

YouTube Trending Video Analytics – Final Report

Introduction

With the rapid growth of video content online, understanding what makes a video trend is essential for content creators, digital marketers, and data analysts. This project investigates YouTube trending video data across multiple regions to uncover patterns in video popularity, viewer sentiment, and regional preferences.

Abstract

This project analyzes a cleaned and consolidated dataset of trending YouTube videos to explore the relationship between video categories, sentiments, and regional trends. Python is used for data cleaning and sentiment analysis, SQL for data querying, and Tableau for building interactive dashboards. Key findings include dominant categories, sentiment distribution in video titles, and time-based patterns in trending duration.

Tools & Technologies Used

- **Python:** Data preprocessing and sentiment analysis (libraries: TextBlob, Pandas, Matplotlib, Seaborn)
 - **SQL (SQLite):** Category-wise analytics and insights
 - **Tableau:** Interactive data visualization and regional comparisons
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Project Workflow

1. **Dataset Collection & Cleaning**
 - Downloaded YouTube Trending Videos dataset
 - Removed duplicates and missing values
 - Standardized date formats
2. **Sentiment Analysis**
 - Applied TextBlob to analyze video title sentiments
 - Classified sentiments as Positive, Negative, or Neutral
3. **SQL-Based Analysis**
 - Used SQLite for querying average views by category
 - Ranked categories based on total viewership
4. **Visualization with Tableau**

- **Bar Chart:** Average views by video category
- **Pie Chart:** Distribution of sentiments in video titles
- **Line Chart:** Trends in views over time based on publish date
- **Map View:** Regional comparison by video count or views

5. Final Dataset Export

- Exported cleaned, sentiment-labeled dataset as .csv for use in Tableau

Key Findings

- **Entertainment** and **Music** dominate in both views and frequency on trending lists.
- Video titles with **positive sentiment** are more likely to trend.
- **Regional preferences** significantly influence trending content types.
- A video's **publish timing** and **title sentiment** are strong indicators of its trending potential.

Conclusion

Through data-driven insights, this project highlights how sentiment, category, and regional trends shape YouTube's trending landscape. These findings can aid content strategists and marketers in optimizing their video content to reach broader audiences.