Project Report: Submitted by- Ravi Katariya

Title: Real-Time Public Sentiment Dashboard (Twitter/X) - Keyword: IPL

1. Introduction

In the era of digital communication, social media platforms like Twitter (now X) have become essential indicators of public sentiment. Real-time sentiment analysis provides valuable insights into people's opinions on trending topics. This project focuses on building a real-time dashboard that tracks, analyzes, and visualizes public sentiment related to the Indian Premier League (IPL) using tweets.

2. Abstract

This project aims to develop a dynamic and interactive dashboard for real-time sentiment analysis of tweets containing the keyword "IPL." Tweets are streamed using Twitter's API and analyzed using Natural Language Processing (NLP) to classify sentiments into Positive, Negative, and Neutral categories. The results are visualized using Tableau to offer a clear, engaging view of public opinion trends, score distribution, and tweet content. The system helps understand public sentiment patterns and can be adapted for any topic in real time.

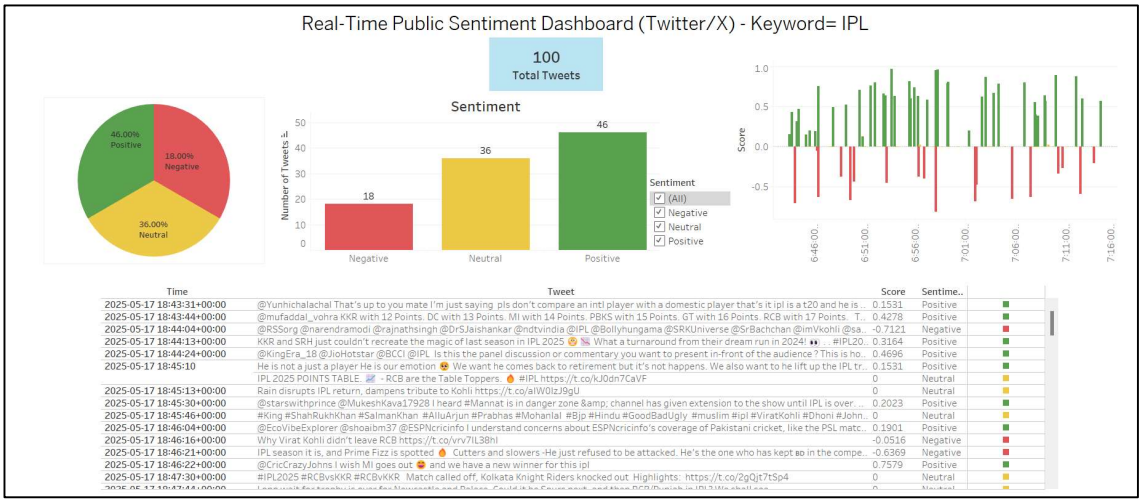
3. Tools Used

- **Python:** For streaming tweets and preprocessing
- **Tweepy:** Accessing Twitter API for live tweet extraction
- **NLTK (VADER):** Sentiment classification using compound scores
- **Pandas:** Data cleaning and manipulation
- **Tableau:** Real-time data visualization dashboard
- **CSV:** Intermediate storage for tweet data
- **Jupyter Notebook / VS Code:** For code execution and analysis

4. Steps Involved in Building the Project

1. **Twitter API Setup:**
    - Configured Tweepy with API credentials to fetch live tweets using a specified keyword (e.g., "IPL").
2. **Data Cleaning and Preprocessing:**
    - Removed URLs, mentions, hashtags, special characters.
    - Ensured uniform text encoding and eliminated noise.
3. **Sentiment Analysis with NLTK (VADER):**
    - Applied VADER lexicon to classify tweets as Positive, Neutral, or Negative based on compound sentiment scores.

4. **Export to CSV:**
    - Stored each tweet with timestamp, sentiment label, and score into a structured CSV file for visualization.
5. **Dashboard Creation in Tableau:**
    - Imported the CSV into Tableau.
    - Built:
        - Pie Chart (% sentiment distribution)
        - Bar Chart (sentiment count)
        - Line/Bar Graph (tweet sentiment scores over time)
        - Highlight Table (detailed tweet view)
    - Added sentiment color codes and interactivity with filters.



6. **Final Layout Design:**
    - Presented total tweets, keyword used, and visual trends with color-coded sentiment bars.

5. Conclusion

The Real-Time Public Sentiment Dashboard provides immediate and accessible insights into public opinion using Twitter data. It successfully demonstrates the power of combining Python-based NLP processing with Tableau's visualization capabilities. Though built for IPL, this model is scalable and can be adapted for sentiment tracking of any trending topic, news event, or marketing campaign. It serves as an effective tool for media analysts, researchers, and public opinion strategists.