

**NAME :Muhammad ilyas**

**Roll number:033**

**Section:BSAI(4A)**

**SUBJECT:Pai(Lab)**

**SUBMITTED TO :Mr Rasikh Ali**

Facebook Sentiment Analysis

# 1. Overview

This project is a Facebook Sentiment Analyzer built using Python and Flask. It takes a user's Facebook status and predicts the sentiment behind it — positive, negative, or neutral — using a machine learning model trained on a Facebook activity dataset.

# 2. Dataset Used

The dataset used for this project is an Excel (.xls) file that contains Facebook status activities along with corresponding sentiment scores (z-scores). These scores were converted to categorical sentiment labels:  
- Positive if score > 0.1  
- Negative if score < -0.1  
- Neutral otherwise

# 3. Model Training

The machine learning model is trained using the following steps:  
- Load and preprocess the .xls dataset using pandas  
- Convert sentiment scores to categorical labels  
- Transform the status text using TF-IDF Vectorizer  
- Train a Logistic Regression classifier  
- Save the trained model and vectorizer using pickle

# 4. Flask Web Application

A modern Flask web interface allows users to input their Facebook status and receive a sentiment prediction. The front-end features a modern UI with a gradient background, styled form, and result display area.

# 5. Project Files

- `train\_model.py`: Preprocesses dataset and trains the model  
- `app.py`: Flask backend that loads the model and handles predictions  
- `templates/index.html`: HTML form for user input  
- `static/style.css`: Stylesheet for the modern UI  
- `dataset/facebook\_activity\_sentiment.xls`: Source dataset  
- `model/`: Folder containing saved model and vectorizer

# 6. Model Evaluation

The model is evaluated using a classification report showing accuracy, precision, recall, and F1-score. This helps assess how well the model performs on unseen test data.

# 7. Conclusion

This project demonstrates the power of machine learning and natural language processing (NLP) for real-world applications. The modern UI combined with an accurate sentiment classifier makes this tool useful for analyzing public opinion or emotional tone in Facebook posts.