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TWITTER SENTIMENTAL ANALYSIS

A Report for the evaluation 3 of Project 2

Submitted by

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(1613105012 / 16SCSE105095)

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Under the Supervision of

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Assistant Professor

APRIL/MAY-2020



SCHOOL OF COMPUTING AND SCIENCE AND
ENGINEERING

BONAFIDE CERTIFICATE

Certified that this project report “TWITTER SENTIMENTAL ANALYSIS” is the bonafide work of “ANIL KUMAR YADAV (1613105012)” who carried out the project works under my supervision

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THANK YOU.

DECLARATION:

I hereby declare that this submission is my very own work which, to the simplest of my knowledge and belief, it contains no material previously published or written by another person nor material which to a considerable extent has been accepted for the award of the other degree or diploma of the university or other institute of upper learning, except where due acknowledgment has been made within the text.

I inform that every data used in this report if it's taken from any site is clearly referenced under the reference section.

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Date: 17-may-2020

ABSTRACT

Sentimental analysis is the method of finding sentiment such as positive, negative or neutral from text as well as emoticons data. With the rise of social networking there has been a huge amount of user generated content. Millions of people are sharing their thoughts daily using microblogging sites like twitter, Facebook, YouTube. We will be mining the sentiments or opinions from very popular and real time microblogging site i.e Twitter, where users present real time reactions and opinions about everything. Public and Private opinion about a wide variety of subjects are expressed. Twitter offers organizations a fast and effective way to analyze user's perspective about the product or decision. This project reports on the design of sentimental analysis, extraction of huge amount of tweets. Results classify customer's perspective via tweets into positive, negative or neutral category and present them in pie chart.

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CHAPTER 1

INTRODUCTION

Nowadays internet is one of the most developing areas. People are frequently communicating, discussing and sharing their thoughts and opinions through internet. Due to these reasons internet has become essential part of human life. Internet covers wide range of information such as academic, public's opinion about products, comments about social issues and many more things. Majority of the public likes to listen other opinions before taking any final decision. Sentimental analysis is one of the research areas.

Microblogging websites are most commonly used platforms for representing views on variety of topics. This is due to the nature of microblogs on which people post real time opinions on products they are using, current issues in day to day life. Many times various organizations use these opinions from microblogs to get a sentiment for their product. Consumers have all the power when it comes to what they like and how they respond to any particular product. Social media can change the behavior of consumers, for example, a previous study [1] mentions that 87% of the internet users are influenced in their purchase and decision by other customer's reviews. So if any organization gets to know what consumers like and what they don't like they can come up with good products and ideas.

In this project, we look at popular microblogging platform known as Twitter and build model which can classify "tweets" into positive, negative and neutral sentiment. We build a three way task of classifying sentiments into positive, negative and neutral classes. Advantage of using twitter data over any other data sets is that the tweets are collected in a streaming way and so they represent actual tweets in terms of language use and content.

CHAPTER 2

LITERATURE SURVEY

Various researchers had already done researches in sentimental analysis. Some of them are discussed below:

Asliet al. [2] presented methods for normalizing the noisy tweets and differentiated them on the basis of polarity. Authors of this paper collected more than 2 million tweets from 2009-2010 using Twitter API. To generate sentimental words they have employed a mixture model approach and calculated F-score of each and every word than selected words having more than 10% F-score. They also suggested a frame work to gain a knowledge of the lexicon from collected tweets so we can represent words such as luv, lovwww and llove as one word i.e love.

Gang Li et al. [3] proposed a method known as clustering-based approach to overcome the drawbacks of previously defined methods. In this approach k-means clustering algorithm is used and tweets are clustered into positive negative clusters. The dataset used for this experiment was movie reviews which contains 1000 positive and 1000 negative reviews about movie. Compared to existing methods this method produced the accuracy of 77.17% and is faster on the basis of operations.

Lianghoet al.[4] proposed a multi domain active learning framework. This model selects text data from all domains such as Books, DVD, Electronics and Kitchen from amazon.com. The authors of this paper implemented term “frequency” for the weightage of features. In this paper authors presented framework in the linearly-separable manner and left the non-separable method for future work.

Po-iet-al. [5] proposed a new method that extracts the sentiments of microblogs. They found that some tweets are positive but it is negative in case of emotions. To overcome this problem they combined supervised learning with opinion expressions. This system is called Opinion miner. They have used tweets from of different categories like movie, camera, mobiles as training set. This model gave an accuracy of 91%.

Agarwal et al. [6] approached a new way of mining sentiment from twitter i.e 3-way task of classifying sentiments of people into positive, negative and neutral classes. They experimented with unigram models, feature based model and tree kernel based model. From the results of all the experiments they came to a conclusion that tree kernel based method is the best method to use as it gave results better than other two models.

Here are some of the methods used for sentimental analysis by above researchers:

2.1 Opinion Mining

Opinion mining refers to the use of natural language processing (NLP), text mining, computational linguistics which involves the computational study of sentiments and opinions present in text. Opinion mining can be used in various domains like law, research, education, politics and marketing. Organizations use these opinions for their product to be more liked by the consumers and has the functions which they dream and desire.

2.2 Lexicon Based Approach

In this method a predefined list of word is used where each word refers to the particular sentiment. Their meanings changes according to the context in which list is created and it involves the calculation of semantic orientation of texts and phrases used in the opinion.

Steps used in Lexicon methods are:

1. Preprocessing of tweets by removing punctuation marks.
2. Initialize the polarity score(s) to 0.
3. Check whether token is present or not.
 - If token is present, s becomes +ve
 - If token is not present, s becomes -ve
4. Compare the polarity score of tweets from post
 - If $s > \text{threshold}$, tweet is classified as positive
 - If $s < \text{threshold}$, tweet is classified as negative

2.3 Machine Learning Based Approach

1. Supervised machine learning which uses structured data or human annotations from which machine learns in order to make future inferences.
2. Semi supervised machine learning approaches helps to interpret unstructured data without guidelines.
3. Deep learning algorithms are advanced level algorithms which uses algorithms like SVM and ANN to gain higher accuracy in results.

2.4 Application Programming Interface

Python Twitter API performs better than any other is terms of quality and execution time. Twitter API helps us in collecting tweets from twitter database in real time and automatically preprocess the data internally and calculates the frequency of the words than use those values for calculating the sentiments.

CHAPTER 3

PROPOSED SYSTEM

Extracted tweets are than used for the pupose of preprocessing. In this process emoticons are labelled under the category of extremely positive, extremely negative, positive, negative and neutral. For example: “:)” is labeled as positive whereas “:=(” is labeled as negative.

| Emoticons | Polarity |
|----------------------|--------------------|
| :-) :) :o) :] :3 :c) | Positive |
| :D C: | Extremely Positive |
| :-(:(:c :[| Negative |
| D8 D; D= DX v.v | Extremely negative |
| : | Neutral |

Table 1: Emoticons dictionary

Sometimes people also use acronyms in their sentences and that becomes a challenge to overcome this problem we try to change the acronyms used to their real meanings and use them for getting sentiments. For example: “bff” is referred as best friends forever, “btw” is referred as by the way etc. Here is a table which shows some of the acronyms and their expansion.

| | |
|--------------------|-------------------|
| Acronym | English expansion |
| Gr8 | Great |
| Tbc | To be continued |
| Not, no never, n't | Not |
| Lovv, luv, love | Love |

Table 2: acronym and their English expansion

After the preprocessing is done we move to the scoring part where we find the semantic score of the opinion carriers like the adjectives, verbs and adverbs. We assign the values ranging from -1 to 1 to the verbs and adverbs which is considered as their strength. Some of the most frequently used verbs and adverbs with their strength score are given below in the table.

| <i>Verb</i> | <i>Strength</i> | <i>Adverb</i> | <i>Strength</i> |
|-------------|-----------------|---------------|-----------------|
| Love | 1 | complete | +1 |
| adore like | 0.9 | most | 0.9 |
| enjoy | 0.8 | totally | 0.8 |
| smile | 0.7 | extremely | 0.7 |
| impress | 0.6 | too very | 0.6 |
| attract | 0.5 | pretty | 0.4 |
| excite | 0.4 | more | 0.3 |
| relax | 0.3 | much | 0.2 |
| reject | 0.2 | any | 0.1 |
| disgust | -0.2 | quite | -0.2 |
| suffer | -0.3 | little | -0.3 |
| dislike | -0.4 | less | -0.4 |
| detest | -0.7 | not | -0.6 |
| suck hate | -0.8 | never | -0.8 |
| | -0.9 | hardly | -0.9 |
| | -1 | | -1 |

Table 3: verbs and adverbs strength

Complete explanation of strength calculation can be found in the paper [7] where detailed study of the strength calculation is done. After this we perform whole tweet sentiment scoring. To calculate the general sentiment of the tweet, we have a tendency to average the strength of all opinion indicators like emoticons, verb, adverb and adjective cluster, word stress exclamation marks, capitalization, as shown below:

$$S(T) = \frac{(1 + (P_c + \log(N_s) + \log(N_x)) / 3)}{|OI(R)|} * \sum_{i=1}^{|OI(R)|} S(AG_i) + S(VG_i) + N_{ei} * S(E_i)$$

Where,

|OI(R)| denotes the scale of the set of opinion and emoticons extracted from the tweets,

P_c denotes fraction of tweet in caps,

N_s denotes the count of continual letters,

N_x denotes the count of exclamation marks,

S(AG_i) denotes score of the ith adjective cluster,

S(VG_i) denotes the score of the ith verb cluster,

S(E_i) denotes the score of the ith facial expression

N_{ei} denotes the count of the ith facial expression.

CHAPTER 4

IMPLEMENTATION OR ARCHITECTURE DESIGN

The proposed technique is designed for query based processing with open API on twitter. This API collects tweets in real time on the basis of user's keyword. Below diagram represents system architecture and the work flow of the model.

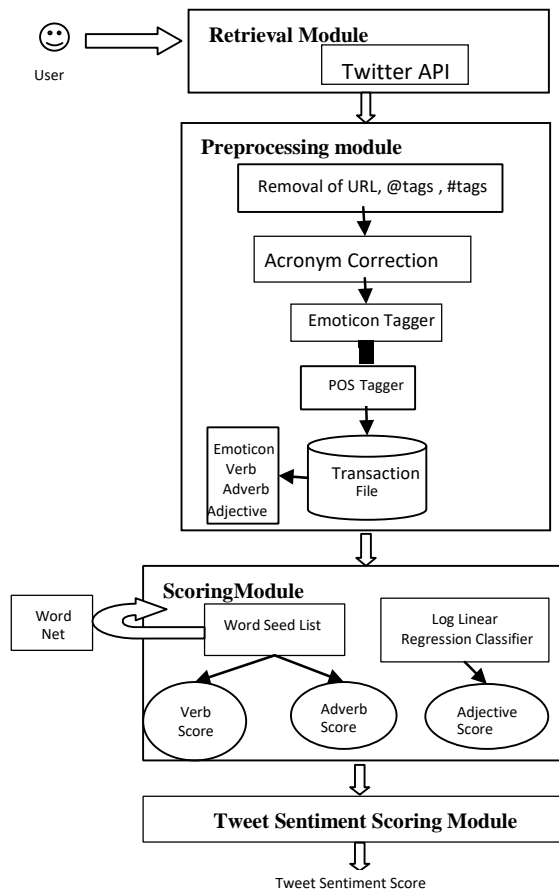


Fig 1: System overview

This is a program for connecting to the twitter using twitter api tweepy and importing necessary libraries required for tweets extraction and data pre-processing.

+ Code + Text

RAM Disk Editing

```
import tweepy
import textblob # textblob is open lib of google
from textblob import TextBlob
import matplotlib.pyplot as plt
def percentage(part, whole):
    return 100* float(part)/float(whole)
```

```
[2] consumer_key = 'ATfKfm1U88EffYQzIF8SQhiYX'
consumer_secret = 'dy8ao96WUqEFjEGi7dnIEiAT2Vq6EDDkXPOv0k50DcSr9dnwsz'
access_token = '180739880-ncdWLjX4vDYfaCh1Foj2d1tv6TNOPa31Nxb4zvXy'
access_token_secret = '3vevh5nD8Z6IX1Hn2XcrD7pnxtMVTZRbwu49rPLVRNW1n'
#consumer_key= 'ak1gcFQaqCgYYpWtzUixNSiV'
#consumer_secret= 'tt5NSjnTrJtbVp0KQ88gvLFGZkQkufc721NrJFkbyztDd9pjcY'
#access_token= '866913642251341824-0r8tdvfw1CBnZhrGQcNTyPfiHz536N4'
#access_token_secret= '1122Ji27mZVbjb01VGBuDDiMK17rEHuQqTVCriUrjPJo'
```

```
[3] auth = tweepy.OAuthHandler(consumer_key, consumer_secret) #yaha dono keys ka authentication check kr ra h
auth.set_access_token(access_token, access_token_secret) # path establish kr rha h
```

```
[4] api = tweepy.API(auth)
```

Activate Windows
Go to Settings to activate Windows.

Double-click (or enter) to edit

This is the program where user is asked on which topic he wants to find the sentiments and the no. of tweets one wants to analyze to get the results. As you can see that I have used #lockdown keyword for the sentiment analysis and no of tweets which I have used to get the result is 1000.

Here we can also see the program that is used for calculating the polarity of the tweets that are extracted for the twitter and after performing the pre-processing, calculated the polarity of the tweets.

The screenshot shows a web browser with several tabs open, including WhatsApp, YouTube, and a Jupyter Notebook titled 'twitter.ipynb - Colaboratory'. The notebook interface includes a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a toolbar with options for RAM, Disk, and Editing. The code in the notebook is as follows:

```
searchTerm = input("Enter the tag to be searched")
NoOfTerms = int(input("Enter the no if tweets to be searched."))

tweets = tweepy.Cursor(api.search, q=searchTerm).items(NoOfTerms)

positive = 0
negative = 0
neutral = 0
polarity = 0

[ ] for tweet in tweets:
    print(tweet.text) #print tweet's text

    analysis = TextBlob(tweet.text)
    polarity += analysis.sentiment.polarity
    if (analysis.sentiment.polarity == 0):
        neutral +=1
    elif (analysis.sentiment.polarity < 0.00):
        negative +=1
    elif (analysis.sentiment.polarity > 0.00):
        positive +=1
```

The input fields show the search term '#lockdown' and the number of tweets '1000'. The Windows taskbar at the bottom shows the date and time as 12:41 PM on 5/5/2020.

Given below is the screenshot of the program that is used for plotting the results into the graphical representation of the pie chart.

The screenshot shows a Jupyter Notebook interface in a browser. The browser tabs include (67) WhatsApp, (65) YouTube, (50) 23 Printing Longest commo..., FUTURESKILLS, and twitter.ipynb - Colaboratory. The address bar shows the URL: colab.research.google.com/drive/1p8qwUO2DSJuhbFRJZgqGtr5Mj_OnHyU#scrollTo=VCLnT1tH673D. The notebook interface includes a menu bar (File, Edit, View, Insert, Runtime, Tools, Help) and a status bar (All changes saved). The code cell contains the following Python code:

```
[6] @ActressTrisha @alawaystrisha #Lockdown #Quarantine...
Cultural consumption in the #UK during the COVID-19 #lockdown
https://t.co/IiXkqJyEhz
#culture #Quarantinelife
RT @mylocaleuk: 🏆#Competition Time🏆
Win a £30 voucher of your choice! To enter simply:
1. Follow us @mylocaleuk
2. Retweet

[7] positive = percentage(positive , NoOfTerms)
negative = percentage(negative , NoOfTerms)
neutral = percentage(neutral , NoOfTerms)

labels = ['positive['+str(positive)+'%]', 'negative['+str(negative)+'%]', 'neutral['+str(neutral)+'%]']
sizes = [positive, negative, neutral]
colors = ['red', 'yellow', 'green']
patches, text = plt.pie(sizes, colors=colors, startangle = 90)
plt.legend(patches, labels, loc="best")
plt.title("how people are reacting on "+searchTerm+" by analysing "+str(NoOfTerms)+" tweets")
plt.axis('equal')
plt.tight_layout()
plt.show()
```

The output of the code is a pie chart titled "how people are reacting on #lockdown by analysing 1000 tweets". The chart shows the following distribution:

| Sentiment | Percentage |
|-----------|------------|
| positive | 29.1% |
| negative | 12.7% |
| neutral | 58.2% |

The pie chart is divided into three segments: a red segment for positive (29.1%), a yellow segment for negative (12.7%), and a green segment for neutral (58.2%). A legend to the right of the chart identifies the segments with their respective colors and percentages.

At the bottom of the screen, the Windows taskbar is visible, showing the search bar, taskbar icons, and system tray with the time 1:07 PM and date 5/5/2020.

CHAPTER 5

OUTPUT / RESULT/ SCREENSHOT

We were able to successfully implement the above discussed idea and have a working model of Twitter Sentimental Analysis. In the developed model it extracts tweets in real time from the twitter and successfully classifies the sentiments into positive, negative and neutral categories. Sentimental analysis can be done for various categories :

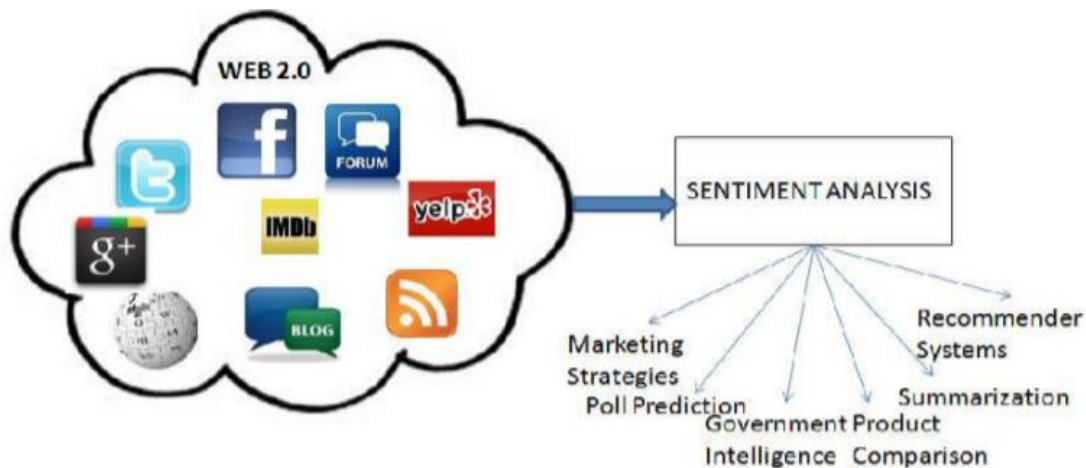
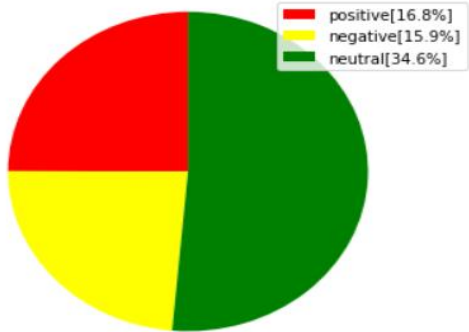


Fig: Classification of Sentiment Analysis

In the previous models there were issues due to the use of emoticons, acronyms and informal languages so we have solved both the issues in this model and due to which more accurate results are produced. We can improve the accuracy by using larger data sets and by targeting tweets which are related to the politics, products and opinions. Sentiments having value greater than zero are considered as positive sentiment, sentiments having values less than zero are considered as

negative sentiments and those which have value equal to zero are considered as null sentiment. The result of this analysis is displayed in the pie chart which is as follows:

how people are reacting on lockdown by analysing 1000 tweets



```
+ Code + Text
elif (analysis.sentiment.polarity < 0.00):
    negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1

RT @KirankS: When wine shops open before schools and colleges, it makes one wonder which category is more "essential"...
#Lockdown
Still India has managed to enter the TOP10 list. We are delaying the outbreak escalation with #lockdown... https://t.co/9Wxe1FHvyE
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementat...
This goes to show that people really can change their behaviours if they want to... or need to. Let's hope this pos... https://t.co/NcNETHsof6
#giorno58
Mi sono appena resa conto che i miei non torneranno entrambi a lavoro almeno fino a settembre. Voglio morì.
#Lockdown
RT @TSCarpnetClean: How I will be at the end of #lockdown 😞😞😞 with my boy @Chester_Vizsla 😞😞
#Wellington #Telford #Shropshire #Wrekin @Love...
RT @AnthonySc6: Vijf protestacties op 5 mei voor vrijheid en tegen #lockdown Mensen hangen als stil protest tegen de lockdown handdoeken ui...
ये देखो शाहीनबाग की आरतें 500 रूपए के लिए लाइनें लगाती हुई। एक नया धंधा खोला है ये लोगों ने मर्द कुत्तर में सो रहा है इ... https://t.co/GJalKr5GUL
RT @AquarianTruths: #Lockdown going into June, which now looks for Sure. Expect Collapse of Many Small Medium Industrial Firms. Paying Sala...
@narendramodi की सोशल मीडिया&amp; इवेंट मैनेजमेंट की नाकारा सरकार के #COVID-19 से निपटने के शानदार कार्य
पीएम के लम्बे https://t.co/QwxrFDx0xg
RT @ABPNews: लोकडाउन के बीच हरियाणा केडर की साल 2014 बैच आईएस अधिकारी रानी नागर ने अपने पद से इस्तीफा दे दिया है. उन्होंने इस्तीफे में सर...
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementat...
Our pets are sick of us. #lockdown #CatsOfTwitter https://t.co/Lax0shTG0o
RT @R_S_Insan: #lockdown has not locked the spirits of these braveheart @derasachasauda Volunteers, who donated blood to fulfill the needs...
RT @agrapolice: #lockdown का नियमानुसार पालन करने हेतु #थाना फतेहाबाद पुलिस टीम द्वारा थाना क्षेत्र में किया गया फ्लैग मार्च
#StayAtHome...
@KajariaPLY This lockdown gives my parents to spend time their grandchildren. #SpaceThatMatters #KajariaPLY... https://t.co/H98csNGjLV
RT @tahira_k: First year of dating and we were strong believers of social distancing!! #futuristic #throwbackthursdayontuesday #throwbackth...
RT @satishacharya: Online learning during lockdown! @sifydotcom cartoon #RaghuramRajan #AbhijitBanerjee #lockdown https://t.co/L3Bw6f82AV
RT @news24tvchannel: दिल्ली में मयूर विहार इलाके की शराब की दुकानों पर लोगों को भगाने के लिए पुलिस ने किया लाठीचार्ज ।

#DelhiFightsCorona...
RT @TPRDTCollector: How #tiruppur looks like during #lockdown ! We will bounce back ! #நம்மால்முடியும் #திருப்பூர் Wonderful video by @sakt...
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementat...
RT @IndiaAHSI: HSI/India is grateful to every person who has shown immense kindness, compassion, and generosity towards animals during this...
RT @oliviercorsan: 10 photos de la #Seine limpide comme jamais à #Paris de @oliviercorsan pour @Le_Parisien #coronavirus #COVID-19 #lockdown...
Modi and only Modi is to be blamed for the #migrants mess. In the midst of the raging Corona pandemic, the Prime Mi... https://t.co/6Dq92GkbNo
RT @thatsTamil: அமைச்சர் பெஞ்சமின் மகன் திருமணம் எனிய முறையில் இல்லத்திலேயே நடைபெற்றது
```

Activate Windows
Go to Settings to activate Windows.

Browser tabs: (66) WhatsApp, (65) YouTube, (50) 23 Printing Longest commo..., FUTURESKILLS, twitter.ipynb - Colaboratory

colab.research.google.com/drive/1p8qwUO2DSJuhbFRJZgqGtr5Mj_OnHyU#scrollTo=NNV0h1Md6RQ3

twitter.ipynb

```
...
negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1
...
RT @satishacharya: Online learning during lockdown! @sifydotcom cartoon #RaghuramRajan #AbhijitBanerjee #lockdown https://t.co/L38w6f82AV
RT @RobertsElaine1: Good news!!! The Foyles Bookshop Girls has been reduced to 99p it's the first book of my debut #HistoricalFiction seri...
RT @siasatpk: روزنامہ عمران خان کے نئے سونے منصوبے کے تحت ایک ٹاؤن کے نوراں سے روزگار ہونے والے 66 ہزار سے زائد مزدوروں کو روزگار ف...
RT @PtainDS: It's time to unlock the #lockdown and trust the common sense of the British people
https://t.co/L100HwTXhZ
RT @SimonGrindrod: Nature takes back its habitat. A whale explores a marina. Graceful and majestic. Beautiful scenes. #natureishealing #L...
Hello readers,
Good news for you us coming up.
#NewsForWetizens @the_hindu #COVID-19 #coronavirus #lockdown. https://t.co/0zFw3l8eWw
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implement...
QUARTANTIME PODCAST 🎧 ce soir 18h sur https://t.co/v9K045axvY 1H de #mix #breakbeat #electro
Player 🎧 https://t.co/7HemT0xPv
#RahulGandhi
#lockdown https://t.co/c56Yn3Fes8
روزنامہ عمران خان کے نئے سونے منصوبے کے تحت ایک ٹاؤن کے نوراں سے روزگار ہونے والے 66 ہزار سے زائد مزدوروں ک...
https://t.co/rpsZepzx8h
RT @JennyYoung: #hometasking #hometasking14 #lockdown is really getting to him now I think, he's gone a bit weird! @Alexhorne @davies htt...
RT @Simranbagga0ffc: Keeping myself occupied in this #lockdown

#lockdowneffect #StayHomeStaySafe #StayHome #StaySafeStayHealthy https://t...
Invece di pensare a come tirar fuori milioni di italiani dal guano causato dal #lockdown , il problema attuale de... https://t.co/wkhByn47xt
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implement...
RT @BoltonLMS: We're inviting children to record their experiences of #coronavirus & the #lockdown. Inspired by @MassObsArchive, we are par...
NP #lockdown by @TeniEntertainer on the #DAYBREAKIGERTIASHOW with @excel_u
RT @CoffePortsmouth: Today's daily prayer during #lockdown comes from the Archdeacon of the Isle of Wight @peterleonard200, who reflects on...
RT @itisanupama: Resin work
Galaxy themed Tray
#resin #handmade #kitchendecor #tray #galaxy #QuarantineLife #Quarantine #QuarantineActivi...
RT @behindthewoman1: Morning,
The further #lockdown continues,
our coping strategies & mechanisms are surely being tested.

If you do one...
RT @WendyDranfield: 📖 My latest book is on sale at 99p/99¢! 📖
```

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Go to Settings to activate Windows.

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colab.research.google.com/drive/1p8qwUO2DSJuhbFRJZgqGtr5Mj_OnHyU#scrollTo=NNV0h1Md6RQ3

twitter.ipynb

```
...
negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1
...
Take a look at the digital marketing landscape with an introduction to Google, this session...
RT @PreetiMenon: Some influential bureaucrats in Mumbai still have their allegiance to Nagpur. They are sabotaging healthcare, migrant ret...
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementat...
#COVID-19
#lockdown
#RahulGandhi
🙏🙏🙏
https://t.co/A01Dly43aw https://t.co/C2qunI2CUJ
Why pursue God? Religious sunday on OgeFash photo blog- Have you said a word of prayer today. We have got all the p... https://t.co/q0rZIElF1X
शराब शराब पर है!
#LiquorShops #CoronavirusOutbreak #lockdown #sharab #LiquorFreeIndia #liqourprice
Just spent the last two hours trying to not wake up. #lockdown
RT @Rinkesh.me: वक़्त नूर को बेनूर कर देता है,
छुटे से जख्म को गासूर कर देता है,
कोन चाहता है अपनी से दूर रहना,
पर वक़्त सबको मजबूर कर दे...
RT @Ishasacredwalks: His dark face stands like a mountain, upon it rivers of rain flow... I stand here and drink upon
the loftiest intoxica.
RT @InfoNashik: महाराष्ट्राच्या माणुसकीने गुपीचे सचिव चकित !
अधिकारी, कर्मचारी, शिक्षकीनी वर्गाणी करून दिते कष्टकऱ्यांना तिकिताचे पैसे
@CN_
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementat...
Ola, Uber resume services in cities in Green, Orange Zones https://t.co/mwJgb89PQ0 by @YourStoryCo #lockdown
RT @tahira_k: First year of dating and we were strong believers of social distancing!! #futuristic #throwbackthursdayontuesday #throwbackth...
RT @satishacharya: Online learning during lockdown! @sifydotcom cartoon #RaghuramRajan #AbhijitBanerjee #lockdown https://t.co/L38w6f82AV
RT @MTKGlobal: 🚂 TRAIN WITH JOSH 🚂

Scottish superstar @JoshTaylorBoxer is in some serious grafting at home.

There's always room for imp...
RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementat...
RT @Ishasacredwalks: His dark face stands like a mountain, upon it rivers of rain flow... I stand here and drink upon
the loftiest intoxica.
Well done folks...we have made it through through six weeks of #lockdown...we have been sent a series of progress p... https://t.co/y2Kc1a018
What it meht байна your mind to be calm and content
```

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colab.research.google.com/drive/1p8qwUO2DSJuhbFRIZgqGtr5Mj_OnHyU#scrollTo=NNVoh1Md6RQ3

twitter.ipynb

```
negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1
```

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Those who haven't evolved have the loudest mouth and the most to say. Wisdom and maturity is silent & Deadly... <https://t.co/PIE04h8mQh>

RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementa...
سنڈوی میں بروزنگری کی وجہ سے جھوک ٹیکس
<https://t.co/0y91Ymku>

#sindh #lockdown #unemployment <https://t.co/Xu31eM8s0>

केरल से पटना धारि मजदूर भाईयों ने इबत इनन सरकार के प्री यात्रा के दावों खारि कर बताया कि सभी ने उधार लेकर अप- <https://t.co/5R8xVmtb2e>

RT @gaonconnection: लॉकडाउन की वजह से बहुत सी जानें ऐसी गईं जिन्हें बचाया जा सकता था, इनमें मजदूरों की संख्या सबसे ज्यादा Report- @Mithiles...

wie eerst op rond punt wandelt heeft voorrang. Meir alleen toegankelijk voor mensen met wandelbewijs A en B... <https://t.co/0DPv9cd4n0>

@TerryMcElvaney @AlihuttonPipes @conorgalvin @JamesMelville @GOVUK You are right and that's exactly why there should... <https://t.co/wg32Ja8UwF>

RT @AquriantTruths: #Lockdown going into June, which now looks for Sure. Expect Collapse of Many Small Medium Industrial Firms. Paying Sala... RT @VannieLaas: Hulle noem dit ook egskelding 🤔

#lockdown <https://t.co/DrcUKd63mby>

- Digital Marketing Is The Most Important Part To Build Your Business

#digitalmarketing #SEO #SMML <https://t.co/7mHy1adyZ1>

RT @HTMumbai: After being stuck in hostels and PG in Kota for approximately six weeks of the #lockdown, the 1,800 students from Maharashtra... RT @thatstamil: ஊரடங்கு முடியும் வரை கட்டணம் செலுத்தாவிட்டாலும் இணைப்பு துண்டிக்கக் கூடாது- ஹைகோர்ட்

மே 6 ஆம் தேதி வரை மின் கட்டணம் செலுத்த... RT @Orionedutech123: UPSDM appeal to all citizen of India to follow necessary actions taken by the government to enforce strict implementa... RT @DeIhiTimesTwee: #QuarantineLife: @sidharth_shukla he is running out of fresh pictures, admits, "I'm reluctant to get clicked"

Ho... But hold on, if employers can transport their staff in coasters and mini buses why can't I, (and I mean just me) be... <https://t.co/KV6MKDm7Pv>

All modes of traffic on Cambridge roads have seen a gradual rise since the start of April, most notably delivery ve... <https://t.co/0PpV2U1FV>

RT @AshramBlr: सनातन वैदिक धर्म का प्रतीक-ममभरत देवा महापुरुषो.संतो की तपोभूमि व कर्मभूमि हे।

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twitter.ipynb

```
negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1
```

RT @sagarikaghose: Is India's #lockdown working? Unlike Spain or Italy, #lockdown isn't flattening India's curve, writes @business <https://...>

RT @mayur_jha: Boost spending. Provide money at the bottom of the pyramid. Make sure MSMEs have liquidity. The only way to revive economy p... RT @justiceandcare: We have all faced the challenges of #lockdown. But hopefully soon, we will step outside & enjoy the taste of freedom a... Good morning Fams

As we go out today, let's be extraordinary careful. Avoid contact with random people. Use your fa... <https://t.co/y6Fu87XIE>

RT @2IMIRE: Expect #vaccine propaganda rotating on front pages at least every 72 hrs, all week, every week. The myth of a 'panacea' vaccine... Resin work Galaxy themed Tray

#resin #handmade #kitchendecor #tray #galaxy #QuarantineLife #Quarantine... <https://t.co/Z6HbMKUM3>

RT @ayodhya_police: #UPPINews #UPPolice #ayodhyapolice @uppolice @dgpup @adgzonelucknow @igrangeayodhya @IpsAshish #IndiaFightsCorona #1o...

RT @rajeshkaira: Life in #orangezone coming back to normal. Ice-cream vendor is back outside my locality in #Gurugram. Right now, #lockdown... RT @EngNewsZA: PROCEED WITH CAUTION: South Africa desperately needs to get its already fragile economy going again. The extended #lockdown... RT @punam_rajaka: #lockdown संत रामपाल जी मरारा के शिष्य भारत के कोने-कोने पर जाकर जरूरत मंदो तक पहुंचा रहे हे खाने का समान <https://t.co/7...>

RT @DangeVithoba: #saveAniruddh कल रात #Aniruddh के पत्नी के परिवार वाले #lockdown वोट 30-40 KM चलकर आते है, पति को मारने का प्रयास... RT @ripunbora: @RahulGandhi deserves Congratulation and high appreciation from people of all walk of life for taking up the most vital econ... My attitude towards my mental health on most days and especially these days!

#lockdown <https://t.co/4ndkS0w0>

RT @thatstamil: 'ஊரட... துடிப்பு செய்து மதுக்கடைகளை இறக்காதிங்கய்யா'.. முதல்வருக்கு ஒரு பெண்ணின் உருக்கமான கோரிக்கை <https://t.co/4ure94Zv1> #1o... RT @ayodhya_police: #UPPINews #UPPolice #ayodhyapolice @uppolice @dgpup @adgzonelucknow @igrangeayodhya @IpsAshish #IndiaFightsCorona #1o... RT @punjabkesari: #lockdown: रुढ़ी से दिसे ख्वस्त हिमालय के बर्गले पहाड़, 312 KM दूर है गंगोत्री रेंज की ये चोटिया <https://t.co/lm2k...>

After being stuck in hostels and PG in Kota for approximately six weeks of the #lockdown, the 1,800 students from M... <https://t.co/7WidZ0Mtpj>

RT @ffizicalleries: La #Prudenza! Quella che vi raccomandiamo nel lento recupero di una nuova quotidianità dopo il #lockdown. Con sguardo... RT @NewIndianXpress: A massive evacuation plan has been chalked out by the Union Government to help the NRI's stranded in various countries... RT @arsched: Will 18000000 (One Crore 80 Lakh) #Pakistanis lose jobs due to #coronavirus #lockdown ? Fed Min for Planning @Asad_Umar answer...

#animal #animalcrossing #animallovers #wildlife #wildlifeofindia #wildlifeconservation #flamingo #oliveridley... <https://t.co/kUXUwXKJE>

RT @SouthakesPol: Please understand- the #lockdown is #NOT* over. This article explains the medical reasons why, from the horses mouth ...

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twitter.ipynb

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+ Code + Text
analysis.sentiment.polarity < 0.00):
    negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1
```

इस को #पार समझते रहे फिर कहते हमारा...

RT @PtainDS: It's time to unlock the #lockdown and trust the common sense of the British people <https://t.co/L100HwIXhz>

Older people and those with underlying conditions have been in #lockdown longer than anyone else and we must not fo... <https://t.co/i3ucSGLGdL>

RT @meeracomposes: #Gulfisha was one of the first to be picked up on 9th April & jailed during #lockdown, with barely any info coming out!..

RT @yorkgin: We're in the paper @yorkpress 🙌👍

Make a date 6pm Friday 8 May - V.E. Day - on our Facebook page for a morale-raising hour of...
RT @AmitPandey_: दिल्ली में wine के दाम 70% बढ़ा दिए गए कोई प्रदर्शन नहीं, कोई हल्ला नहीं

#VAT के बढ़ाये जाने से पेट्रोल और डीजल के दाम...

Nuovo Podcast! "2020-02 Quanto ci costa il Lockdown?" su @Spreaker #covid19 #crescita #epidemia #governo italia... <https://t.co/uM1UfZOS7Z>

RT @jimmywizmusic: (((WAS R300, NOW R200)))

Get yourself a Black, Grey or White JimmyWiz T-shirt for only R200.
Excl. Delivery..

At the...

RT @OlivierCorsan: 10 photos de la #Seine limpide comme jamais à #Paris de @oliviercorsan pour @Le_Parisien #coronavirus #COVID-19 #lockdown

PSG continues to service our clients in line with our usual high standards as we continue level 4 of #lockdown. We... <https://t.co/mLappcmB8B>

Hand sanitizers & disinfectants. Buy now @ our Pretoria branch only ☎️ +27810404502 / +27810404506... <https://t.co/qmtg0BUtC6>

RT @EmmaRosalyn11: Fascinating lecture by @anglion11 on domestic violence. Highlighting such an important area of #TBI research. Sadly bec...

RT @meenakashisharan: Do you know how unconsciously you live, act, speak, function?

Brain has distinct regions for different kinds of infor...

RT @vcnewsng: #Fallentanker: A tanker conveying fuel spilled its content by the otedola bridge making it impossible for vehicles to move...

Attempted a 'fakeaway' this weekend, a regular thing now for fun - especially in #lockdown - 'KFC' this time. Quite... <https://t.co/PSuq5BiUhc>

RT @johnlemonuk1: <https://t.co/D52P72cpe>

A stunning Verve cover by our Gaz. Support yr venues & theatres, if they have crowdfunding pleas...

RT @ABPNews: #Lockdown में शराब की दुकानें खोलने का फैसला कैसे है?

#LiquorShops #wineshops

RT @BollySpy: #KunaalVermaa And #HimanshiKhurana's Song #OJaanwaale Is Shot In #Lockdown

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twitter.ipynb

```
analysis.sentiment.polarity < 0.00):
    negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1

#LOCKDOWN
Stunning #divyakholakumar at filmfare awards #ThrowbackPicture

#lockdown #tuesdayvibes #BollywoodBreaking2020_ https://t.co/alv1cc6kRS
Current shock to UK business is of course perfect timing as Brexit progresses.

They - eg Rolls Royce - can downsi_ https://t.co/PX1d2oy70
#Speak Hausa? Got you #covered here @ogemama

View more www.ogefash.reviews #ogefashblog #ogefash #clarencpeters_ https://t.co/Thk0yxcVcV
RT @AmitPandey_: दिल्ली में wine के दाम 70% बढ़ा दिए गये कोई प्रदर्शन नहीं, कोई हल्ला नहीं

#VAT के बढ़ाये जाने से पेट्रोल और डीजल के दाम_
RT @tribuneph1: LGUs ordered: Let in OFWs cleared of virus - https://t.co/LM25Byxey #FilipinoTogether #EnhancedCommunityQuarantine #social
RT @BollySpy: #SalmanKhan's Personal Bodyguard #Sheraa Will Be Live With Us At 6 PM Today.

@Beingsalmankhan #Lockdown #Pandemic #Bollywoo...
RT @AnnabelMullin: I suspect that antibody tests will be a far more usable means of moving beyond #lockdown than NHS app but both require t...
RT @BreakfastNT: 📺 On Air 📺

"We need to get testing down to a turnaround to 24 hours" that would help us get out of #Lockdown quicker

Pa_
RT @MPIainDS: It's time to unlock the #lockdown and trust the common sense of the British people
https://t.co/1LO0HJXhz
More than 25 million Britons experienced high #anxiety in the days after #lockdown was announced, say @ONS figures... https://t.co/gCJraTHzPV
जाणिए Lockdown के Side Effects की वजह से किन लोगों ने कर दी हे हमारी बीतती बंद इस Episode में @TheCalmDev... https://t.co/d67zfg0qE
After more than 6 weeks of #lockdown, India appears to find much worse place than it began with cases now rising ex... https://t.co/nHfdx483cJ
RT @devraye_ganesh: ती #lockdown सारखी आली,
अन् माझी #अर्थव्यवस्था विघटवतुं गेली. 🙄🙄🙄
@marathitweets_
#COVID-19 #coronavirus #lockdown https://t.co/FEruGAY0sp
RT @Real_Ravi_BJP: पहले जमाती और अब शराबी 🙄
```

शराब न पीने के तबह से कोई नहीं मरा लेकिन कोरोना से तो हजारों लोग मर चुके हैं

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twitter.ipynb

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+ Code + Text
[6]
analysis = textblob(tweet.text)
polarity += analysis.sentiment.polarity
if (analysis.sentiment.polarity == 0):
    neutral +=1
elif (analysis.sentiment.polarity < 0.00):
    negative +=1
elif (analysis.sentiment.polarity > 0.00):
    positive +=1

RT @Nafiu_rabe: Whoever invented this game angel Gabriel is waiting for you at the gate👉

#nigeriaVsghana #COVID19 #AmericaVsNigeria #lockd...
RT @satishacharya: Online learning during lockdown! @sifydotcom cartoon #RaghuramRajan #AbhijitBanerjee #lockdown https://t.co/L3Bw6f82AV
I FEEL SO EXTRA FOR ONLY Rs. 50 (PHP 30)! 🤔

It is also important to keep our hair clean and conditioned to ensure. https://t.co/eqem85kh0j
RT @KTHopkins: Under #lockdown - illegal immigrants are being pushed into towns and villages throughout the U.K. - with no due process, no...
RT @WRAP_UK: What impact has #lockdown had on the way we manage our food at home? Our latest research shows positive change, with people ta...
RT @BollySpy: #KunalVermaa And #Himanshikurana's Song #OJaanwaale Is Shot In #Lockdown

@realhimanshi @kunalvermaa77 @TSeries @itsbhusa...
RT @6Sthakursahab: Once #lockdown is lifted, running factories, stores or deliveries, is going to be a major problem, once #MigrantLabourer...
RT @toyahofficial: Unicorn Bolero Sunday Lockdown Lunch #toyahwillcox #robertfipp #bolero #unicorn #lockdown https://t.co/QfHPzd2pKn
'ஐயா.. தயவு செய்து மதுக்கடையை திறக்காதீங்கய்யா' .. முதல்வருக்கு ஒரு பெண்ணின் உருக்கமான @கார்டிக்கை https://t.co/4Nre9474V3 #lockdown #tasmac
If #TheNewNormal includes saying "hello" and "thank you" to complete strangers every single time I leave the house. https://t.co/Sl1gtLg1g0
@LarsRuiter Veel geleerd, gestudeerd en intelligent. Nu nog een cursus menselijkheid en dan maar weer op straat en... https://t.co/u441518FJH
#SupremeCourt refuses to entertain a PIL filed by former police chief of Uttar Pradesh #VikramSingh seeking a direc... https://t.co/Dwx4722mJA
RT @ElRaynerista: Not that I don't believe you Nige. But err... all I see is a silent port. Evidence?
And why break #Lockdown? Can't you b...
We Have Begun Our Operations.
https://t.co/xZgYt0Y8Q
#Lockdown #Quarantine #COVID19 #Coronavirus #Car #Tyres. https://t.co/klJhSaZM7
RT @UrbanAsian: .@itsBhushanKumar Presents @GuruOfficial 's Soulful Meditation, #SatnamWaheguru!

https://t.co/Zn6vugt8gc

@officialvee @TS...
RT @satishacharya: Online learning during lockdown! @sifydotcom cartoon #RaghuramRajan #AbhijitBanerjee #lockdown https://t.co/L3Bw6f82AV

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5/5/2020

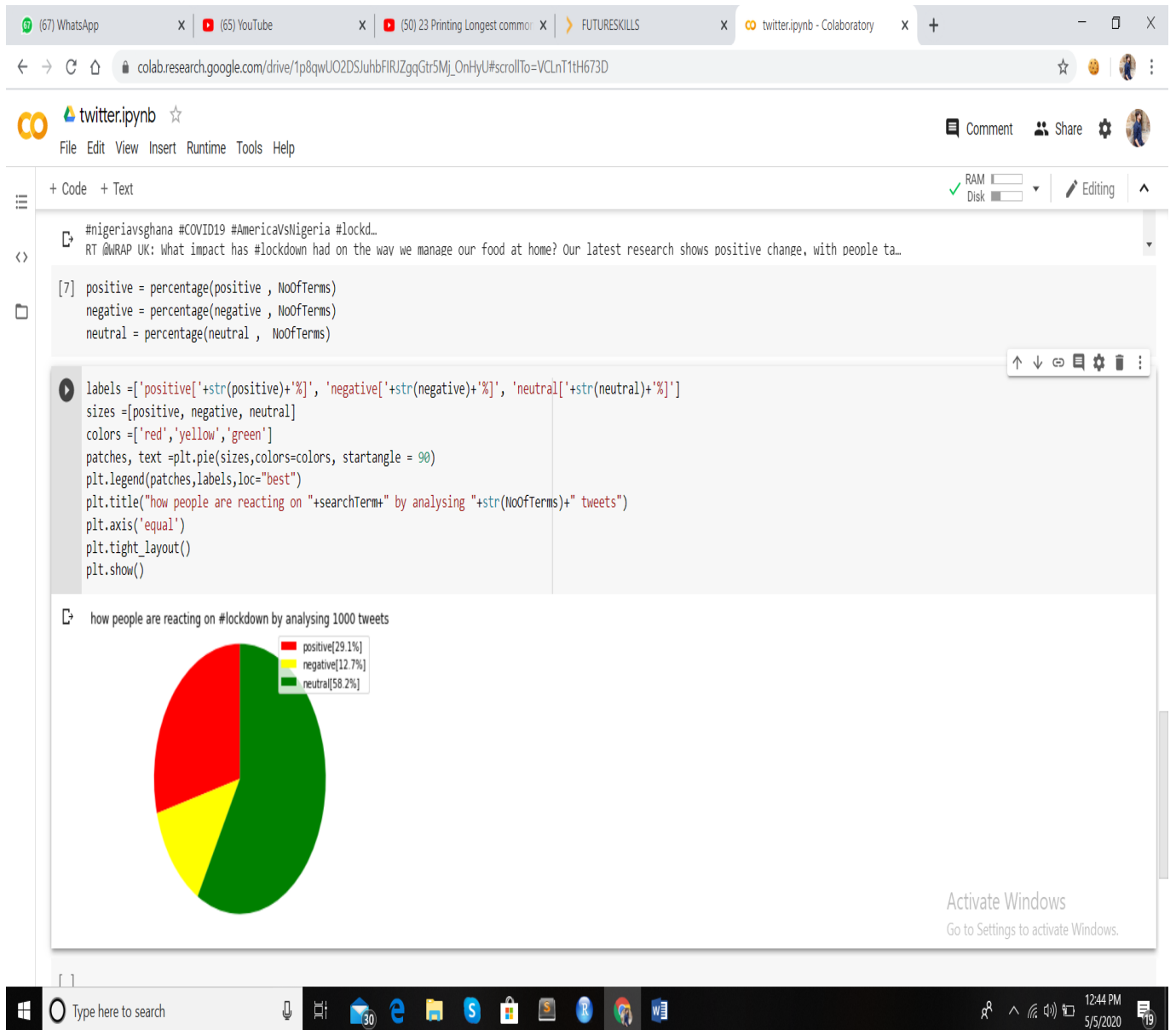


Fig 2: Pie chart

As shown in Fig 2, Pie chart is representing how many peoples are taking lockdown occurred due to coronavirus in positive way, negative way. Results are presented in different colors with percentage values.

CHAPTER 6

CONCLUSION AND FUTURE ENHANCEMENT

Thus, Opinion Mining and 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 Opinion Mining and Sentiment Analysis

Future opinion-mining systems need broader and deeper common and commonsense knowledge bases. This will lead to a better understanding of natural language opinions and will more efficiently bridge the gap between multimodal information and machine processable data. Blending scientific theories of emotion with the practical engineering goals of analyzing sentiments in natural language text will lead to more bio-inspired approaches to the design of intelligent opinion-mining systems capable of handling semantic knowledge, making analogies, learning new affective knowledge, and detecting, perceiving, and “feeling” emotions.

CHAPTER 7

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