Project Title: Sentilytics – Sentiment Analysis Application

Abstract

The Sentiment Analysis application aims to classify textual data into sentiment categories such as positive, negative, or neutral. By leveraging Natural Language Processing (NLP) techniques and machine learning algorithms, the application processes user-generated content such as product reviews, social media posts, or survey feedback to extract valuable insights. This tool can help organizations understand customer opinions, track trends, and make data-driven decisions.

The project is implemented in Python, utilizing libraries such as NLTK, TextBlob, and scikit-learn for text preprocessing, feature extraction, and classification. It supports interactive analysis through a user-friendly interface or API for integration with other applications.

Project Overview:

- To analyze text and determine its sentiment (positive, negative, or neutral).
- To provide visual insights into sentiment trends using data visualization techniques**.**

Key Features:

- Text preprocessing (tokenization, stemming, stop-word removal).
- Sentiment classification using machine learning models like Naive Bayes, Logistic Regression, or advanced models like BERT.
- Graphical representation of results (e.g., bar charts, pie charts, or word clouds).
- Batch sentiment analysis for large datasets.
- Real-time sentiment analysis through a web interface or API.

Technologies and Tools:

- Programming Language: Python
- Libraries:
  - NLP: NLTK, spaCy, TextBlob
  - Machine Learning: scikit-learn, TensorFlow, PyTorch

        - Visualization: Matplotlib, Seaborn.
    - Frameworks (Optional): Flask/Django for creating a web-based interface.
    - Dataset: Public datasets like IMDb reviews, Twitter Sentiment Analysis dataset, or custom datasets.

Project Cost: 3000 Per Student