

YouTube Trending Analytics Project Overview

Objective

This project analyzes YouTube trending videos across different countries to uncover insights related to video popularity, categories, regional trends, and sentiment in titles and tags. The main goal is to understand patterns that drive video virality using interactive visualizations and data processing.

Tools & Technologies Used

- Python (pandas, NLTK, matplotlib, seaborn)
- VADER Sentiment Analysis (for text emotion detection)
- PostgreSQL (SQL aggregation queries)
- Power BI (for dashboarding and storytelling)

Project Files

- youtubeexcel.csv: Cleaned dataset
- youtube_with_sentiment.csv: Dataset with sentiment scores
- yout.sql: SQL script for database loading and ranking
- sentiment_analysis.ipynb: Jupyter Notebook with preprocessing and sentiment analysis code
- YouTube_Trending.pbix: Power BI interactive dashboard

Dashboard Summary (Power BI)

The dashboard contains 4 pages:

1. Global Overview – KPIs, category views, likes
2. Country Comparison – Views and likes by country
3. Sentiment Analysis – Emotional tone in titles and tags
4. Channel Engagement – Popular creators and interaction stats

Sentiment Analysis (VADER)

VADER sentiment analysis was applied to video titles and tags. The model outputs a compound score between -1 (negative) to +1 (positive). This score helps to assess how emotionally positive or negative a video's title or tags are.

Two new columns were added:

- title_compound
- tags_compound

Findings: Videos with higher positivity tend to get more views, likes, and engagement.

Key Insights

- Music and Entertainment dominate trending categories.
- US and India trend videos for longer durations.
- Videos with emotionally positive titles tend to perform better.
- Tags with motivational or emotional words receive higher engagement.

How to Run the Project

1. Load the dataset into Power BI or PostgreSQL.
2. Run the sentiment_analysis.ipynb notebook to create sentiment-enhanced data.
3. Open the Power BI dashboard and load youtube_with_sentiment.csv.
4. Explore visuals and apply filters to derive insights.

Project Completion Status

All deliverables are complete and the project fully satisfies the original objectives.