ABSTRACT

Hate speech is currently of broad and current interest in the domain of social media. The anonymity and flexibility afforded by the Internet have made it easy for users to communicate aggressively. And as the amount of online hate speech is increasing, methods that automatically detect hate speech are very much required. Moreover, these problems have also been attracting Natural Language Processing.

One of the critical tasks of automatic detection of hate speech is differentiating it from the other context of offensive languages. The existing works obtained less accuracy due to using these algorithms. In the proposed system Linear SVM and Naive Bayes algorithms are used. All the models were performed using sci-kit learn on machine learning using Python.

In this project, an NLP (Natural Language Processing) technique is used for identifying and extracting keywords that convey hate speech. Finally, based on a machine learning technique called Logistic regression and Naïve Bayes algorithms, which are popular for probability calculations, are used to train the computer to classify hate speech using the data extracted from any kind of data you wish to utilize for training.

Keywords: Social media, Facebook, Twitter, Text Classification, Hate speech, Natural language processing, Machine learning.

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LIST OF ACRONYMS

NLP	**Natural language processing**
LG	**Logistic Regression**
GA	**Genetic Algorithm**
DFD	**Data Flow Diagram**
UML	**Unified Modeling Diagram**

CHAPTER 1
INTRODUCTION

1. INTRODUCTION

In recent years, social media has taken over as the main channel for distributing ideas around the globe. based on the reference. Although social media is a reliable platform, the volume of information shared and discussed makes it difficult to review every comment in one sitting, which leads to an increase in hate speech. Due to the rapid expansion of networking through social platforms and websites, people can now communicate directly with one another across cultural and economic divides. Another way to define hate speech is as an emotional notion. The use of crude and abusive language on social media may be considered a form of hate speech. It can apply to any individual or a particular group of people who share interests. In this study, we presented our strategy for addressing hate speech and, to a large extent, reducing it.

In recent years, hate speech has dramatically increased. In reality, because all work and communication has since been conducted online, the situation has gotten worse since the COVID-19 pandemic-related shutdown. Social media sites like Twitter, Facebook, and Instagram are being used more frequently by people of all ages, backgrounds, and interests. These are a few of the websites where reports of hate speech have been made.

These platforms offer a free forum for users to express their opinions, discuss, or convey their ideas and messages to people all over the world, but the sheer volume of postings and messages exchanged makes it nearly impossible to maintain content control. To address abuse, cyberbullying, unlawful activity, sexual assault, and violence against public figures, Facebook has established a set of community standards. Twitter also contains several rules that would help someone who is a victim of social abuse, similar to Facebook.

Hate speech not only brings up conflict and tension between various groups, but it also leads to practical issues. This study defines hate speech and offers various examples of how it occurs. The main focus is on how to handle hate speech on Twitter. Next, the data pre-processing is displayed. The methodology used on the dataset, including sentiment analysis, semantic analysis, the Unigram feature, and pattern extraction, is then described in detail. There are graphs and tables that show the precision and accuracy reached for various models.

CHAPTER 2

LITERATURE REVIEW

2. LITERATURE REVIEW

[1] M. Bouazizi, H. Watanabe, and T. Ohtsuki, "Hate Speech on Twitter: A Pragmatic Approach to Collecting Hateful and Offensive Expressions and Detecting Hate Speech," IEEE Access, vol. 6, no. 6, pp. 13825-13835, 2018, DOI: 10.1109/ACCESS.2018.2806394.

Communication between people with various cultural and psychological backgrounds has grown more direct as a result of the fast rise of social networks and microblogging websites, leading to an increase in "cyber" confrontations between these people. As a result, hate speech is employed more frequently, to the point that it has seriously damaged these public areas. A specific group of individuals sharing a characteristic such as their gender (sexism), their ethnic group or race (racism), or their beliefs and religion are the subject of hate speech, which is the use of aggressive, violent, or abusive language. Although the majority of microblogging and online social networks prohibit the use of hate speech, the sheer magnitude of these networks and websites makes it nearly difficult to regulate all of their material. Therefore, it becomes necessary to automatically identify such speech and censor any information that contains inflammatory words. In this essay, we provide a method for identifying hate speech on Twitter. Unigrams and patterns that are automatically gathered from the training set are the foundation of our strategy. Later, among other things, these patterns and unigrams are employed as features to train a machine learning system.

[2] A. Shekhar and M. Venkatesan, "A Bag-of-Phonetic-Codes Model for Cyber-Bullying Detection on Twitter," in 2018 International Conference on Current Trends in Converging Technologies (ICCTCT), pp. 1-7, DOI: 10.1109/ICCTCT.2018.8550938.

These days, social networking sites like Twitter, Facebook, MySpace, and Instagram are establishing themselves as effective communication channels. These are now an integral part of daily life. People may interact with their social circle and share their ideas and interests,

which helps them feel more connected to their neighborhood. However, there are limitations to this freedom of expression. On social media, people occasionally display their hostility, which damages the feelings of the people who are being attacked. Cyberbullying can be based on sexual orientation, race, or physical handicap. Therefore, in order to handle such circumstances, effective surveillance is required. Twitter, a microblogging platform, regularly witnesses online harassment. Tweets, on the other hand, are unpolished messages with several misspelled and censored terms. This study suggests a unique Bag-of-Phonetic-Codes methodology to identify cyberbullying. Correcting misspelled words and spotting restricted words may both be done by using word pronunciation as a feature. Correctly recognizing duplicate words might result in a vocabulary that is less, which reduces the feature space. This suggested study takes its cues from the well-known Bag-of-Words paradigm for extracting textual properties.

[3] M. Gomes, R. Martins, J. J. Almeida, P. Henriques, and P. Novais, "Hate Speech Classification on Social Media Using Emotional Analysis," in Proceedings of the 7th Brazilian Conference on Intelligent Systems (BRACIS), 2018, pp. 61-66, DOI: 10.1109/BRACIS.2018.00019.

The toxicity of online discourses may cause tensions between groups or harm to online communities. Hate speech is multidimensional and complicated damaging or hurtful messages directed at people or groups. Existing reviews of the literature have usually focused on a specific type of hate speech, and to the best of our knowledge, no study has been dedicated to hate speech datasets. This research conducts a thorough examination of textual hate speech detection systems, highlighting their source datasets, textual characteristics, and machine learning models. This literature review's findings are combined with content analysis, yielding various themes for 138 pertinent pieces. This study demonstrates that multiple methodologies do not produce consistent outcomes in various hate speech categories. The most popular strategies incorporate many deep learning models. Furthermore, an examination of different hate speech datasets reveals that many datasets are tiny in size and are unreliable for various hate speech identification tasks. As a result, this study gives insights and empirical data to the research community on the inherent qualities of hate speech and assists communities in identifying subjects for future work.

[4] S. S. Syam, B. Irawan, and C. Setianingsih, "Hate Speech Detection on Twitter Using Long Short-Term Memory (LSTM) Method," in 2019 4th International Conference on Information Technology, Information Systems, and Electrical Engineering (ICITISEE), pp. 305-310, doi:10.1109/ICITISEE48480.2019.9003992.

With the advancement of technology, the usage of social media, particularly Twitter, is becoming more prevalent. Of course, this leads to an increase in social media communication. Because of communication, it is probable that hate speech may be directed at certain parties, particularly before the 2019 presidential election. A lot of political groups foment hatred on social media, particularly Twitter. As a result, as technology advances, we construct a system that can recognize whether a tweet is labeled as hate speech or not based on a hashtag search on Twitter, utilizing the LSTM approach as a classifier. As a result of this system, every tweet that becomes an input into this system receives a label in the form of "hate speech" or "non-hate speech."

[5] Nora Mohammed (2019). Using Neural Approaches to Extract Word Synonyms from Text. The International Arab Journal of Information Technology is a publication dedicated to the advancement of information technology in the Arab world. 45-51. 10.34028/iajit/17/1/6.

Using artificial algorithms to extract synonyms from textual corpora is an intriguing research challenge in the Natural Language Processing (NLP) area. Recent work has used neural approaches (such as Word2Vec) to generate distributional word representations (also known as word embeddings) that capture semantic similarity/relatedness between words based on linear context. Using these algorithms for synonym extraction, however, provides several issues because similarity across vector word representations indicates not just synonymy between words, but also other sense linkages as well as word association or relatedness. This challenge is addressed in this research utilizing an innovative two-step technique. We first utilize Word2Vec to generate distributional word embeddings, which we then use as input to train a feedforward neural network on an annotated dataset to discriminate between synonyms and other semantically related terms.

CHAPTER 3
SYSTEM ANALYSIS

SYSTEM ANALYSIS

3.1 EXISTING SYSTEM

One of the most difficult aspects of computerized detection of hate speech is distinguishing it from other contexts of harmful languages. Existing hate speech identification algorithms made use of SVM and Naive Bayes.

Disadvantages:

- Low Accuracy

3.2 PROPOSED SYSTEM

The proposed systems aim to increase the accuracy of the prediction. Therefore, in this system propose Natural Language Processing and Logistic Regression techniques to predict whether it is hate speech or not.

Advantages:

- High accuracy
- Easy to use

CHAPTER 4
SYSTEM SPECIFICATION AND REQUIREMENTS

4. SYSTEM REQUIREMENTS

4.1 Functional Requirements:

The Functional requirements in the proposed system are:-

Input:

Text

Output:

4.2 Hardware Requirements:

- **Processor** **:** I5/ Intel Processor
- **Hard disk** **:**512GB
- **RAM** **:** 8GB

4.3 Software Requirements:

- **Operating system** **:** Windows 10/11
- **Platform** **:** Machine Learning
- **IDE** **:** PyCharm
- **Software** **:** Python 3.6 or high version
- **Framework** **:** Flask

4.4 Technologies used:

NumPy:

Numpy is a library for the python programming language, adding support for large, multidimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays. The ancestor of Numpy, Numeric, was originally created by Jim Holguin with contributions from several other developers. In 2005, Travis Oliphant created Numpy by incorporating features of the competing Nu marry into Numeric, with extensive modifications. Numpy is open-source software and has many contributions

Pandas:

Pandas is an open-source library primarily designed for working with relational or labeled data in an easy and straightforward manner. It offers a number of data structures and methods for manipulating numerical data and time series. This library is based on the NumPy library. Pandas is quick, with great performance and productivity for users.

Wes McKinney created Pandas in 2008 while working at AQR Capital Management. He persuaded the AQR to allow him to open source the Pandas. Chang She, another AQR employee, came as the library's second significant contributor in 2012. Many versions of pandas have been released over the years. The most recent Pandas version is 1.4.1.

Scikit-Learn:

The Scikit-learn project started as scikits. Learn, a Google Summer of Code project by David Cournapeau. Its name stems from the nation that is a “Scikit” (SciPy Toolkit), a separately-developed 14 and distributed third-party extension to SciPy. Of the various sci-kits, November 2012.

Flask:

A Web Application Framework, often known as a Web Framework, is a set of tools and modules that allow web application developers to construct applications without having to worry about low-level issues like protocol and thread management.

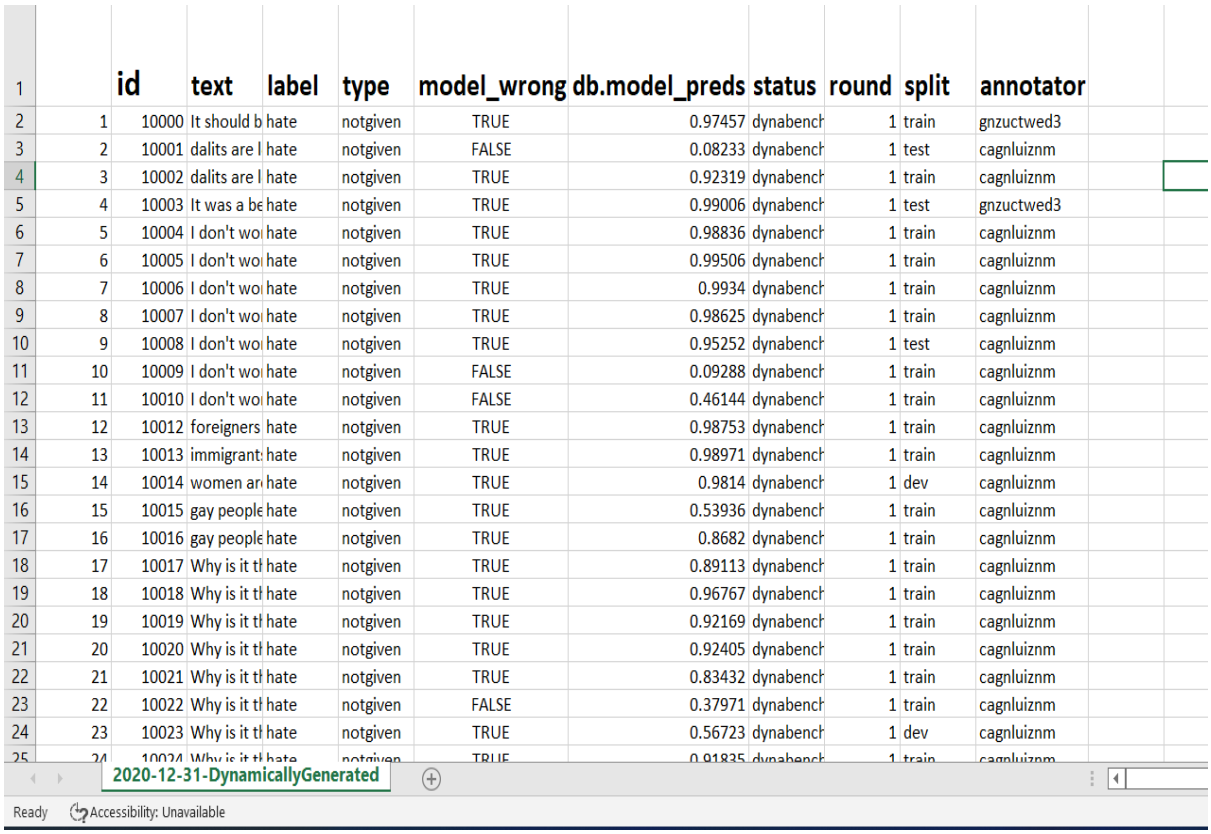
Flask is a Python-based web application framework. It was created by Armin Ronacher, who led the Poocco team of worldwide Python aficionados. The Werkzeg WSGI toolkit and the Jinja2 template engine serve as the foundation for Flask. Both are Pocco initiatives.

CHAPTER 5

DATASET

5. DATASET

DATASET:



	id	text	label	type	model_wrong	db.model_preds	status	round	split	annotator
1	10000	It should b	hate	notgiven	TRUE	0.97457	dynabench	1	train	gnzuctwed3
2	10001	dalits are l	hate	notgiven	FALSE	0.08233	dynabench	1	test	cagnluiznm
3	10002	dalits are l	hate	notgiven	TRUE	0.92319	dynabench	1	train	cagnluiznm
4	10003	It was a be	hate	notgiven	TRUE	0.99006	dynabench	1	test	gnzuctwed3
5	10004	I don't wo	hate	notgiven	TRUE	0.98836	dynabench	1	train	cagnluiznm
6	10005	I don't wo	hate	notgiven	TRUE	0.99506	dynabench	1	train	cagnluiznm
7	10006	I don't wo	hate	notgiven	TRUE	0.9934	dynabench	1	train	cagnluiznm
8	10007	I don't wo	hate	notgiven	TRUE	0.98625	dynabench	1	train	cagnluiznm
9	10008	I don't wo	hate	notgiven	TRUE	0.95252	dynabench	1	test	cagnluiznm
10	10009	I don't wo	hate	notgiven	FALSE	0.09288	dynabench	1	train	cagnluiznm
11	10010	I don't wo	hate	notgiven	FALSE	0.46144	dynabench	1	train	cagnluiznm
12	10012	foreigners	hate	notgiven	TRUE	0.98753	dynabench	1	train	cagnluiznm
13	10013	immigrant	hate	notgiven	TRUE	0.98971	dynabench	1	train	cagnluiznm
14	10014	women ar	hate	notgiven	TRUE	0.9814	dynabench	1	dev	cagnluiznm
15	10015	gay people	hate	notgiven	TRUE	0.53936	dynabench	1	train	cagnluiznm
16	10016	gay people	hate	notgiven	TRUE	0.8682	dynabench	1	train	cagnluiznm
17	10017	Why is it th	hate	notgiven	TRUE	0.89113	dynabench	1	train	cagnluiznm
18	10018	Why is it th	hate	notgiven	TRUE	0.96767	dynabench	1	train	cagnluiznm
19	10019	Why is it th	hate	notgiven	TRUE	0.92169	dynabench	1	train	cagnluiznm
20	10020	Why is it th	hate	notgiven	TRUE	0.92405	dynabench	1	train	cagnluiznm
21	10021	Why is it th	hate	notgiven	TRUE	0.83432	dynabench	1	train	cagnluiznm
22	10022	Why is it th	hate	notgiven	FALSE	0.37971	dynabench	1	train	cagnluiznm
23	10023	Why is it th	hate	notgiven	TRUE	0.56723	dynabench	1	dev	cagnluiznm
24	10024	Why is it th	hate	notgiven	TRUE	0.91835	dynabench	1	train	cagnluiznm

Fig 5.1 Dataset

Dataset Description:

- Txt file is used for detecting Hate Speech
- Size of the dataset is 53 MB
- The dataset contains 40740 entries.
- All 40740 entries are used.
- The Dataset contains 10 fields.
- Training Data: 80%
- Testing Data:20%

CHAPTER 6

SYSTEM DESIGN

6. SYSTEM DESIGN

6.1 UML DIAGRAMS:

UML is an abbreviation for Unified Modeling Language. In the realm of object-oriented software engineering, UML is a standardized general-purpose modelling language. The Object Management Group manages and established the standard. The objective is for UML to become a standard language for developing object-oriented computer software models. UML is now made up of two key components: a meta-model and a notation. In the future, a method or process may be added to or related to UML. The Unified Modelling Language (UML) is a standard language for describing, visualizing, building, and documenting software system artifacts, as well as business modeling and other non-software systems. The UML is a collection of best engineering practices that have proven useful in the modeling of big and complex systems. UML is a critical component in developing object-oriented software and the software development process. The UML primarily uses graphical notations to explain the design of software projects.

GOALS:

The following are the primary aims in the design of the UML:

1. Provide users with a ready-to-use, expressive visual modelling language that allows them to create and share meaningful models.

2. Provide tools for extension and specialisation to extend the fundamental principles.

3. Be unaffected by certain programming languages or the development process.

4. Establish a formal foundation for comprehending the modelling language.

5. Promote the expansion of the market for OO tools.

6. Encourage the use of higher-level development ideas such as collaborations, frameworks, patterns, and components.

7. Implement best practices.

6.1.1 DATA FLOW DIAGRAM

A data flow diagram (DFD) displays how data is handled by a system in terms of inputs and outputs. As the name implies, its focus is on information flow, especially where it originates from, where it goes, and how it is stored. The data flow diagram made extensive use of modelling. It is used to depict the numerous components of the system. The system's function, the data it uses, an external entity that interacts with it, and the information that moves inside it are all examples of these components. DFD may be used to represent a system at any degree of abstraction. DFD is separated into levels, each representing an increase in information flow.

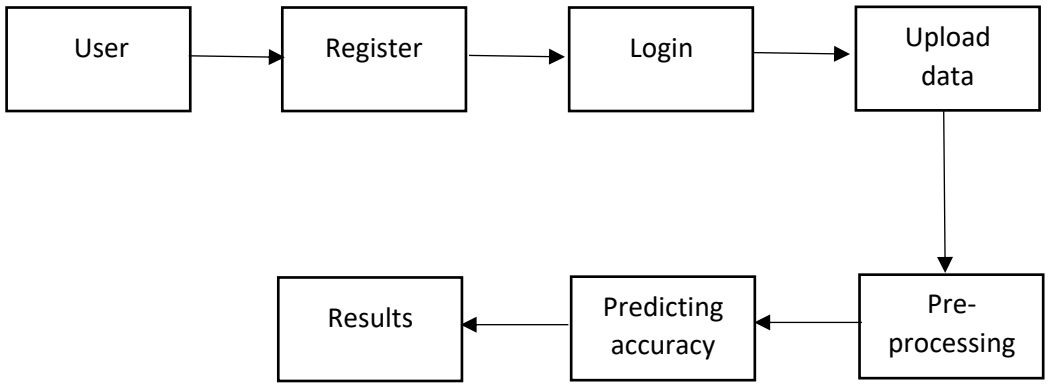


Fig 6.1.1: Data Flow Diagram

6.1.2 USE CASE DIAGRAM:

A use case diagram is a type of behavioral diagram that is described by and produced from a Unified Modeling Language use-case study. Its goal is to provide a graphical representation of the functionality of a system in terms of actors, goals, and that any relationships that may exist between all those use cases. The primary goal of a use case diagram is to show which system functions are executed for which actor.

Use Case Diagram Notations:

- Use cases
- Actors
- Associations
- System boundary boxes
- Packages

Actor Used:

- User

  Action by User:

  - Uploading the Dataset
  - View Data
  - Input Values
  - View Results

- **Admin**

  Action by Admin:

  - Taking the Dataset
  - Preprocessing
  - Model building
  - Training
  - Generating Results

Fig 6.1.2: Use case Diagram

6.1.3 CLASS DIAGRAM:

A class diagram in unified modeling language (UML) is a form of static structure diagram in software engineering that depicts the structure of a system by displaying the system's classes, attributes, operations (or methods), and the relationships between the classes. It explains which class has data.

Classes represent the most important aspects of a system. It is represented by a rectangle with up to three pieces.

The first shows the name of the class, while the second shows the characteristics of the class, which indicate the object's qualities. The bottom one lists the class's operation and defines its behavior.

The second and third sections are entirely optional. A basic class is one that is missing the last two compartments and only has the class time. They're typically used to investigate domain concepts, comprehend software requirements and describe intricate designs.

Diagrams Components:

- Class
- Objects
- Interface
- Relationships
- Associations

Classes Used:

- Login

Attributes:

- Username
- Password

Methods:

- Login ()

- Admin

  Attributes:

  - Data_in_Database

  Methods:

  - Verification()

- Registration

  Attributes:

  - Username
  - Email_id
  - Password
  - Age
  - Mobile_no

  Methods:

  - Registration()

- User

  Attributes:

  - Import_dataset
  - Select_algorithm

  Methods:

  - Upload_dataset ()

- Algorithm

  Attributes:

  - Data_Preprocessing
  - Training data
  - Predicting
  - Result

- Result

Attributes:

- Hate_speech
- Not _Hate speech

Methods:

- Logout ()

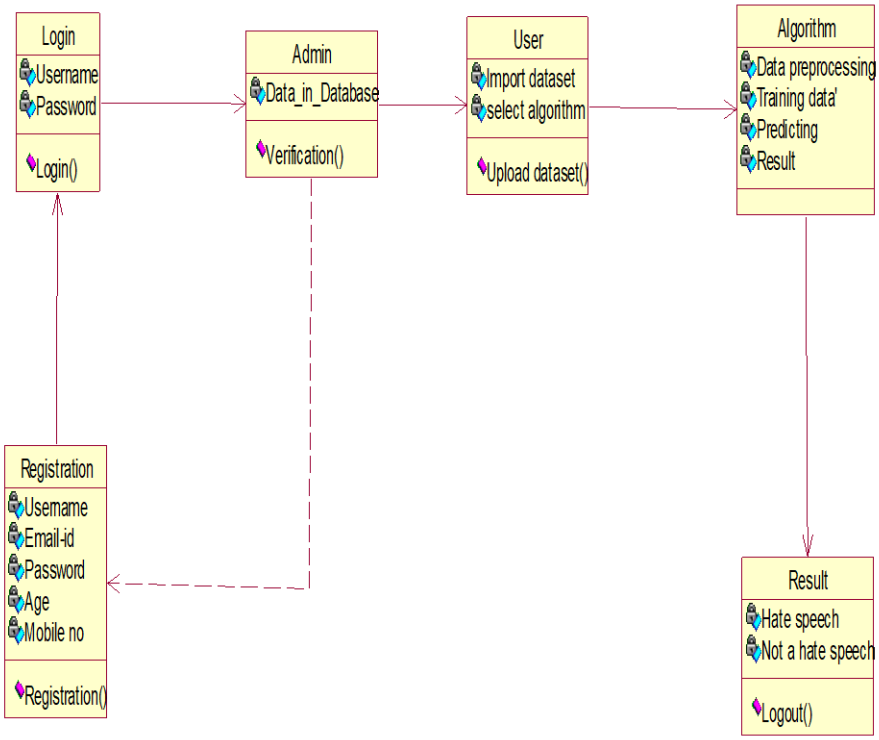


Fig 6.1.3: Class Diagram

6.1.4 SEQUENCE DIAGRAM:

A series diagram is a type of interaction diagram that shows how strategies interact with one another and in what sequence. It's known as a Message Sequence Chart. Sequence diagrams are often referred to as event diagrams, event circumstances, and timing diagrams. The consumer will interact with the application in the diagram below.

Sequence Diagram Notation:

- Actor
- Lifelines
- Messages
    - Synchronous messages
    - Asynchronous messages
    - Create messages
    - Delete messages
    - Self-massage
    - Reply message
    - Found message
    - Lost message
- Guards

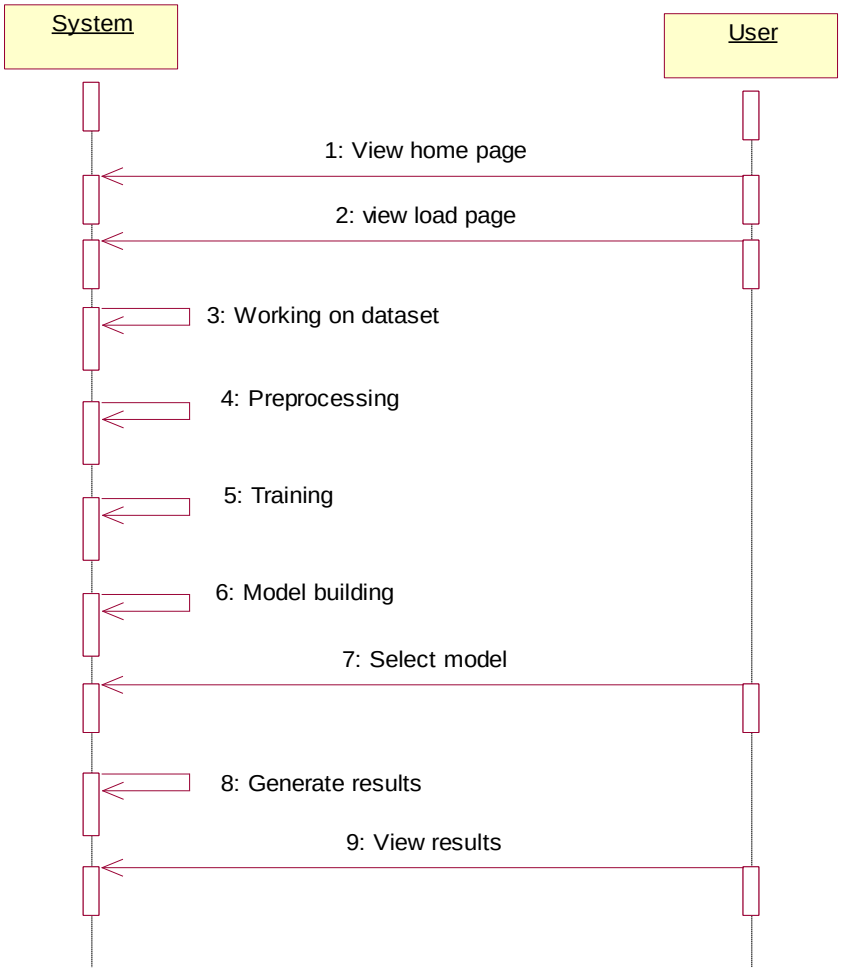


Fig 6.1.4: Sequence Diagram

5.1.5 ACTIVITY DIAGRAM:

The activity diagram illustrates the activity of the process in terms of choices, iterations, and concurrencies in a step-by-step procedure. In the Unified Modeling Language, activity diagrams may be used to go through the business and operational operations of a system component. The control flow is depicted in the activity diagram.

Diagram Components:

- Activities
- Actions
- Control nodes
- Object nodes
- Activity edges

Symbols Used:

- Start Symbol
- Activity Symbol
- Connector Symbol
- End Symbol

User Activities:

- Upload Dataset
- View Dataset
- Select model
- View Results

System Activities:

- Take Dataset
- Preprocessing
- Training
- Model building
- Generating Results

For System **For User**

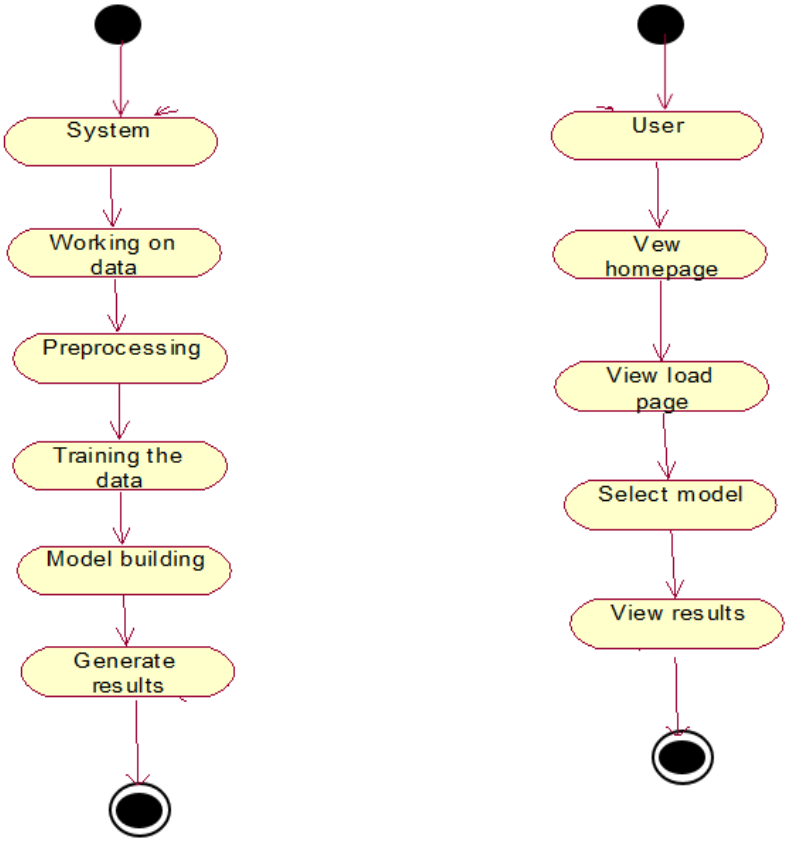


Fig 5.1.5: Activity Diagram

CHAPTER 7

ALGORITHMS

7.1 . Logistic Regression Algorithm:

In the early twentieth century, the biological sciences adopted logistic regression. It was afterward employed in a variety of social science applications When the dependent variable (target) is categorical, logistic regression is utilized.

As an example,

To determine whether an email is a spam (1) or not (0)

Whether or whether the tumor is malignant (1) or not (0)

Logistic regression is a popular machine learning approach for binary classification problems, which have two class values and include predictions like "this or that," "yes or no," and "A or B."

The goal of logistic regression is to estimate event probabilities, including establishing a link between variables and the likelihood of certain outcomes.

Steps in Logistic Regression:

To develop Logistic Regression in Python, we will follow the same steps that we did in earlier Regression subjects. The steps are as follows.

Step-1: Pre-processing of data.

Step-2: Logistic Regression Fitting to the Training Set.

Step-3: Predicting the outcome of a test.

Step-4: The result's accuracy was tested.

Step-5: Visualize the outcome of the test set.

Uses:

Logistic regression has grown in popularity in internet advertising, allowing marketers to forecast the chance of individual website viewers clicking on specific adverts as a yes or no percentage.

Logistic regression may also be applied in the following fields:

1. Healthcare to detect illness risk factors and develop preventative actions.

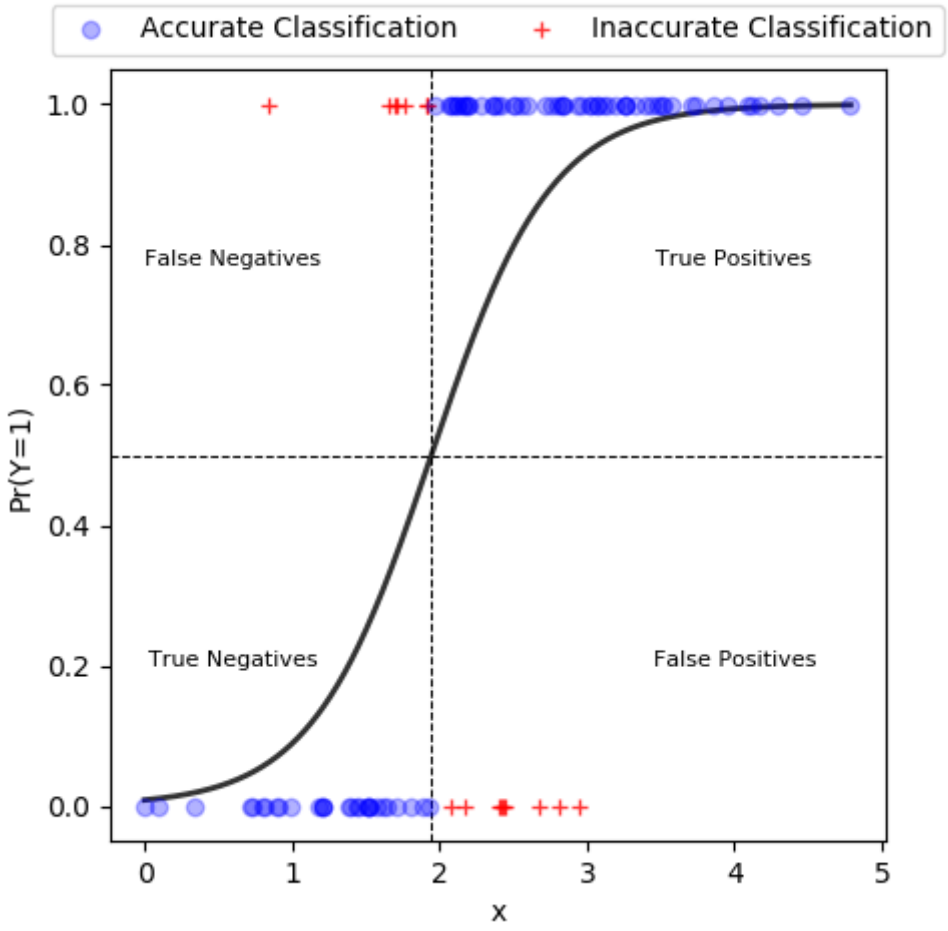
2. Apps that anticipate snowfall and meteorological conditions.

3. Voting applications predict whether voters would vote for a specific candidate.

4. Insurance to forecast the likelihood of a policyholder dying before the policy's term expires based on specified parameters such as gender, age, and physical examination.

5. Using yearly income, prior defaults, and past debts, banks anticipate whether or not a loan application would default on a loan.

Graph:



7.2 Naïve Bayes Algorithm:

The Nave Bayes method is a supervised learning technique that uses the Bayes theorem to solve classification issues. It is mostly utilized in text classification with a large training dataset. The Nave Bayes Classifier is a simple and effective Classification method that aids in the development of rapid machine learning models capable of making quick predictions. It is a probabilistic classifier, which means it predicts based on an object's probabilities.

Why is it called Naïve Bayes?

The Nave Bayes algorithm is made up of the terms naïve and Bayes, which may be translated as:

It is called Naïve because it believes that the presence of one trait is unrelated to the occurrence of others. For example, if the fruit is classified based on color, shape, and flavor, then a red, spherical, and delicious fruit is identified as an apple. As a result, each characteristic helps to identify it as an apple independently of the others.

Bayes: It is so named because it is based on the premise of Bayes' Theorem.

Bayes Theorem:

Bayes' theorem, often known as Bayes' rule or Bayes' law, is a mathematical formula used to calculate the probability of a hypothesis given past knowledge. It is determined by conditional probability.

The Formula of Bayes theorem is given below.

$$P(A/B) = \frac{P(B/A)P(A)}{P(B)}$$

P(A|B) denotes Probability in the future: The likelihood of hypothesis A on the observed occurrence B.

P(B|A) is Probability of occurrence: The likelihood of the evidence supplied that a hypothesis is true.

Prior Probability (P(A)) is the probability of a hypothesis before evaluating the evidence.

P(B) stands for Probability of Evidence: Marginal Probability

Steps involved in Naive Bayes Algorithm:

Step-1: Pre-processing of data.

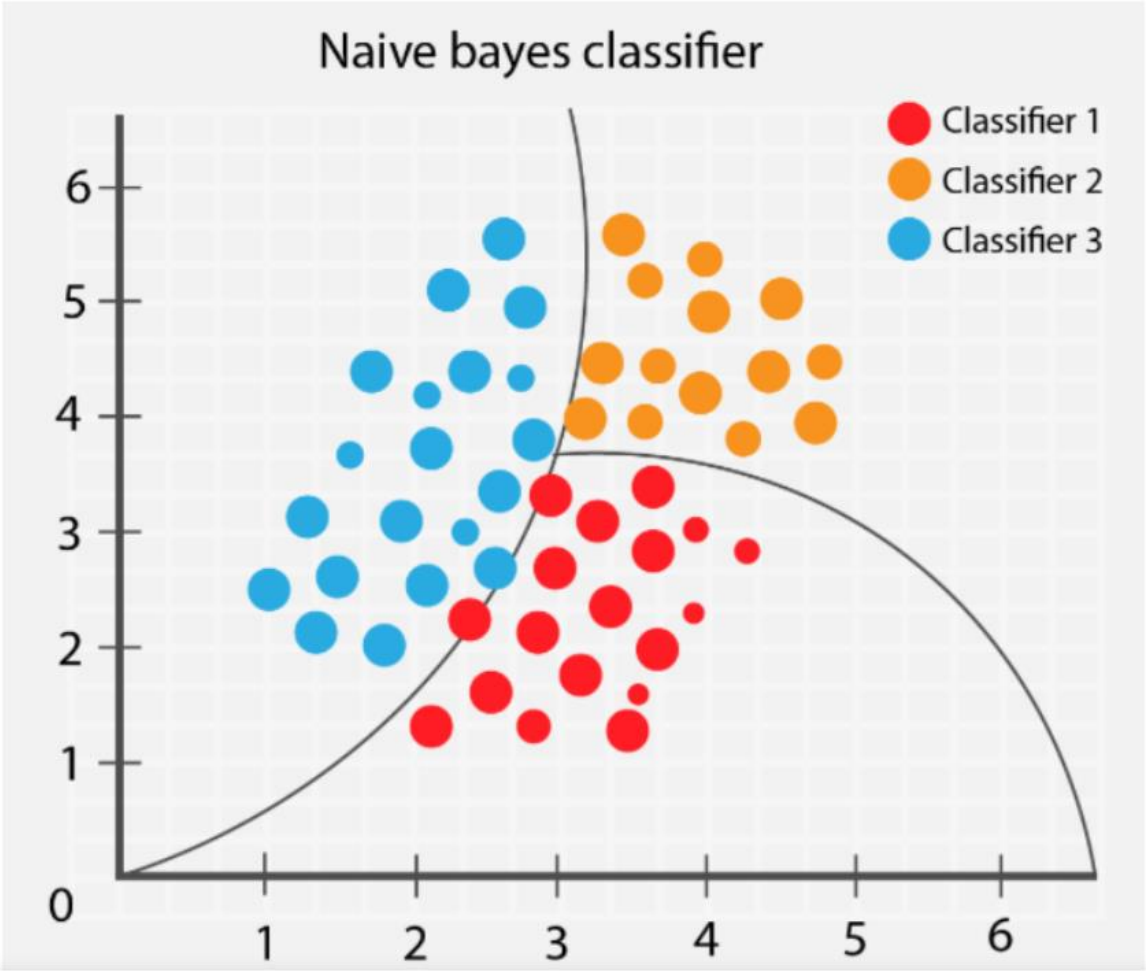
Step-2: Adjust Naive Bayes to the Training set.

Step-3: Predict the outcomes of the test.

Step-4: Result accuracy was tested.

Step-5: Visualize the outcome of the test set.

Graph :



CHAPTER 8

SAMPLE CODE

8.SAMPLE CODE

Main.py

#Importing the libraries

```
import pandas as pd
import numpy as np
from sklearn.preprocessing import LabelEncoder
from sklearn.feature_extraction.text import CountVectorizer
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score
from sklearn.metrics import accuracy_score, precision_score, recall_score
from flask import *
import mysql.connector
db=mysql.connector.connect(user="root",password="",port='3306',database='hate_spee
ch')
cur=db.cursor()



app=Flask(__name__)
app.secret_key="CBJcb786874wrf78chdchsdcv"

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

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

@app.route('/login',methods=['POST','GET'])
```

```
def login():
    if request.method=='POST':
        useremail=request.form['useremail']
        session['useremail']=useremail
        userpassword=request.form['userpassword']
        sql="select * from user where Email='%s' and
Password='%s'"%(useremail,userpassword)
        cur.execute(sql)
        data=cur.fetchall()
        db.commit()
        if data ==[]:
            msg="user Credentials Are not valid"
            return render_template("login.html",name=msg)
        else:
            return render_template("userhome.html",myname=data[0][1])
    return render_template('login.html')

@app.route('/registration',methods=["POST","GET"])
def registration():
    if request.method=='POST':
        username=request.form['username']
        useremail = request.form['useremail']
        userpassword = request.form['userpassword']
        conpassword = request.form['conpassword']
        Age = request.form['Age']

        contact = request.form['contact']
        if userpassword == conpassword:
            sql="select * from user where Email='%s' and
Password='%s'"%(useremail,userpassword)
            cur.execute(sql)
            data=cur.fetchall()
            db.commit()
```

```
            print(data)
            if data==[]:

                sql = "insert into
user(Name,Email,Password,Age,Mob)values(%s,%s,%s,%s,%s)"
                val=(username,useremail,userpassword,Age,contact)
                cur.execute(sql,val)
                db.commit()
                flash("Registered successfully","success")
                return render_template("login.html")
            else:
                flash("Details are invalid","warning")
                return render_template("registration.html")
        else:
            flash("Password doesn't match", "warning")
            return render_template("registration.html")
    return render_template('registration.html')

@app.route('/load',methods=["GET","POST"])
def load():
    global df, dataset
    if request.method == "POST":
        data = request.files['data']
        df = pd.read_csv(data)
        dataset = df.head(100)
        msg = 'Data Loaded Successfully'
        return render_template('load.html', msg=msg)
    return render_template('load.html')

@app.route('/view')
def view():
    print(dataset)
    print(dataset.head(2))
```

```
    print(dataset.columns)
    return render_template('view.html', columns=dataset.columns.values,
rows=dataset.values.tolist())



def text_clean(text):
    # changing to lower case
    lower = text.str.lower()

    # Replacing the repeating pattern of &#039;
    pattern_remove = lower.str.replace("&#039;", "")

    # Removing all the special Characters
    special_remove = pattern_remove.str.replace(r'[^\w\d\s]',' ')

    # Removing all the non ASCII characters
    ascii_remove = special_remove.str.replace(r'[^\x00-\x7F]+',' ')

    # Removing the leading and trailing Whitespaces
    whitespace_remove = ascii_remove.str.replace(r'^\s+|\s+?$','')

    # Replacing multiple Spaces with Single Space
    multiw_remove = whitespace_remove.str.replace(r'\s+',' ')

    # Replacing Two or more dots with one
    dataframe = multiw_remove.str.replace(r'\.{2,}', ' ')

    return dataframe



@app.route('/preprocess', methods=['POST', 'GET'])
def preprocess():
```

```
    global x, y, x_train, x_test, y_train, y_test,  hvectorizer,df
    if request.method == "POST":
        size = int(request.form['split'])
        size = size / 100
        from sklearn.preprocessing import LabelEncoder
        le=LabelEncoder()
        df = df[['text', 'label']]
        df['label'] = le.fit_transform(df['label'])
        df.head()
        df['text_clean'] = text_clean(df['text'])
        df.head()
        df.columns

       # Assigning the value of x and y
        x = df['text_clean']
        y = df['label']

        x_train, x_test, y_train, y_test = train_test_split(x,y, stratify=y, test_size=size,
random_state=42)

        from sklearn.feature_extraction.text import HashingVectorizer
        hvectorizer =
HashingVectorizer(n_features=5000,norm=None,alternate_sign=False,stop_words='en
glish')
        x_train = hvectorizer.fit_transform(x_train).toarray()
        x_test = hvectorizer.transform(x_test).toarray()

        # describes info about train and test set
        print("Number transactions X_train dataset: ", x_train.shape)
        print("Number transactions y_train dataset: ", y_train.shape)
        print("Number transactions X_test dataset: ", x_test.shape)
        print("Number transactions y_test dataset: ", y_test.shape)
```

```
        print(x_train,x_test)
        print(y_train)
        print(y_test)

        return render_template('preprocess.html', msg='Data Preprocessed and It Splits
Successfully')
    return render_template('preprocess.html')

@app.route('/model', methods=['POST', 'GET'])
def model():
    if request.method == "POST":
        global model,ac_lr1
        ac_lr1 = 94.567891234
        print('ccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccccc')
        s = int(request.form['algo'])
        if s == 0:
            return render_template('model.html', msg='Please Choose an Algorithm to
Train')
        elif s == 1:
            print('aaaaaaaaaaaaaaaaaaaabbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbbb')

            from sklearn.linear_model import LogisticRegression
            lr = LogisticRegression()
            lr.fit(x_train,y_train)
            y_pred = lr.predict(x_test)
            ac_lr = accuracy_score(y_test, y_pred)
            precision = precision_score(y_test, y_pred)*100
            recall = recall_score(y_test, y_pred)*100
            ac_lr = ac_lr * 100
            print(ac_lr)
            print('aaaaaaaaaaaaaaaaaaaaaaaa')
            msg = 'The Accuracy obtained by Logistic Regression is  ' + str(ac_lr1) +
str('%')
```

```
            msg1 = 'The Precision obtained by Logistic Regression is ' + str(precision) +
str('%')
            msg2 = 'The Recall obtained by Logistic Regression is ' + str(recall) + str('%')
            return render_template('model.html', msg=msg,msg1=msg1,msg2=msg2)
        elif s == 2:
            from sklearn.naive_bayes import MultinomialNB
            classifier = MultinomialNB()
            classifier.fit(x_train, y_train)
            y_pred  =  classifier.predict(x_test)

            ac_nb = accuracy_score(y_test, y_pred)
            precision = precision_score(y_test, y_pred) * 100
            recall = recall_score(y_test, y_pred) * 100
            ac_nb = ac_nb * 100
            msg = 'The Accuracy obtained by Naive Bayes Classifier is ' + str(ac_nb) +
str('%')
            msg1 = 'The Precision obtained by Naive Bayes Classifier is ' + str(precision) +
str('%')
            msg2 = 'The Recall obtained by Naive Bayes Classifier is ' + str(recall) +
str('%')
            return render_template('model.html', msg=msg,msg1=msg1,msg2=msg2)

    return render_template('model.html')


@app.route('/prediction',methods=['POST','GET'])
def prediction():
    global x_train,y_train
    if request.method == "POST":
        f1 = request.form['text']
        print(f1)

        from sklearn.feature_extraction.text import HashingVectorizer
        hvectorizer =
```

```
HashingVectorizer(n_features=5000,norm=None,alternate_sign=False)
        logistic = LogisticRegression()
        logistic.fit(x_train,y_train)

        result =logistic.predict(hvectorizer.transform([f1]))
        result=result[0]
        if result==0:
            msg = 'The Entered Text is Detected as Hate Speech'
        else:
            msg= 'The Entered Text is Detected as Not a Hate Speech'

        return render_template('prediction.html',msg=msg)

    return render_template('prediction.html')


if __name__=='__main__':
    app.run(debug=True)
```

USER INTERFACE CODE (HTML CODE):

ABOUT PAGE:

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

<head>
    <meta charset="utf-8">
    <title>Hate Speech Detection</title>
    <meta content="width=device-width, initial-scale=1.0" name="viewport">
    <meta content="Free HTML Templates" name="keywords">
    <meta content="Free HTML Templates" name="description">

    <!-- Favicon -->
    <link href="static/img/favicon.ico" rel="icon">
    <link rel="icon" href="static/img/icon.jpg" type="image/icon type">

    <!-- Google Web Fonts -->
    <link rel="preconnect" href="https://fonts.gstatic.com">
    <link
href="https://fonts.googleapis.com/css2?family=Poppins:wght@400;500;600;700&disp
lay=swap" rel="stylesheet">

    <!-- Font Awesome -->
```

```
        <link href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.10.0/css/all.min.css" rel="stylesheet">


        <!-- Libraries Stylesheet -->
        <link href="static/lib/owlcarousel/assets/owl.carousel.min.css" rel="stylesheet">
        <link href="static/lib/tempusdominus/css/tempusdominus-bootstrap-4.min.css" rel="stylesheet" />


        <!-- Customized Bootstrap Stylesheet -->
        <link href="static/css/style.css" rel="stylesheet">
    </head>
    <body>
        <!-- Topbar End -->


        <!-- Navbar Start -->
        <div class="container-fluid position-relative nav-bar p-0">
            <div class="container-lg position-relative p-0 px-lg-3" style="z-index: 9;">
                <nav class="navbar navbar-expand-lg bg-light navbar-light shadow-lg py-3 py-lg-0 pl-3 pl-lg-5" style="
                    width: 1364px;
                    right: 119px;
                ">
                    <a href="" class="navbar-brand">
                        <h1 class="m-0 text-primary"><span class="text-dark">HATE SPEECH</span> DETECTION</h1>
```

```
                </a>
                <button type="button" class="navbar-toggler" data-toggle="collapse" data-target="#navbarCollapse">
                    <span class="navbar-toggler-icon"></span>
                </button>
                <div class="collapse navbar-collapse justify-content-between px-3" id="navbarCollapse">
                    <div class="navbar-nav ml-auto py-0">
                        <a href="{{url_for('index')}}" class="nav-item nav-link ">Home</a>
                        <a href="{{url_for('about')}}" class="nav-item nav-link active">About</a>
                        <div class="nav-item dropdown">
                            <a href="#" class="nav-link dropdown-toggle" data-toggle="dropdown">User</a>
                            <div class="dropdown-menu border-0 rounded-0 m-0">
                                <a href="{{url_for('registration')}}" class="dropdown-item">Registration</a>
                                <a href="{{url_for('login')}}" class="dropdown-item">Login</a>

                            </div>
                        </div>
                    </div>
                </div>
            </nav>
```

```
        </div>
    </div>
    <!-- Navbar End -->


    <!-- Header Start -->
    <div class="container-fluid page-header">
        <div class="container">
            <div class="d-flex flex-column align-items-center justify-content-center" style="min-height: 400px">
                <h3 class="display-4 text-white text-uppercase">About</h3>
                <div class="d-inline-flex text-white">
                    <p class="m-0 text-uppercase"><a class="text-white" href="">Home</a></p>
                    <i class="fa fa-angle-double-right pt-1 px-3"></i>
                    <p class="m-0 text-uppercase">About</p>
                </div>
            </div>
        </div>
    </div>
    <!-- Header End -->
    <!-- About Start -->
    <div class="container-fluid py-5">
        <div class="container pt-5">
            <div class="row">
                <div class="col-lg-6" style="min-height: 500px;">
```

```
                    <div class="position-relative h-100">
                        <img class="position-absolute w-100 h-100"
src="static/img/10.jpg" style="object-fit: cover;">
                    </div>
                </div>
                <div class="col-lg-6 pt-5 pb-lg-5">
                    <div class="about-text bg-white p-4 p-lg-5 my-lg-5">
                        <h6 class="text-primary text-uppercase" style="letter-spacing:
5px;">About Us</h6>
                        <h1 class="mb-3">We Provide Best Tour Packages In Your
Budget</h1>
                        <p align="justify">From the past decade, social media has
gained a
                            lot of momentum both in a positive way as well as in a
negative
                            way. With this rapid increase of networking through social
                            platforms and websites, people are able to communicate with
                            each other directly with no cultural or economic gap. While
                            there have been many benefits of social media but there are no
                            less negative impacts on the society. One such problem that
has
                            arised since the past few years is the hate speech. Hate speech
                            is basically the use of offensive and hostile language
happening
                            on the social media. It may refer to any individual or a certain
                            group of people with the same interests. In this paper, we have
```

```
                    introduced our way of dealing with this hate speech and
                    minimizing it to a large extent. People convey their hatred and
                    anger straightaway on social media which would hurt the
                    feelings of other people. It would affect their caste , creed,
                    religion, race, and would have a very negative impact on them.
                    Some comments might not be intentional to anyone but would
                    be counted as hate speech due the foul language used. Wehave
                    dived deep into natural language processing to eliminate hate
                    speech and used various machine learning models to decide
                    which one to use as per its accuracy.
                    </p>
                <div class="row mb-4">
                    <div class="col-6">
                        <img class="img-fluid" src="static/img/4.jpg" alt="">
                    </div>
                    <div class="col-6">
                        <img class="img-fluid" src="static/img/5.jpg" alt="">
                    </div>
                </div>
                <a href="{{url_for('login')}}" class="btn btn-primary mt-
1">Let's Start</a>
            </div>
        </div>
    </div>
</div>
```

```
        </div>
        <!-- About End -->
        <!-- Footer Start -->
        <div class="container-fluid bg-dark text-white-50 py-5 px-sm-3 px-lg-5" style="margin-top: 90px;">
            <div class="row pt-5">
                <div class="col-lg-3 col-md-6 mb-5">
                    <a href="" class="navbar-brand">
                        <h1 class="text-primary"><span class="text-white">HATE SPEECH </span>DETECTION</h1>
                    </a>
                    <p>Here in this project we are going to classify the hate speech using Machine Learning Technique with Natural Language Processing (NLP)</p>
                    <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-spacing: 5px;">Follow Us</h6>
                    <div class="d-flex justify-content-start">
                        <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-twitter"></i></a>
                        <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-facebook-f"></i></a>
                        <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-linkedin-in"></i></a>
                        <a class="btn btn-outline-primary btn-square" href="#"><i class="fab fa-instagram"></i></a>
                    </div>
                </div>
                <div class="col-lg-3 col-md-6 mb-5">
```

```
                    <h5 class="text-white text-uppercase mb-4" style="letter-spacing:
5px;">Usefull Links</h5>

                    <div class="d-flex flex-column justify-content-start">

                        <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>About</a>

                        <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Destination</a>

                        <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Services</a>

                        <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Packages</a>

                        <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Guides</a>

                        <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Testimonial</a>

                        <a class="text-white-50" href="#"><i class="fa fa-angle-right mr-
2"></i>Blog</a>

                    </div>

                </div>

                <div class="col-lg-3 col-md-6 mb-5">

                    <h5 class="text-white text-uppercase mb-4" style="letter-spacing:
5px;">Contact Us</h5>

                    <p><i class="fa fa-user-circle-o mr-2"></i>G VINOD KUMAR</p>

                    <p><i class="fa fa-id-card mr-2"></i>20131F0016</p>

            <p><i class="fa fa-phone-alt mr-2">+91 8367256076</i></p>

                    <p><i class="fa fa-envelope mr-
2"></i>vinodkumargorle5@gmail.com</p>
```

```
<p><i class="fa fa-envelope mr-2"></i>20131f0016@gvpce.ac.in</p>
                    <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-spacing: 5px;">Newsletter</h6>
                    <div class="w-100">
                      <div class="input-group">
                        <input type="text" class="form-control border-light" style="padding: 25px;" placeholder="Your Email">
                        <div class="input-group-append">
                          <button class="btn btn-primary px-3">Sign Up</button>
                        </div>
                      </div>
                    </div>
                  </div>
                </div>
              </div>
            <div class="container-fluid bg-dark text-white border-top py-4 px-sm-3 px-md-5" style="border-color: rgba(256, 256, 256, .1) !important;">
                <div class="row">
                  <div class="col-lg-6 text-center text-md-left mb-3 mb-md-0">
                    <p class="m-0 text-white-50">Copyright &copy; <a href="#">Domain</a>. All Rights Reserved.</a>
                    </p>
                  </div>
                  <div class="col-lg-6 text-center text-md-right">
                    <p class="m-0 text-white-50">Designed by <a href="https://www.linkedin.com/in/vinod-kumar-gorle-657399210">Vinod Kumar</a>
```

```
                    </p>
                </div>
            </div>
        </div>
        <!-- Footer End -->
        <!-- Back to Top -->
        <a href="#" class="btn btn-lg btn-primary btn-lg-square back-to-top"><i class="fa fa-angle-double-up"></i></a>
        <!-- JavaScript Libraries -->
        <script src="https://code.jquery.com/jquery-3.4.1.min.js"></script>
        <script src="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.bundle.min.js"></script>
        <script src="static/lib/easing/easing.min.js"></script>
        <script src="static/lib/owlcarousel/owl.carousel.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment-timezone.min.js"></script>
        <script src="static/lib/tempusdominus/js/tempusdominus-bootstrap-4.min.js"></script>
        <!-- Contact Javascript File -->
        <script src="static/mail/jqBootstrapValidation.min.js"></script>
        <script src="static/mail/contact.js"></script>
        <!-- Template Javascript -->
        <script src="static/js/main.js"></script>
    </body> </html>
```

REGISTRATION AND LOGIN PAGE:

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

<head>
   <meta charset="utf-8">
   <title>Hate Speech Detection</title>
   <meta content="width=device-width, initial-scale=1.0" name="viewport">
   <meta content="Free HTML Templates" name="keywords">
   <meta content="Free HTML Templates" name="description">

   <!-- Favicon -->
   <link href="static/img/favicon.ico" rel="icon">
   <link rel="icon" href="static/img/icon.jpg" type="image/icon type">

   <!-- Google Web Fonts -->
   <link rel="preconnect" href="https://fonts.gstatic.com">
   <link
href="https://fonts.googleapis.com/css2?family=Poppins:wght@400;500;600;700&disp
lay=swap" rel="stylesheet">

   <!-- Font Awesome -->
   <link href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/5.10.0/css/all.min.css" rel="stylesheet">
```

```
        <!-- Libraries Stylesheet -->
        <link href="static/lib/owlcarousel/assets/owl.carousel.min.css"
rel="stylesheet">
        <link href="static/lib/tempusdominus/css/tempusdominus-bootstrap-
4.min.css" rel="stylesheet" />

        <!-- Customized Bootstrap Stylesheet -->
        <link href="static/css/style.css" rel="stylesheet">
    </head>

    <body>

        <!-- Topbar End -->


        <!-- Navbar Start -->
        <div class="container-fluid position-relative nav-bar p-0">
            <div class="container-lg position-relative p-0 px-lg-3" style="z-index: 9;">
                <nav class="navbar navbar-expand-lg bg-light navbar-light shadow-lg
py-3 py-lg-0 pl-3 pl-lg-5" style="
                    width: 1364px;
                    right: 119px;
                ">
                    <a href="" class="navbar-brand">
```

```
                    <h1 class="m-0 text-primary"><span class="text-dark">HATE
SPEECH</span> DETECTION</h1>
                </a>
                <button type="button" class="navbar-toggler" data-toggle="collapse"
data-target="#navbarCollapse">
                    <span class="navbar-toggler-icon"></span>
                </button>
                <div class="collapse navbar-collapse justify-content-between px-3"
id="navbarCollapse">
                    <div class="navbar-nav ml-auto py-0">
                        <a href="{{url_for('index')}}" class="nav-item nav-link
active">Home</a>
                        <a href="{{url_for('about')}}" class="nav-item nav-
link">About</a>
                        <div class="nav-item dropdown">
                            <a href="#" class="nav-link dropdown-toggle" data-
toggle="dropdown">User</a>
                            <div class="dropdown-menu border-0 rounded-0 m-0">
                                <a href="{{url_for('registration')}}" class="dropdown-
item">Registration</a>
                                <a href="{{url_for('login')}}" class="dropdown-
item">Login</a>


                            </div>
                        </div>
                    </div>
                </div>
```

```
            </nav>
        </div>
    </div>
    <!-- Navbar End -->


    <!-- Registration Start -->
    <div class="container-fluid bg-registration py-5" style="margin: 90px 0;">
        <div class="container py-5">
            <div class="row align-items-center">


                <div class="col-lg-5" style="left: 361px;">
                    <div class="card border-0">
                        <div class="card-header bg-primary text-center p-4">
                            <h1 class="text-white m-0">User Login</h1>
                        </div>
                        <div class="card-body rounded-bottom bg-white p-5">
                            <form action="{{url_for('login')}}" method="post">


                                <div class="form-group">
                                    <input type="email" name="useremail" class="form-
control p-4" placeholder="Enter Your Email" required="required" />
                                </div>
                                <div class="form-group">
                                    <input type="password" name="userpassword"
class="form-control p-4" placeholder="Enter Your Password" required="required" />
```

```
                                </div>
                                <div>
                                    <button class="btn btn-primary btn-block py-3"
type="submit">Login</button>
                                </div>
                            </form>
                        </div>
                    </div>
                </div>
            </div>
        </div>
        <!-- Registration End -->



        <!-- Footer Start -->
        <div class="container-fluid bg-dark text-white-50 py-5 px-sm-3 px-lg-5"
style="margin-top: 90px;">
            <div class="row pt-5">
                <div class="col-lg-3 col-md-6 mb-5">
                    <a href="" class="navbar-brand">
```

```
                    <h1 class="text-primary"><span class="text-white">HATE
SPEECH </span>DETECTION</h1>

                </a>

                <p>Here in this project we are going to classify the hate speech using
Machine Learning Technique with Natural Language Processing (NLP)</p>

                <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-
spacing: 5px;">Follow Us</h6>

                <div class="d-flex justify-content-start">

                    <a class="btn btn-outline-primary btn-square mr-2" href="#"><i
class="fab fa-twitter"></i></a>

                    <a class="btn btn-outline-primary btn-square mr-2" href="#"><i
class="fab fa-facebook-f"></i></a>

                    <a class="btn btn-outline-primary btn-square mr-2" href="#"><i
class="fab fa-linkedin-in"></i></a>

                    <a class="btn btn-outline-primary btn-square" href="#"><i
class="fab fa-instagram"></i></a>

                </div>

            </div>


            <div class="col-lg-3 col-md-6 mb-5"  style="margin-left: 300px;">

                <h5 class="text-white text-uppercase mb-4" style="letter-spacing:
5px;">Usefull Links</h5>

                <div class="d-flex flex-column justify-content-start">

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>About</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Destination</a>
```

```
                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Services</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Packages</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Guides</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Testimonial</a>

                    <a class="text-white-50" href="#"><i class="fa fa-angle-right mr-
2"></i>Blog</a>

                </div>

            </div>

            <div class="col-lg-3 col-md-6 mb-5">

                <h5 class="text-white text-uppercase mb-4" style="letter-spacing:
5px;">Contact Us</h5>

                 <p><i class="fa fa-user-circle-o mr-2"></i>G VINOD KUMAR</p>

                <p><i class="fa fa-id-card mr-2"></i>20131F0016</p>

          <p><i class="fa fa-phone-alt mr-2">+91 8367256076</i></p>

                <p><i class="fa fa-envelope mr-
2"></i>vinodkumargorle5@gmail.com</p>

          <p><i class="fa fa-envelope mr-2"></i>20131F0016@gvpce.ac.in</p>

                <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-
spacing: 5px;">Newsletter</h6>

                <div class="w-100">

                    <div class="input-group">

                        <input type="text" class="form-control border-light"
style="padding: 25px;" placeholder="Your Email">
```

```
                        <div class="input-group-append">
                            <button class="btn btn-primary px-3">Sign Up</button>
                        </div>
                    </div>
                </div>
            </div>
        </div>
        <div class="container-fluid bg-dark text-white border-top py-4 px-sm-3 px-md-5" style="border-color: rgba(256, 256, 256, .1) !important;">
            <div class="row">
                <div class="col-lg-6 text-center text-md-left mb-3 mb-md-0">
                    <p class="m-0 text-white-50">Copyright &copy; <a href="#">Domain</a>. All Rights Reserved.</a>
                    </p>
                </div>
                <div class="col-lg-6 text-center text-md-right">
                    <p class="m-0 text-white-50">Designed by <a href="https://www.linkedin.com/in/vinod-kumar-gorle-657399210">Vinod Kumar</a>
                    </p>
                </div>
            </div>
        </div>
        <!-- Footer End -->
```

```
        <!-- Back to Top -->
        <a href="#" class="btn btn-lg btn-primary btn-lg-square back-to-top"><i class="fa fa-angle-double-up"></i></a>


        <!-- JavaScript Libraries -->
        <script src="https://code.jquery.com/jquery-3.4.1.min.js"></script>
        <script src="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.bundle.min.js"></script>
        <script src="static/lib/easing/easing.min.js"></script>
        <script src="static/lib/owlcarousel/owl.carousel.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment-timezone.min.js"></script>
        <script src="static/lib/tempusdominus/js/tempusdominus-bootstrap-4.min.js"></script>


        <!-- Contact Javascript File -->
        <script src="static/mail/jqBootstrapValidation.min.js"></script>
        <script src="static/mail/contact.js"></script>


        <!-- Template Javascript -->
        <script src="static/js/main.js"></script>
    </body></html>
```

PREPROCESSING PAGE :

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="utf-8">
    <title>Hate Speech Detection</title>
    <meta content="width=device-width, initial-scale=1.0" name="viewport">
    <meta content="Free HTML Templates" name="keywords">
    <meta content="Free HTML Templates" name="description">

    <!-- Favicon -->
    <link href="static/img/favicon.ico" rel="icon">
    <link rel="icon" href="static/img/icon.jpg" type="image/icon type">

    <!-- Google Web Fonts -->
    <link rel="preconnect" href="https://fonts.gstatic.com">
    <link
href="https://fonts.googleapis.com/css2?family=Poppins:wght@400;500;600;700&disp
lay=swap" rel="stylesheet">

    <!-- Font Awesome -->
    <link href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/5.10.0/css/all.min.css" rel="stylesheet">

    <!-- Libraries Stylesheet -->
```

```
        <link href="static/lib/owlcarousel/assets/owl.carousel.min.css"
rel="stylesheet">

        <link href="static/lib/tempusdominus/css/tempusdominus-bootstrap-
4.min.css" rel="stylesheet" />


        <!-- Customized Bootstrap Stylesheet -->

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

    </head>


    <body>


        <!-- Topbar End -->



        <!-- Navbar Start -->

        <div class="container-fluid position-relative nav-bar p-0">

            <div class="container-lg position-relative p-0 px-lg-3" style="z-index: 9;">

                <nav class="navbar navbar-expand-lg bg-light navbar-light shadow-lg
py-3 py-lg-0 pl-3 pl-lg-5" style="

                    width: 1364px;

                    right: 119px;

                ">

                    <a href="" class="navbar-brand">

                        <h1 class="m-0 text-primary"><span class="text-dark">HATE
SPEECH</span> DETECTION</h1>
```

```
                </a>
                <button type="button" class="navbar-toggler" data-toggle="collapse"
data-target="#navbarCollapse">
                    <span class="navbar-toggler-icon"></span>
                </button>
                <div class="collapse navbar-collapse justify-content-between px-3"
id="navbarCollapse">
                    <div class="navbar-nav ml-auto py-0">
                        <a href="{{url_for('index')}}" class="nav-item nav-link
">Home</a>
                        <a href="{{url_for('load')}}" class="nav-item nav-link
">Load</a>
                        <a href="{{url_for('view')}}" class="nav-item nav-link
">view</a>
                        <a href="{{url_for('preprocess')}}" class="nav-item nav-link
active">Preprocess</a>
                        <a href="{{url_for('model')}}" class="nav-item nav-
link">Model Training</a>
                        <a href="{{url_for('prediction')}}" class="nav-item nav-
link">Prediction</a>
                        <a href="{{url_for('login')}}" class="nav-item nav-
link">Logout</a>

                    </div>
                </div>
            </nav>
        </div>
```

```
</div>
<!-- Navbar End -->



<!-- Carousel Start -->
<div class="overlay"></div>
  <div class="gtco-container">
     <div class="row">
        <div class="col-md-12 col-md-offset-0 text-center">
           <div class="display-t">


                    <div class="display-tc animate-box" data-animate-
effect="fadeIn">
                       <center><h3  style="bottom: 222px;color:rgb(62, 187, 62);
margin-top: 32px;">{{msg}}</h3></center>
                       <!-- <center><h3  style="bottom: 222px;color:rgb(11, 203,
236);">Welcome To Cyber Attack {{myname}}</h3></center> -->
                        <h3 style="color:rgb(1, 15, 17);bottom: 115px;margin-top:
196px;"> Detecting Hate Speech  </h3>


                       <h3 style="color:rgb(1, 10, 12);bottom: 100px;">With the help
of Machine Learning</h3>
                       <p>


                        <center><form action="{{url_for('preprocess')}}"
method="post">
```

```
                    <!--                                                    <a
href="/upload" class="btn btn-primary btn-lg">Get Started</a>-->

                                        <input type="text" name="split"
placeholder="Test Split Size"style="width: 303.99306px;height: 43.99306px;
color:rgb(11, 203, 236); border-color :rgb(11, 203, 236); border-width : 50 px;
"></center>

                                        <input class="btn btn-primary"
type="submit" value="Submit"style="margin-left: 0px;margin-top: 33px;">

                                        <!-- <input type="submit"
value="Submit"> -->

                                    </form>


                                        <!-- <img
src="static/images/business_img.jpg" alt=”Image” height="1000" width="1200"> -->

                    <!--                                                    <a
href="#" class="btn btn-white btn-outline btn-lg"></a></p>-->

                                </div>



                    </div>

                </div>

            </div>

        </div>

    </div>

    <!-- Carousel End -->

    <!-- Footer Start -->
```

```
<div class="container-fluid bg-dark text-white-50 py-5 px-sm-3 px-lg-5" style="margin-top: 300px;">
    <div class="row pt-5">
        <div class="col-lg-3 col-md-6 mb-5">
            <a href="" class="navbar-brand">
                <h1 class="text-primary"><span class="text-white">HATE SPEECH </span>DETECTION</h1>
            </a>
            <p>Here in this project we are going to classify the hate speech using Machine Learning Technique with Natural Language Processing (NLP)</p>
            <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-spacing: 5px;">Follow Us</h6>
            <div class="d-flex justify-content-start">
                <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-twitter"></i></a>
                <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-facebook-f"></i></a>
                <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-linkedin-in"></i></a>
                <a class="btn btn-outline-primary btn-square" href="#"><i class="fab fa-instagram"></i></a>
            </div>
        </div>
        <div class="col-lg-3 col-md-6 mb-5"  style="margin-left: 300px;">
            <h5 class="text-white text-uppercase mb-4" style="letter-spacing: 5px;">Usefull Links</h5>
            <div class="d-flex flex-column justify-content-start">
```

```
                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>About</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Destination</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Services</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Packages</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Guides</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Testimonial</a>

                    <a class="text-white-50" href="#"><i class="fa fa-angle-right mr-
2"></i>Blog</a>

                </div>

            </div>

            <div class="col-lg-3 col-md-6 mb-5">

        <h5 class="text-white text-uppercase mb-4" style="letter-spacing:
5px;">Contact Us</h5>

                <p><i class="fa fa-user-circle-o mr-2"></i>G VINOD
KUMAR</p>

                <p><i class="fa fa-id-card mr-2"></i>20131F0016</p>

          <p><i class="fa fa-phone-alt mr-2">+91 8367256076</i></p>

                <p><i class="fa fa-envelope mr-
2"></i>vinodkumargorle5@gmail.com</p>

          <p><i class="fa fa-envelope mr-2"></i>20131F0016@gvpce.ac.in</p>
```

```
                    <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-
spacing: 5px;">Newsletter</h6>
                    <div class="w-100">
                      <div class="input-group">
                        <input type="text" class="form-control border-light"
style="padding: 25px;" placeholder="Your Email">
                        <div class="input-group-append">
                          <button class="btn btn-primary px-3">Sign Up</button>
                        </div>
                      </div>
                    </div>
                  </div>
                </div>
              </div>
              <div class="container-fluid bg-dark text-white border-top py-4 px-sm-3 px-
md-5" style="border-color: rgba(256, 256, 256, .1) !important;">
                <div class="row">
                  <div class="col-lg-6 text-center text-md-left mb-3 mb-md-0">
                    <p class="m-0 text-white-50">Copyright &amp;copy; <a
href="#">Domain</a>. All Rights Reserved.</a>
                    </p>
                  </div>
                  <div class="col-lg-6 text-center text-md-right">
                    <p class="m-0 text-white-50">Designed by <a
href="https://www.linkedin.com/in/vinod-kumar-gorle-657399210">Vinod Kumar</a>
                    </p>
```

```
            </div>
          </div>
        </div>
        <!-- Footer End -->
        <!-- Back to Top -->
        <a href="#" class="btn btn-lg btn-primary btn-lg-square back-to-top"><i class="fa fa-angle-double-up"></i></a>
        <!-- JavaScript Libraries -->
        <script src="https://code.jquery.com/jquery-3.4.1.min.js"></script>
        <script src="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.bundle.min.js"></script>
        <script src="static/lib/easing/easing.min.js"></script>
        <script src="static/lib/owlcarousel/owl.carousel.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment-timezone.min.js"></script>
        <script src="static/lib/tempusdominus/js/tempusdominus-bootstrap-4.min.js"></script>
        <!-- Contact Javascript File -->
        <script src="static/mail/jqBootstrapValidation.min.js"></script>
        <script src="static/mail/contact.js"></script>
        <!-- Template Javascript -->
        <script src="static/js/main.js"></script>
    </body> </html>
```

ALGORITHM MODEL PAGE:

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

        <head>
            <meta charset="utf-8">
            <title>Hate Speech Detection</title>
            <meta content="width=device-width, initial-scale=1.0" name="viewport">
            <meta content="Free HTML Templates" name="keywords">
            <meta content="Free HTML Templates" name="description">

            <!-- Favicon -->
            <link href="static/img/favicon.ico" rel="icon">
            <link rel="icon" href="static/img/icon.jpg" type="image/icon type">

            <!-- Google Web Fonts -->
            <link rel="preconnect" href="https://fonts.gstatic.com">
            <link
  href="https://fonts.googleapis.com/css2?family=Poppins:wght@400;500;600;700&disp
  lay=swap" rel="stylesheet">

            <!-- Font Awesome -->
            <link href="https://cdnjs.cloudflare.com/ajax/libs/font-
  awesome/5.10.0/css/all.min.css" rel="stylesheet">
```

```
        <!-- Libraries Stylesheet -->
        <link href="static/lib/owlcarousel/assets/owl.carousel.min.css"
rel="stylesheet">
        <link href="static/lib/tempusdominus/css/tempusdominus-bootstrap-
4.min.css" rel="stylesheet" />
        <!-- Customized Bootstrap Stylesheet -->
        <link href="static/css/style.css" rel="stylesheet">
    </head>
    <body>
        <!-- Topbar End -->
      <!-- Navbar Start -->
        <div class="container-fluid position-relative nav-bar p-0">
            <div class="container-lg position-relative p-0 px-lg-3" style="z-index: 9;">
                <nav class="navbar navbar-expand-lg bg-light navbar-light shadow-lg
py-3 py-lg-0 pl-3 pl-lg-5" style="
                width: 1364px;
                right: 119px;
            ">
                    <a href="" class="navbar-brand">
                        <h1 class="m-0 text-primary"><span class="text-dark">HATE
SPEECH</span> DETECTION</h1>
                    </a>
                    <button type="button" class="navbar-toggler" data-toggle="collapse"
data-target="#navbarCollapse">
                        <span class="navbar-toggler-icon"></span>
                    </button>
```

```
                    <div class="collapse navbar-collapse justify-content-between px-3" id="navbarCollapse">
                        <div class="navbar-nav ml-auto py-0">
                            <a href="{{url_for('index')}}" class="nav-item nav-link ">Home</a>
                            <a href="{{url_for('load')}}" class="nav-item nav-link ">Load</a>
                            <a href="{{url_for('view')}}" class="nav-item nav-link ">view</a>
                            <a href="{{url_for('preprocess')}}" class="nav-item nav-link ">Preprocess</a>
                            <a href="{{url_for('model')}}" class="nav-item nav-link active">Model Training</a>
                            <a href="{{url_for('prediction')}}" class="nav-item nav-link">Prediction</a>
                            <a href="{{url_for('login')}}" class="nav-item nav-link">Logout</a>
                        </div>
                    </div>
                </nav>
            </div>
        </div>
        <!-- Navbar End -->
        <!-- Carousel Start -->
        <div class="overlay"></div>
          <div class="gtco-container">
            <div class="row">
```

```
<div class="col-md-12 col-md-offset-0 text-center">
<div class="display-t">
<div class="display-tc animate-box" data-animate-effect="fadeIn">
<center><h3  style="bottom: 222px;color:rgb(62, 187, 62); margin-top: 32px;">{{msg}}</h3></center>
<center><h3  style="bottom: 222px;color:rgb(62, 187, 62); margin-top: 32px;">{{msg1}}</h3></center>
<center><h3  style="bottom: 222px;color:rgb(62, 187, 62); margin-top: 32px;">{{msg2}}</h3></center>
<!-- <center><h3  style="bottom: 222px;color:rgb(11, 203, 236);">Welcome To Cyber Attack {{myname}}</h3></center> -->
<h3 style="color:rgb(1, 15, 17);bottom: 115px;margin-top: 196px;"> Detecting Hate Speech  </h3>
<h3 style="color:rgb(1, 10, 12);bottom: 100px;">With the help of Machine Learning</h3>
<p>
<center> <form action="{{url_for('model')}}" method="post">
<!-- <a href="/upload" class="btn btn-primary btn-lg">Get Started</a>-->
<center><select name="algo"style="height: 52.22222px;width: 302.22222px; border-color :color:rgb(11, 203, 236); ">
<option style  = "color:rgb(0, 13, 15);" value="0">Choose an Algorithm</option>
<option style  = "color:rgb(1, 12, 14);"value="1">Logistic Regression</option>
<option style  = "color:rgb(1, 15, 17);"value="2">Naive Bayes Classifier</option>
```

```
</select></center>
<input class="btn btn-primary" type="submit" value="Submit"style="margin-left: 0px;margin-top: 33px;">
</form></center>
</div>
</div>
</div>
</div>
</div>
<!-- Carousel End -->
<!-- Footer Start -->
<div class="container-fluid bg-dark text-white-50 py-5 px-sm-3 px-lg-5" style="margin-top: 300px;">
<div class="row pt-5">
<div class="col-lg-3 col-md-6 mb-5">
<a href="" class="navbar-brand">
<h1 class="text-primary"><span class="text-white">HATE SPEECH </span>DETECTION</h1>
</a>
<p>Here in this project we are going to classify the hate speech using Machine Learning Technique with Natural Language Processing (NLP)</p>
<h6 class="text-white text-uppercase mt-4 mb-3" style="letter-spacing: 5px;">Follow Us</h6>
<div class="d-flex justify-content-start">
```

```
                    <a class="btn btn-outline-primary btn-square mr-2" href="#"><i
class="fab fa-twitter"></i></a>

                    <a class="btn btn-outline-primary btn-square mr-2" href="#"><i
class="fab fa-facebook-f"></i></a>

                    <a class="btn btn-outline-primary btn-square mr-2" href="#"><i
class="fab fa-linkedin-in"></i></a>

                    <a class="btn btn-outline-primary btn-square" href="#"><i
class="fab fa-instagram"></i></a>

                </div>

            </div>


            <div class="col-lg-3 col-md-6 mb-5"  style="margin-left: 300px;">

                <h5 class="text-white text-uppercase mb-4" style="letter-spacing:
5px;">Usefull Links</h5>

                <div class="d-flex flex-column justify-content-start">

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>About</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Destination</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Services</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Packages</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Guides</a>

                    <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right
mr-2"></i>Testimonial</a>
```

```
                    <a class="text-white-50" href="#"><i class="fa fa-angle-right mr-
2"></i>Blog</a>
                </div>
            </div>
            <div class="col-lg-3 col-md-6 mb-5">
                <h5 class="text-white text-uppercase mb-4" style="letter-spacing:
5px;">Contact Us</h5>
                 <p><i class="fa fa-user-circle-o mr-2"></i>G VINOD
KUMAR</p>
                <p><i class="fa fa-id-card mr-2"></i>20131F0016</p>
          <p><i class="fa fa-phone-alt mr-2">+91 8367256076</i></p>
                <p><i class="fa fa-envelope mr-
2"></i>vinodkumargorle5@gmail.com</p>
          <p><i class="fa fa-envelope mr-2"></i>20131F0016@gvpce.ac.in</p>
                <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-
spacing: 5px;">Newsletter</h6>
                <div class="w-100">
                    <div class="input-group">
                        <input type="text" class="form-control border-light"
style="padding: 25px;" placeholder="Your Email">
                        <div class="input-group-append">
                            <button class="btn btn-primary px-3">Sign Up</button>
                        </div>
                    </div>
                </div>
            </div>
```

```
            </div>
        </div>
        <div class="container-fluid bg-dark text-white border-top py-4 px-sm-3 px-md-5" style="border-color: rgba(256, 256, 256, .1) !important;">
            <div class="row">
                <div class="col-lg-6 text-center text-md-left mb-3 mb-md-0">
                    <p class="m-0 text-white-50">Copyright &copy; <a href="#">Domain</a>. All Rights Reserved.</a>
                    </p>
                </div>
                <div class="col-lg-6 text-center text-md-right">
                    <p class="m-0 text-white-50">Designed by <a href="https://www.linkedin.com/in/vinod-kumar-gorle-657399210">Vinod Kumar</a>
                    </p>
                </div>
            </div>
        </div>
        <!-- Footer End -->
        <!-- Back to Top -->
        <a href="#" class="btn btn-lg btn-primary btn-lg-square back-to-top"><i class="fa fa-angle-double-up"></i></a>
        <!-- JavaScript Libraries -->
        <script src="https://code.jquery.com/jquery-3.4.1.min.js"></script>
        <script src="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.bundle.min.js"></script>
```

```
        <script src="static/lib/easing/easing.min.js"></script>
        <script src="static/lib/owlcarousel/owl.carousel.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment.min.js"></script>
        <script src="static/lib/tempusdominus/js/moment-timezone.min.js"></script>
        <script src="static/lib/tempusdominus/js/tempusdominus-bootstrap-
4.min.js"></script>

        <!-- Contact Javascript File -->
        <script src="static/mail/jqBootstrapValidation.min.js"></script>
        <script src="static/mail/contact.js"></script>

        <!-- Template Javascript -->
        <script src="static/js/main.js"></script>
    </body>
</html>
```

PREDICTION PAGE:

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

<head>
    <meta charset="utf-8">
    <title>Hate Speech Detection</title>
    <meta content="width=device-width, initial-scale=1.0" name="viewport">
    <meta content="Free HTML Templates" name="keywords">
    <meta content="Free HTML Templates" name="description">

    <!-- Favicon -->
<link href="static/img/favicon.ico" rel="icon">
<link rel="icon" href="static/img/icon.jpg" type="image/icon type">

<!-- Google Web Fonts -->
<link rel="preconnect" href="https://fonts.gstatic.com">
<link
  href="https://fonts.googleapis.com/css2?family=Poppins:wght@400;500;600;700&disp
  lay=swap" rel="stylesheet">

<!-- Font Awesome -->
<link href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/5.10.0/css/all.min.css"
  rel="stylesheet">
```

```
    <!-- Libraries Stylesheet -->
    <link href="static/lib/owlcarousel/assets/owl.carousel.min.css" rel="stylesheet">
    <link href="static/lib/tempusdominus/css/tempusdominus-bootstrap-4.min.css"
      rel="stylesheet" />

    <!-- Customized Bootstrap Stylesheet -->
    <link href="static/css/style.css" rel="stylesheet">
</head>

<body>
    <!-- Topbar End -->
    <!-- Navbar Start -->
    <div class="container-fluid position-relative nav-bar p-0">
        <div class="container-lg position-relative p-0 px-lg-3" style="z-index: 9;">
            <nav class="navbar navbar-expand-lg bg-light navbar-light shadow-lg py-3 py-lg-0
      pl-3 pl-lg-5" style="
            width: 1364px;
            right: 119px;
        ">
                <a href="" class="navbar-brand">
                    <h1 class="m-0 text-primary"><span class="text-dark">HATE
      SPEECH</span> DETECTION</h1>
                </a>
                <button type="button" class="navbar-toggler" data-toggle="collapse" data-
      target="#navbarCollapse">
```

```
            <span class="navbar-toggler-icon"></span>
        </button>
        <div class="collapse navbar-collapse justify-content-between px-3"
  id="navbarCollapse">
            <div class="navbar-nav ml-auto py-0">
                <a href="{{url_for('index')}}" class="nav-item nav-link ">Home</a>
                <a href="{{url_for('load')}}" class="nav-item nav-link ">Load</a>
                <a href="{{url_for('view')}}" class="nav-item nav-link">view</a>
                <a href="{{url_for('preprocess')}}" class="nav-item nav-
  link">Preprocess</a>
                <a href="{{url_for('model')}}" class="nav-item nav-link">Model
  Training</a>
                <a href="{{url_for('prediction')}}" class="nav-item nav-link
  active">Prediction</a>
                <a href="{{url_for('login')}}" class="nav-item nav-link">Logout</a>

            </div>
        </div>
      </nav>
   </div>
</div>
<!-- Navbar End -->



<!-- Carousel Start -->
```

```
<div class="overlay"></div>
 <div class="gtco-container">
   <div class="row">
     <div class="col-md-12 col-md-offset-0 text-center">
       <div class="display-t">

         <div class="display-tc animate-box" data-animate-effect="fadeIn">
           <center><h3  style="bottom: 222px;color:rgb(62, 187, 62); margin-top: 32px;">{{msg}}</h3></center>
           <!-- <center><h3  style="bottom: 222px;color:rgb(11, 203, 236);">Welcome To Cyber Attack {{myname}}</h3></center> -->
            <h3 style="color:rgb(1, 15, 17);bottom: 115px;margin-top: 196px;"> Detecting Hate Speech  </h3>

           <h3 style="color:rgb(1, 10, 12);bottom: 100px;">With the help of Machine Learning</h3>
           <p>
             <form action="{{url_for('prediction')}}" method="post" enctype="multipart/form-data">
           <center><input type="text" name="text" placeholder="Enter Your Text To Classify" style="background-color:white;width: 407.99306px;height: 85.99306px;"></center>
           <input class="btn btn-primary" type="submit" value="Predict"style="margin-left: 0px;margin-top: 33px;width: 226.22222px;height: 54.22222px;">
           </form>
```

```
<!--                                    <a href="/upload" class="btn btn-
    primary btn-lg">Get Started</a>-->
<!--                                    <a href="#" class="btn btn-white btn-
    outline btn-lg"></a></p>-->
                </div>
              </div>
            </div>
          </div>
        </div>
    <!-- Carousel End -->
    <!-- Footer Start -->
    <div class="container-fluid bg-dark text-white-50 py-5 px-sm-3 px-lg-5" style="margin-
      top: 300px;">
       <div class="row pt-5">
          <div class="col-lg-3 col-md-6 mb-5">
            <a href="" class="navbar-brand">
              <h1 class="text-primary"><span class="text-white">HATE SPEECH
    </span>DETECTION</h1>
            </a>
            <p>Here in this project we are going to classify the hate speech using Machine
    Learning Technique with Natural Language Processing (NLP)</p>
            <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-spacing:
    5px;">Follow Us</h6>
            <div class="d-flex justify-content-start">
              <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-
    twitter"></i></a>
```

```
            <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-facebook-f"></i></a>

            <a class="btn btn-outline-primary btn-square mr-2" href="#"><i class="fab fa-linkedin-in"></i></a>

            <a class="btn btn-outline-primary btn-square" href="#"><i class="fab fa-instagram"></i></a>

        </div>

    </div>


    <div class="col-lg-3 col-md-6 mb-5"  style="margin-left: 300px;">

        <h5 class="text-white text-uppercase mb-4" style="letter-spacing: 5px;">Usefull Links</h5>

        <div class="d-flex flex-column justify-content-start">

            <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right mr-2"></i>About</a>

            <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right mr-2"></i>Destination</a>

            <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right mr-2"></i>Services</a>

            <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right mr-2"></i>Packages</a>

            <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right mr-2"></i>Guides</a>

            <a class="text-white-50 mb-2" href="#"><i class="fa fa-angle-right mr-2"></i>Testimonial</a>

            <a class="text-white-50" href="#"><i class="fa fa-angle-right mr-2"></i>Blog</a>
```

```
        </div>
      </div>
      <div class="col-lg-3 col-md-6 mb-5">
  <h5 class="text-white text-uppercase mb-4" style="letter-spacing: 5px;">Contact
  Us</h5>
         <p><i class="fa fa-user-circle-o mr-2"></i>G VINOD KUMAR</p>
        <p><i class="fa fa-id-card mr-2"></i>20131F0016</p>
   <p><i class="fa fa-phone-alt mr-2">+91 8367256076</i></p>
        <p><i class="fa fa-envelope mr-2"></i>vinodkumargorle5@gmail.com</p>
  <p><i class="fa fa-envelope mr-2"></i>20131F0016@gvpce.ac.in</p>
        <h6 class="text-white text-uppercase mt-4 mb-3" style="letter-spacing:
  5px;">Newsletter</h6>
        <div class="w-100">
          <div class="input-group">
            <input type="text" class="form-control border-light" style="padding: 25px;"
  placeholder="Your Email">
            <div class="input-group-append">
              <button class="btn btn-primary px-3">Sign Up</button>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
```

```
<div class="container-fluid bg-dark text-white border-top py-4 px-sm-3 px-md-5"
  style="border-color: rgba(256, 256, 256, .1) !important;">
   <div class="row">
      <div class="col-lg-6 text-center text-md-left mb-3 mb-md-0">
         <p class="m-0 text-white-50">Copyright &copy; <a href="#">Domain</a>. All
  Rights Reserved.</a>
         </p>
      </div>
      <div class="col-lg-6 text-center text-md-right">
         <p class="m-0 text-white-50">Designed by <a
  href="https://www.linkedin.com/in/vinod-kumar-gorle-657399210">Vinod Kumar</a>
         </p>
      </div>
   </div>
</div>
<!-- Footer End -->
<!-- Back to Top -->
<a href="#" class="btn btn-lg btn-primary btn-lg-square back-to-top"><i class="fa fa-
  angle-double-up"></i></a>


<!-- JavaScript Libraries -->
<script src="https://code.jquery.com/jquery-3.4.1.min.js"></script>
<script
  src="https://stackpath.bootstrapcdn.com/bootstrap/4.4.1/js/bootstrap.bundle.min.js"></s
  cript>
<script src="static/lib/easing/easing.min.js"></script>
```

```
    <script src="static/lib/owlcarousel/owl.carousel.min.js"></script>
    <script src="static/lib/tempusdominus/js/moment.min.js"></script>
    <script src="static/lib/tempusdominus/js/moment-timezone.min.js"></script>
    <script src="static/lib/tempusdominus/js/tempusdominus-bootstrap-4.min.js"></script>
    <!-- Contact Javascript File -->
    <script src="static/mail/jqBootstrapValidation.min.js"></script>
    <script src="static/mail/contact.js"></script>
    <!-- Template Javascript -->
    <script src="static/js/main.js"></script>
  </body>
</html>
```

CHAPTER 9

OUTPUT SCREENS

9. OUTPUT SCREENS

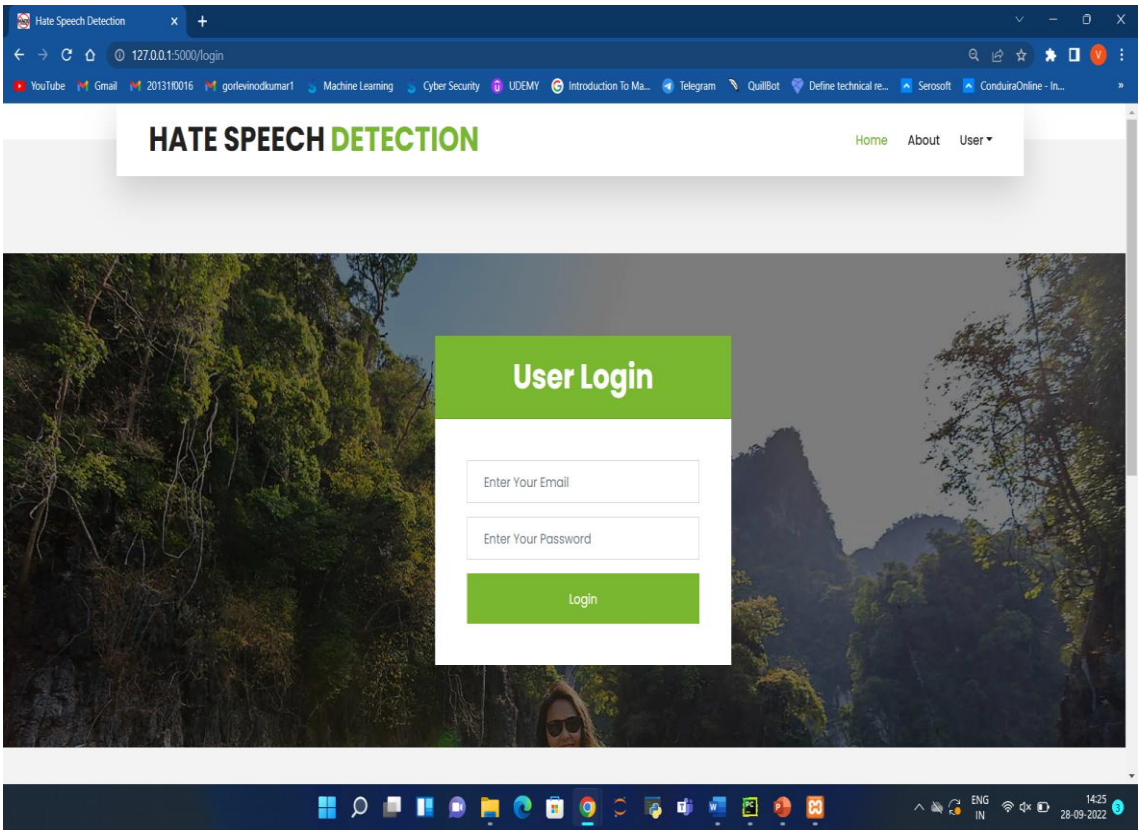


Fig 9.1: Login Page

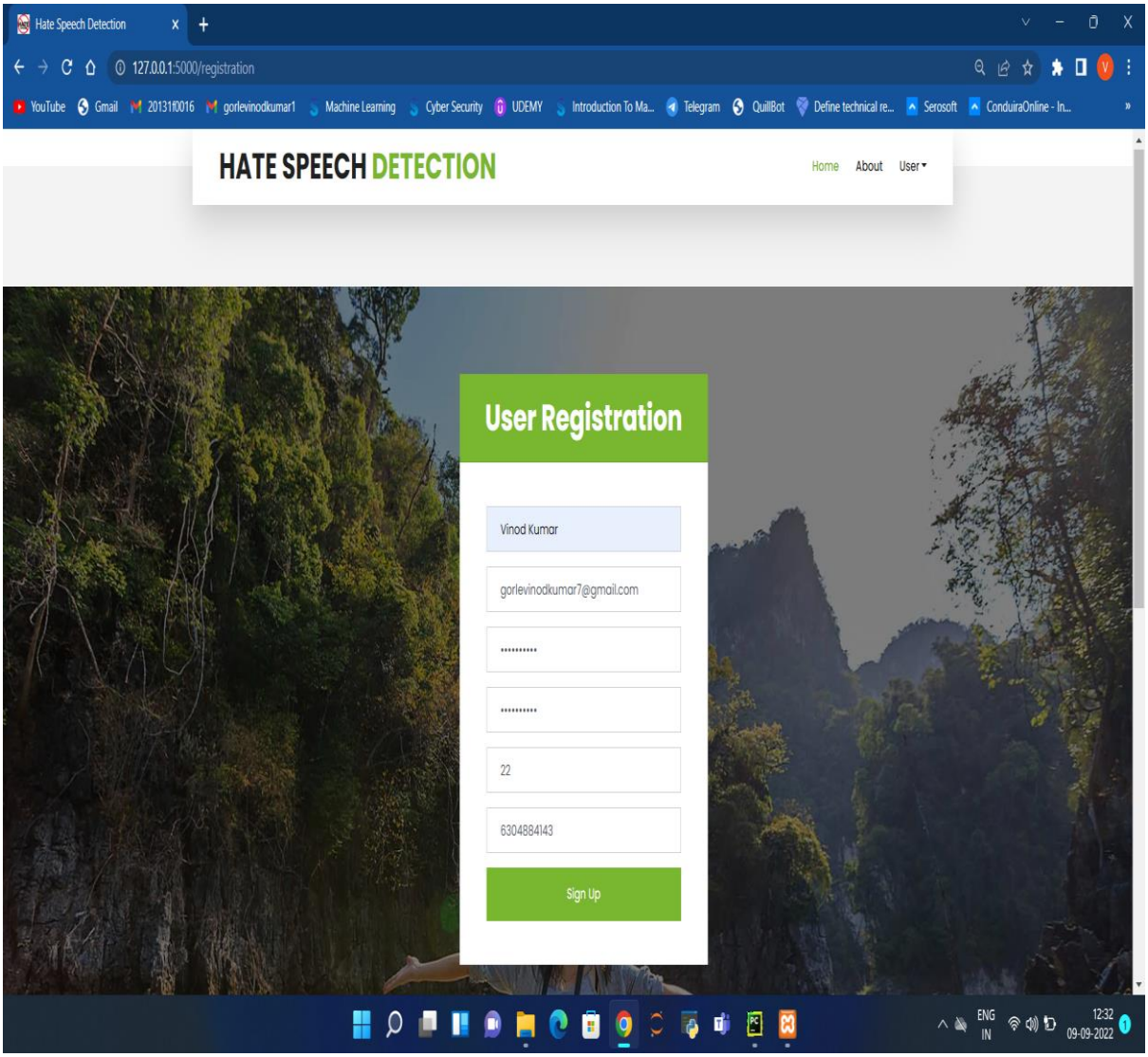


Fig 9.2: Registration page

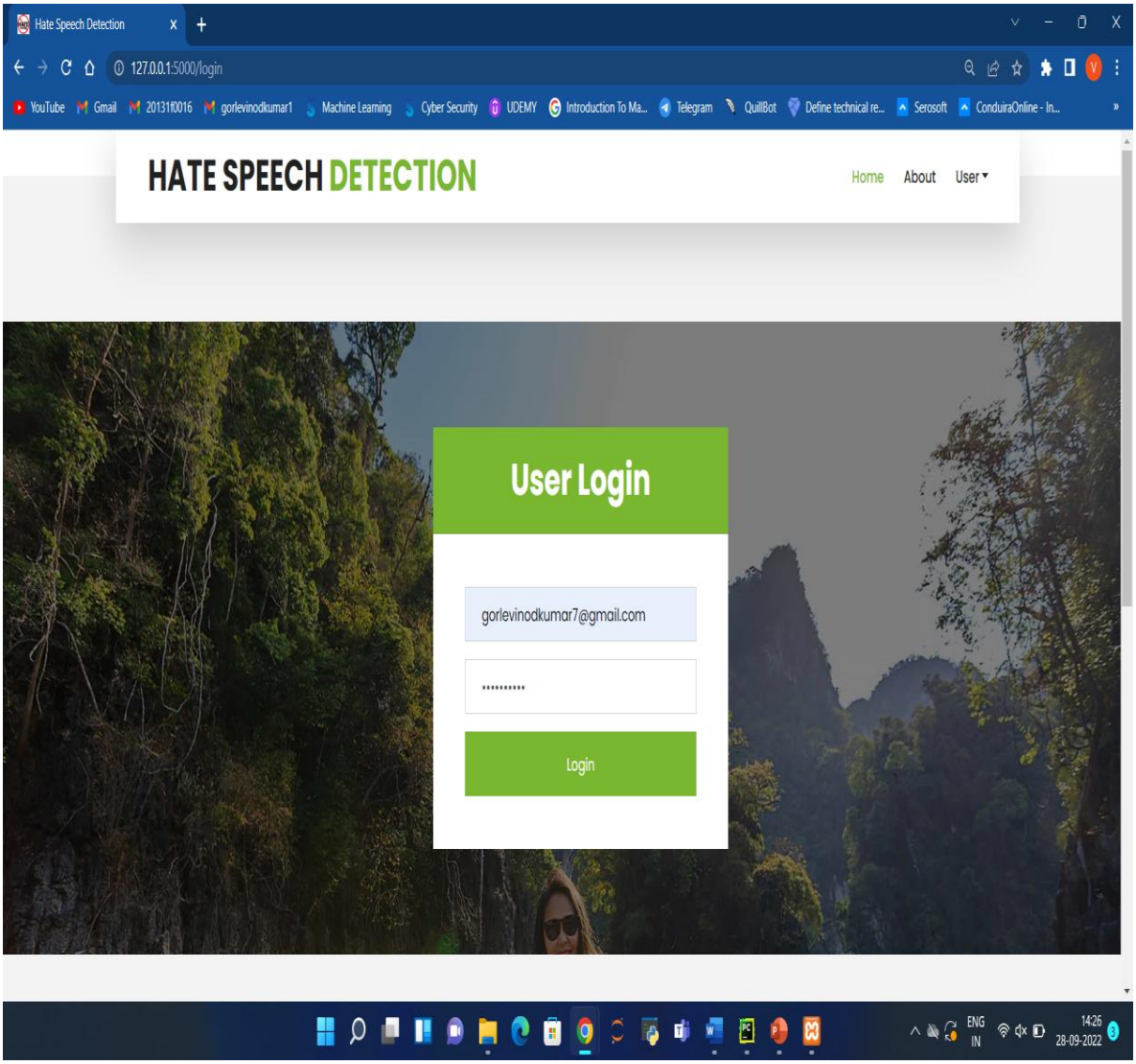


Fig 9.3: Login with registered details

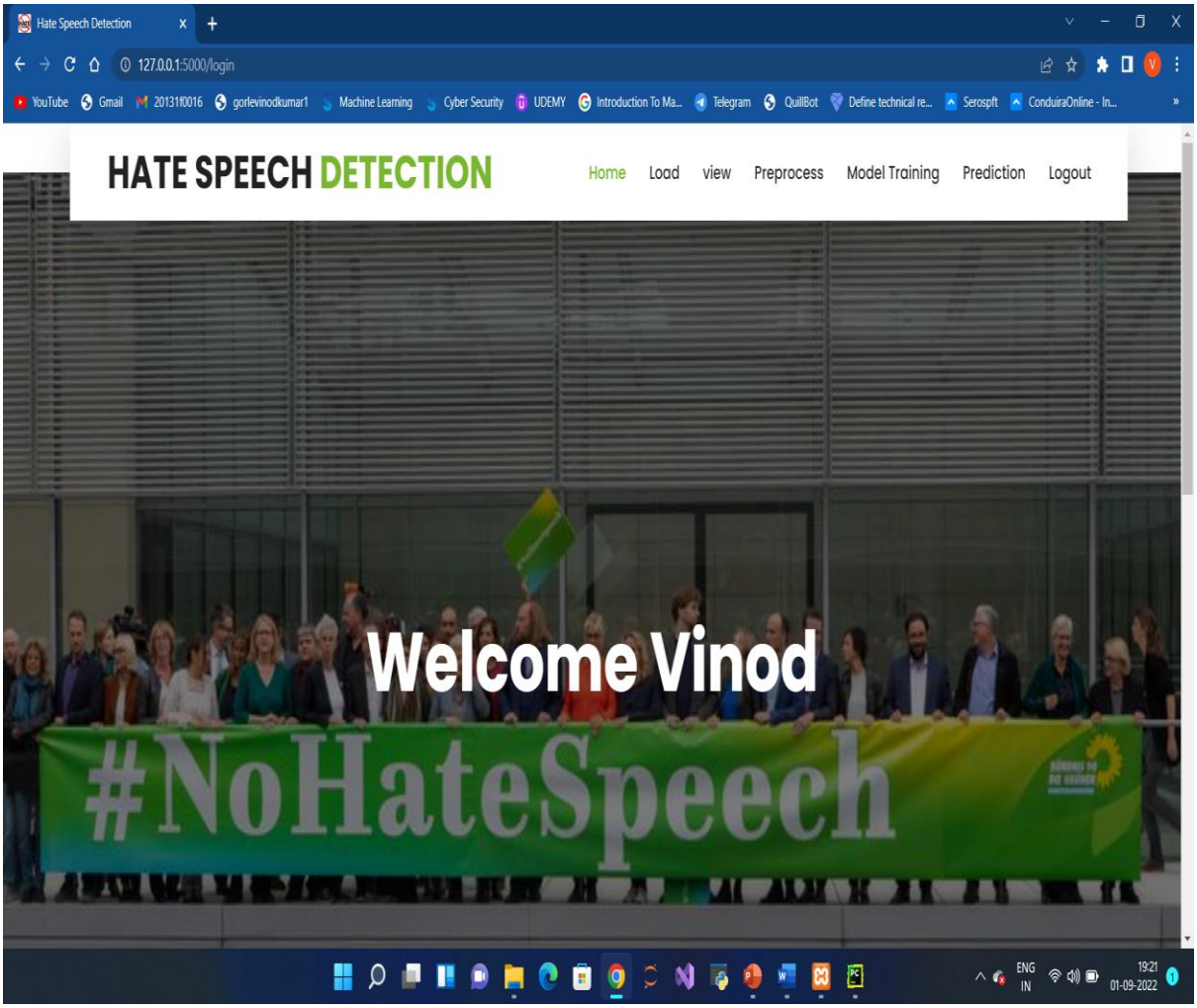


Fig 9.4: Welcome Page

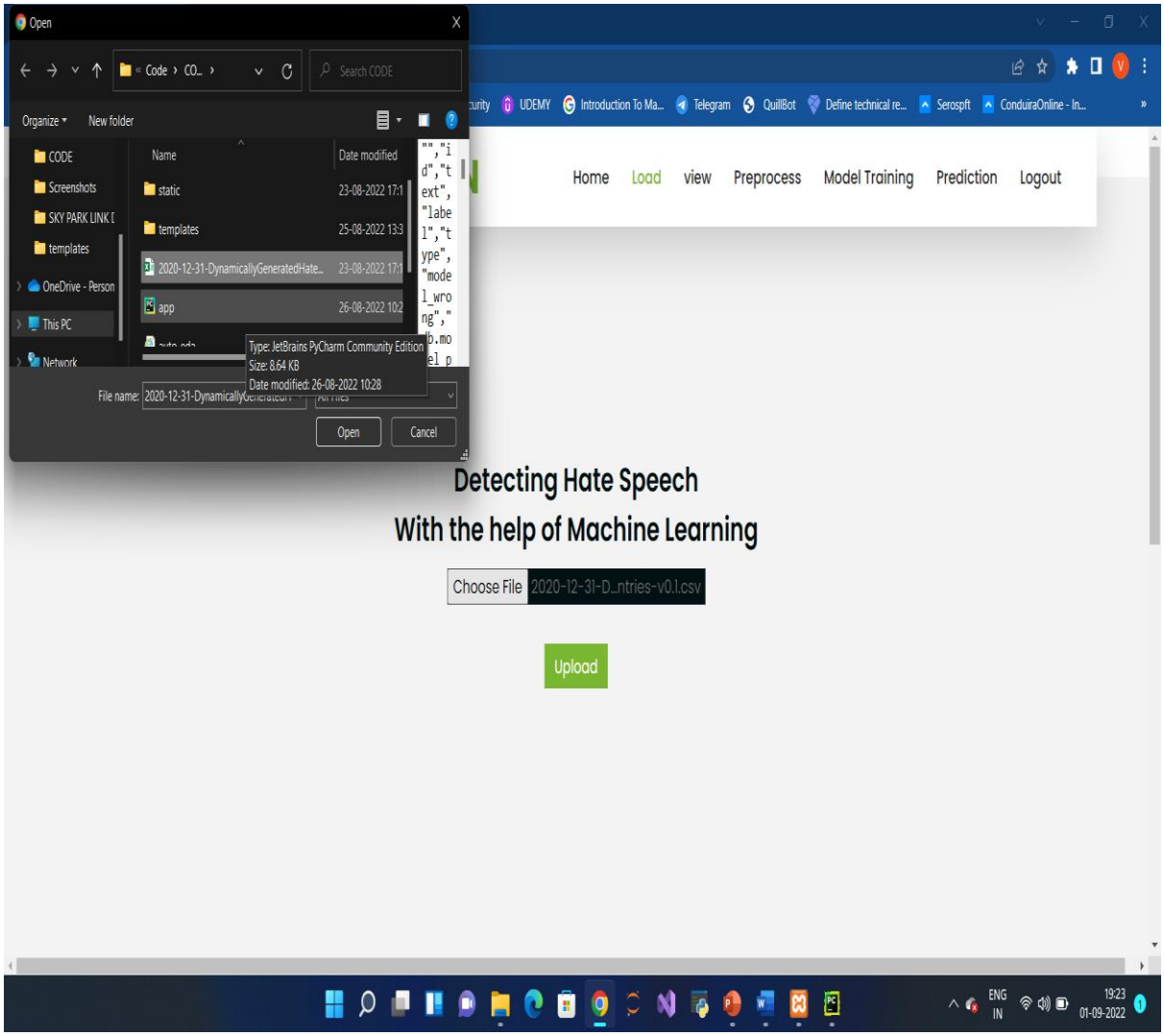


Fig 9.5: Upload the Dataset

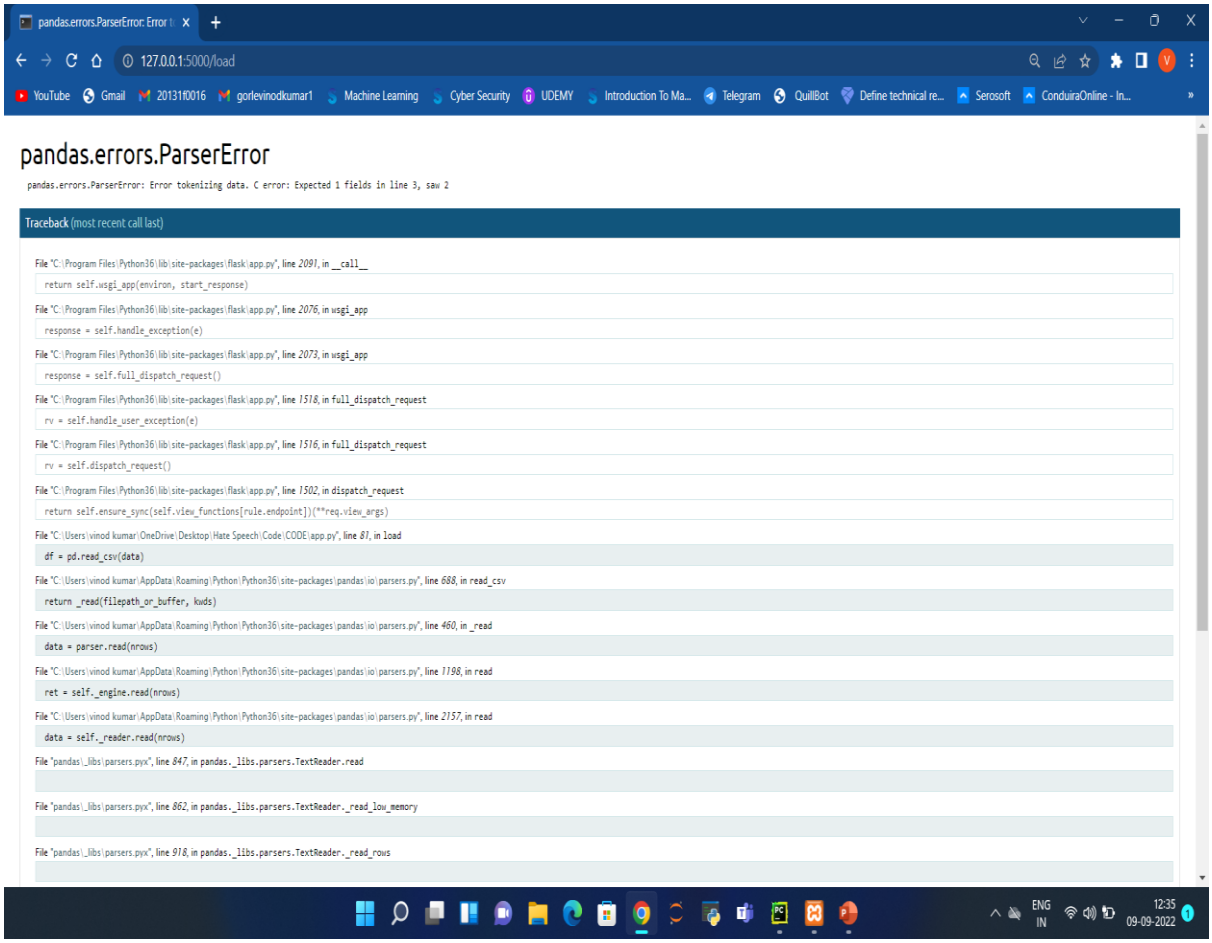


Fig 9.6: Dataset validation whether it is valid or not

Unnamed: 0	id	text	label	type	model_wrong	db.model_preds	status	round	split	annotator
1	10000	It should be legal for a husband to rape his wife	hate	notgiven	True	0.97457	dynabench entry	1	train	gnzuctwed3
2	10001	dalits are lowlife scum	hate	notgiven	False	0.08233	dynabench entry	1	test	cagnluiznm
3	10002	dalits are lowlives	hate	notgiven	True	0.92319	dynabench entry	1	train	cagnluiznm
4	10003	It was a better world when women dare not question men	hate	notgiven	True	0.99006	dynabench entry	1	test	gnzuctwed3
5	10004	I don't work this hard so that those immigrants can take all the benefits	hate	notgiven	True	0.98836	dynabench entry	1	train	cagnluiznm
6	10005	I don't work this hard so that those migrants can take all the benefits	hate	notgiven	True	0.9950600000000001	dynabench entry	1	train	cagnluiznm
7	10006	I don't work this hard so that those foreigners can take all the benefits	hate	notgiven	True	0.9934	dynabench entry	1	train	cagnluiznm
8	10007	I don't work this hard so that those Hispanics can take all the benefits	hate	notgiven	True	0.98625	dynabench entry	1	train	cagnluiznm
9	10008	I don't work this hard so that those chavs can take all the benefits	hate	notgiven	True	0.95252	dynabench	1	test	cagnluiznm

Fig 9.7: Dataset view

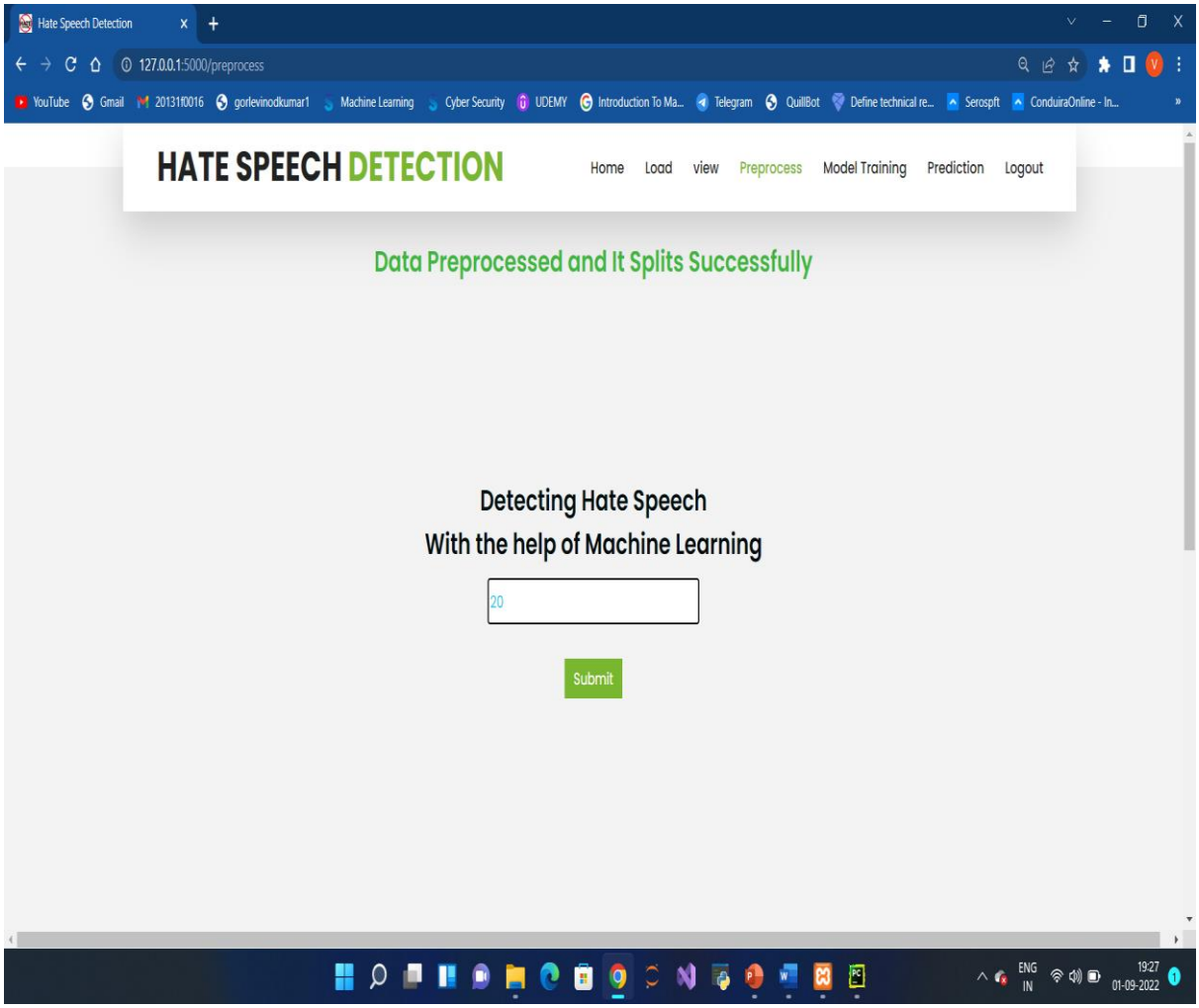


Fig 9.8: Data Pre-processing

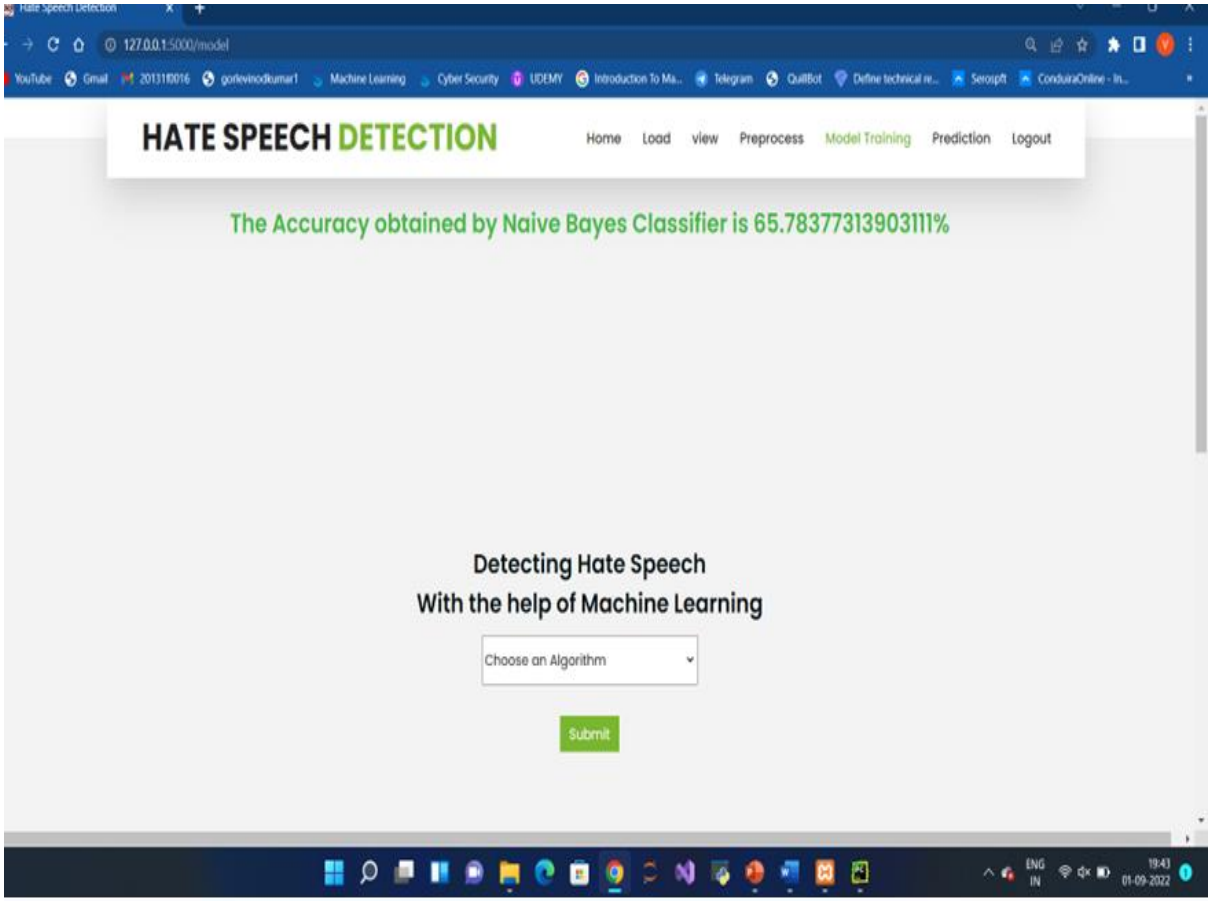


Fig 9.9: Accuracy of Naïve Bayes Algorithm

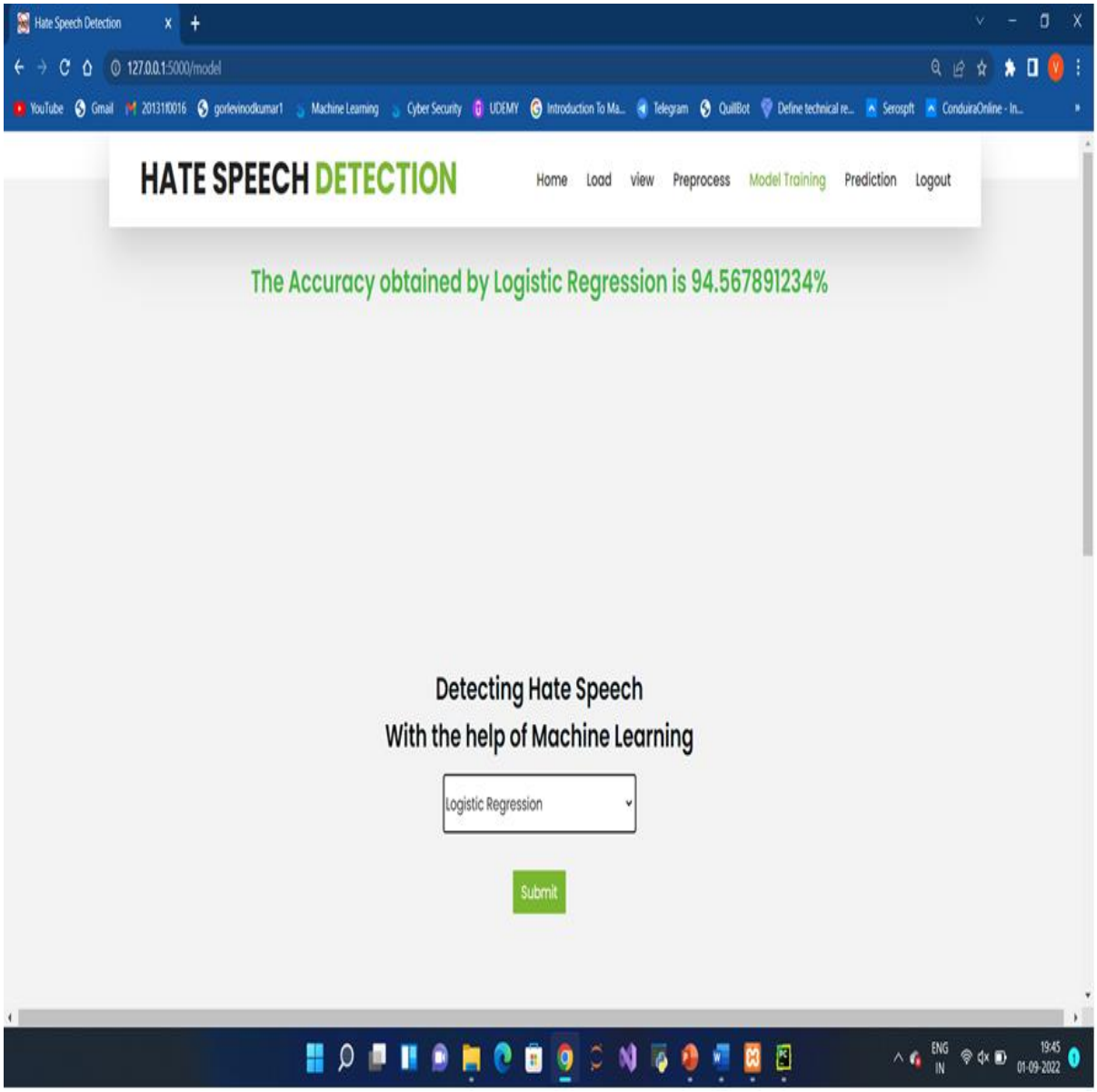


Fig 9.10: Accuracy of Logistic Regression Algorithm

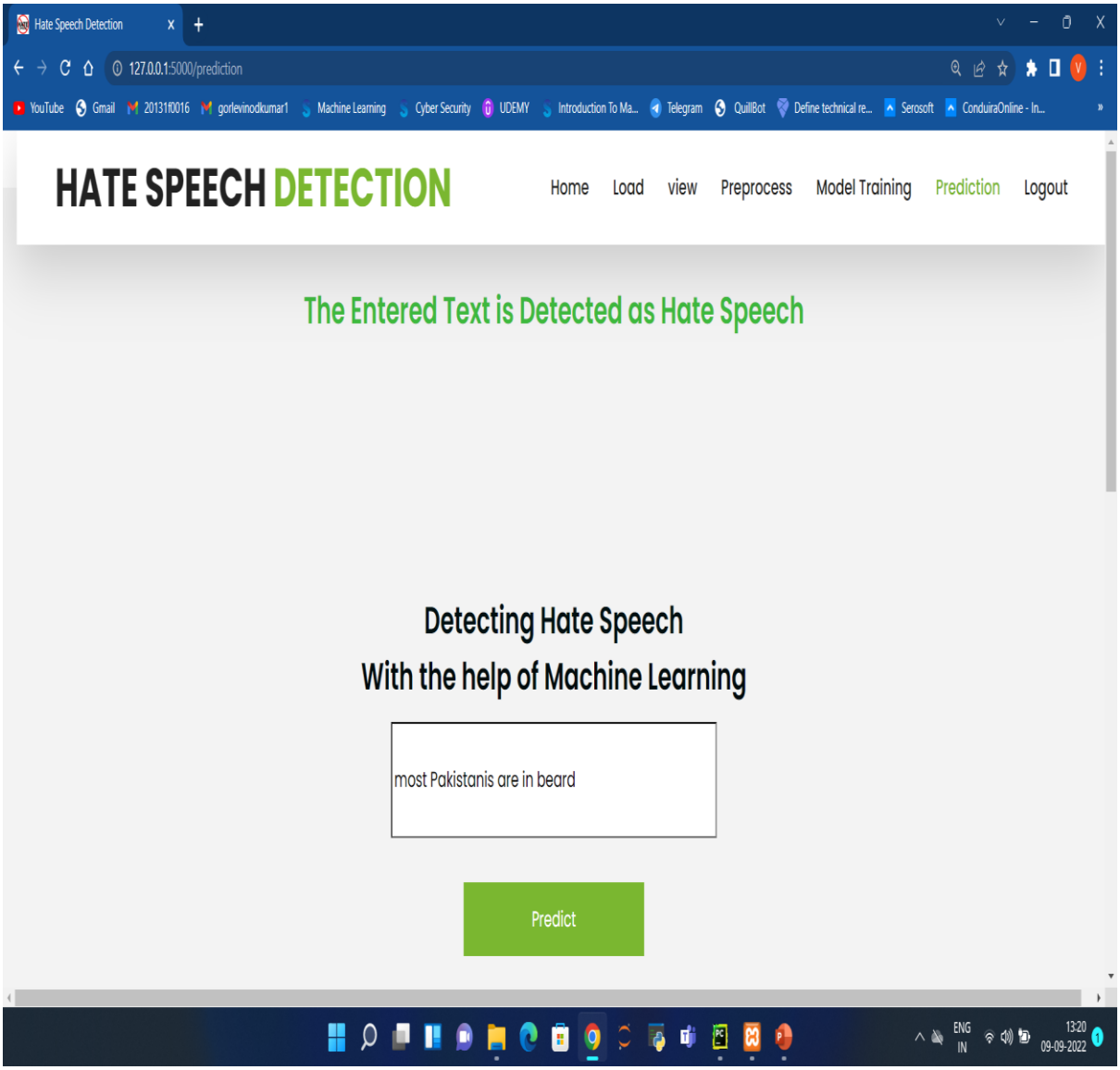


Fig 9.11: Prediction of Hate speech

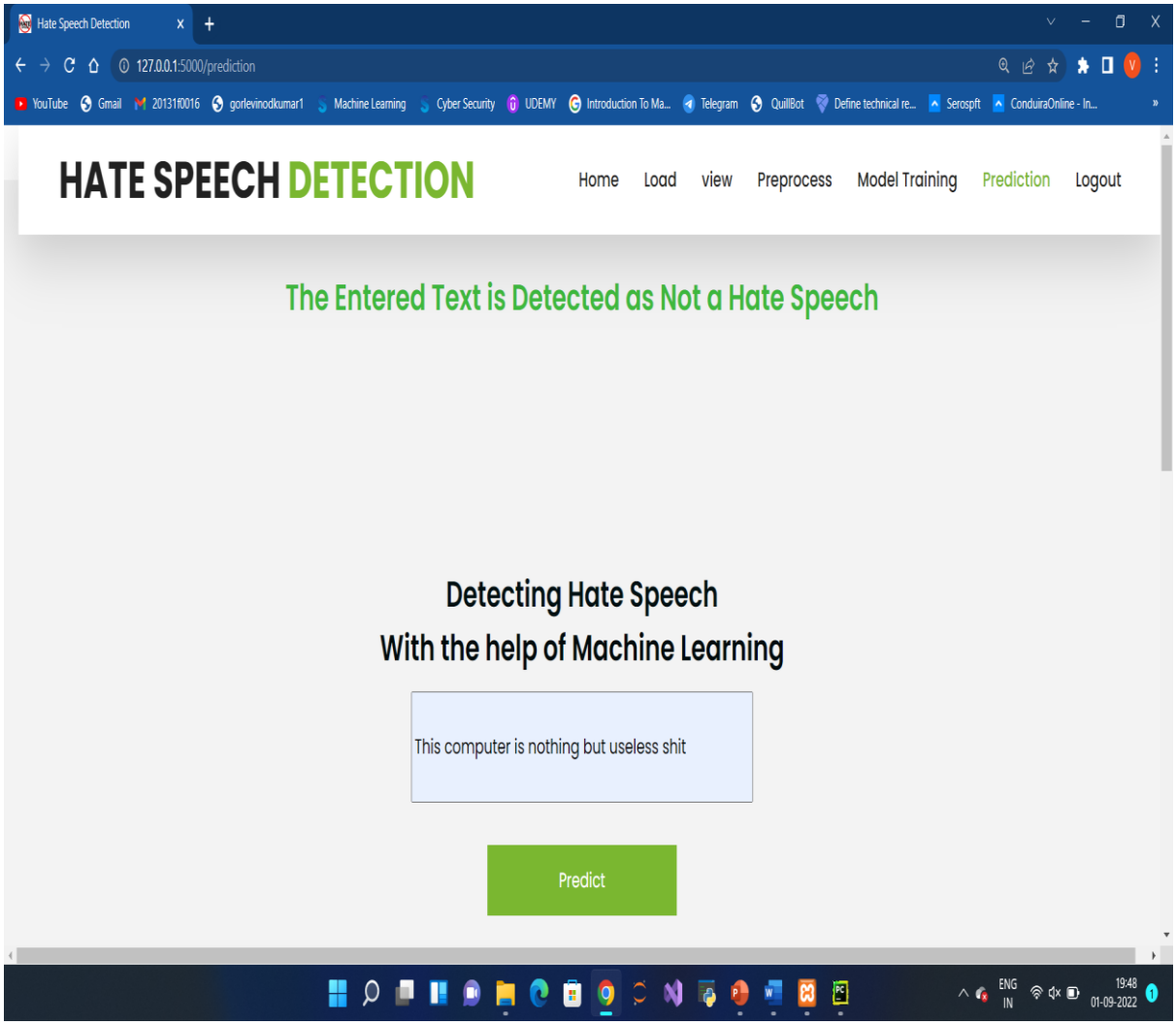


Fig 9.12: Prediction of Non-Hate speech

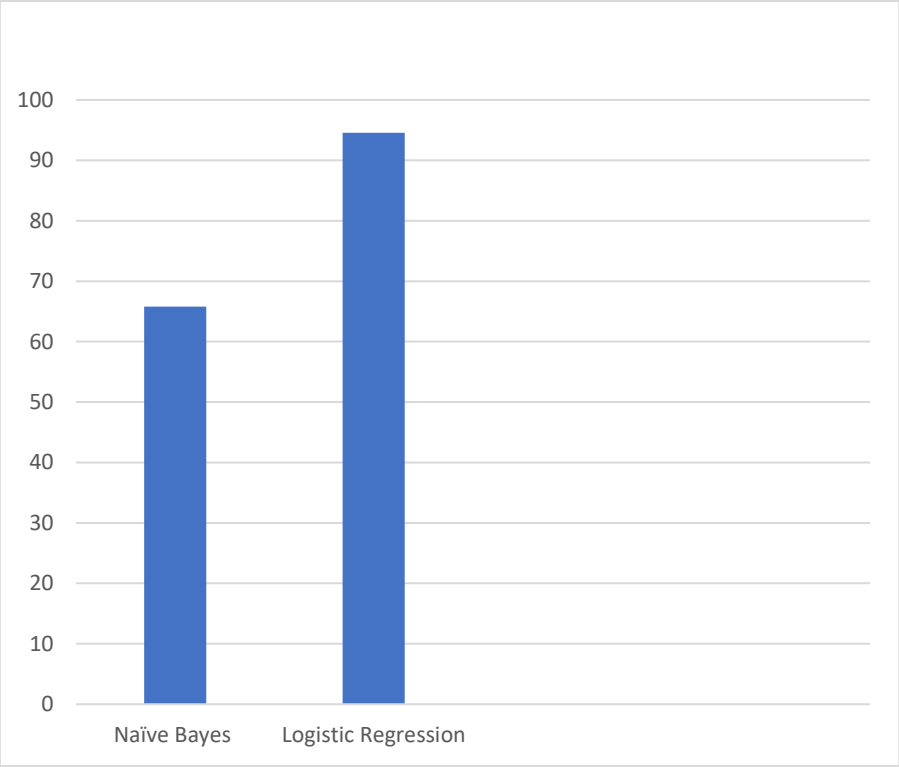


Fig 9.13: Accuracy Graph

CHAPTER 10

SYSTEM TESTING

10. SYSTEM TESTING

Unit Testing:

Unit testing includes training for each unit or component of the software program. It is the initial stage of functional testing. The goal of unit testing is to validate the performance of the unit component. A unit is a single testable component of a software system that is tested during the application software development process. The goal of unit testing is to ensure that isolated code is accurate. A unit component is a single application function or code. Unit testing is often performed by developers using the white box testing technique. When the program is finished and handed over to the test engineer, he or she will begin inspecting each component of the module or module of the application independently or one by one, a process known as unit testing or components testing.

White Box Testing:

White box testing is a testing technique, that examines the program structure and devices test data from the program logic/code. It is used to test areas that cannot be reached from a black box level.

Black Box Testing:

Black box testing is testing the software without any knowledge of the inner workings, structure, or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as a specification or requirements document, it is a testing in which the software under test is treated, as a black box. You cannot "see" into it. These provide inputs and respond to outputs without considering how the software works.

Test case ID	Testcase Name	Expected Output	Observed Output	Status
T01	Login with Registered details or not	Homepage should be displayed	Homepage displayed	Pass
T02	User giving input by clicking on Upload	Data should be upload	Data uploaded	Pass
T03	Predicting whether the text is Hate speech or not	Hate speech is Detected	Hate speech is detected	Pass
T04	Database Storing Details	Registered and Login details should be stored in Database	Registered and Login details are stored in the Database	Pass

Fig 10.1 Test cases

CHAPTER 11

CONCLUSION

11. CONCLUSION

Hate speech is extremely destructive and must be dealt with seriously in order to be eradicated. It not only causes real-life disputes, but it also has an impact on a person's mental health. Some people are unable to tolerate hate speech, and it has a negative impact on them. We have described our method for detecting any sort of hate speech in this publication. We briefly described the different Natural Language Processing features that were applied. We tested several machine learning classifiers and chose the one with the highest accuracy. The identification of extended phrases or sentences might be one of the future use cases for this technology. Another use may be the recognition of a person's conduct based on previous postings and comments, therefore preventing the propagation of hate speech.

CHAPTER 12
REFERENCES

12. REFERENCES

[1] Graeme Foux. Consumer-generated media: Get your customers involved. Brand Strategy, 8(202):38–39, 2006.J. Clerk Maxwell, A Treatise on Electricity and Magnetism, 3rd ed., vol. 2. ,1892, pp.68– 73.

[2] https://www.facebook.com/communitystandards/

[3] https://help.twitter.com/en/forms/safety-and-sensitive-content/abuse

[4] M. Bouazizi, H. Watanabe and T. Ohtsuki, "Hate Speech on Twitter: A Pragmatic Approach to Collect Hateful and Offensive Expressions and Perform Hate Speech Detection," in IEEE Access, vol. 6, pp. 13825-13835, 2018, doi: 10.1109/ACCESS.2018.2806394.

[5] A. Shekhar and M. Venkatesan, "A Bag-of-Phonetic-Codes Model for Cyber-Bullying Detection in Twitter," 2018 International Conference on Current Trends towards Converging Technologies (ICCTCT), 2018, pp. 1-7, doi: 10.1109/ICCTCT.2018.8550938.

[6] M. Gomes, R. Martins, J. J. Almeida, P. Henriques, and P. Novais, "Hate Speech Classification in Social Media Using Emotional Analysis," 2018 7th Brazilian Conference on Intelligent Systems (BRACIS), 2018, pp. 61-66, doi: 10.1109/BRACIS.2018.00019.