Public Sentiment Analysis using Twitter Data

Introduction

This project focuses on real-time public sentiment analysis by analyzing tweets collected from Twitter. It uses Natural Language Processing (NLP) to classify tweets into Positive, Neutral, or Negative sentiment categories and presents the results on an interactive Streamlit dashboard.

Abstract

The main objective of this project is to understand public sentiment on trending topics like elections, product launches, or current events. The system fetches live tweets using the Twitter API, analyzes them using the VADER sentiment analyzer, and presents visual insights in real time. This project helps showcase skills in data collection, cleaning, NLP, and dashboard design.

Tools Used

- Python
- Tweepy (Twitter API)
- VADER Sentiment Analysis
- pandas & matplotlib
- Streamlit (for dashboard)
- Git & GitHub

Steps Involved in Building the Project

1. Created a Twitter Developer account and accessed the API using Tweepy.
2. Collected recent tweets based on a topic query.
3. Performed sentiment analysis using VADER.
4. Saved the analyzed data to CSV.
5. Built a Streamlit dashboard to display sentiment distribution and tweet data.
6. Deployed the app using Streamlit Cloud.
7. Pushed the complete project with README and requirements to GitHub.

Conclusion

The project successfully demonstrates real-time sentiment analysis using Twitter data. It highlights the use of APIs, NLP, data visualization, and deployment skills. This dashboard can be extended for brand monitoring, political analysis, or public opinion tracking in future projects.