Software Requirements Specification

Group No. 28 : Prevention of Cyber Troll & Sarcasm System on Social Networking using Machine Learning with Bilingual Analytics

Tejas Karia, Priya Mane, Jeet Mehta, Pratik Merchant

October 2020

Contents

1 Introduction

1.1 Product Overview

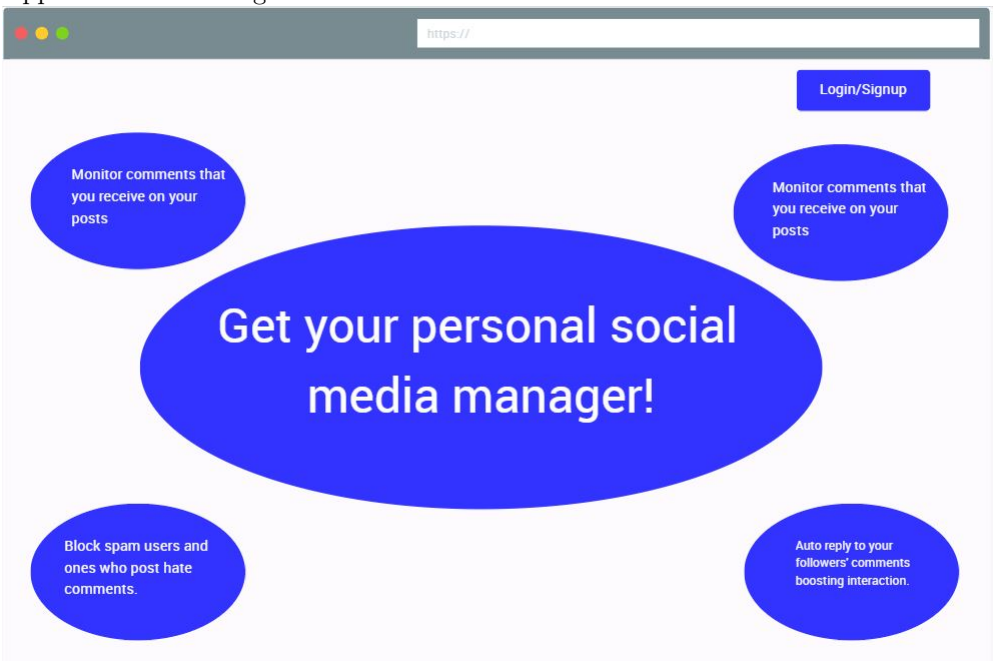
This project will help to deal with online social media hate speech and automate the process of blocking such malicious accounts. The current process for the social media platforms are manual and there are no automated processes. Since the process is manual it becomes very difficult to keep track of such users who are habitual offenders. There are several categories of cyberhate and each of these are interpreted differently. The project has broken this down to mainly 2 categories: offensive and sarcastic depending on the sentiment bilingual sentiment analysis on Hinglish comments. Our main target for developing this tool is to empower influencers who do not have the time to tackle the hate speech and thus they have to keep a social media manager who has to manually delete such malicious comments. Primarily, all the comments will be retrieved from the user created posts and then those will be classified using sentiment analysis. An automated response will be generated to the comments.

2 Specific Requirements

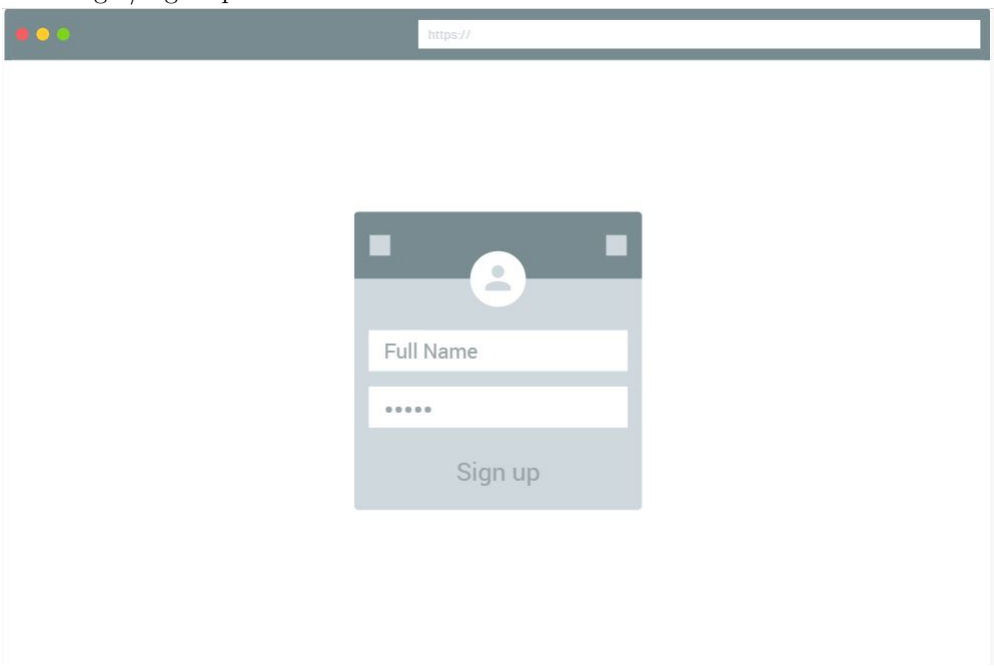
2.1 External Interface Requirements

2.1.1 User Interfaces

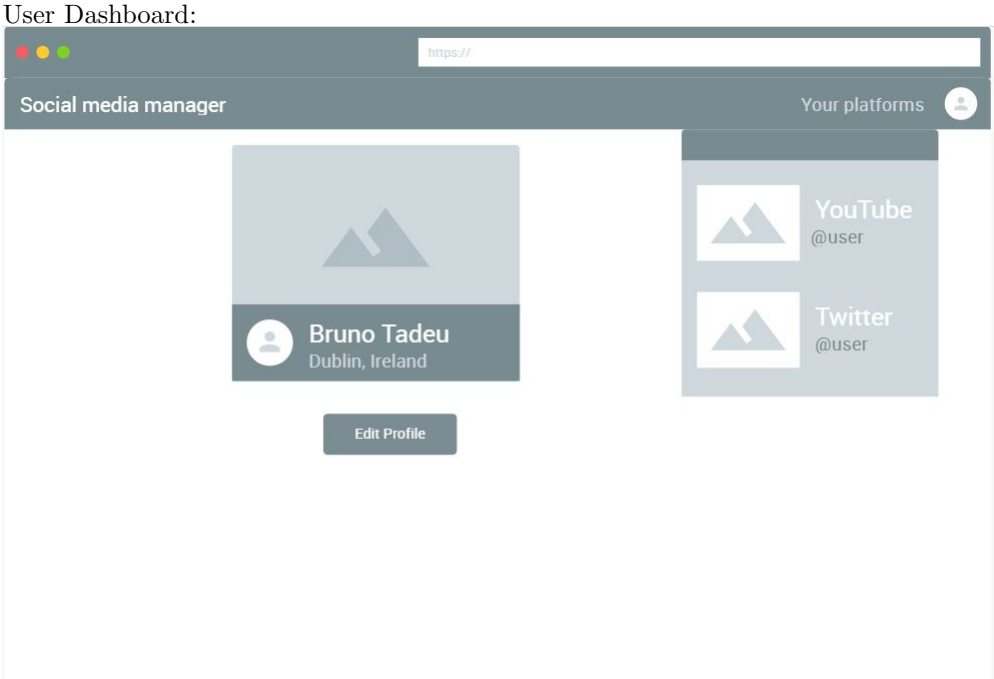
Application Home Page:



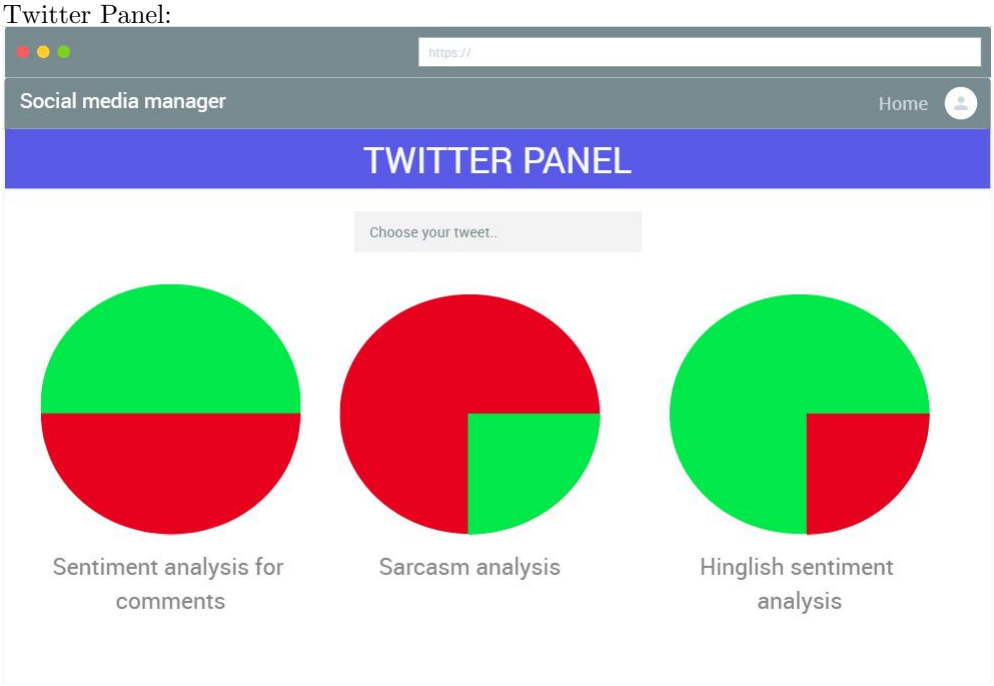
User Login/Sign Up:



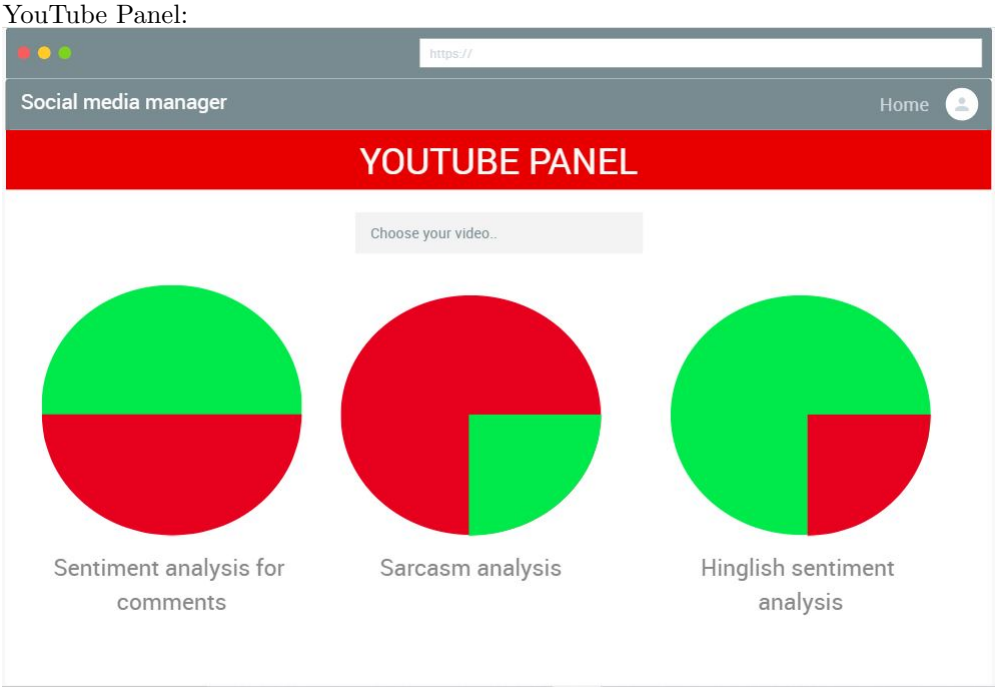
User Dashboard:



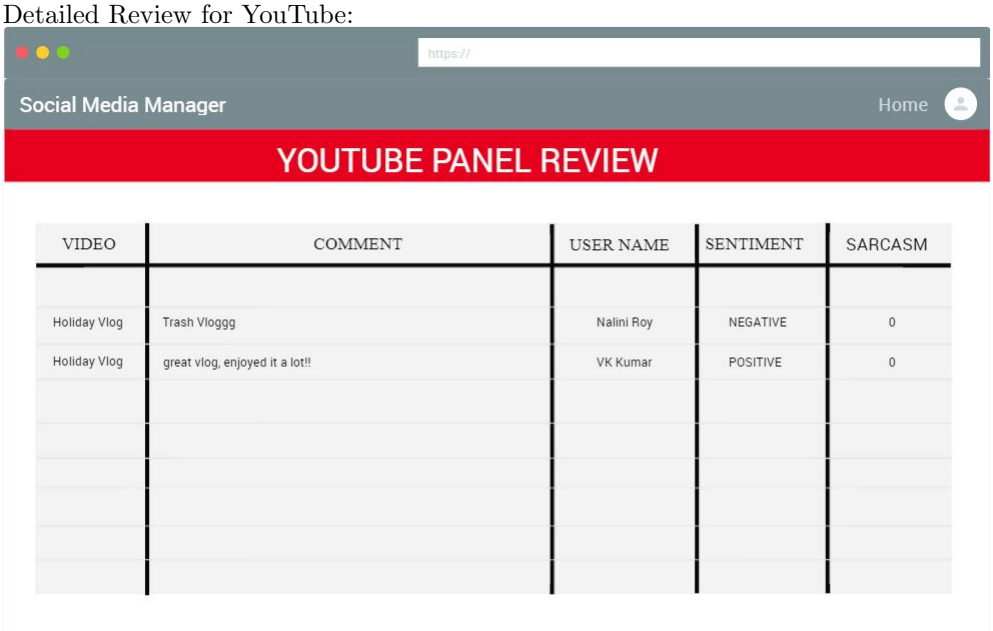
Twitter Panel:



YouTube Panel:



Detailed Review for YouTube:



2.1.2 Hardware Interfaces

There are no specific hardware requirements for using the website as it would be hosted over the internet.

2.1.3 Software Interfaces

Operating System: The application would be compatible with all the operating systems which have the compatible browsers installed. The website would be accessible on various browsers such as Google Chrome, Mozilla Firefox and Microsoft Edge to name a few.
Database: For storing user data we will be making use of MySQL.

2.1.4 Communications Protocols

For uploading data to the database and retrieving the data from the database over the internet, the relevant TCP protocols will be used. OAuth will be used for establishing communication with the APIs.

2.2 Software Product Features

Functional Requirements:
• Retrieval of comments on user created posts from the social media account using APIs and displaying it in a more comprehensive manner.
• Classification of the retrieved comments using sentiment analysis as offensive and sarcastic.

• For processing of comments posted in hinglish i.e. typing hindi using english alphabets, bilingual sentimental analysis will be performed.
• The process of deleting offensive comments and/or reporting the associated user would be automated.
• Automated responses to the comments received on the user's post would be provided to increase the interaction with the community.

2.3 Software System Attributes

2.3.1 Usability

The application will be easy to use as the target audience for the application is the social media users. Hence, a similar seamless experience will be provided to the users of this website. The application will provide easy insights into the user's social media accounts and help them manage their social media accounts with ease.

2.3.2 Availability

User credentials will be stored safely in the database by using a hash function. Hence, the original password the user enters is never revealed to anyone.

2.3.3 Security

The application will be available at all times i.e. all round the year, only restricted by the down time of the server on which the system runs.

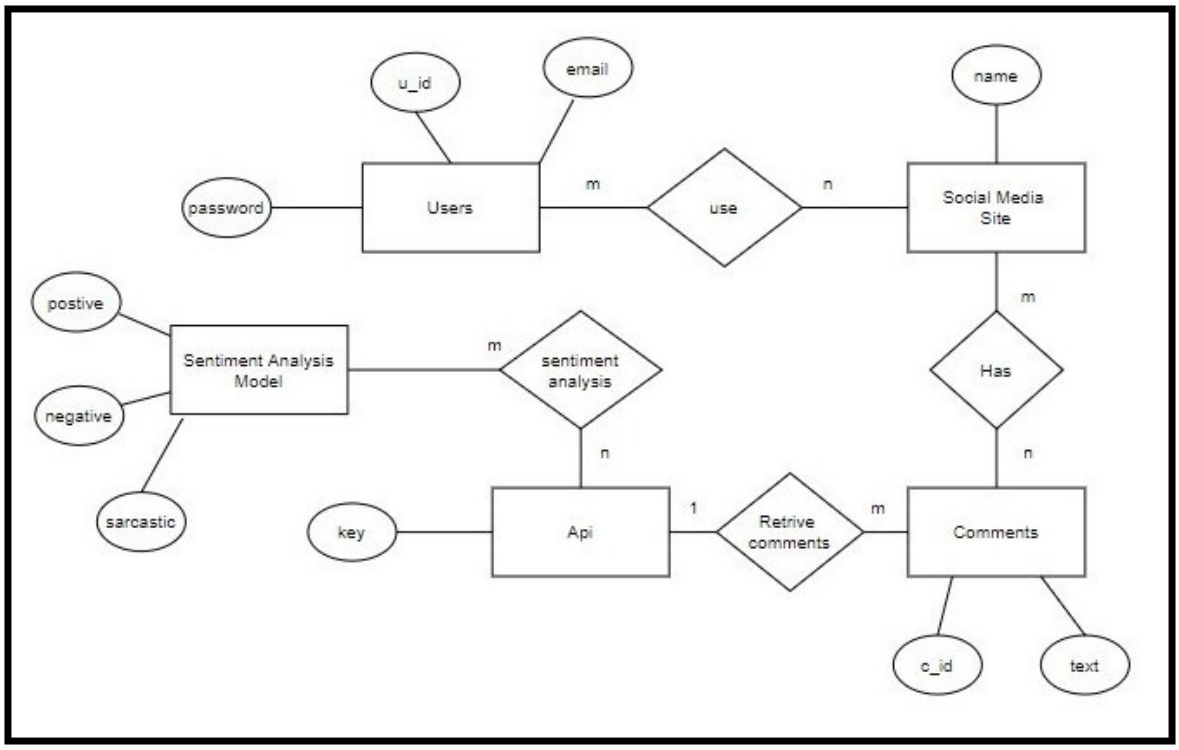
2.3.4 Maintainability

Any changes in algorithms of sarcasm detection and offense detection as improvements should be easily pushed to the server.

2.4 Database Requirements

The user enters their login credentials,which will be used to generate the API key. Using this key, API requests can be made for retrieving comments on a user's post. These comments will be processed using the Sentiment Analysis Model to classify comments as positive, negative or sarcastic. Appropriate API requests can then be made to delete offensive comments, reply to comments or flag them. These are the necessary tables and their functions required for the proper functioning of the website.

ER Diagram:


u_id
email
name
password
Users
m
use
n
Social Media Site
postive
Sentiment Analysis Model
m
sentiment analysis
m
Has
negative
n
n
sarcastic
key
Api
1
Retrive comments
m
Comments
c_id
text