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**Facebook Sentiment Analysis Web App**

**1. Project Overview**

This project is a web-based Facebook Sentiment Analysis application built using Python, Flask, and machine learning. It uses a cleaned dataset of Facebook statuses with labeled sentiments to train a model that can predict whether a given status is Positive, Negative, or Neutral.

The application offers a user-friendly modern web interface, allowing users to input any Facebook-like status text and instantly receive sentiment analysis feedback.

**2. Dataset Used**

The dataset used for this project consists of Facebook statuses along with their corresponding sentiment labels. The cleaned dataset includes the following columns:

**Text:** The content of the Facebook status.

**Sentiment**: The label representing the emotion/sentiment (Positive, Negative, or Neutral).

**3. Model Training (Without Pipeline)**

This project uses a simple machine learning approach. The steps include:

* Load the dataset from a CSV file.
* Split the data into training and testing sets using train\_test\_split.
* Transform the text data using TF-IDF vectorization.
* Train a Naive Bayes classifier (MultinomialNB) using the transformed data.
* Save the model and vectorizer using pickle so they can be reused in the web app.
* Two separate files are saved in the model/ folder:
* tfidf\_vectorizer.pkl — stores the trained vectorizer.
* naive\_bayes\_model.pkl — stores the trained classifier.

**4. Flask Web Application**

The web application is powered by Flask and contains the following components:

**app.py**

Loads the trained model and vectorize**r.**

Renders a web form to accept Facebook status input.

Predicts the sentiment when a user submits a status.

**templates/index.html**

A modern HTML form with a textarea for input.

Displays the predicted sentiment result after form submission.

**static/style.css**

Provides a visually appealing modern UI.

Includes gradient backgrounds, custom buttons, and clean form styling.

**5. How to Run the Application**

**Required Libraries**

pandas

scikit-learn

flask

Pickle

**6. Conclusion**

This project demonstrates a basic but effective machine learning-based sentiment analysis system wrapped in a stylish and interactive web application.

It’s perfect for:

* Analyzing social media content.
* Understanding user sentiment.
* Serving as a foundation for more complex NLP applications.
* This system can easily be extended to work with Twitter, Instagram, or customer reviews by adjusting the dataset.