applications are a major concern because it can involve both enterprise information and private customer data. Protecting these assets is an important part of any web application and there are some key operational areas that must be included in the development process. This includes processes for authentication, authorization, asset handling, input, and logging and auditing. Building security into the applications from the beginning can be more effective and less disruptive in the long run.

Web design

It is encompasses many different skills and disciplines in the production and maintenance of websites. The different areas of web design include web graphic design; interface design; authoring, including standardized code and proprietary software; user experience design; and

search engine optimization. The term web design is normally used to describe the design process relating to the front-end (client side) design of a website including writing mark up. Web design partially overlaps web engineering in the broader scope of web development. Web designers are expected to have an awareness of usability and if their role involves creating mark up then they are also expected to be up to date with web accessibility guidelines. Web design partially overlaps web engineering in the broader scope of web development.

Departments and services offered

Compsoft Technologies plays an essential role as an institute, the level of education, development of student's skills are based on their trainers. If you do not have a good mentor then you may lag in many things from others and that is why we at Compsoft Technologies gives you the facility of skilled employees so that you do not feel unsecured about the academics. Personality development and academic status are some of those things which lie on mentor's hands. If you are trained well then you can do well in your future and knowing its importance of Compsoft Technologies always tries to give you the best.

They have a great team of skilled mentors who are always ready to direct their trainees in the best possible way they can and to ensure the skills of mentors we held many skill development programs as well so that each and every mentor can develop their own skills with the demands of the companies so that they can prepare a complete packaged trainee.

Services provided by Compsoft Technologies.

- Core Java and Advanced Java
- Web services and development
- Dot Net Framework
- Python
- Selenium Testing
- Conference / Event Management Service
- Academic Project Guidance
- On The Job Training
- Software Training

CHAPTER 3

INTRODUCTION

3. INTRODUCTION

Introduction to ML

Machine learning (ML) is a branch of artificial intelligence (AI) that enables computers to "self learn" from training data and improve over time, without being explicitly programmed. Machine learning algorithms are able to detect patterns in data and learn from them, in order to make their own predictions. In short, machine learning algorithms and models learn through experience.

Classification of Machine Learning

Machine learning implementations are classified into four major categories, depending on the nature of the learning "signal" or "response" available to a learning system which are as follows:

- Supervised learning
- Unsupervised learning
- Reinforcement learning
- Semi-supervised learning

Categorizing based on required Output

- Classification: When inputs are divided into two or more classes, the learner must produce a model that assigns unseen inputs to one or more (multi-label classification) of these classes .
- Regression: Which is also a supervised problem, A case when the outputs are continuous rather than discrete.
- Clustering: When a set of inputs is to be divided into groups. Unlike in classification, the groups are not known beforehand, making this typically an unsupervised task.

Problem Statement

Since the past few decades, humans have been tirelessly working day in and day out that they fail to prioritize their health on a regular basis. In the longer run, this problem leads to jeopardizing the quality of life. Nevertheless, with the aid of Artificial Intelligence, we can now provide health care services to individuals at their convenience at reasonable prices. A chatbot is a software or computer program that simulates human conversation or "chatter" through text or voice interactions. Yet, this paper concentrates only on text. These systems can learn themselves and restore their knowledge using human assistance or using web resources. This application is incredibly fundamental since knowledge is stored in advance. The system application uses the question-and-answer protocol in the form of a chatbot to answer user queries. This system is developed to reduce the healthcare cost and time of the users, as it is not possible for the users to visit the doctors or experts when immediately needed to diagnose a disease. Here the users can type in the symptoms they are facing and the chatbot will fetch the dataset with correct diagnose of disease/illness. It will also provide you the doctors details such as name, prognosis, website, etc if asked. The chatbot is made using python programming language.

CHAPTER 4

SYSTEM ANALYSIS

4. SYSTEM ANALYSIS

Problem System

This research aims to capture, process and evaluate people's feelings within the certain timeframe on the tweets posted on twitter. The study would therefore concentrate on the following questions: i. Collect the tweets through Twitter API using RTweet package in R programming was used. The Hashtag used for collecting the tweet were #covid-19, #COVID19, #CORONAVIRUS, #CORONA, #StayHomeStaySafe, #Stay Home, #StayHomeSaveLives , #Covid_19, #CovidPandemic, #covid19, #CoronaVirus, #Lockdown, #Qurantine, #qurantine, #CoronavirusOutbreak and #COVID. ii. Preprocess the tweets by data cleaning (removing white spaces, links, punctuations, stop words, tokenization, retweet). iii. Calculate the sentiment using syuzhet package and analyze the result. The tweets posted in English have been considered for a sentiment analysis to understand how people from different infected countries have responded during this pandemic situation to cope with it. The collected tweets will be used, preprocessed and applied with text mining algorithms for performing the sentiment analysis.

CHAPTER 5

REQUIREMENT ANALYSIS

5. REQUIREMENT ANALYSIS

Hardware Requirement Specification

The backend of the chatbot has been developed using the python programming language along with the "ApiMedic API". API is called Application Programming Interface that acts as an interface between the chatbot and the database server. The database will be accessed through API by simple python codes.

Hardware requirements

IQ Bot	Recommendation
Application server optimum requirements	32 GB RAM 8 Octa Core Processor 500 GB hard disk space[1] Ensure C: drive has 100 GB plus free hard disk space.

Software Requirement Specification

Software requirements

The following software is required for IQ Bot installation:

Software	Details
Database Management System	See IQ Bot database compatibility matrix for a list of compatible versions.
Automation Anywhere Control Room	See IQ Bot version compatibility matrix for a list of compatible versions.
Supported web browsers	Google Chrome Microsoft Internet Explorer (Version 11.3.3 onward

CHAPTER 6

DESIGN ANALYSIS

6. DESIGN & ANALYSIS

This section will provide a further explanation of how we collect data and conduct sentiment analysis. A flow chart of complete procedures is shown in Figure 3.2 after we expand each stage in detail.

1. Preparation: Twitter developer accounts are free to apply and with which researchers can access the Twitter APIs to complete a lot of different tasks. With a developer account, we have generated API keys and tokens for the authentication process. A Tweepy library package has been implemented with the command “pip install tweepy” at the terminal to use Python to fetch tweets.

2. Data Collecting: to collect tweets, we have set search keywords as #covid-19, #covid, #coronavirus with geoID at (27.502789, -83.825565) with 280 mi radius, and time intervals as Apr 22-28, Jul 15-21, and Oct 14-20 respectively. The streams of tweets have been collected and stored in separate CSV files for all 21 days.

3. Data Cleaning: all the original tweets have been sent to a cleansing process, where the white spaces, HTML and links, punctuations, and junk terms have been removed, and the content has been converted into lowercase for more straightforward analyses. Word lists containing the top frequently appeared words have been conducted for 22 manually examining the possible problems. The words “positive” and “negative” have been removed for reducing the ambiguity.

4. Sentiment Analysis: TextBlob and NRC methods are applied to the same dataset separately. Both of them can be implemented by pip with the command “pip install textblob” and “pip install NRCLex.” TextBlob depends on NLTK 3, and it has been automatically installed as TextBlob has been installed. The dictionary Corpora also needs to be downloaded for analyzing tweets, and the command is “python -m textblob.download_corpora” at the terminal. The previously cleaned tweets have been sent to two methods, and TextBlob automatically processes the sentiment polarity and subjectivity scores for all tweets and provides classifications of positive, negative, or neutral. On the other hand, NRC measures eight emotional affects associated with each word and counts each emotional occurrence on each day’s tweets. The classification of the sentiment of each tweet is also calculated in this method.

5. Result Analysis: further discussions and analyses have been performed on both methods. For TextBlob, the results are shown in terms of polarity outcomes, subjectivity scores, and perspective emotions; and for NRC, the percentage of default emotional affects and the classifications of sentiments are shown for each day to produce a clearer perception of people’s

sentiment. The overtime analysis has also been conducted to observe possible sentiment and emotional changes. Then the comparison and discussion of the results from both approaches are provided.

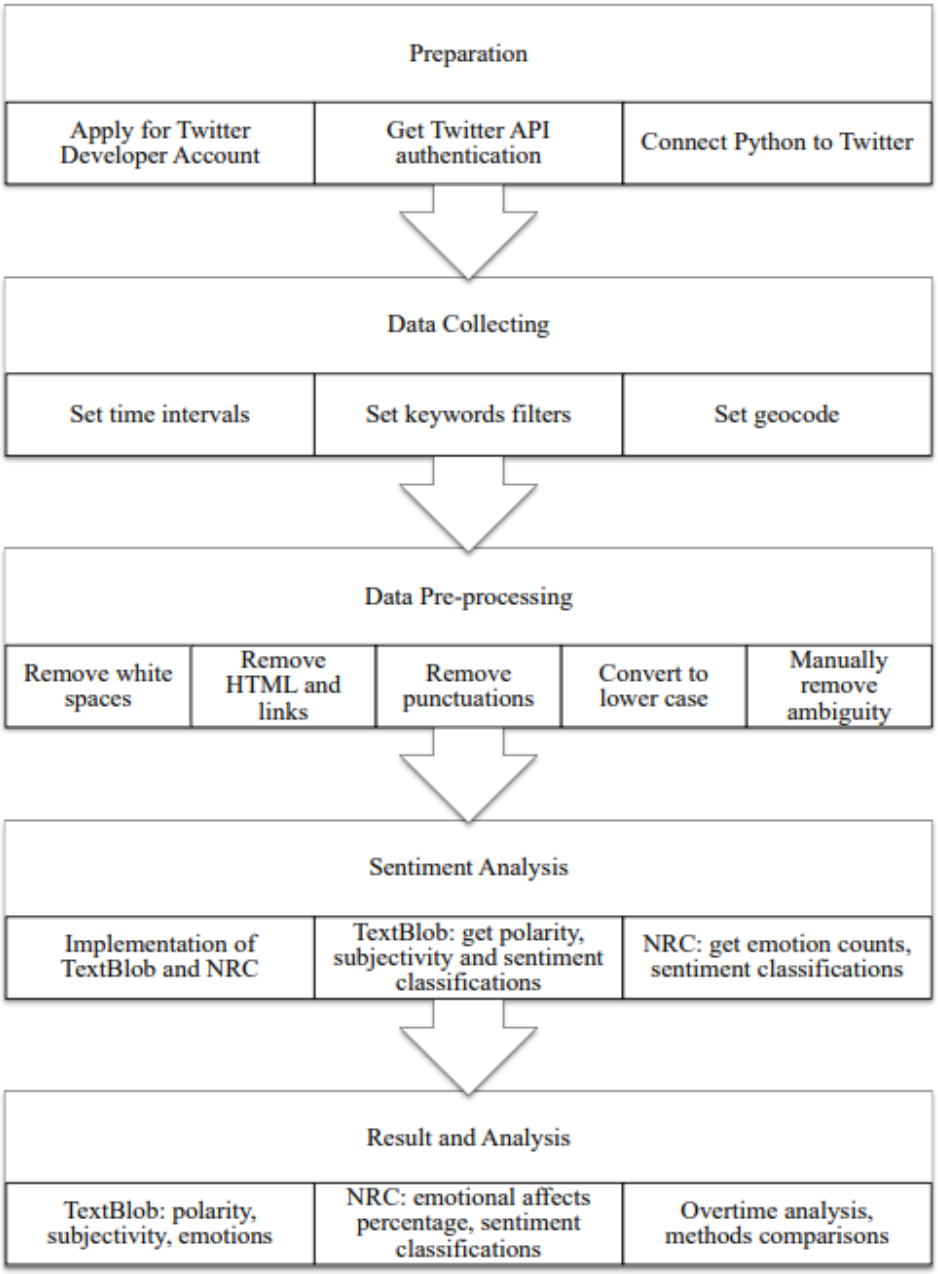


Figure 3.2. Flowchart for sentiment analysis procedures

CHAPTER 7

IMPLEMENTATION

7. IMPLEMENTATION

Implementation is the stage where the theoretical design is turned into a working system. The most crucial stage in achieving a new successful system and in giving confidence on the new system for the users that it will work efficiently and effectively.

The system can be implemented only after thorough testing is done and if it is found to work according to the specification. It involves careful planning, investigation of the current system and it constraints on implementation, design of methods to achieve the change over and an evaluation of change over methods a part from planning.

Two major tasks of preparing the implementation are education and training of the users and testing of the system. The more complex the system being implemented, the more involved will be the system analysis and design effort required just for implementation.

The implementation phase comprises of several activities. The required hardware and software acquisition is carried out. The system may require some software to be developed. For this, programs are written and tested. The user then changes over to his new fully tested system and the old system is discontinued.

TESTING

The testing phase is an important part of software development. It is the Information zed system will help in automate process of finding errors and missing operations and also a complete verification to determine whether the objectives are met and the user requirements are satisfied. Software testing is carried out in three steps:

1. The first includes unit testing, where in each module is tested to provide its correctness, validity and also determine any missing operations and to verify whether theobjectives have been met. Errors are noted down and corrected immediately.
2. Unit testing is the important and major part of the project. So errors are rectified easily in particular module and program clarity is increased. In this project entire system is divided into several modules and is developed individually. So unit testing is conducted to individual modules.
3. The second step includes Integration testing. It need not be the case, the software whose modules when run individually and showing perfect results, will also show perfect results when run as a whole.

CHAPTER 8

SNAPSHOTS

8. SNAPSHOTS

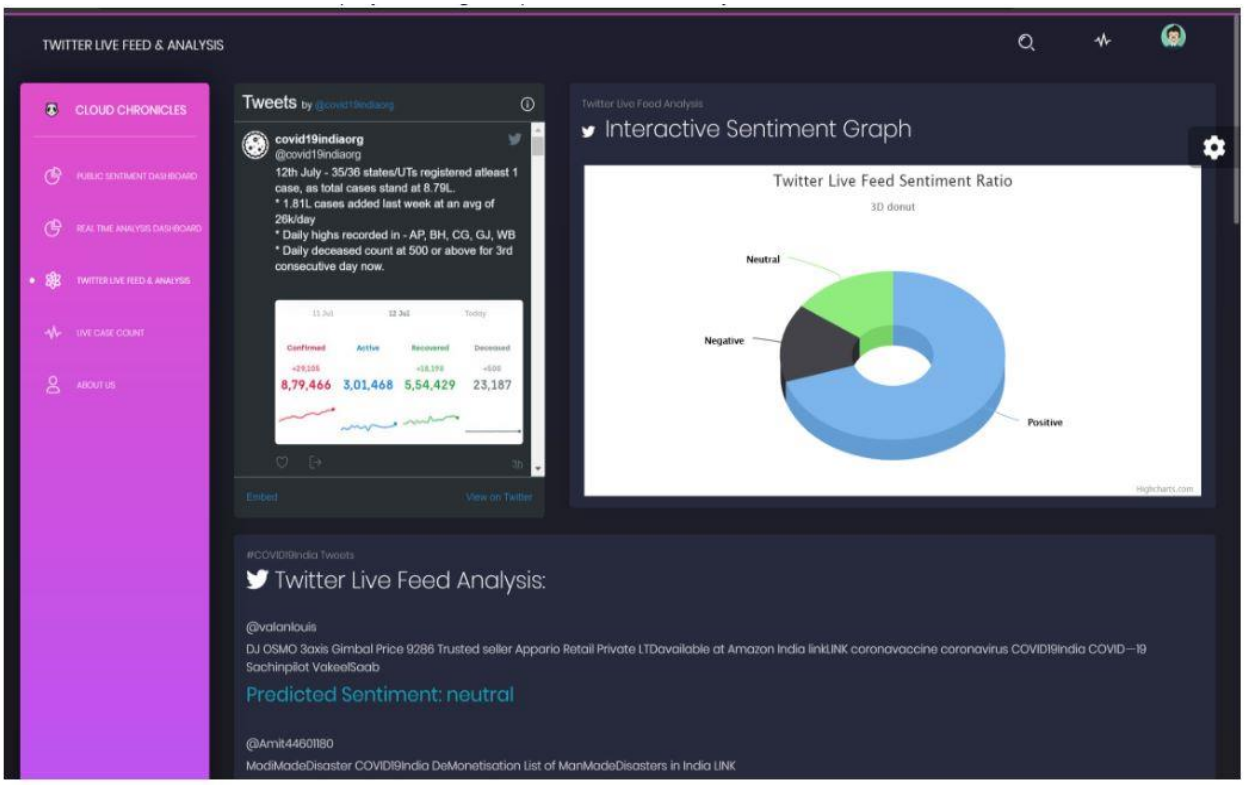


Fig.1

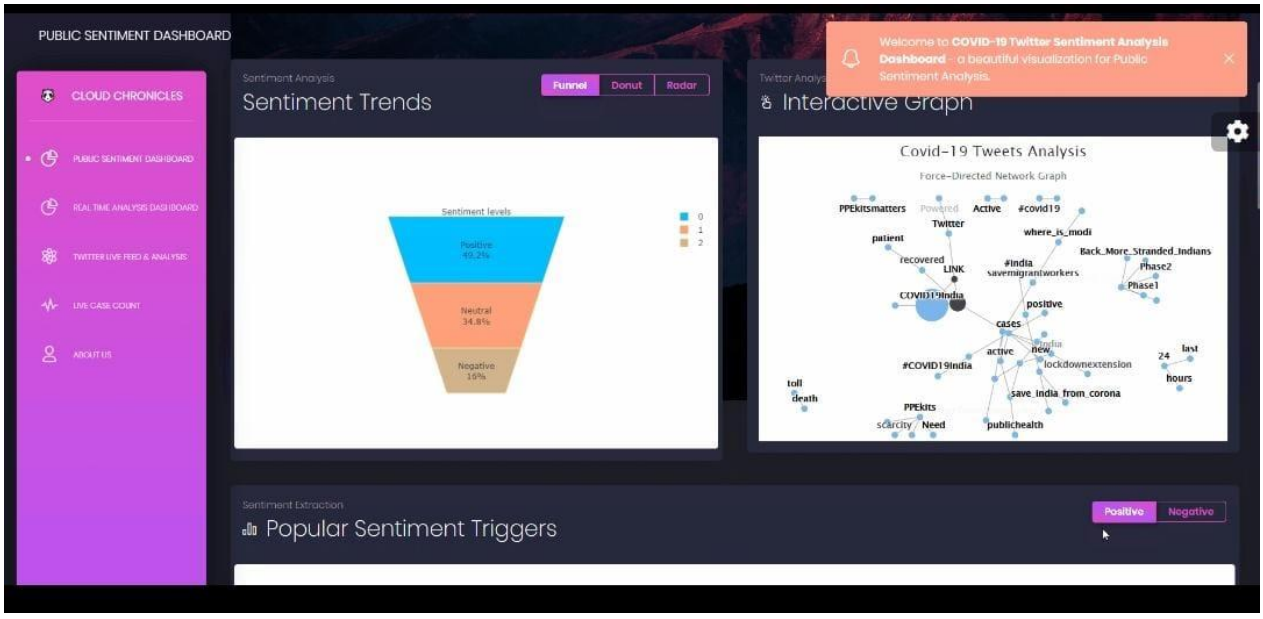


Fig.2

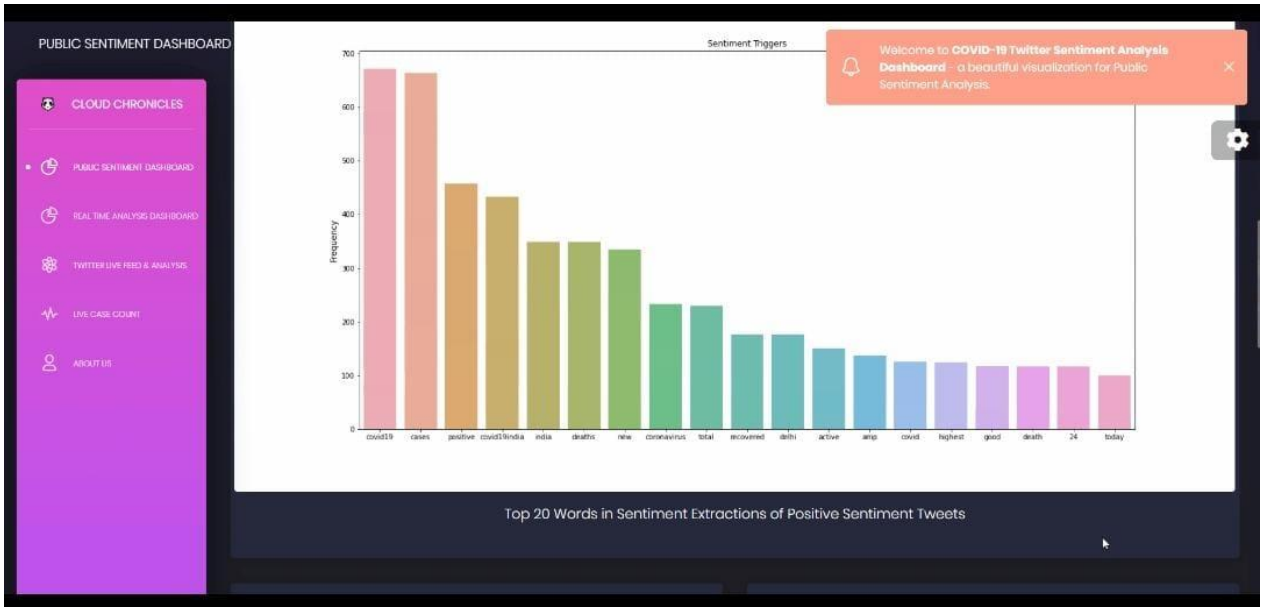
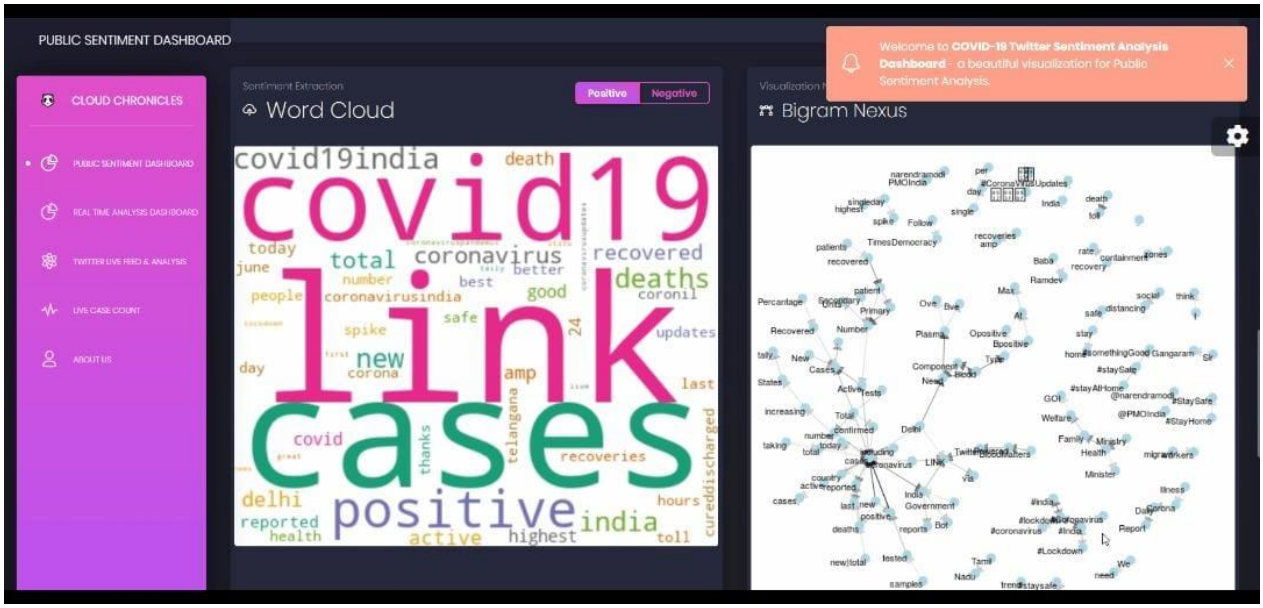

PUBLIC SENTIMENT DASHBOARD
CLOUD CHRONICLES
PUBLIC SENTIMENT DASHBOARD
REAL TIME ANALYSIS DASHBOARD
TWITTER LIVE FEED & ANALYSIS
LIVE CASE COUNT
ABOUT US
Sentiment Triggers
Frequency
covid19
cases
positive
covid19india
india
deaths
new
coronavirus
total
recovered
delhi
active
amp
covid
highest
good
death
24
today
Welcome to COVID-19 Twitter Sentiment Analysis Dashboard - a beautiful visualization for Public Sentiment Analysis.
Top 20 Words in Sentiment Extractions of Positive Sentiment Tweets

Fig .3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LIVE CASE COUNT
ABOUT US
Sentiment Extraction
Word Cloud
Positive
Negative
Bigram Nexus
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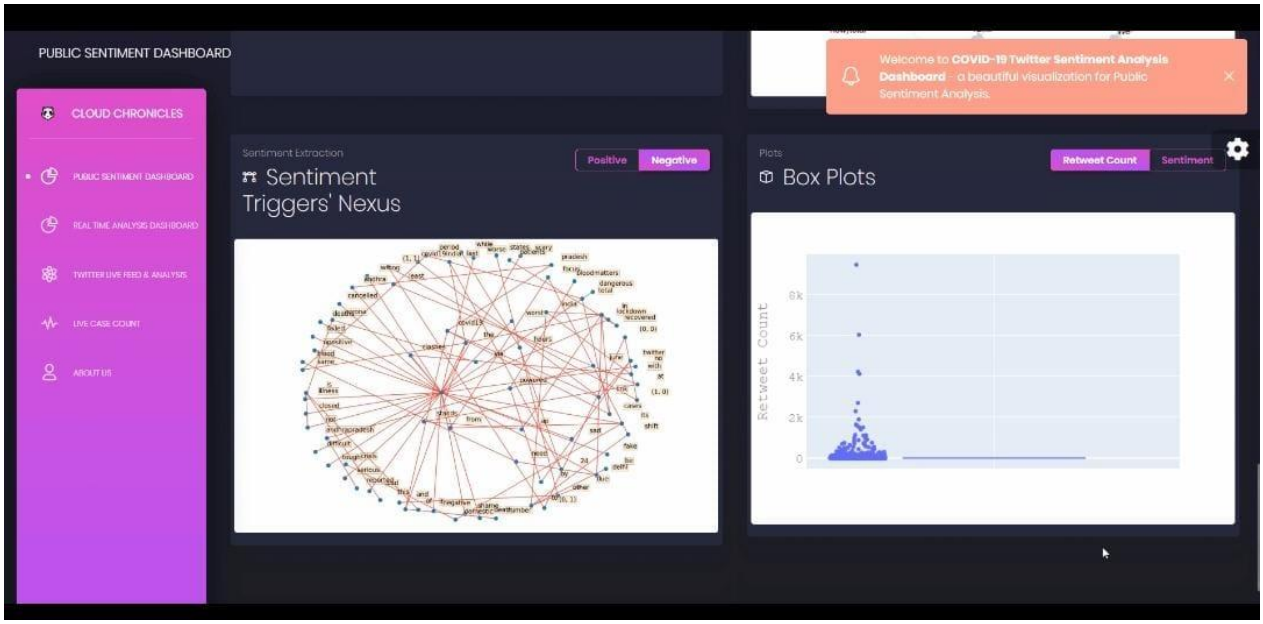
covid19india
death
covid19
link
cases
today
total
coronavirus
recovered
june
number
best
better
deaths
people
coronavirusindia
good
coronil
spike
safe
24
updates
day
new
corona
amp
last
covid
telangana
thanks
recoveries
delhi
positive
india
hours
cureddischarged
reported
health
active
highest
toll

Fig.4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Sentiment Extraction
Sentiment Triggers' Nexus
Positive
Negative
Plots
Box Plots
Retweet Count
Sentiment
Retweet Count
8k
6k
4k
2k
0

Fig.5

CHAPTER 9

CONCLUTION

9. CONCLUTION

The package was designed in such a way that future modifications can be done easily. The following conclusions can be deduced from the development of the project:

- Automation of the entire system improves the efficiency
- It provides a friendly graphical user interface which proves to be better when comparedto the existing system.
- It gives appropriate access to the authorized users depending on their permissions.
- It effectively overcomes the delay in communications.
- Updating of information becomes so easier
- System security, data security and reliability are the striking features.
- The System has adequate scope for modification in future if it is necessary.

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