

YouTube Trending Video Analytics Report

Introduction

The digital content landscape is evolving rapidly, with YouTube leading as one of the most influential video platforms worldwide. This project investigates the trending video patterns on YouTube across different regions, with a focus on India, to understand user preferences, sentiment trends, and genre popularity. Through a combination of data analysis and visualization, we derive actionable insights to inform content strategy and audience engagement.

Abstract

The project employs a dataset of trending YouTube videos across multiple countries, focusing on India for regional insights. Data was cleaned and standardized using Python, sentiment analysis was performed on video titles and tags, and SQL was used to compute category-level metrics like average views. Tableau dashboards visualize popular genres, trends in viewer sentiment, and time-series patterns in trending durations. The result is a comprehensive analytics pipeline that combines data science and storytelling for video content strategy.

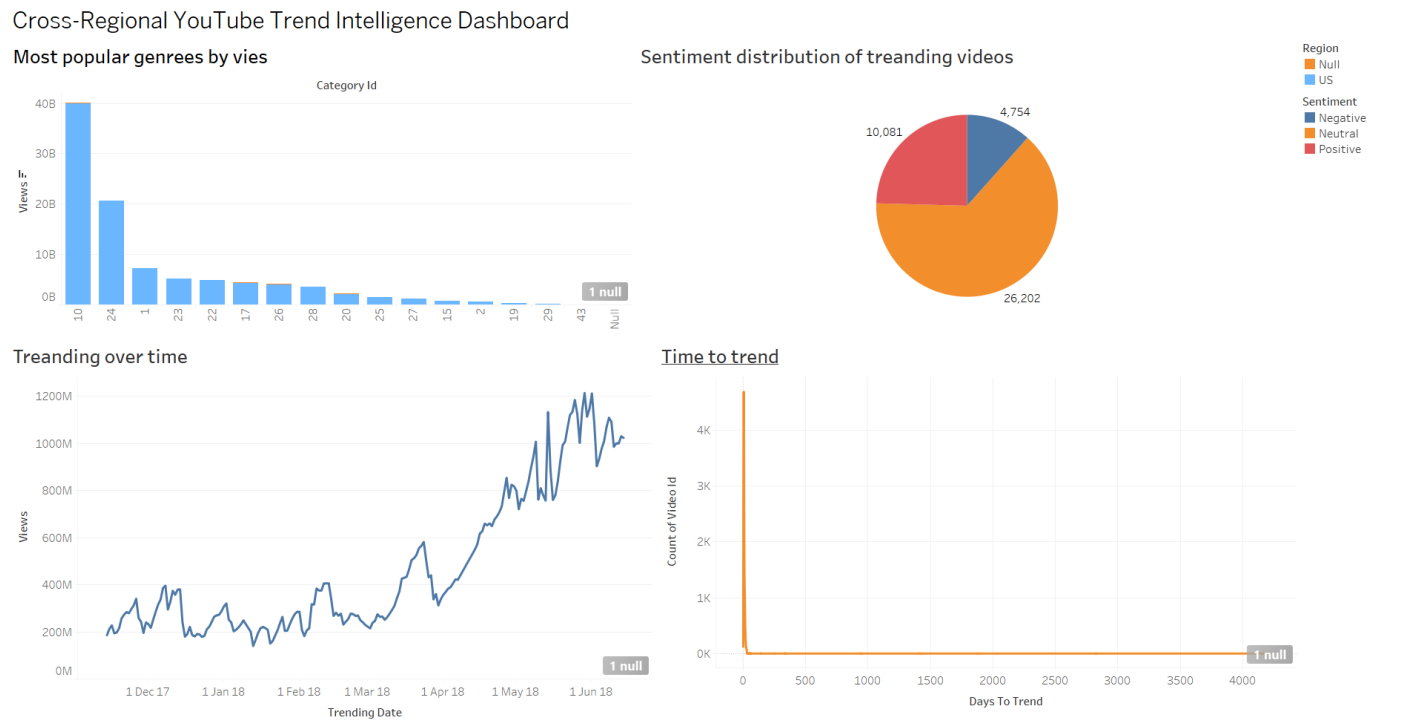
Tools Used

- Python (Pandas, Matplotlib, Seaborn, NLTK/TextBlob)
- SQL (SQLite / MySQL for ranking and aggregation)
- Tableau (for interactive dashboard and visuals)

Steps Involved in Building the Project

1. Data Cleaning & Standardization: Removed nulls, duplicates, and unified date formats across regions using Python.
2. Sentiment Analysis: Applied TextBlob to titles and tags to classify videos into Positive, Neutral, or Negative sentiment.
3. SQL Analysis: Wrote queries to rank video categories by average views and likes, using GROUP BY and window functions.
4. Trending Duration Calculation: Counted the number of days each video stayed trending to analyze longevity.
5. Time-Series & Comparative Visualization:
 - Created line graphs and bar charts (Python) for video trends over time.
 - Built Tableau dashboards to showcase region-wise genre popularity, sentiment distribution, and top-performing videos.

Tableau Dashboard:



Conclusion

This project highlights how regional preferences, sentiments, and content categories shape the YouTube trending ecosystem. The Indian video market shows a strong preference for entertainment and music, with predominantly positive sentiment in titles. The dashboard offers a user-friendly interface to explore these insights further, aiding creators, marketers, and analysts in content planning. This end-to-end workflow blends data engineering, analysis, and visualization into a cohesive insight-driven story.