**Real-Time Twitter Sentiment Insights: A Web-Based Analysis**

**ABSTRACT**

Sentiment analysis plays a significant role in understanding public opinion, trends, and sentiments expressed on social media platforms. In this project, we focus on performing sentiment analysis on real-time Twitter data to gain insights into the sentiments related to specific topics or events. By leveraging the Twitter API, we collect a stream of tweets based on predefined keywords or hashtags. The collected tweets undergo preprocessing steps to clean and standardize the text for sentiment analysis. We employ machine learning and deep learning techniques to classify the sentiments expressed in the tweets, utilizing sentiment lexicons and training data as references. Real-time sentiment analysis is performed as new tweets are collected, enabling continuous monitoring and analysis of public sentiment. The sentiment analysis results are visualized through informative visualizations such as sentiment distribution charts and sentiment trends over time. Additionally, we focus on topic-specific analysis by filtering tweets based on relevant keywords or hashtags, providing deeper insights into sentiments related to specific subjects. The project faces challenges such as noisy and informal text, ambiguity in sentiment expression, and handling large volumes of real-time data. Addressing these challenges, we aim to develop an effective sentiment analysis system that provides valuable insights into public sentiment and supports decision-making processes in various domains. This project contributes to the understanding of sentiment analysis techniques on real-time Twitter data and their application in extracting sentiments from social media platforms.

**Keywords:** Machine Learning, NLP, tweepy, textblob, sentiment classification, API, Flask, python.

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