



YouTube Trending Video Analytics

Objective

The main objective of this project is to analyze YouTube trending datasets from multiple regions to uncover patterns in trending videos. By using Python, SQL, and Tableau, the project identifies popular genres, performs sentiment analysis on video titles and tags, and builds dashboards for regional comparison of viewer preferences.

Introduction

YouTube is the world's largest video-sharing platform, with millions of videos uploaded daily. Among these, only a few videos trend based on audience engagement, likes, shares, and comments. Analyzing trending videos helps understand user behavior, content strategies, and cultural differences across countries.

This project focuses on analyzing YouTube trending datasets across regions to explore which categories dominate, how sentiments in titles/tags impact popularity, and how long videos remain in the trending list.

Abstract

The YouTube Trending Video Analytics project collects datasets of trending videos from different countries. The data is cleaned, standardized, and analyzed using Python libraries such as Matplotlib and Seaborn for visualization. Sentiment analysis is applied to titles and tags to examine audience responses. SQL queries rank categories based on average views, while Tableau dashboards provide interactive visualizations of regional patterns.

The final deliverables include:

- Dashboard showing **popular categories and sentiment analysis**
 - **Region-wise comparison** of trending patterns
 - A **report with storytelling** highlighting key insights
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Tools Used

- **Python (Matplotlib, Seaborn, Pandas, NLTK/TextBlob)** → Data cleaning, analysis, and visualizations
 - **SQL** → Ranking categories by average views, filtering datasets
 - **Tableau** → Dashboards for region-wise and sentiment comparison
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Steps Involved in Building the Project

1. **Data Collection & Cleaning**

- Import YouTube trending datasets from multiple regions.
 - Handle missing values, remove duplicates, and standardize column names.
 - Convert publish time and trending dates into proper datetime formats.
2. **Exploratory Data Analysis (EDA)**
- Analyze numerical features like views, likes, comments.
 - Identify most common categories across countries.
 - Study distribution of trending duration for videos.
3. **Sentiment Analysis**
- Use TextBlob/NLTK to analyze polarity and subjectivity of video titles and tags.
 - Classify sentiments as **positive, neutral, or negative**.
 - Compare how sentiment influences trending performance.
4. **SQL Queries**
- Rank video categories by average views.
 - Query top-performing creators across countries.
 - Compare regional watch patterns.
5. **Visualization**
- **Python** → Time-series plots for trending duration.
 - **Tableau** → Dashboards showing:
 - Most popular genres/categories
 - Sentiment-based performance
 - Region-wise trending patterns
6. **Insights & Storytelling**
- Certain categories (Music, Entertainment) dominate globally.
 - Titles with **positive sentiments** tend to trend longer.
 - Regional differences show cultural preferences, e.g., News in some countries vs. Music in others.
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Conclusion

The YouTube Trending Video Analytics project successfully revealed patterns in trending content across multiple countries. Music and Entertainment are globally dominant, while other genres like News and

Sports vary by region. Sentiment analysis highlighted that **positive and engaging titles/tags lead to higher visibility**.

By integrating Python, SQL, and Tableau, the project demonstrates how data analytics can provide valuable insights into audience behavior and content strategies on digital platforms. Such findings are useful for creators, marketers, and businesses to improve engagement and reach.