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Web Application for Sentimental Analysis with NLP

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Abstract : In today's world where everything is online, people are getting more dependent on online websites for buying products. To get the perfect analysis of the product or for market research or for buying products online, the web app for sentimental analysis is used. The Web app shows a detailed report of the sentimental analysis of the reviews of the particular product. This helps with getting to know the faults of the product and where to improve it. Also to get the market need of the product or get to know the needs of the customer and make it available accordingly. The purpose of the project is to develop a web application that allows the user to perform sentimental analysis on his/her inputs.

IndexTerms - **Natural Language Processing – NLP, Visual Studio Code - VS Code**

I. INTRODUCTION

Sentiment analysis is done on user-generated content on the Web which contains opinions, sentiments, or views. In this project, we develop a web application that asks a particular keyword and no. of occurrence of the review input from a user and gives the sentiment analysis of a particular keyword by using flask framework, text blob, and bootstrap. Also, we show the time taken to analyse the given review by the user. The project is divided into two parts: Create a web application using python and perform sentiment analysis with Natural Language Processing (NLP).

II. LITERATURE SURVEY

Leandro N de and Ana L [1] in their work proposed three approaches for the classification of sentiments of Tweets. An approach based on emotion, word and a hybrid approach. Havy and Kim [2] evaluated the sentiment of an opinion holder or user based on WordNet to generate a list of positive and Negative words. They made an assumption that synonyms and antonyms of a word have the same and opposite polarity. In Turney [3], reviews were classified by calculating the summation of polarity of the adjectives and adverbs within a text. The study utilized movie and car reviews. Ana CE S Lima, et.al., in [4] described the automatic sentiment analysis for twitter messages. It covered three approaches for sentiment classification, Word based, emoticon based and hybrid approach. After comparison, a given system is proposed for sentimental analysis.

III. PROPOSED APPROACH

The following software's are used in the implementation of the project - Python, Flask, Text-blob, HTML, and Visual Studio Code. Fig. 1 shows visual studio code page.

Fig. 1 Visual Studio Code Page

A web application is developed that asks for a particular keyword and no. of occurrence of the review input from the user and gives the sentimental analysis of the particular keyword by flask framework, text blob, and bootstrap. Also, we show the general report, detailed report with sentimental polarity of the reviews and generate visualization like pie chart of the detailed report which reflects the detailed sentiments of the reviews.

Page wise

1. Login Page (if the database has information go directly to the home page else create an account)
    a. Register page
    b. Home page
        i. Information
        ii. Work Flow
        iii. Toggle for Sentimental analysis page
2. Sentimental analysis page
        i. General report
        ii. Sentiment polarity
        iii. Detailed report
        iv. Generate visualization

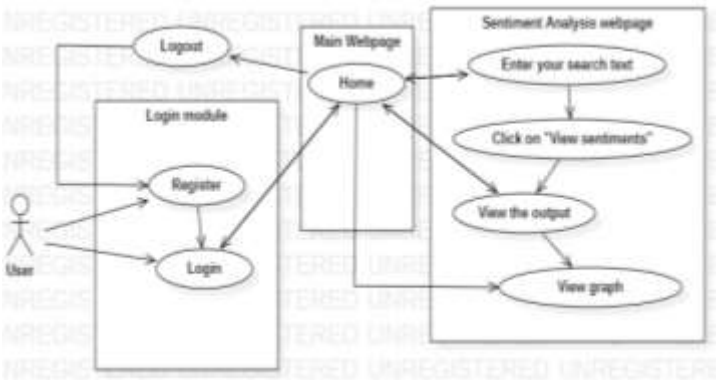

Fig. 2 Flow diagram of the System

IV. RESULTS AND DISCUSSIONS

In this Sentimental Analysis project there are two major part and specific sub parts which have been structured according to the requirements. Login Page and Sentimental Analysis Page are the major part of the project.

To begin with the user will access the login page of the web application where he has to login into the account, if database has the information it will go directly to the home page else need to create an account. To create an account, it needs to register through the registration page and then it will take it to home page. On home page it can view three things, information on sentimental

analysis, work flow of the web application and toggle to sentimental analysis page where the sentimental analysis can be done. Sentimental analysis page is the second major part of the web application. Once toggled to sentimental analysis page there we have to enter a keyword for which the sentimental analysis is required and also number of reviews required. The web app will analyze the keyword through the data sets installed into the web app and put forth the result. Now the result acquired will have general report, sentimental polarity, detailed report, and generate visualization from which the user can get as per the requirement. In generate visualization, it will generate a pie chart where all the result will be graphed. The Detailed report can be download in the pdf, word format from the web app.

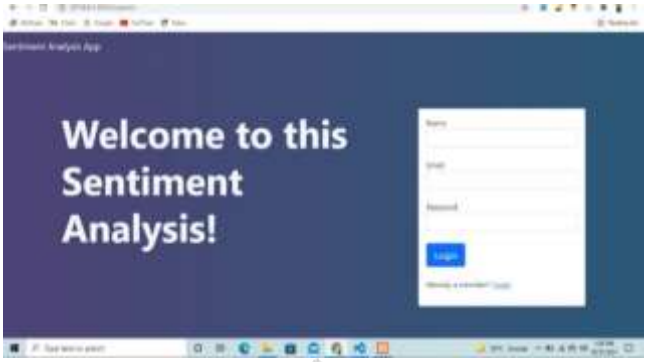

Fig. 3 Project Login Page

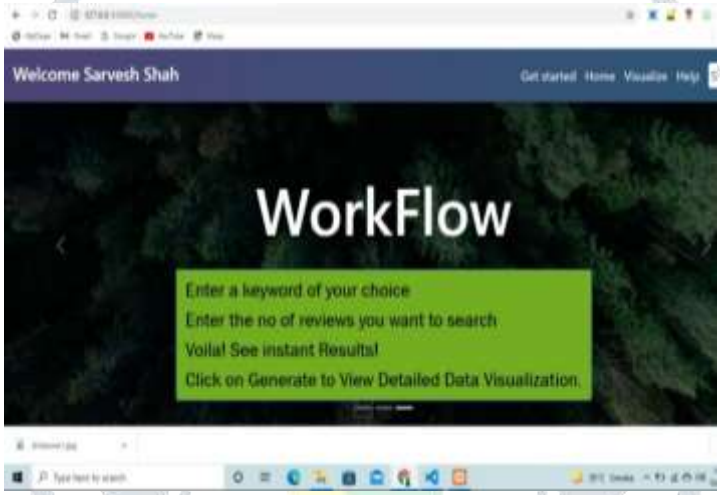

Fig 4: Front Page

Fig 5: Sentimental Analyser Page

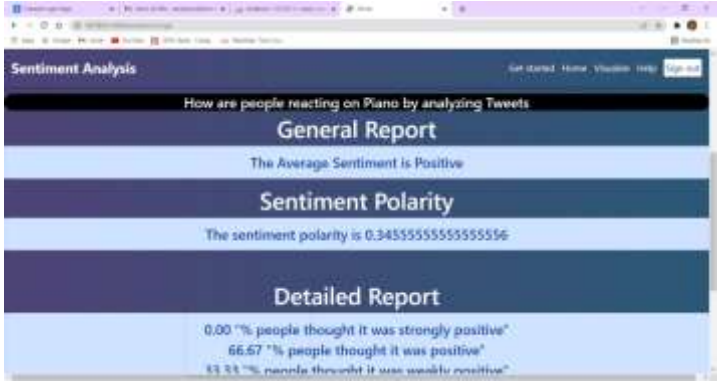

Fig 6: Sentimental Analysis Output

Fig 7: Detailed Report Page

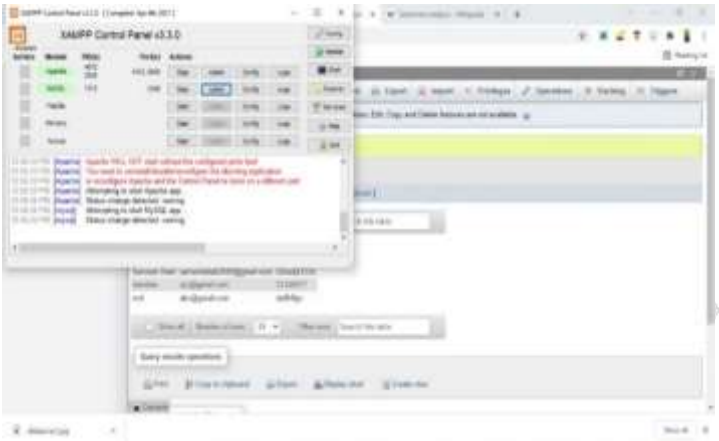

Fig 8: XAMPP Server for Database

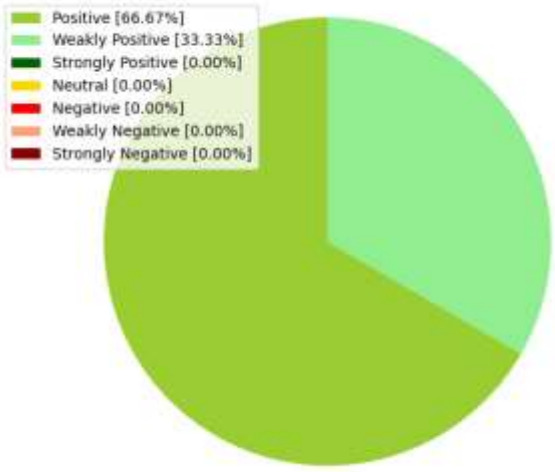

Fig 9: Pie Chart Visualization

IV. APPLICATIONS

1. Social media monitoring
2. Customer support and feedback
3. Brand monitoring
4. Voice of Customer (VoC)
5. Product analysis
6. Market research

V. CONCLUSIONS AND FUTURE SCOPE

With the exponential use of social media, there is a need to set measures to ensure safety and thus sentiment analysis can be used to monitor social media this can detect the danger The future of sentiment analysis is going to continue to dig deeper, far past the surface of the number of likes, comments, and shares, and aim to reach, and truly understand, the significance of social media interactions and what they tell us about the consumers behind the screens. With sentiment analysis, you have a ton of clues to explore further and gain an in-depth understanding of where your brand is doing well and where it needs to rethink.

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