

*A PROJECT REPORT ON*

# **POLITICAL SENTIMENT ANALYSIS**

*Submitted to*

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, KAKINADA**

*For Partial Fulfillment of Award of the Degree of*

## **BACHELOR OF TECHNOLOGY**

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**APRIL 2019**

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**CERTIFICATE**

This is to certify that this project report entitled “**POLITICAL SENTIMENT ANALYSIS**” is the bonafide work of **Ms. D. Sai Maneesha (15X41A0517), Mr. M. Krishna Chaitanya (15X41A0534), Mr. Ch. Bhargav Sai (15X41A0510) and Ms. Ch. Naga Lakshmi (15X41A0508)** in partial fulfillment of the requirements for the award of the graduate degree in BACHELOR OF TECHNOLOGY during the academic year 2015-2019. This Work has carried out under our supervision and guidance.

*Signature of the Guide*

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**Signature of the External Examiner**

**ACKNOWLEDGEMENT**

Firstly we would like to convey our heartfelt thanks to Almighty for the blessings on us to carry out this project work without any disruption.

We are very much grateful to **Mrs. A. RADHIKA**, our project guide working as Sr.Asst Professor in C.S.E Department, for her valuable guidance which helped us to bring out this project successfully. Her wise approach made us to learn the minute details of the subject. We are also thank her for the at most independence and freedom of thought given to us during various phases of the project. Her matured and patient guidance paved away for completing our project with the sense of satisfaction and pleasure.

We are thankful to our project coordinator **Mrs. A. RADHIKA** for her valuable guidance which helped us to bring this project successfully.

We are thankful to **Dr. Haritha**, Professor and **Head of Department, CSE** for her valuable guidance which helped us to bring this project successfully.

We are thankful to our Principal Dr. **Mr. M. Ekambaram Naidu** for providing the resources required which helped us to bring this project successfully.

Finally we would like to convey our heartfelt thanks to our Technical Staff, for their guidance and support in every step of this project. We convey our sincere thanks to all the faculty and friends who directly or indirectly helped us for the successful completion of this project.

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**DECLARATION**

We hereby declare that the project report entitled “**POLITICAL SENTIMENT ANALYSIS**” is an original work done in the Department of Computer Science & Engineering, SRK Institute of Technology, Enikepadu, Vijayawada, during the academic year 2018-2019, in partial fulfillment for the award of the Degree of Bachelor of Technology in Computer Science & Engineering. we assure that this project is not submitted in any other College or University.

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**ABSTRACT**

The proliferation of social media in the recent past has provided end users a powerful platform to voice their opinions. One such application is in the field of politics, where political entities need to understand public opinion and thus determine their campaigning strategy. The popularity of a person can be predicted in Politics also which will help the party to understand the sentiment and opinion of public about their party member which can help them in winning an election. Sentiment analysis on social media data has been seen by many as an effective tool to monitor user preferences and inclination.

Every day, billions of people communicate on the online social network. Facebook, with more than a billion of users, is currently the largest and most popular OSN in the world. Twitter, with more than 200 million users. Usage of twitter is growing rapidly for sharing private and/or intimate information by various applications that assist users to get in close contact with others.

We intend to explore an analysis to these issues by using trusted system machine learning algorithms using python to find out the polls about various political parties, politicians by considering various social media posts on them in twitter.

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# INTRODUCTION



## 1. INTRODUCTION

Online Social Networks (OSN), such as Facebook and Twitter, facilitate easy information sharing among people. A user not only can share his/her updates, in forms of text, picture and video, with his/her direct friends but also can quickly disseminate those updates to much larger audience of indirect friends, leveraging on the rich connectivity and global reach of popular OSNs. Now many OSNs are providing a user with a platform to share his/her opinion on a particular issue publicly, e.g., like or dislike. One such application is in the field of politics, where political entities need to understand public opinion and thus determine their campaigning strategy. The popularity of a person can be predicted in Politics also which will help the party to understand the sentiment and opinion of public about their party member which can help them in winning an election. Sentiment analysis on social media data has been seen by many as an effective tool to monitor user preferences and inclination.

# LITERATURE REVIEW

## 2. Literature Review

Fedrico Neri [1] describes a sentiment analysis study performed on about 1000 Face book posts about new casts and comparing the sentiments of Rai.in which two techniques of Sentiment Analysis can be used:

- 1) Supervised Machine Learning- It requires a training set of texts with manually assigned polarity values for the learn features (words) that correlates with the value.
- 2) Unsupervised Machine Learning- That uses a lexicon with words scored for polarity values such as neutral, positive or negative. To extract opinions and their sentiments the following logical components are there:
  - Crawler-Gathers document from internet
  - Semantic engine –identifies relevant knowledge in the texts
  - Search engine- enables natural language, semantic and semantic role queries.
  - Machine translation engine- enables automatic translation of search results.
  - Geo-referential engine- enables an interactive geographical representation of documents.
  - Classification engine-classifies search results into clusters and sub-clusters, highlighting meaningful information.

Yasufumi Takama[2] in their paper proposed method by which a user profile is generated by using user's TV watching behavior using sentiment analysis. The method generates positive and negative profile with bookmarkformat for each user based on iPEG and estimated rating of watching TV programme. If user watches program for long time that means he/she is interested and if changes channel frequently that means he/she is not interested. Daniel E.O' Leary in his paper focused on blog mining-reviews. He termed blog as type of media that allows user to present a range of information including opinions and personal views. Organizations are looking upon blogs as an important source of information and knowledge. Blogs may contain redundant and co related information about any topic financial, political, entertainment and news. It represents a single individual or a group. Blog mining is a process of searching and analyzing blogs in order to generate additional insights that might otherwise not be found by examining a single blog, Capturing information from blogs is very useful to various marketing researches about the sentiments of buyers and potential buyers of their

products. Sometimes sample of blogs are selected when the organization is concerned with opinions of a particular group or community. Random sample of blogs are selected when we require a broad base of opinions. Particular type of all available blogs is selected when we require an opinion according to a particular context. Blogs can be selected on the bases of time or a particular topic. Resources of a blog can be Internal if generated by employees of the organization or can be External if taken from outside sources i.e. customers. Opinions and sentiments can be determined with the help of frequency of appearance of words. To analyze the frequency of appearance of words we look for particular words or phrases used. Almost 50% of the blogs are Splogs i.e. Spam Blogs and are designed to induce readers to click advertisement and to get search engine to capture number of links. Polarity of the blogs can be examined by the tags placed on the blogs. The unit of reference may be word level, sentence level, or paragraph level and with the help of mood declaration we may classify the blogs as positive, negative or neutral. Blogs provide a platform for bloggers to express their opinions on a range of issues.

Narmada God bole [3] proposed the large scale sentiment analyses for news and blogs. The frequency of adjectives is tracked with positive and negative polarity using Word Net. Sentiment hop counts to determine the strength of the candidate terms and eliminate ambiguous terms. Adjectives separated by “And” have same polarity but those separated by “But” have opposite polarity. Machine learning techniques perform better than simple counting methods and are more accurate. Fetch certain access keys and tokens for the extraction and filtering of the tweets as required by the user and putting it in a database for further mapping of these tweets for sentiment analysis of the same. The access keys are generated and the tweets are extracted and put in the database. The approach to extract the tweets from the twitter database according to the user’s need is a generic one as the user has the control over how many and which tweets are required by the user and he/she can work according to the desired level of complexity. The initial step is to extract tweets from a twitter account which is accomplished by making an account on twitter. From the respective account, a twitter development application is created on the developers end through an application on twitter site which gives the user the access to certain keys. These keys are the used in the code to extract the tweets from the database and save them in a .csv file. The .csv file generated is used as an input for the next modules in the code to generate the required

result from the analysis of the sentiments. With the grant of the keys, now the extraction of the tweets starts. The access tokens are now generated via the keys. With the help of tokenization, the tweets are split to words and every word is referred with a dictionary and its polarity is determined. We are using dictionary i.e. AFFINN-111. We assign a sentiment score to the words ( $S_w$ ) as well as to those words that are not present in AFINN-111 through this simple formula: where,  $N$  is the number of tweets that contain the word  $W$ ,  $S_t$  is the sentiment score of the tweet that contains the word  $W$ . The sentiment of a tweet is determined based on the higher value of  $s_+$  or  $s_-$ . If the values are equal the tweets are considered neutral.

# SYSTEM ANALYSIS

### **3.1 EXISTING SYSTEM**

The media plays a vital role in a democracy; informing the public about political issues and acting as a watchdog against abuses of power. During election campaigns the media provides information and analysis about the political party's programmes, policies, candidates and performance.

### **DRAWBACKS**

Government influence, including overt and covert censorship, such as Sakshi TV is owned by Jagan Mohan Reddy along with NTV and TV5 in Andhra Pradesh supports him, Studio N is owned by Narne Srinivasa Rao, a businessman related to N.Chandrababu Naidu biases the media resulting in biased surveys.

### **3.2 PROPOSED SYSTEM**

The use of social media in politics including Twitter, Face book and YouTube has dramatically changed the way campaigns are run and how people interact with their politicians. Twitter attracts a very peculiar subset of citizens, the role of the web in this regard is significantly stronger than that of the mass media.

### **ADVANTAGES**

On average social media users are younger and better educated than non-users, and they are more liberal and pay more attention to politics. So the analysis will be transparent.



### **3.3 MODULE DESCRIPTION**

As we are going to implement the analysis the following modules are required to get accurate results to the project.

#### **3.3.1 USER MODULE**

- In user module a particular user can select his/her interested name whether it is a political party or a politician name.
- Based on the political party names a user can select the political leader name.
- Then finally after selecting the names the analysis is done and support will be displayed.
- Based on the support the polls will be displayed as positive, negative and neutral.

### **3.4 HARDWARE REQUIREMENTS**

Processor	:	Intel Core I3
RAM	:	4GB (Minimum)
Hard Disk	:	1TB

### **3.5 SOFTWARE REQUIREMENTS**

Operating System	:	Windows7/8/10
Application Server	:	FLASK in Python
Front End	:	HTML, CSS
Back End	:	Machine Learning with Python
Tools	:	Anaconda spyder, Anaconda Prompt, Brackets

### **3.6 Functional requirements**

Functional requirements are the functions or features that must be included in any system to satisfy the business needs and be acceptable to the users. Based on this, the functional requirements that the system must require are as follows:

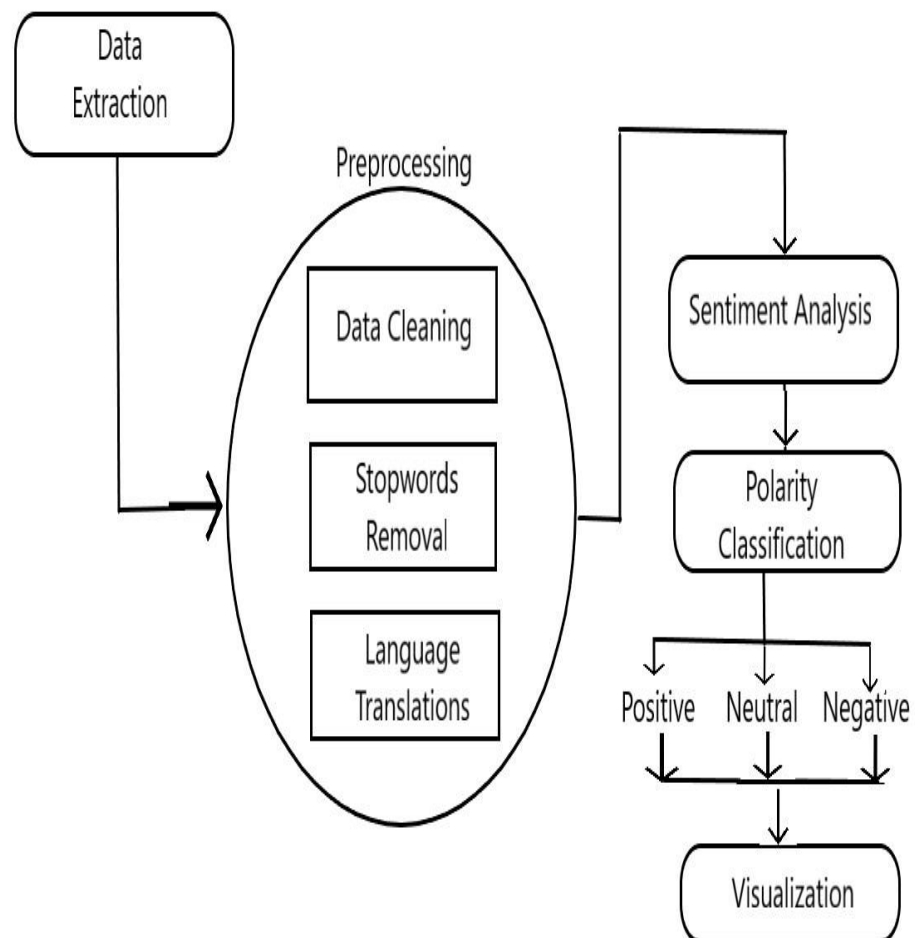
- System should be able to process new tweets stored in database after retrieval.
- System should be able to analyze data and classify each tweet polarity.

### **3.7 Non- Functional Requirements**

The major non-functional requirements of the system are as follows:

- Usability:  
The system is designed with completely automated process. Hence there is no or less user intervention.
- Reliability:  
The system is more reliable because of the qualities that are inherited from the chosen platform python. The code built by using python is more reliable as well as Taking tweets or opinions about political leaders from reputed and reliable social networking site such as twitter, Facebook etc..
- Performance:  
The system is developing in the high level languages and using the advanced front-end and back-end technologies it will give response to the end user with in less time0 0..
- Supportability:  
The system is designed to be the cross platform supportable. The system is supported in wide range of hardware and object oriented software platform.

# SYSTEM DESIGN

**4.1 SYSTEM ARCHITECTURE**

## **4.2 UML DIAGRAMS**

In the field of software engineering, the Unified Modeling Language (UML) is a standardized visual specification language for object modeling. UML is a general-purpose modeling language that includes a graphical notation used to create an abstract model of a system, referred to as a UML model.

### **Importance of UML in Modeling:**

A modeling language is a language whose vocabulary and rules focus on the conceptual and physical representation of a system. A modeling language such as UML is thus a standard language for software blueprints. The UML is not a visual programming language but its models can be directly connected to various programming languages.

This means that it is possible to map from a model in the UML to a programming language Python, Java, C++, or even to tables in relational database are the persistent store of an object oriented database. This mapping permits forward engineering the generation of code from a UML model into a programming language.

The reverse is also possible you can reconstruct a model from an implementation back into UML. This is a programming language that is used for object oriented software development. To organize program code more efficiently programmers often create “objects” that are sets of structured data within programs. UML, which has been standardized by the Object Management Group (OMG), was designed for this purpose . The language has been enough support that it has become a standard language for visualizing and constructing software programs.

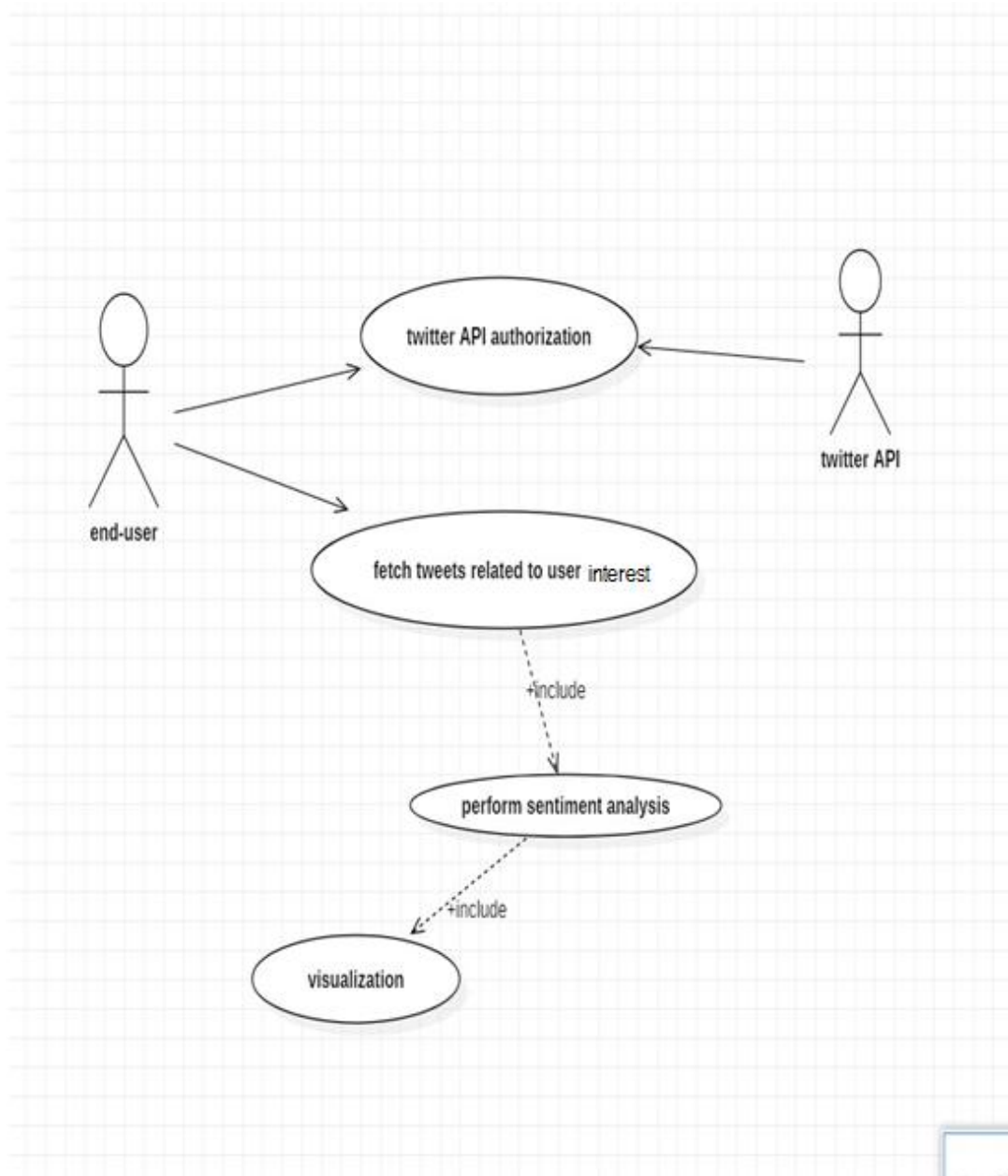
### **CONCEPTUAL MODEL OF UML**

The three major elements of UML are

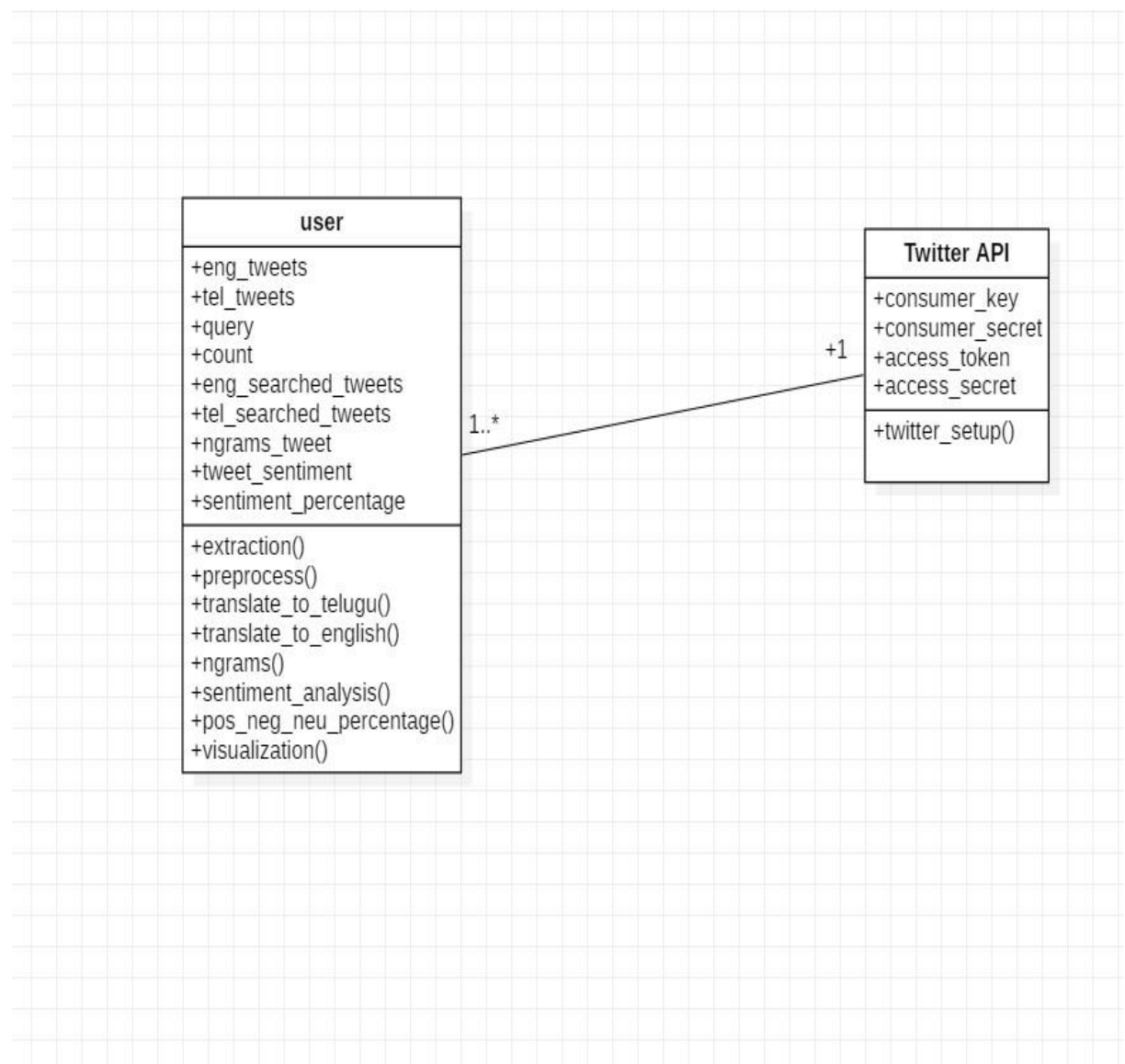
- The UML basic building blocks

- The rules that dictate how those building blocks may be put together
- Some common mechanism that apply throughout the UML.

#### 4.2.1 Use case Diagram

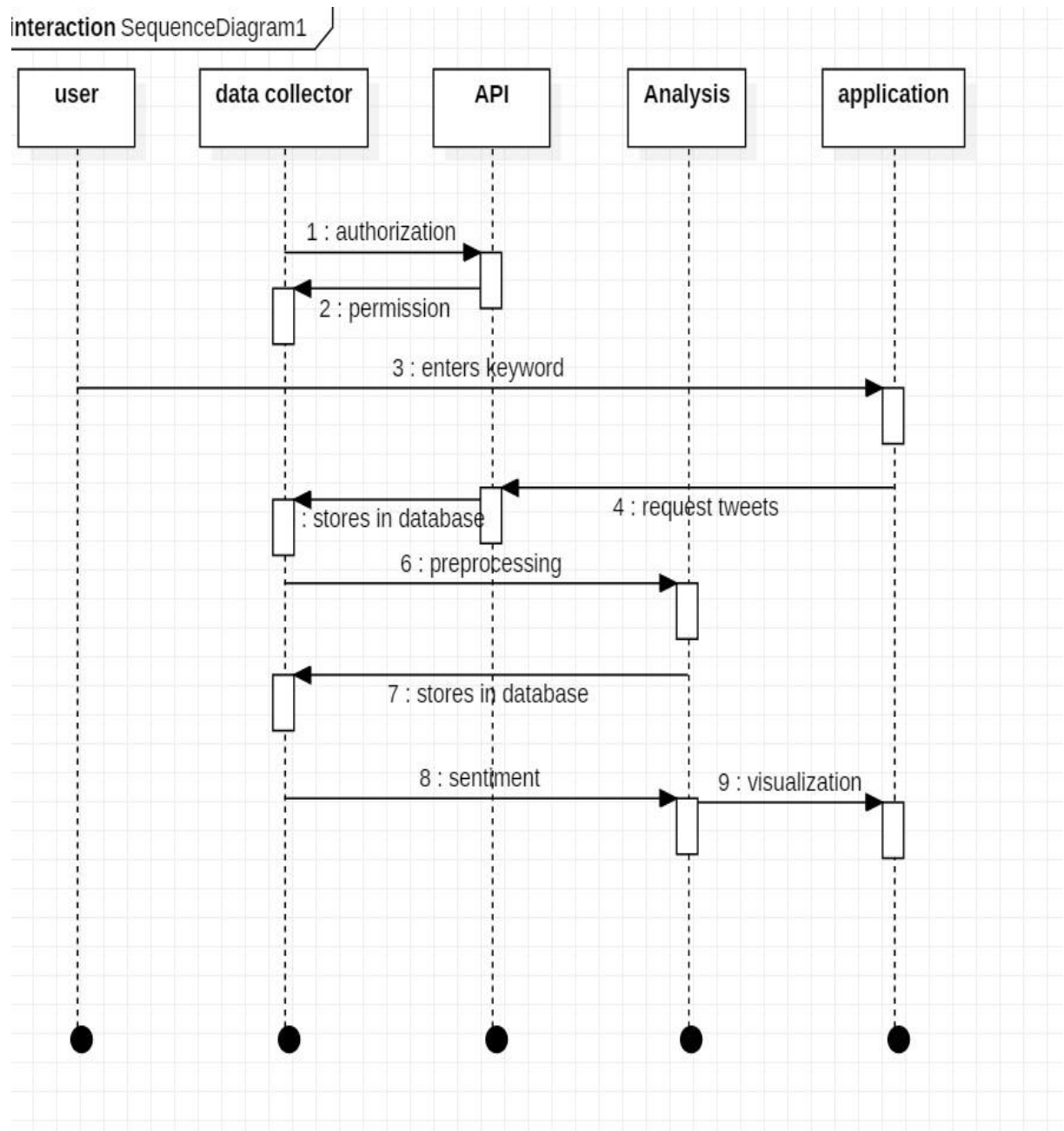


#### 4.2.2 Class Diagram

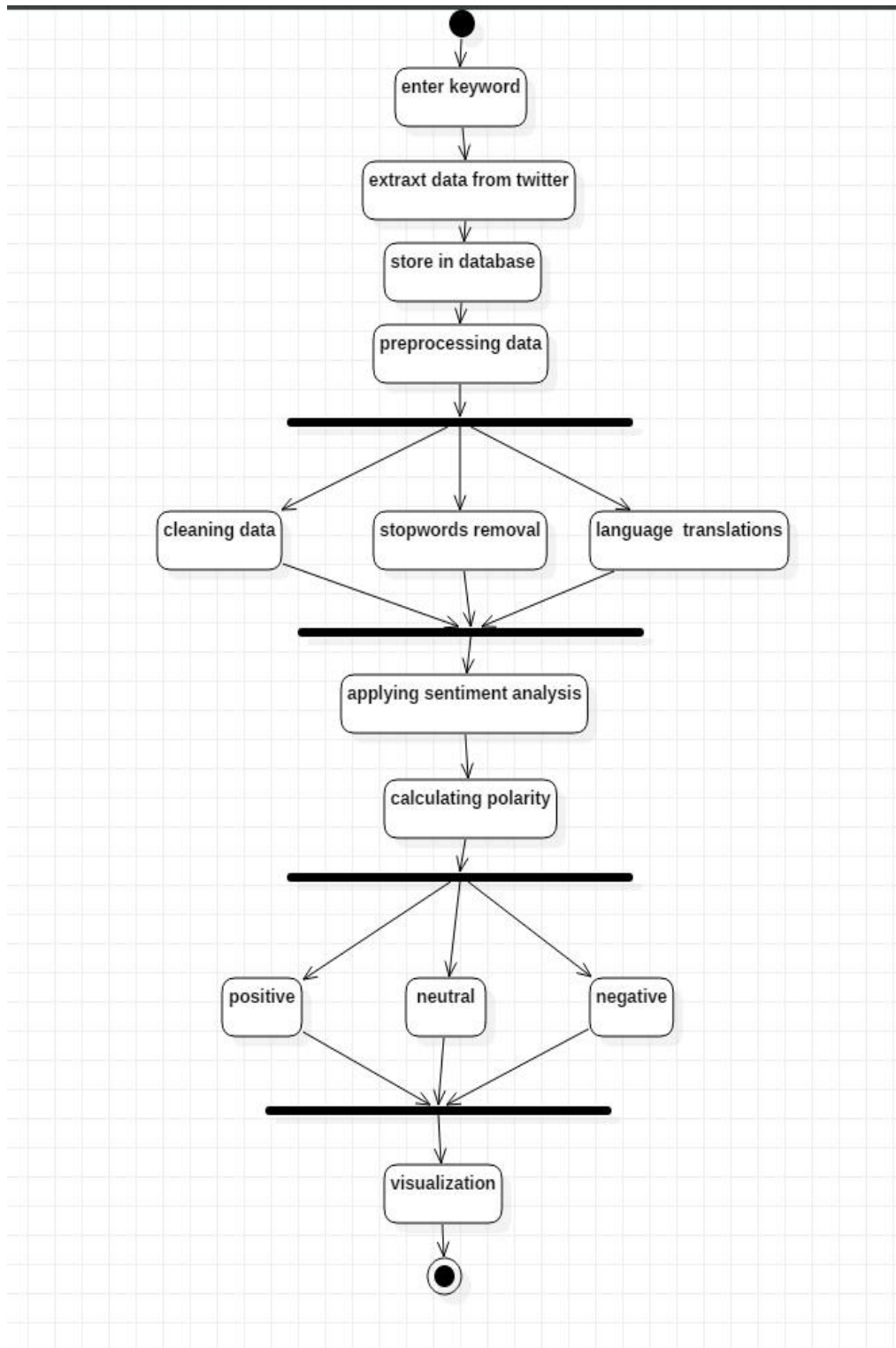




### 4.2.3 Sequence Diagram



## 4.2.4 Activity Diagram



### **4.3 TECHNOLOGY DESCRIPTION**

Machine learning (ML) is the scientific study of algorithms and statistical models that computer systems use to effectively perform a specific task without using explicit instructions, relying on patterns and inference instead. It is seen as a subset of artificial intelligence. Machine learning algorithms build a mathematical model of sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to perform the task. Machine learning algorithms are used in a wide variety of applications, such as email filtering, detection of network intruders, and computer vision, where it is infeasible to develop an algorithm of specific instructions for performing the task. Machine learning is closely related to computational statistics, which focuses on making predictions using computers. The study of mathematical optimization delivers methods, theory and application domains to the field of machine learning. Data mining is a field of study within machine learning, and focuses on exploratory data analysis through unsupervised learning. In its application across business problems, machine learning is also referred to as predictive analytics.

#### **Machine learning tasks**

Machine learning tasks are classified into several broad categories. In supervised learning, the algorithm builds a mathematical model from a set of data that contains both the inputs and the desired outputs. For example, if the task were determining whether an image contained a certain object, the training data for a supervised learning algorithm would include images with and without that object (the input), and each image would have a label (the output) designating whether it contained the object. In special cases, the input may be only partially available, or restricted to special feedback. Semi-supervised learning algorithms develop mathematical models from incomplete training data, where a portion of the sample input doesn't have labels.

Classification algorithms and regression algorithms are types of supervised learning. Classification algorithms are used when the outputs are restricted to a limited set of values.

For a classification algorithm that filters emails, the input would be an incoming email, and the output would be the name of the folder in which to file the email. For an algorithm that identifies spam emails, the output would be the prediction of either "spam" or "not spam", represented by the Boolean values true and false. Regression algorithms are named for their continuous outputs, meaning they may have any value within a range. Examples of a continuous value are the temperature, length, or price of an object.

In unsupervised learning, the algorithm builds a mathematical model from a set of data which contains only inputs and no desired output labels. Unsupervised learning algorithms are used to find structure in the data, like grouping or clustering of data points. Unsupervised learning can discover patterns in the data, and can group the inputs into categories, as in feature learning. Dimensionality reduction is the process of reducing the number of "features", or inputs, in a set of data.

Active learning algorithms access the desired outputs (training labels) for a limited set of inputs based on a budget, and optimize the choice of inputs for which it will acquire training labels. When used interactively, these can be presented to a human user for labelling. Reinforcement learning algorithms are given feedback in the form of positive or negative reinforcement in a dynamic environment, and are used in autonomous vehicles or in learning to play a game against a human opponent. Other specialized algorithms in machine learning include topic modelling, where the computer program is given a set of natural language documents and finds other documents that cover similar topics. Machine learning algorithms can be used to find the unobservable probability density function in density estimation problems. Meta learning algorithms learn their own inductive bias based on previous experience. In developmental robotics, robot learning algorithms generate their own sequences of learning experiences, also known as a curriculum, to cumulatively acquire new skills through self-guided exploration and social interaction with humans. These robots use guidance mechanisms such as active learning, maturation, motor synergies, and imitation.

### **Applications of Machine learning**

Machine learning has a wide range of applications one of them is the sentiment analysis. Opinion mining (sometimes known as sentiment analysis or emotion AI) refers to the use of natural language processing, text analysis, computational linguistics, and biometrics to systematically identify, extract, quantify, and study affective states and subjective

information. Sentiment analysis is widely applied to voice of the customer materials such as reviews and survey responses, online and social media, and healthcare materials for applications that range from marketing to customer service to clinical medicine.

A basic task in sentiment analysis is classifying the polarity of a given text at the document, sentence, or feature/aspect level whether the expressed opinion in a document, a sentence or an entity feature or aspect is positive, negative, or neutral. Advanced, "beyond polarity" sentiment classification looks, for instance, at emotional states such as "angry", "sad", and "happy".

### **Natural language processing (NLP)**

NLP is a subfield of computer science, information engineering, and artificial intelligence concerned with the interactions between computers and human (natural) languages, in particular how to program computers to process and analyse large amounts of natural language data. Challenges in natural language processing frequently involve speech recognition, natural language understanding, and natural language generation.

### **Python**

Python is an interpreter, high-level, general-purpose programming language. Created by Guido van Rossum and first released in 1991, Python has a design philosophy that emphasizes code readability, notably using significant whitespace. It provides constructs that enable clear programming on both small and large scales. Van Rossum led the language community until stepping down as leader in July 2018.

Python features a dynamic type system and automatic memory management. It supports multiple programming paradigms, including object-oriented, imperative, functional and procedural. It also has a comprehensive standard library.

Python interpreters are available for many operating systems. C, Python, the reference implementation of Python, is open source software and has a community-based development model, as do nearly all of Python's other implementations. Python and C, Python are managed by the non-profit Python Software Foundation.

### **Packages**

- 1) **Tweepy:** Tweepy is open-sourced, hosted on GitHub and enables Python to communicate with Twitter platform and use its API.
- 2) **Googletrans :** Googletrans is a free and unlimited Python library that implemented google API
- 3) **Nltk:** The Natural Language Toolkit, or more commonly NLTK, is a suite of libraries and programs for symbolic and statistical natural language processing for English written in the Python programming language.
- 4) **Textblob:** Textblob is a python library and offers a simple API to access its methods and perform basic NLP tasks.
- 5) **Matplotlib:** Matplotlib is a plotting library for the Python programming language and its numerical mathematics extension NumPy.
- 6) **Os:** The OS module in python provides functions for interacting with the operating system.
- 7) **Re:** Regular expressions (called REs, or regexes, or regex patterns) are essentially a tiny, highly specialized programming language embedded inside Python and made available through the re module.
- 8) **Json:** JSON is a syntax for storing and exchanging data. JSON is text, written with JavaScript object notation.
- 9) **Utils:** Python utils is a collection of small Python functions and classes which make common patterns shorter and easier.
- 10) **Wikipedia:** Wikipedia is a Python library that makes it easy to access and parse data from Wikipedia.
- 11) **Flask:** Flask is a lightweight web application framework. It is designed to make getting started quick and easy, with the ability to scale up to complex applications.
- 12) **Werkzeug :**Werkzeug is a comprehensive WSGI web application library.
- 13) **Csv :**The csv module implements classes to read and write tabular data in CSV format.

**Anaconda :** Anaconda is a free and open-source distribution of the Python and R programming languages for scientific computing(data science, machine

learning applications, large-scale data processing, predictive analytics, etc.), that aims to simplify package management and deployment. Package versions are managed by the package management system conda. The Anaconda distribution is used by over 12 million users and includes more than 1400 popular data-science packages suitable for Windows, Linux, and MacOS.

Anaconda distribution comes with more than 1,400 packages as well as the Conda package and virtual environment manager, called Anaconda Navigator, so it eliminates the need to learn to install each library independently.

Anaconda Navigator is a desktop graphical user interface (GUI) included in Anaconda distribution that allows users to launch applications and manage conda packages, environments and channels without using command-line commands. Navigator can search for packages on Anaconda Cloud or in a local Anaconda Repository, install them in an environment, run the packages and update them. It is available for Windows, macOS and Linux.

### **Anaconda Prompt**

Conda is a powerful package manager and environment manager that you use with command line commands at the Anaconda Prompt for Windows, or in a terminal window for macOS or Linux.

### **Anaconda Spyder**

Spyder is the Scientific **Python** Development Environment, is a free integrated development environment (IDE) that is included with Anaconda. It includes editing, interactive testing, debugging and introspection features.

Initially created and developed by Pierre Raybaut in 2009, since 2012 Spyder has been maintained and continuously improved by a team of scientific Python developers and the community.

Spyder is extensible with first- and third-party plugins, includes support for interactive tools for data inspection and embeds Python-specific code quality assurance and introspection instruments, such as Pyflakes, Pylint and Rope. It is available cross-platform through Anaconda, on Windows, on macOS through MacPorts, and on major Linux distributions such as Arch Linux, Debian, Fedora, Gentoo Linux, openSUSE and Ubuntu.

## **Brackets**

Brackets is a source code editor with a primary focus on web development. Created by Adobe Systems, it is free and open-source software licensed under the MIT License, and is currently maintained on GitHub by Adobe and other open-sourced developers. It is written in JavaScript, HTML and CSS. Bracket is cross-platform, available for macOS, Windows, and most Linux distributions. The main purpose of brackets is its live HTML, CSS and JavaScript editing functionality.

Brackets has a major focus on development in JavaScript, CSS and HTML. With release of version 1.0 Adobe announced a feature that extracts design information from a PSD file for convenience of coding in CSS. As of June 28, 2016, the feature is officially discontinued, due to "low usage". However, Extract is still available via Photoshop and Dreamweaver, both of which are part of their paid service, Adobe Creative Cloud.<sup>[9]</sup> The latest version release of Brackets is 1.13.

## **HTML**

Hypertext Markup Language (HTML) is the standard markup language for creating web pages and web applications. With Cascading Style Sheets (CSS) and JavaScript, it forms a triad of cornerstone technologies for the World Wide Web.

Web browsers receive HTML documents from a web server or from local storage and render the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document.

HTML elements are the building blocks of HTML pages. With HTML constructs, images and other objects such as interactive forms may be embedded into the rendered page. HTML provides a means to create structured documents by denoting structural semantics for text such as headings, paragraphs, lists, links, quotes and other items. HTML elements are delineated by tags, written using angle brackets. Tags such as `<img/>` and `<input/>` directly introduce content into the page. Other tags such as `<p/>` surround and provide information about document text and may include other tags as



sub-elements. Browsers do not display the HTML tags, but use them to interpret the content of the page.

# **CODING AND IMPLEMENTATION**

## 5. Coding and Implementation

### Installations Steps

#### ANACONDA INSTALLATION STEPS

##### Installing on Windows

1. Download the Anaconda installer.
2. Double click the installer to launch.
3. Click Next.
4. Read the licensing terms and click “I Agree”.
5. Select an install for “Just Me” unless you’re installing for all users (which require Windows Administrator privileges) and click Next.
6. Select a destination folder to install Anaconda and click the Next button.
7. Choose whether to add Anaconda to your PATH environment variable.  
We recommend not adding Anaconda to the PATH environment variable, since this can interfere with other software. Instead, use Anaconda software by opening Anaconda Navigator or the Anaconda Prompt from the Start Menu.
8. Choose whether to register Anaconda as your default Python. Unless you plan on installing and running multiple versions of Anaconda, or multiple versions of Python, accept the default and leave this box checked.
9. Click the Install button. If you want to watch the packages Anaconda is installing, click Show Details.
10. Click the Next button.
11. After a successful installation you will see the “Thanks for installing Anaconda”.
12. After your install is complete, verify it by opening Anaconda Navigator, a program that is included with Anaconda: from your Windows Start menu, select the shortcut Anaconda Navigator. If Navigator opens, you have

successfully installed Anaconda. If not, check that you completed each step above then see our Help page.

13. After opening anaconda navigator click on spyder to install.

### INSTALLING PACKAGES

You can now install either packages from pip or packages from anaconda. They will all be installed on just this version of python alone.

1. Open anaconda prompt from anaconda navigator
2. Give the command

`conda install [package_name]`

OR

`pip install [package_name]`

### Using Political Sentiment Analysis

1. Open the political sentiment analysis.
2. Initially a home page will be opened.
3. Click on the search button on the top right.
4. Page will be navigated to search page.
5. Select political party name and then select the politician name from the given dropdowns
6. Click on search.
7. The image along with Wikipedia information the support will be displayed in the form of pie-charts.

**Run.py**

Aim: The main of this code is to import and use the other python files such as extraction.py, preprocess.py, sentiment.py, visualization.py and we connect the python code to Flask Server and twitter API authorization is done.

```

from core.preprocessing.tweet_preprocessing import(
    preprocess,
    translate_to_telugu,
    translate_to_english,
    telugu_tweet_to_english)
from core.extraction.tweet_extraction import(
    twitter_setup,
    readTweetFromCSV)
from utils.image_downloader import download_image
from utils.text_extraction_wiki import get_wiki_text
from core.analisys.sentiment import(
    sentiment_analysis,
    pos_neg_neu_percent,
    ngrams)
from core.visualization.visualization import(
    visualization)
from flask import (
    Flask,
    request,
    render_template,
    send_from_directory,
    url_for,
    jsonify)

from werkzeug import secure_filename

```

```

import os
import tweepy      # To consume Twitter's API
import csv         # to perform operations on csv file
basedir = os.path.abspath(os.path.dirname(__file__))
app = Flask(__name__, static_url_path='/static')
from logging import Formatter, FileHandler
handler = FileHandler(os.path.join(basedir, 'log.txt'), encoding='utf8')
handler.setFormatter(Formatter("[% (asctime)s] %(levelname)-8s %(message)s",
"%Y%m-%d %H:%M:%S"))

consumer_key = "c5ngE9QAnLMuG9bpf3POOZOUs"
consumer_secret="PINocRoGHOVI3Y9musv4scQ2ZoWgDnVAF4evEH0dz7KEQO
NTRK"
access_token = "597013287-
7qzBXwJ4UVzw1GXxcNG0k7eOgQmqGSvzYz6wijvb"
access_secret = "aKaPHpMsslI5n1xClnHfdPZY1s50uuXQ6MYaNenN9k5kw"

auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_token, access_secret)

count=100

app.logger.addHandler(handler)

app.config['ALLOWED_EXTENSIONS'] = set(['txt', 'pdf', 'png', 'jpg', 'jpeg', 'gif',
'csv'])

def allowed_file(filename):
    return '.' in filename and \
        filename.rsplit('.', 1)[1] in app.config['ALLOWED_EXTENSIONS']

@app.context_processor

```

```

def override_url_for():
    return dict(url_for=dated_url_for)

def dated_url_for(endpoint, **values):
    if endpoint == 'js_static':
        filename = values.get('filename', None)
        if filename:
            file_path = os.path.join(app.root_path, 'static/js',
filename)
            values['q'] = int(os.stat(file_path).st_mtime)
        elif endpoint == 'css_static':
            filename = values.get('filename', None)
            if filename:
                file_path = os.path.join(app.root_path, 'static/css', filename)
                values['q'] = int(os.stat(file_path).st_mtime)
            return url_for(endpoint, **values)

@app.route('/css/<path:filename>')
def css_static(filename):
    return send_from_directory(app.root_path + '/static/css/', filename)

@app.route('/js/<path:filename>')
def js_static(filename):
    return send_from_directory(app.root_path + '/static/js/', filename)

@app.route('/')
def index():
    return render_template('home.html')

@app.route('/search')

```

```

def search():
    return render_template('search.html')

@app.route('/searchajax', methods=['POST'])
def search_keyword():
    if request.method == 'POST':
        query = request.form.get('politician_names')
        print("\nDownloading Image for :",query)
        image_path = download_image(query)
        path = image_path[query][0]
        display_image = path.split('static')[1].replace('\\','/')
        print("\nSuccessfully Downloaded Image",display_image)
        print("-----")
    )
    print("Getting text from wikipedia",query)
    wiki_text = get_wiki_text(query)
    print("Successfully Extracted Text for:", query)
    return jsonify(query=query,display_image=display_image,
        wiki_text=wiki_text)

@app.route('/uploadajax', methods=['POST'])
def upldfile():
    query = request.form.get('politician_names')
    try:
        print("\nDownloading Image for :",query)
        image_path = download_image(query)
        path = image_path[query][0]
        display_image = path.split('static')[1].replace('\\','/')
        print("\nSuccessfully Downloaded Image",display_image)
        print("-----")
    )
    print("Getting text from wikipedia",query)

```



```

wiki_text = get_wiki_text(query)
print("Successfully Extracted Text for:", query)
auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
auth.set_access_token(access_token, access_secret)

eng_tweets=r"data\eng_tweets.csv"
count=5

#-----
# created twitter api:
extractor =
twitter_setup(consumer_key,consumer_secret,access_token,access_secret)
eng_searched_tweets = [status.text for status in
tweepy.Cursor(extractor.search, q=query,lang='en').items(count)]
tel_searched_tweets = [status.text for status in
tweepy.Cursor(extractor.search, q=query,lang='te').items(count)]

#-----
#write extracted tweets into csv files
with open(eng_tweets, "w", encoding='utf-8') as output:
    writer = csv.writer(output, lineterminator='\n')
    for val in eng_searched_tweets:
        writer.writerow([val])
with open(tel_tweets, "w", encoding='utf-8') as output:
    writer = csv.writer(output, lineterminator='\n')
    for val in tel_searched_tweets:
        writer.writerow([val])

#-----
#read tweets from csv file
english_tweets=readTweetFromCSV(eng_tweets)

```

```

telugu_tweets=readTweetFromCSV(tel_tweets)

#-----
#preprocessing of english tweets
print("\nPreprocessing of english tweets started:\n Removing Special
Charecters...")
eng_tweets_with_alphanum = preprocess(english_tweets)
print("\n Removed Special Charecters Successfully")
print("-----")
")

print("\nTranslating English Tweets to Telugu...")
eng_to_tel_tweet = translate_to_telugu(eng_tweets_with_alphanum)
print("\nSuccessfully Translated English to Telugu")
print("-----")
")

print("\nSemantically Translating Telugu Tweet to English...")
translated_english_tweets=translate_to_english(eng_to_tel_tweet)
print("\nSuccessfully Translated Telugu to English")
print("-----")
")

tel_translated_tweets=telugu_tweet_to_english(tel_searched_tweets)
print("\nPreprocessing of english tweets Done Successfully")
print("-----")
-)

#-----
#preprocessing of telugu tweets
print("preprocessing of telugu tweets...")
tel_tweets_with_alphanum = preprocess(telugu_tweets)

```

```

print("\n Removed Special Charecters Successfully")
print("-----")
")

print("\nSemantically Translating Telugu Tweet to English...")

translated_telugu_tweets=translate_to_english(tel_tweets_with_alphan
um)
print("\nSuccessfully Translated Telugu to English")
print("-----")
")

print("\nPreprocessing of telugu tweets Done Successfully")
print("-----")
")

#merging english tweets & telugu tweets
print("merging english & telugu tweets...")

tweets_for_analyze=translated_english_tweets+translated_telugu_twee
ts
print("merging completed successfully")

#calculating analisys

ngrams_tweets=[]
for tweet in tweets_for_analyze:
    for tweet in translated_english_tweets:
        output=""
        sentence=ngrams(tweet, 8)
        for word in sentence:
            output=output+' '+' '.join(word)

```

```

        ngrams_tweets.append(output)
    print("\nAnalysis started:\n Calculating Polarity...")
    tweet_sentiment=sentiment_analysis(ngrams_tweets)
    print("\n Polarity Successfully calculated")
    print("-----")
    ")

    print("\nCalculating Polarity Percentages---
    >Positive,Neutral,Negative")

    sentiment_percentage=pos_neg_neu_percent(tweet_sentiment,len(engl
    ish_tweets))
    print("\n Polarity Percentages are Successfully Calculated")
    print("Analysis Successfully Completed")
    print("-----")
    ")

    #visualization
    print("\nVisualizing the Sentiment Pi-chart of :",query)
    sentiment_image = visualization(sentiment_percentage)
    print("Sentiment.png is Successfully Saved to static\images Directory :
    ", sentiment_image)
except Exception as ex:
    wiki_text = "No Data Available"
    sentiment_image = " "
    display_image = " "
    print(ex)
    print("Unable to download data.",ex)
return jsonify(query=query, display_image=display_image,
    wiki_text=wiki_text, sentiment_image=sentiment_image)

if __name__ == '__main__':

```

```
app.run(debug = True, use_reloader=True)
```

#### **Execution steps:**

- 1) Open anaconda prompt.
- 2) Set the path of run.py in anaconda prompt.
- 3) Use commands:  

```
Python run.py
```
- 4) After this an IP address is displayed.
- 5) Give this IP address in the browser then the application will be started.

#### **Extraction.py**

Aim: The main aim is to extract the tweets related to given keyword using twitter API.

```
import tweepy
import pandas as pd

# API's setup:
def twitter_setup(consumer_key,consumer_secret,access_token,access_secret):
    # Authentication and access using keys:
    auth = tweepy.OAuthHandler(consumer_key, consumer_secret)
    auth.set_access_token(access_token, access_secret)

    # Return API with authentication:
    api = tweepy.API(auth)
    return api

def readTweetFromCSV(eng_tweets):
    tweets=pd.read_csv(eng_tweets,lineterminator='\n',header=None)
    return tweets[0].tolist()
```

#### **Preprocess.py**

Aim: The main aim is to preprocess the extracted tweets such as stop words removal, special character's removal and language translations.

```

import re
from googletrans import Translator

#function to remove special charecters
def preprocess(tweets):
    tweets_preprocess=[]
    for tweet in tweets:
        #for k in tweet.split("\n"):
            tweets_preprocess.append((re.sub(r'\W+', ' ', tweet)))
            #print("Removing Special Charecters for Tweet #: ",count)
            #count=count+1
    eturn tweets_preprocess
#tweets_alphanum=preprocess(tweets)

#call translate after preprocess
def translate_to_telugu(tweets):
    count=1
    translated_text=[]
    for tweet in tweets:
        trans=Translator()
        translated_text.append((trans.translate(tweet, dest='te')).text)
        print("Translating English Tweets to Telugu for Tweet #: ",count)
        count=count+1
    return translated_text
#eng_tel=tw_translate(tweets_alphanum)

def translate_to_english(tweets):
    count=1
    trans_tweet=[]

```

```

    for tweet in tweets:
        trans=Translator()
        trans_tweet.append(trans.translate(tweet).text)
        print("Semantically Translating Telugu Tweet to English for Tweet #:
        ",count)
        count=count+1

    return trans_tweet
#translated_tweets=translate(eng_tel)

#original telugu tweets translation to english
def telugu_tweet_to_english(tweets):
    tel_trans_tweet=[]
    count=1
    for tweet in tweets:
        trans=Translator()
        tel_trans_tweet.append(trans.translate(tweet).text)
        print("translate tel to eng tweet no ",count)
        count=count+1

    return tel_trans_tweet
#tel_translated_tweets=lang_translate(eng_tel)

```

### **Analysis.py**

Aim: The main aim is to apply ngrams to the preprocessed data and calculate polarity and giving polarity value to every tweet as 1(positive), 0(neutral), -1 (negative).

```

from textblob import TextBlob

def ngrams(input, n):
    input = input.split(' ')
    output = []
    for i in range(len(input)-n+1):
        output.append(input[i:i+n])

```

```
return output
```

```
#function for sentiment
```

```
def sentiment_analysis(tweets):
```

```
    tweet_sentiment=[]
```

```
    count=1
```

```
    for tweet in tweets:
```

```
        if(TextBlob(tweet).sentiment.polarity>0):
```

```
            sentiment="positive"
```

```
        elif(TextBlob(tweet).sentiment.polarity<0):
```

```
            sentiment="negative"
```

```
        else:
```

```
            sentiment="neutral"
```

```
    # temp['text'] =tweet
```

```
    #temp['sentiment']=sentiment
```

```
    tweet_sentiment.append({"text":tweet,"sentiment":sentiment})
```

```
    print("sentiment calculated to tweet no ",count)
```

```
    count=count+1
```

```
    return tweet_sentiment
```

```
#function for sentiment splitting
```

```
def pos_neg_neu_percent(tweet_sentiment,length):
```

```
    tweet_percent=[]
```

```
    ptweets = [tweet for tweet in tweet_sentiment if tweet['sentiment'] ==  
                'positive']
```

```
    ptweetsPercentage = 100*len(ptweets)/length
```

```
    ntweets = [tweet for tweet in tweet_sentiment if tweet['sentiment'] ==  
                'negative']
```

```
    ntweetsPercentage = 100*len(ntweets)/length
```

```
    neutweetsPercentage = (100-ptweetsPercentage-ntweetsPercentage)
```

```
    tweet_percent = { "positive":ptweetsPercentage,
```



```

        "negative":ntweetsPercentage,
        "neutral":neutweetsPercentage
    }
    return tweet_percent

```

### Visualization.py

Aim: The main aim is to visualize the obtained sentiment in the form of pie-chart.

```

import matplotlib.pyplot as plt
import os
import time
#visualization
def visualization(tweet_percentage):
    labels = list(tweet_percentage.keys())
    sizes = list(tweet_percentage.values())
    explode = (0.1, 0, 0) # only "explode" the 2nd slice (i.e. 'Positive
    Tweets')
    fig1, ax1 = plt.subplots()
    ax1.pie(sizes, explode=explode, labels=labels, autopct='%1.1f%%',
    shadow=True, startangle=90)
    ax1.axis('equal') # Equal aspect ratio ensures that pie is drawn as a
    circle.
    t = time.localtime()
    timestamp = time.strftime('%b-%d-%Y_%H%M', t)
    sentiment_image = ("sentiment_" + timestamp + ".png")
    #plt.savefig(r'static\images\sentiment.png')
    plt.savefig(os.path.join('static\img\' + sentiment_image))
    return sentiment_image

```

**image\_downloader.py**

```
from google_images_download import google_images_download #importing the library

def download_image(text):
    response = google_images_download.googleimagesdownload() #class instantiation
    arguments =
    {"keywords":text,"limit":1,"print_urls":True,"output_directory":'static\google_images
    '} #creating list of arguments
    paths = response.download(arguments) #passing the arguments to the function
    return paths #printing absolute paths of the downloaded images
```

**text\_extractore\_wiki**

```
import wikipedia
def get_wiki_text(text):
    wikipedia.set_lang("en")
    wiki_text = wikipedia.summary(text, sentences=9)
    return wiki_text
```

## Front End

### Home.HTML

```
<!DOCTYPE html>

<html lang="en">

<head>
<meta charset="utf-8">
<title>Political Sentiment Analysis</title>
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="description" content="">
<meta name="author" content="">
<!-- styles -->
<link href="https://fonts.googleapis.com/css?family=Open+Sans:400italic,400,600,700"
rel="stylesheet">
<link href="static/css/bootstrap.css" rel="stylesheet">
<link href="static/css/bootstrap-responsive.css" rel="stylesheet">
<link href="static/css/docs.css" rel="stylesheet">
<link href="static/css/prettyPhoto.css" rel="stylesheet">
<link href="static/js/google-code-prettify/prettify.css" rel="stylesheet">
<link href="static/css/flexslider.css" rel="stylesheet">
<link href="static/css/sequence.css" rel="stylesheet">
<link href="static/css/style.css" rel="stylesheet">
<link href="static/color/default.css" rel="stylesheet">

<!-- fav and touch icons -->
<link rel="shortcut icon" href="static/ico/favicon.ico">
<link rel="apple-touch-icon-precomposed" sizes="144x144" href="static/ico/apple-touch-
icon-144-precomposed.png">
<link rel="apple-touch-icon-precomposed" sizes="114x114" href="static/ico/apple-touch-
icon-114-precomposed.png">
```

```
<link rel="apple-touch-icon-precomposed" sizes="72x72" href="static/ico/apple-touch-icon-72-precomposed.png">
```

```
<link rel="apple-touch-icon-precomposed" href="static/ico/apple-touch-icon-57-precomposed.png">
```

```
</head>
```

```
<body>
```

```
<header>
```

```
<!-- Navbar
```

```
    <div class="navbar navbar-fixed-top">
```

```
    <div class="navbar-inner">
```

```
    <div class="container">
```

```
    <!-- logo -->
```

```
    <a class="brand logo" href="index.html">Political Sentiment Analysis</a>
```

```
    <!-- end logo -->
```

```
    <!-- top menu -->
```

```
    <div class="navigation">
```

```
    <nav>
```

```
    <ul class="nav topnav">
```

```
    <li class="dropdown active">
```

```
    <a href="{ {url_for('index')}} ">Home</a>
```

```
    </li>
```

```
    <li class="dropdown">
```

```
    <a href="{ {url_for('search')}} ">Search</a>
```

```
    </li>
```

```
    <li class="dropdown">
```

```
    <a href="{ {url_for('upload')}} ">Upload</a>
```

```
    </li>
```

```
</ul>
```

```
</nav>
```

```
</div>
```

```

<!-- end menu -->
</div>
</div>
</div>
</header>
<section id="intro">
<div class="jumbotron masthead">
<div class="container">
<!-- slider navigation -->
<div class="sequence-nav">
<div class="prev">
<span></span>
</div>
<div class="next">
<span></span>
</div>
</div>
<!-- end slider navigation -->
<div class="row">
<div class="span12">
<div id="slider_holder">
<div id="sequence">
<ul>
<!-- Layer 1 -->
<li>
<div class="info animate-in">
<h2>Extract Tweets</h2>
<br>

<p>
    The Twitter API will extract the related tweets as per the user interest.
</p>

```

```

</div>

</li>
<!-- Layer 2 -->
<li>
<div class="info">
<h2>Preprocess Tweets</h2>
<br>
<p>
    The extracted tweets are cleaned in order to get a cleaned dataset. The regional language
    tweets will be semantically translated to english.
</p>
</div>

</li>
<!-- Layer 3 -->
<li>
<div class="info">
<h2>Analyze Tweets</h2>
<br>
<p>
        Sentiment analysis is applied on the dataset to get the sentiment.
    </p>
</div>

</li>
<!-- Layer 4 -->
<li>
<div class="info">
<h2>Visualize Sentiment</h2>
<br>
<p>

```

The final analysis is represented in the form of polls.

```
</p>
</div>

</li>
</ul>
</div>
</div>
<!-- Sequence Slider::END-->
</div>
</div>
</div>
</div>
</section>
<!-- Footer
<footer class="footer">
<div class="verybottom">
<div class="container">
<div class="row">
<div class="span6">
<p>
&copy; Political Sentiment Analysis - All right reserved
</p>
</div>
<div class="span6">
</div>
</div>
</div>
</div>
</div>
```

```

<!-- JavaScript Library Files -->
<script src="static/js/jquery.min.js"></script>
<script src="static/js/jquery.easing.js"></script>
<script src="static/js/google-code-prettify/prettify.js"></script>
<script src="static/js/modernizr.js"></script>
<script src="static/js/bootstrap.js"></script>
<script src="static/js/jquery.elastislide.js"></script>
<script src="static/js/sequence/sequence.jquery-min.js"></script>
<script src="static/js/sequence/setting.js"></script>
<script src="static/js/jquery.prettyPhoto.js"></script>
<script src="static/js/application.js"></script>
<script src="static/js/jquery.flexslider.js"></script>
<script src="static/js/hover/jquery-hover-effect.js"></script>
<script src="static/js/hover/setting.js"></script>

<!-- Template Custom JavaScript File -->
<script src="static/js/custom.js"></script>

</body>
</html>

```

### Search.HTML

```

<!DOCTYPE html>
<html lang="en">

<head>
<meta charset="utf-8">
<title>Political Sentiment Analysis</title>
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta name="description" content="">
<meta name="author" content="">
<!-- styles -->

```



```
<link href="https://fonts.googleapis.com/css?family=Open+Sans:400italic,400,600,700"
rel="stylesheet">
```

```
<link href="static/css/bootstrap.css" rel="stylesheet">
```

```
<link href="static/css/bootstrap-responsive.css" rel="stylesheet">
```

```
<link href="static/css/docs.css" rel="stylesheet">
```

```
<link href="static/css/prettyPhoto.css" rel="stylesheet">
```

```
<link href="static/js/google-code-prettify/prettify.css" rel="stylesheet">
```

```
<link href="static/css/flexslider.css" rel="stylesheet">
```

```
<link href="static/css/sequence.css" rel="stylesheet">
```

```
<link href="static/css/style.css" rel="stylesheet">
```

```
<link href="static/color/default.css" rel="stylesheet">
```

```
<!-- Include the above in your HEAD tag ----->
```

```
<link rel="stylesheet" href="https://use.fontawesome.com/releases/v5.1.0/css/all.css"
integrity="sha384-
IKuwvrZot6UHsBSfcMvOkWwlCMgc0TaWr+30HWe3a4ltaBwTZhyTEggF5tJv8tbt"
crossorigin="anonymous">
```

```
<!-- fav and touch icons -->
```

```
<link rel="shortcut icon" href="static/ico/favicon.ico">
```

```
<link rel="apple-touch-icon-precomposed" sizes="144x144" href="static/ico/apple-touch-
icon-144-precomposed.png">
```

```
<link rel="apple-touch-icon-precomposed" sizes="114x114" href="static/ico/apple-touch-
icon-114-precomposed.png">
```

```
<link rel="apple-touch-icon-precomposed" sizes="72x72" href="static/ico/apple-touch-icon-
72-precomposed.png">
```

```
<link rel="apple-touch-icon-precomposed" href="static/ico/apple-touch-icon-57-
precomposed.png">
```

```
<!-- Latest compiled and minified CSS -->
```

```
<link rel="stylesheet"
```

```
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.2.1/css/bootstrap.min.css">
```

```
<!-- jQuery library -->
```

```
<script src="https://ajax.googleapis.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>
```

```
<!-- Popper JS -->
```

```
<script
```

```
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/1.14.6/umd/popper.min.js"></script>
```

```
<!-- Latest compiled JavaScript -->
```

```
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.2.1/js/bootstrap.min.js"></script>
```

```
<script src="https://maxcdn.bootstrapcdn.com/bootstrap/4.2.1/js/bootstrap.min.js"></script>
```

```
<script language="javascript" type="text/javascript">
```

```
$(function(){
```

```
var $cat = $("#category1"),
```

```
$subcat = $(".subcat");
```

```
var optgroups = {};
```

```
$subcat.each(function(i,v){
```

```
var $e = $(v);
```

```
var _id = $e.attr("id");
```

```
optgroups[_id] = {};
```

```
$e.find("optgroup").each(function(){
```

```
var _r = $(this).data("rel");
```

```
$(this).find("option").addClass("is-dyn");
```

```
optgroups[_id][_r] = $(this).html();
```

```
});
```

```
});
```

```
$subcat.find("optgroup").remove();
```

```
var _lastRel;
```

```

$cat.on("change",function(){
    var _rel = $(this).val();
    if(_lastRel === _rel) return true;
    _lastRel = _rel;
    $subcat.find("option").attr("style","");
    $subcat.val("");
    $subcat.find(".is-dyn").remove();
    if(!_rel) return $subcat.prop("disabled",true);
    $subcat.each(function(){
        var $el = $(this);
        var _id = $el.attr("id");
        $el.append(optgroups[_id][_rel]);
    });
    $subcat.prop("disabled",false);
});

});
</script>
<style>

.form-control-borderless {
    border: none;
}

.form-control-borderless:hover, .form-control-borderless:active, .form-control-
borderless:focus {
    border: none;
    outline: none;
    box-shadow: none;
}

div.gallery {
    margin: 60px;

```

```

border: 0px solid #ccc;
float: left;
width: 400px;
}

div.gallery:hover {
border: 1px solid #777;
}

div.gallery img {
width: 100%;
height: auto;
}

div.desc {
padding: 50px;
text-align: center;
}
</style>
</head>

<body>
<header>
<!-- Navbar
  <div class="navbar navbar-fixed-top">
<div class="navbar-inner">
<div class="container">
<!-- logo -->
<a class="brand logo" href="index.html">Political Sentiment Analysis</a>
<!-- end logo -->
<!-- top menu -->
<div class="navigation">

```



```

<option value>Select Politician Names</option>
<!-- Home Ware -->
<optgroup data-rel="tdp">
<option value="Chandra Babu Naidu">Chandra Babu Naidu</option>
<option value="Kala Venkat Rao">Etcherla - Kala Venkata Rao</option>
<option value="Gunda Lakshmi Devamma">Srikakulam - Gunda Lakshmi
Devamma</option>
<option value="Kondru Murali">Rajam - Kondru Murali</option>
<option value="Ramana Murthi">Narasannapeta - Ramana Murthi</option>
<option value="Bendalam Ashok">Ichchapuram - Bendalam Ashok</option>
<option value="kalamata Venkataramana">Patapatnam - kalamata Venkataramana</option>
<option value="Gouthu Sirisha">Palasa - Gouthu Sirisha</option>option>
<option value="kinjarapu Atchannaidu">tekkali - kinjarapu Atchannaidu</option>
<option value="Kuna Ravikumar">Amudalavalasa - Kuna Ravikumar</option>
<option value="Bandaru Satyanarayana Murthy">Pendurthi - Bandaru Satyanarayana
Murthy</option>
<option value="chintakayala Ayyannapatrudu">Narsipatnam - chintakayala
Ayyannapatrudu</option>
<option value="Panchakarla Ramesh Babu">Yalamanchili - Panchakarla Ramesh
Babu</option>
<option value="Velagapudi Ramakrishna">Vizag East - Velagapudi Ramakrishna</option>
<option value="P.G.V.R Gana Babu">Vizag West -P.G.V.R Gana Babu</option>
<option value="Vasupalli Ganesh">Vizag South - Vasupalli Ganesh</option>
<option value="Palla Srinivasa Rao">Gajuwaka - Palla Srinivasa Rao</option>
<option value="Kidari Sravan Kumar">Araku - Kidari Sravan Kumar</option>
<option value="Bangarayya">Payakaraopeta - Bangarayya</option>
<option value="Venkata Sujaya Krishna Rangarao">Bobbili - venkata Sujaya Krishna
Rangarao</option>
<option value="Kolla Lalitha Kumari">S. Kota - Kolla Lalitha Kumari</option>
<option value="Rajendra Pratap Bhanj Deo">Saluru - Rajendra Pratap Bhanj Deo</option>
<option value="Veeravaratodramala Janardhan Thatraj">Kurupam - Veeravaratodramala
Janardhan Thatraj</option>

```

<option value="Bobbili Chiranjeevulu">Parvathipuram - Bobbili Chiranjeevulu</option>  
 <option value="KE Naidu">Gajapathinagaram - KE Naidu</option>  
 <option value="Yanamala Krishnu">Tuni - Yanamala Krishnu</option>  
 <option value="Varupula Raja">Prathipadu - Varupula Raja</option>  
 <option value="SVSN Varma">Pithapuram - SVSN Varma</option>  
 <option value="Pilli Ananthalakshmi">Kakinada Rural - Pilli Ananthalakshmi</option>  
 <option value="Vanamadi Konda Babu">Kakinada Town - Vanamadi Konda Babu</option>  
 <option value="Nimmakayala Chinarajappa">Peddapuram - Nimmakayala  
 Chinarajappa</option>  
 <option value="Ramakrishna Reddy">Anaparthi - Ramakrishna Reddy</option>  
 <option value="Thota Trimurthulu">Ramachandrapuram - Thota Trimurthulu</option>  
 <option value="Datla Subbaraju">Mummadivaram - Datla Subbaraju</option>  
 <option value="Gollapalli Suryarao">Rajolu - Gollapalli Suryarao</option>

<option value="Bandaru Satyananda Rao">Kothapeta - Bandaru Satyananda Rao</option>  
 <option value="vegulla Jogeswara Rao">Madapeta - vegulla Jogeswara Rao</option>  
 <option value="Pendurthi Venkatesh">Rajanagaram - Pendurthi Venkatesh</option>  
 <option value="Adireddi Bhavani">Rajahmundry Urban - Adireddi Bhavani</option>  
 <option value="Gorantla Butchaiah Chowdary">Rajahmundry Rural - Gorantla Butchaiah  
 Chowdary</option>  
 <option value="Jyothula Nehru">Jaggampeta - Jyothula Nehru</option>  
 <option value="Velagapudi Anitha">Kovvuru - Velagapudi Anitha</option>  
 <option value="Pitani Satyanarayana">Achanta - Pitani Satyanarayana</option>  
 <option value="Ramanaidu">Palakollu - Ramanaidu</option>  
 <option value="Bandar Madhava Naidu">Narsapuram - Bandar Madhava Naidu</option>  
 <option value="Pulaparthi Ramanjaneyulu">Bhimavaram - Pulaparthi  
 Ramanjaneyulu</option>  
 <option value="Vetukuri Venkata Siva Ramaraju">Undi - Vetukuri Venkata Siva  
 Ramaraju</option>  
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 <option value="Ganni Veeranjanyulu">Unguturu - Ganni Veeranjanyulu</option>

<option value="Chintamaneni Prabhakar">Denduluru - Chintamaneni Prabhakar</option>  
 <option value="Badeti Bujji">Eluru - Badeti Bujji</option>  
 <option value="Devineni Uma">Mylavaram - Devineni Uma</option>  
 <option value="Kollu Ravindra">Bandaru - Kollu Ravindra</option>  
 <option value="Vallabhaneni Vamsi">Gannavaram - Vallabhaneni Vamsi</option>  
 <option value=" Jawahar">Tiruvuru - Jawahar</option>  
 <option value="Jayamangala Venkataramana">Kaikaluru - Jayamangala Venkataramana</option><option value=" Budha Prasad">Avanigadda - Budha Prasad</option>  
 <option value="Nakka Anandababu">Vemuru - Nakka Anandababu</option>  
 <option value=" Anagani Satyaprasad">Repalle - Anagani Satyaprasad</option>  
 <option value=" Alapati Raja">Tenali - Alapati Raja</option>  
 <option value=" Nara Lokesh">Mangalagiri - Nara Lokesh</option>  
 <option value=" Prathipati Pullarao">Chilakalurpeta - Prathipati Pullarao</option><option value="Kodela Sivaprasad">Sattenapalle - Kodela Sivaprasad</option>  
 <option value="GV Anjaneyulu">Vinukonda - GV Anjaneyulu</option>  
 <option value=" Yarapathineni Srinivasa Rao">Gurajala - Yarapathineni Srinivasa Rao</option>  
 <option value=" Mettu Anjireddy">Macharla - Mettu Anjireddy</option>  
 <option value=" Kommalapati Sridhar">Pedakurapadu - Kommalapati Sridhar</option>  
 <option value=" Dhulipalla Narendra">Ponnuru - Dhulipalla Narendra</option>  
 <option value="Adala Prabhakar Reddy">Nellore Rural - Adala Prabhakar Reddy</option>  
 <option value="Somireddy Chandramohan Reddy">Sarvepalli - Somireddy Chandramohan Reddy</option>  
 <option value="Bollineni Krishnaiah">Atmakuru - Bollineni Krishnaiah</option>  
 <option value=" Polamreddy Srinivasula Reddy">Kovuru - Polamreddy Srinivasula Reddy</option>  
 <option value="Pasam Suneel">Gudur - Pasam Suneel</option>  
 <option value=" Kurugondla Ramakrishna">Venkatagiri - Kurugondla Ramakrishna</option>  
 <option value=" Mukka Ugra Narasimha Reddy">Darsi - Mukka Ugra Narasimha Reddy</option>



<option value="Yeluri Sambasiva Rao">Parchur - Yeluri Sambasiva Rao</option>  
<option value="Gottipati Ravikumar">Addanki - Gottipati Ravikumar</option>  
<option value="Karanam Balaram">Chirala - Karanam Balaram</option>  
<option value=" Damacharla Janardhan">Ongole - Damacharla Janardhan</option>  
<option value=" Pothula Ramarao">Kandukuru - Pothula Ramarao</option>  
<option value="Dola bala Veeranjaneya Swami">Kondepalle - Dola bala Veeranjaneya Swami</option>  
<option value="Kondula Narayana Reddy">Markapuram - Kondula Narayana Reddy</option>  
<option value=" Mutumula Ashok Reddy">Giddalur - Mutumula Ashok Reddy</option>  
<option value="satyala Chengalrayudu">Rajampet - satyala Chengalrayudu</option>  
  
<option value="pantagani Narsimha Prasad">Railway Koduru - pantagani Narsimha Prasad</option>  
<option value=" Reddeppagari palli Rameshkumar Reddy">Rayachoti - Reddeppagari palli Rameshkumar Reddy</option>  
<option value=" Venkata Satish Kumar Reddy Singareddy">Pulivendula - Venkata Satish Kumar Reddy Singareddy</option>  
<option value=" Putta Narsimha Reddy">Kamalapuram - Putta Narsimha Reddy</option>  
<option value=" Rama Subbareddy ponapureddy">Jammalamadugu - Rama Subbareddy ponapureddy</option>  
<option value=" Putta Sudhakar">Mydukur - Putta Sudhakar</option>  
<option value="sheik Ameer Babu">Kadapa -sheik Ameer Babu</option>  
<option value=" Bhuma Akhila Priya">Allagadda - Bhuma Akhila Priya</option>  
<option value=" Budda Rajasekhar Reddy">Srisailem - Budda Rajasekhar Reddy</option>  
<option value="BC Janardhan Reddy">Banaganapalle - BC Janardhan Reddy</option>  
<option value="Kambalapadu ediga Prathap">Done - Kambalapadu ediga Prathap</option>  
<option value=" KE Shyam Babu">Pathikonda - KE Shyam Babu</option>  
<option value=" B.Jaya Nageswara Reddy">Emmiganur - B.Jaya Nageswara Reddy</option>  
<option value=" Tikka Reddy">Mantralayam - Tikka Reddy</option>

<option value="Bhuma Brahmananda Reddy">Nandyal - Bhuma Brahmananda Reddy</option>  
 <option value=" Kalva Srinivasulu">Raidurgam - Kalva Srinivasulu</option>  
 <option value=" Payyavula Keshav">Uravakonda - Payyavula Keshav</option>  
 <option value=" JC Asmith Reddy">Tadipatri - JC Asmith Reddy</option>  
 <option value="vykuntam PrabhakarChowdary">Anantapur - vykuntam Prabhakar Chowdary</option>  
 <option value="Paritala Sreeram">Raptadu - Paritala Sreeram</option>  
 <option value=" Veeranna">Madakasira - Veeranna</option>  
 <option value=" Balakrishna Nandamuri">Hindupur - Balakrishna Nandamuri</option>  
 <option value="BK Parthasaradhi">Penukonda - BK Parthasaradhi</option>  
 <option value="Palle Raghunadha Reddy">Puttaparthi - Palle Raghunadha Reddy</option>  
 <option value=" Gonuguntla Suryanarayana">Dharmavaram - Gonuguntla Suryanarayana</option>  
 <option value=" Nara Chandrababu Naidu">Kuppam - Nara Chandrababu Naidu</option>  
 <option value=" Nallari Kishore Kumar Reddy">Pileru - Nallari Kishore Kumar Reddy</option>  
 <option value=" Anisha Reddy">Punganuru - Anisha Reddy</option>  
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 <option value="Munnuru Sugunamma">Tirupati - Munnuru Sugunamma</option>  
 <option value=" Satya Prabha">Chitoor - Satya Prabha</option>  
 <option value=" Amarnath Reddy">Palamaneru - Amarnath Reddy</option>  
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 <option value="Nakka Rajababu"> Payakaraopet: Nakka Rajababu</option>  
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 Janardhan(Jana)</option>  
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 <option value="Raja Ashok Babu"> Tuni: Raja Ashok Babu</option>  
 <option value="Kandula Durgesh"> Rajahmundry city: Kandula Durgesh  
 <option value="Raapaka Vara Prasad">Rajole: Raapaka Vara Prasad</option>  
 <option value="Pamula Rajeswari"> P. Gannavaram: Pamula Rajeswari</option>  
 <option value="Muttha Sasidhar"> Kakinada City: Muttha Sasidhar</option>  
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 <option value="Pitani Balakrishna">Mummidivaram: Pitani Balakrishna</option>  
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 <option value="Navudu Venkataramana Babu">Unguturu: Navudu Venkataramana  
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 <option value="Reddy Appalanaidu"> Eluru: Reddy Appalanaidu</option>  
 <option value="Nadendla Manohar "> Tenali: Nadendla Manohar </option>  
 <option value="Thota Chandrasekhar"> Guntur West: Thota Chandrasekhar</option>  
 <option value="Ravela Kishore Babu"> Prathipadu: Ravela Kishore Babu</option>  
 <option value="A Bharat Bhushan"> Vemuru: A Bharat Bhushan</option>  
 <option value="Sayyed Jilani">Narasaraopet: Sayyed Jilani</option>  
 <option value="Pasupuleti Sudhakar">Kaavali: Pasupuleti Sudhakar</option>  
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 Reddy</option>  
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 <option value="Patthipati Kusuma Kumari">Rajampet: Patthipati Kusuma Kumari</option>  
 <option value="Bonasi Venkata Subbaih">Railway Koduru: Bonasi Venkata  
 Subbaih</option>  
 <option value="Bode Ramachandra Yadav"> Punganuru: Bode Ramachandra  
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 <option value="Bandi Ramakrishna"> Machilipatnam: Bandi Ramakrishna</option>

```

</optgroup>
<optgroup data-rel="ysrcp">
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<option value="MALIPEDHI SUDHEER REDDY ">jamalamadugu:MALIPEDHI
SUDHEER REDDY</option>
<option value="RACHAMALLU SIVA PRASAD REDDY ">poddatur:RACHAMALLU
SIVA PRASAD REDDY</option>
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SETTIPALLI</option>
<option value="Pochimareddy Ravindranath Reddy ">kamalapuram:Pochimareddy
Ravindranath Reddy</option>
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Jaganmohan Reddy</option>
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VENKATA MALLIKARJUNA REDDY</option>
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SRINIVASULU</option>
<option value="Gadikota Srikanth Reddy ">Rayachota:Gadikota Srikanth Reddy</option>
<option value="k CHANDRAMOULI ">KUPPAM:chandramouli</option>
<option value="Roja Selvamani">nagari:Roja Selvamani</option>
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Reddy</option>
<option value=" Arani Srinivasulu">chitoor:Arani Srinivasulu</option>
<option value="KALATTUR NARAYANA SWAMY ">nellore:KALATTUR NARAYANA
SWAMY</option>
<option value="Chintala Ramachandra Reddy ">pileru:Chintala Ramachandra
Reddy</option>
<option value=" Shaik Nawaz Basha">mudenepali: Shaik Nawaz Basha</option>

```

<option value=" Peddireddy Dwarakanatha Reddy ">Thambalepalli:Peddireddy  
Dwarakanatha Reddy</option>

<option value="BHUMANA KARUNAKAR REDDY ">Tirupathi:BHUMANA  
KARUNAKAR REDDY</option>

<option value="BIYYAPU MADHUSUDHAN REDDY ">srikalahasthi:BIYYAPU  
MADHUSUDHAN REDDY</option>

<option value="K.ADIMULAM SATYAVEDU ">satyaveedu:K.ADIMULAM</option>

<option value="Kethireddy Pedda Reddy ">tadpatri:Kethireddy Pedda Reddy </option>

<option value=" Anantha Venkatarami Reddy ">Ananthapur:Anantha Venkatarami Reddy  
</option>

<option value="KAPU RAMACHANDRA REDDY ">Rayadurg:KAPU RAMACHANDRA  
REDDY</option>

<option value="Jonnalagadda Padmavathy ">singanamala:Jonnalagadda  
Padmavathy</option>

<option value=" Y. VISWESWARA REDDY ">Uravakonda:Y. VISWESWARA REDDY  
</option>

<option value="THOPUDURTHY PRAKASH REDDY ">Raptadu:THOPUDURTHY  
PRAKASH REDDY</option>

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SANKARANARAYANA</option>

<option value="KETHIREDDY VENKATA RAMI REDDY  
>Dharmavaram:KETHIREDDY VENKATA RAMI REDDY</option>

<option value=" Mopuragundu Thippeswamy">Madakasira:Mopuragundu  
Thippeswamy</option>

<option value=" P.V Siddha Reddy ">Kadiri: Siddha Reddy</option>

<option value="DUDDUKUNTA SREEDHAR REDDY ">puttaparthi:DUDDUKUNTA  
SREEDHAR REDDY</option>

<option value="Y SAIPRASAD REDDY ">Adoni:Y SAIPRASAD REDDY</option>

<option value=" K.Chenna Kesava Reddy">yemmiganur:K.Chenna Kesava Reddy</option>

<option value="BALA NAGI REDDY ">MANTRALAYAM:BALA NAGI  
REDDY</option>

<option value="Sudhakar Babu ">kodumur:Sudhakar Babu</option>

```

<option value="Silpa Ravichandra Reddy ">nandyal:Silpa Ravichandra Reddy </option>
</optgroup>
</select>
<!--end of col-->
<div class="col-auto">
<button class="btn btn-sm btn-success" id="submit" type="button">Search</button>
</div>
<!--end of col-->
</div>
</form>
</div>
<!--end of col-->
</div>
</div>
<div class="container">
<div class="gallery">
<img id="image" width="1200" height="800"></img>
</div>
<div>
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<p><span id="wikiText"></span></p>
</table>
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<script src="{{url_for('js_static', filename='search.js')}}"></script>
</div>
<div class="gallery">
<img id="senti_image" width="1600" height="1200"></img>
</div>
</div>
<section id="maincontent">
<div class="container">
<div class="row">

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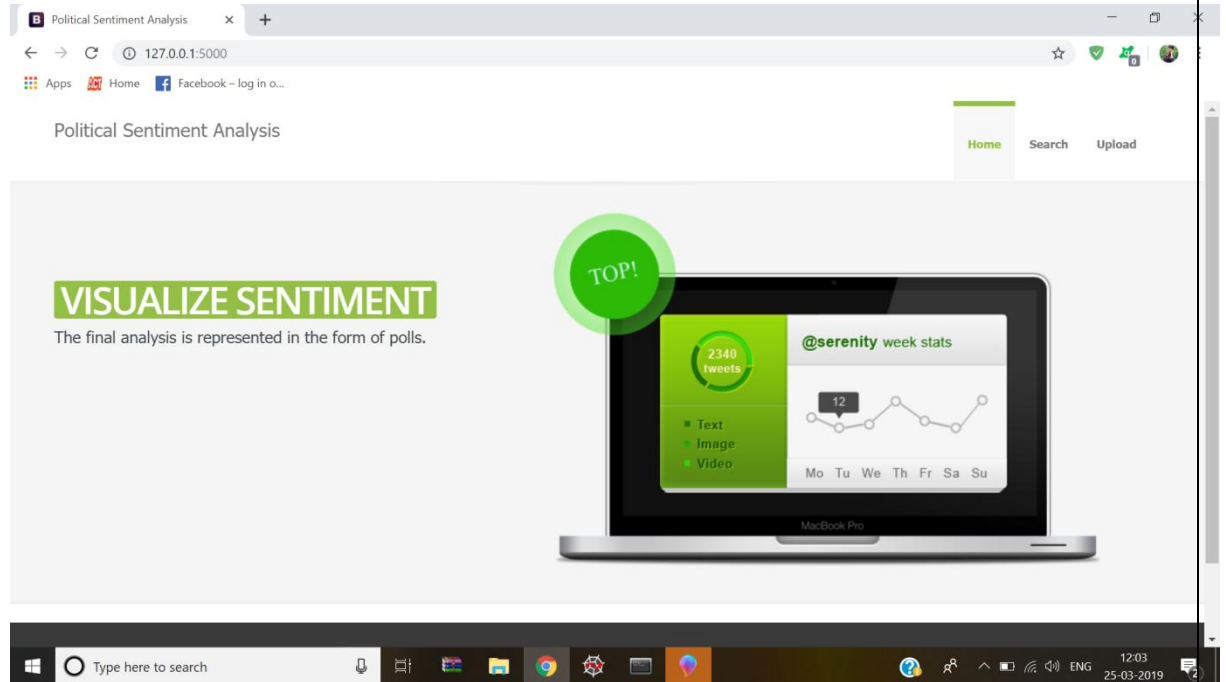
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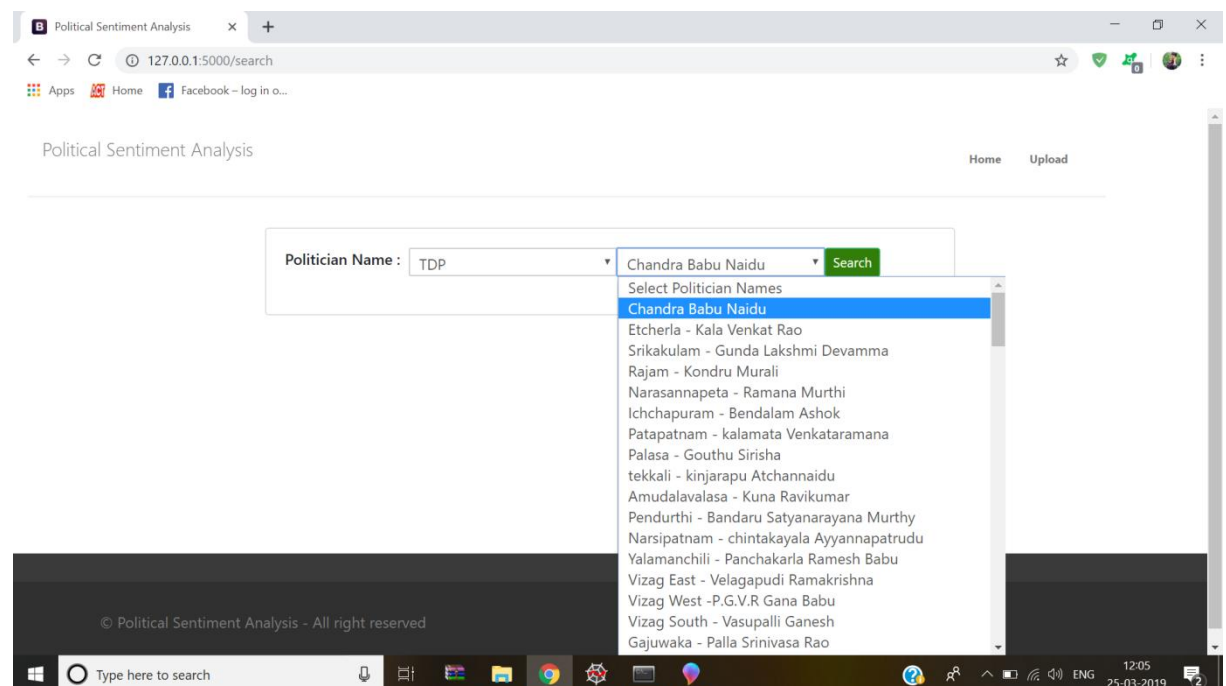
# OUTPUT SCREENS

## 6. OUTPUT SCREENS

1. Home page: The user can get a brief knowledge about the steps involved in the political sentiment analysis



2. Search Page: The user can search the political party name and politician name of their interest.



3. Details: The user can find the photograph and information about the selected politician.

The screenshot shows a web browser window titled "Political Sentiment Analysis". The address bar shows "127.0.0.1:5000/search". Below the browser window, there is a search bar with "Politician Name : TDP" and "Chandra Babu Naidu" selected, and a green "Search" button. To the left of the text is a photograph of Chandra Babu Naidu. To the right is a detailed biography of him, including his birth date (20 April 1950), his role as Chief Minister of Andhra Pradesh, and his political career. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons.

Politician Name : TDP Chandra Babu Naidu Search

Nara Chandrababu Naidu (born 20 April 1950) is an Indian politician who has been Chief Minister of Andhra Pradesh since 2014. He is the first chief minister of the state since it was divided. Previously he served as Chief Minister of United Andhra Pradesh from 1994 to 2004, before the state was divided, and as the Leader of the opposition in the United Andhra Pradesh Legislative Assembly from 2004 to 2014. He is currently the National President of Telugu Desam Party. Naidu has won a number of awards, including IT Indian of the Millennium from India Today, Business Person of the Year by The Economic Times, South Asian of the Year from Time Asia and membership in the World Economic Forum's Dream Cabinet. Naidu chaired the National IT Panel under the NDA government and was described as one of the "hidden seven", working wonders around the world, by Profit (Oracle Corporation's monthly magazine). == Early life and education == Naidu was born in 20 April 1950 at Naravaripalle, Chittoor district, Andhra Pradesh in an agricultural family. His father, N. Kharjura Naidu, worked in agriculture and his mother Amanamma was a housewife. Since his village had no school, Naidu attended primary school in Seshapuram until class five and the Chandragiri Government High School until class nine by walking 11 km every day. He went to Tirupati for his higher education, studying there from class 10 until he received his master's degree.

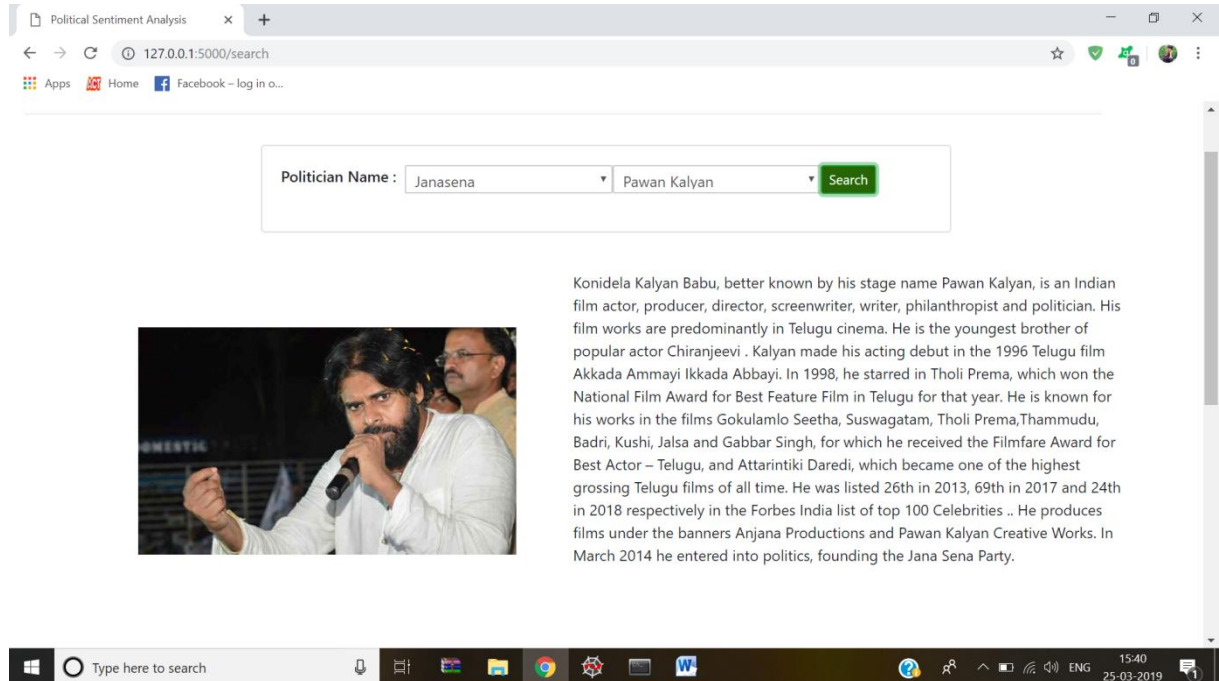
4. Visualization: The user can see the visualization of the analysis of the politician they have selected.

The screenshot shows the same web browser window as before, but now displaying a sentiment analysis visualization. On the left is a photograph of Chandra Babu Naidu. On the right is a pie chart showing the sentiment distribution: 80.0% negative (orange), 20.0% neutral (green), and 0.0% positive (yellow). The Windows taskbar at the bottom is the same as in the previous screenshot.

positive 0.0% neutral 20.0% negative 80.0%

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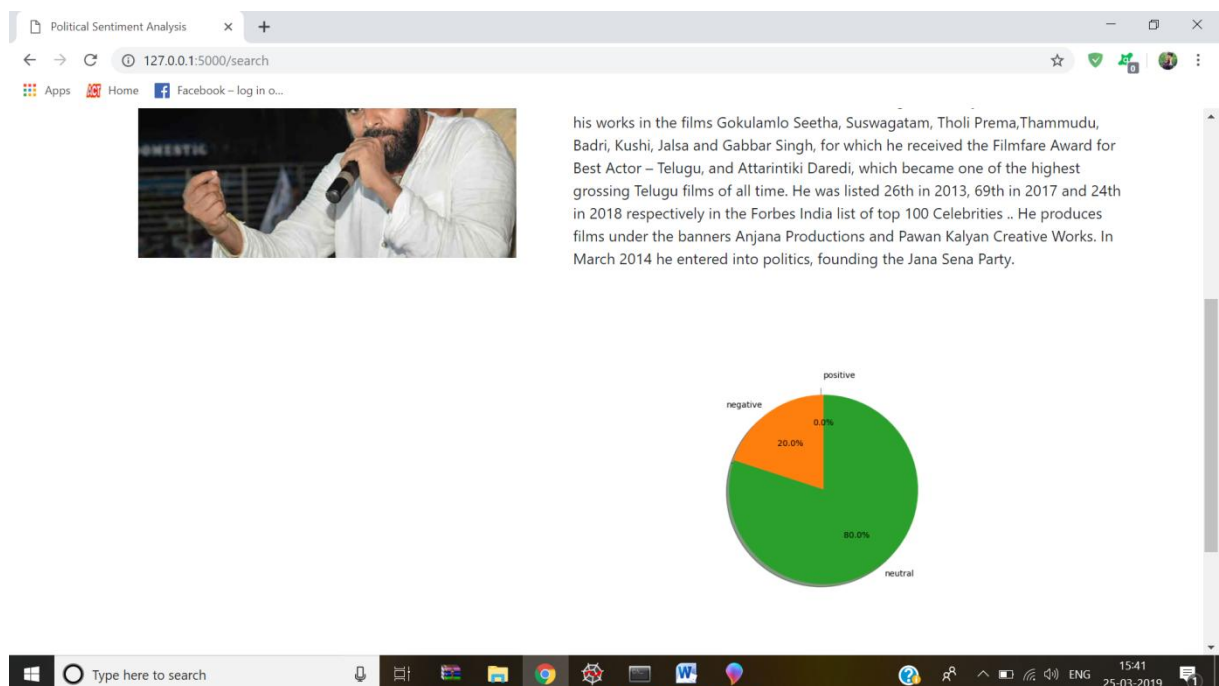
5. Search Page: The user can search the political party name and politician name of their interest and the user can find the photograph and information about the selected politician.



Politician Name : Janasena Pawan Kalyan Search

Konidela Kalyan Babu, better known by his stage name Pawan Kalyan, is an Indian film actor, producer, director, screenwriter, writer, philanthropist and politician. His film works are predominantly in Telugu cinema. He is the youngest brother of popular actor Chiranjeevi. Kalyan made his acting debut in the 1996 Telugu film Akkada Ammayi Ikkada Abbayi. In 1998, he starred in Tholi Prema, which won the National Film Award for Best Feature Film in Telugu for that year. He is known for his works in the films Gokulamlo Seetha, Suswagatam, Tholi Prema, Thammudu, Badri, Kushi, Jalsa and Gabbar Singh, for which he received the Filmfare Award for Best Actor – Telugu, and Attarintiki Daredi, which became one of the highest grossing Telugu films of all time. He was listed 26th in 2013, 69th in 2017 and 24th in 2018 respectively in the Forbes India list of top 100 Celebrities. He produces films under the banners Anjana Productions and Pawan Kalyan Creative Works. In March 2014 he entered into politics, founding the Jana Sena Party.

6. Details: The user can find the photograph and information about the selected politician.



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positive 0.0%  
negative 20.0%  
neutral 80.0%

# TESTING

### **7.1. Testing Technologies**

Software testing is an investigation conducted to provide stakeholders with information about the quality of the software product or service under test. Software testing can also provide an objective, independent view of the software to allow the business to appreciate and understand the risks of software implementation. Test techniques include the process of executing a program or application with the intent of finding software bugs (errors or other defects), and verifying that the software product is fit for use.

#### **Testing Types**

##### **1. UNIT TESTING**

Unit testing is a level of software testing where individual units/ components of a software are tested. The purpose is to validate that each unit of the software performs as designed. A unit is the smallest testable part of any software. It usually has one or a few inputs and usually a single output.

##### **2. SYSTEM TESTING**

System testing is a level of software testing where a complete and integrated software is tested. The purpose of this test is to evaluate the system's compliance with the specified requirements.

##### **3. INTEGRATION TESTING**

Integration testing is a level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units. Test drivers and test stubs are used to assist in Integration testing.

#### 4. ACCEPTANCE TESTING

Acceptance testing is a level of software testing where a system is tested for acceptability. The purpose of this test is to evaluate the system's compliance with the business requirements and assess whether it is acceptable for delivery.

#### 7.2 TEST CASES

A test case is a set of conditions or variables under which a tester will determine whether a system under test satisfies requirements or works correctly.

The process of developing test cases can also help find problems in the requirements or design of an application.

##### Test Cases

Test Case id	Test case description	Input	Expected output	Actual output
Tc1	Number of tweets	Count=30	30 tweets	30 tweets
Tc2	Sentiment for similar tweets	KCR is the CM of Telangana, telangana's CM, is KCR	Positive, positive	Positive, positive
Tc3	N grams size for analysing, for more accuracy the size should be 6 or 7 or 8.	Size=6		
Tc4	Downloaded image should be real	Chandra Babu Naidu	(Image from Chandra Babu Naidu)	(image of cbn)
Tc5	Importing and using a python file in another python file	Preprocessing.py in run.py	Successful execution	Successful execution

# CONCLUSION



## **8. CONCLUSION**

This project is developed on the basis of support of public for a particular political party or politician. Now a days the rapid growth of social media users led to the public to raise their voice on various issues. Twitter being professional over the decades with educated users the tweets will be more practical. This project is using the tweets along with regional language tweets. The extracted tweets are preprocessed. Sentiment is applied on the preprocessed set. Finally, parsed tweets are returned with their polarity values. Then, we can do various type of statistical analysis on the tweets. For example, in above project, we tried to find the percentage of positive, negative and neutral tweets about a query. From this Polarity Percentage we can represent the support in pie-chart. By looking into the pie-chart an end user can easily know the support.

## **FUTURE ENHANCEMENTS**

## **9. FUTURE ENHANCEMENTS**

The project entitled POLITICAL SENTIMENT ANALYSIS has been developed in a structural manner, which helps for future development. In future work this project can use enhanced and more accurate analysis with better algorithms. More efficient analysis can be done from other social media like Facebook, instagram other than twitter. Latest algorithm NLP can be used to analyze the data from different platforms. One more enhancement that can be done for this project is we can analyze the expected way of ruling the government by ruling party in past five years.

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