YouTube Trending Video Analytics

Internship Program: Elevate Labs - Data Analyst Internship

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Introduction

The YouTube Trending Video Analytics project aims to uncover patterns, insights, and trends in trending videos across regions. The objective was to analyze category popularity, engagement rates, regional variations, and sentiments from video metadata to build an interactive dashboard for storytelling with data.

Abstract

This project analyzed YouTube trending video datasets (US, UK, and other regions). performed cleaning and preprocessing, integrated SQL queries for structured insights, and used Python (Pandas, Matplotlib, Seaborn) for exploratory analysis. Finally, a dashboard was built in Power BI/Tableau to visualize key metrics such as views, engagement rates, trending duration, and sentiment analysis across regions and categories.

Tools Used

- Python: pandas, matplotlib, seaborn
- SQLite: data storage & queries
- Tableau/Power BI: dashboard design
- TextBlob/VADER: sentiment analysis

Steps Involved in Building the Project:

1. Data Collection - YouTube trending datasets from multiple regions.
2. Data Cleaning & Preprocessing - Standardized dates, categories, and removed duplicates.
3. SQL Analysis - Queries for category ranking, regional comparisons, and time-series trends.
4. Sentiment Analysis - Extracted sentiment scores from video titles and tags.

5. Visualization - Created charts in Python and dashboards in Tableau/Power BI.
6. Dashboard Design - KPIs (views, engagement, duration), region vs category charts, time-series of unique trending videos, and sentiment distribution.

Conclusion

The project revealed that certain categories like Music and Entertainment dominate views, while engagement varies across regions. The East and North American regions had higher engagement, while trending durations differed significantly by video type. The dashboard enables easy comparison of categories and regions, providing valuable insights into video performance. Through this project, I strengthened my skills in SQL, Python-based EDA, and dashboard storytelling.