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**PROJECT WRITING**

**PROJECT NAME: SENTIMENT ANALYSIS SYSTEM ON A SOCIAL MEDIA**

Course Code: CSE299 Semester: SUMMER 2019

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ABSTRACT   
Sentiment Analysis is the process of analyzing online pieces of writing to determine the emotional tone they carry. Our goal is to create a system that will analyze and predict a writer’s attitude or opinion toward a certain topic through social media. At first, it will search through a social media (example twitter) and fetch texts or tweets about anything or everything. It will then analyze those words, by splitting up a tweet into a several words using the process of Tokenization, and it will then display the sentiment value. We wish to create an option where it searches for a specific input (name or brand) in the tweets and display the overall data with the help of a graph or chart. For example, if the search word is “Trump”, then it will search for all posts containing the word “Trump” and will then display the results and conclude the polarity and overall opinions about that person. The reason we decided to use twitter website is that it has a developer account which provides an application programming interface (API) through which we can access our system with the twitter account, which will makes it easier to accomplish data mining effectively.

INTRODUCTION AND MOTIVATION

Firstly, we are very interested in Machine Learning, Artificial Intelligence and Natural Language Processing and one of the core key concepts of this is Sentiment Analysis. Our motivation is   
to develop an AI, hence we are doing Sentiment Analysis System as Project, so that one day we can develop our very own AI with which we can interact and share our opinions. Secondly, we also want to work on something related to data mining and data science which is popular and unique. Thus, we decided Sentiment Analysis System as it is a very important step for us to chase our dream as well as it is a vital part for many companies in the modern day.

BACKGROUND AND SIGNIFICANCE

The applications that use this Sentiment Analysis tool ranges from ecommerce, marketing, crime detection, to politics and any other research. Firstly, it is used in Ecommerce and marketing where it analyzes web and social media mentions about a product, a service, a marketing campaign or a brand. This is how companies can discover consumer attitudes towards them, their products, services, or marketing campaigns on discussion forums, review sites, Twitter, Instagram, Facebook and other publicly available sources. Many companies also use this system to collect and analyze customer feedback. Some time ago, UBER used social media monitoring and sentiment analysis tool to discover if users like the new version of their app. Sentiment analysis is also used in politics. In 2012, the Obama administration used sentiment analysis tools to analyze the reception of policy announcement during 2012 presidential election. During the last presidential election in the US, some organizations analyzed, for example, how many negative mentions about particular candidates appeared in the media and news reports. However, there are some challenges and difficulties to expect while analyzing tweets or any posts. Sometimes there may be words that are contradictory for example “The weather is bad, but the

hike is good”, as this sentence contains both a positive and a negative reaction. Sometimes it is hard to conclude whether a word is actually a word or a name of a brand or movie. For example “Python”. It is very difficult to assume whether it is a snake or a language.

HIGH LEVEL CLASS DIAGRAM :

**APPLICATION PROGRAMMING INTERFACE**

**Module: tweepy**

**Process Outputs**

**STORAGE**

**(HDD / SSD)**

**USER INFERFACE**

**User Input/**

**Interaction**

**• View Tweets**

**• Apply Sentiment**

**Analysis & View Results**

**• Graphical Represntation**

**Extensions: .txt files**

**View Tweets**

**Graphical Representation**

**Apply Sentiment Analysis**

**POLARITY VALUE**

**Time Complexity = O(n)**

**All Polarity Values**

**Stored in System**

**Cache**

**Module: matplotlib**

**PIE CHART**

**Sentiment %**

**= Number of Sentiments / Total Polarity Values (all tweets)**

**Count**

**Strongly Positive**

**Strongly Negative**

**Negative**

**Weakly Negative**

**Neutral**

**Positive**

**Weakly Positive**

**Result**

**Strongly Negative**

**if !EOL :**

**Polarity += Sentiment\_Value**

**Weakly Positive**

**Strongly Positive**

**Neutral**

**Negative**

**Weakly Negative**

**Positive**

**POLARITY CALCULATION**

**SET VALUE**

**LEXICON WORD**

**Sentence is split into a bag of words.**

**TOKENIZATION**

**Each bag of words is tokenized.**

**Module : textblob**

**SENTIMENT**

**• Tweets Posted**

**Site: twitter.com**

**SOCIAL MEDIA**

SCHEMATIC DIAGRAM :

**USER RESULT UI**

**(Front End)**

**USER MENU UI**

**(Front End)**

**POLARITY PERCENTAGE**

**CALCULATION**

**GRAPHICAL VIEW**

**SENTIMENT ANALYSIS ON A SOCIAL ACCOUNT**

**POLARITY TYPE**

**SENTIMENT ANALYSIS**

**POLARITY IS :**

**Positive, Weakly Positive, Strongly Positive, Neutral, Negative, Weakly Negative, Strongly Negative**

**View Tweets**

**PHYSICAL STORAGE**

**SOCIAL MEDIA**

**All Tweets/Posts**

**(Back End)**

**tweepy**

**CSV writer and reader**

**textblob**

**matplotlib**

BLOCK DIAGRAM :

Twitter Server

System Software

Operating System

Solid State Drive/

Hard Disk Drive

User Interface

API

Tweets

System Memory

Neutral

Lexicon Analysis

Strongly Positive

Positive

Graphical Interface

Tokenization

Weakly Positive

Negative

Strongly Negative

Weakly Negative

Sentiment Calculation

Attitude , Opinion &

Polarity Calculation

BRIEF IMPLEMENTATION APPROACH

The purpose of “View Tweets” is to gather all relevant tweets from a specified twitter account. After accessing the twitter account, the tweets are fetched through a module called tweepy and is then stored using CSV file writer into the storage. Then it is accessed by the system through CSV file reader and then showing them through the User Interface.

Sentiment Analysis Calculation is done by splitting a whole sentence into a bag of words and performing tokenization of each words until the end of a sentence. This process is done through textblob module. Then the total polarity value of a single sentence is calculated and polarity type is then decided (Positive, Strongly Positive, Weakly Positive, Neutral, Negative, Strongly Negative, Weakly Negative). This whole process is then repeated for each of the tweets and will terminate until the end of all tweets.

Percentage of each sentiment type is calculated by using mathematics, and the overall polarities of all the tweets is then shown inside a pie-chart, which represents all the resulted sentiment of the tweets. Graphing is done by using matplotlib module. From the graph we can conclude what is that person overall opinions on twitter.

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