Sentiment Analysis

Submitted To:

Dr. Waqar Ahmad sb

Group Member:

- Muhammad Faisal (22-NTU-CS-1355)
- Sufhan Siddique (22-NTU-CS-1375)
- Hazim Waqar (22-NTU-CS-1346)

Introduction:

This program utilizes Natural Language Processing (NLP) techniques to analyze sentiments in movie reviews. By training a classifier on a dataset of movie reviews, it predicts whether a given review expresses positive or negative sentiment.

Objective:

The objective of this program is to demonstrate sentiment analysis using machine learning. It aims to accurately classify movie reviews into positive or negative categories based on their textual content.

Language and Libraries:

- **python**
- **NLTK** for Text Processing
- **scikit-learn** for Model Training
- Naive Bayes Classifier

Functionalities:

- Data Loading and Preprocessing
    - By downloaded data from NLTK
- Feature Extraction
    - Convert Documents to Strings
    - Create CountVectorizer
    - Fit and Transform Data
- Model Training
    - Split Data into Training and Test Sets
    - Train Classifier (Multinomial Naive Bayes)

    - Make Predictions
- **Evaluation**
    - Accuracy Measurement
    - Precision Measurement
- **Prediction**
    - Predict Sentiment Function
- **Streamlit**
    - Making well designed front-end