YouTubeProjectCompletionReport

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1 YouTube Trending Video Analytics: Project Completion Report

1.1 Introduction

YouTube is one of the most **influential digital platforms**, shaping trends and audience engagement worldwide. This project aimed to **analyze trending video patterns** across different regions using **sentiment analysis, SQL-based ranking, and data visualizations** to uncover **engagement dynamics**.

1.2 Abstract

This project focused on analyzing **YouTube trending video datasets** across multiple countries to uncover audience behavior. Using **Python, SQL, and Tableau**, we examined **sentiment trends, regional comparisons, and engagement metrics** to determine the factors driving content popularity. The study **offers valuable insights for creators and businesses** looking to optimize their strategies for audience engagement.

1.3 Tools Used

Python (Pandas, Matplotlib, Seaborn) → Data preprocessing, cleaning, and sentiment analysis.
SQL → Ranking categories by views & computing engagement metrics.
Tableau → Creating interactive visualizations for sentiment distribution & region-wise comparisons.

1.4 Steps Involved in Building the Project

1.4.1 1 Data Collection & Cleaning

- Aggregated YouTube trending datasets from **multiple countries**.
- Cleaned inconsistencies in **date formats, missing values, and category classifications**.
- Standardized the dataset for **MySQL compatibility**.

1.4.2 2 Sentiment Analysis

- Extracted **video title sentiment** using NLP techniques.
- Classified sentiment as **Positive, Neutral, or Negative**.
- Integrated sentiment scores into the final dataset.

1.4.3 3 Ranking Categories Using SQL

- Queried **average video views** per category.
- Computed **engagement ratios** (likes-to-views comparison).
- Identified **top-performing genres** in different regions.

1.4.4 4 Time-Series Visualization

- Created **time-series sentiment trends** using Python & Tableau.
- Computed **trending duration** for videos.
- Tracked **category-wise shifts** over time.

1.4.5 5 Region-Wise Comparison

- Extracted **country-based statistics** from the **Global YouTube Statistics dataset**.
- Compared **video views across different countries**.
- Designed **region-wise visuals to illustrate engagement trends**.

1.5   Conclusion

This project successfully uncovered **patterns in YouTube video popularity**, **sentiment-driven engagement**, and **regional consumption trends**. The findings indicate: **Positive sentiment** correlates with **higher audience engagement**.
  Entertainment & Music categories dominate the most-viewed content.
  India leads in total video views, followed closely by **USA & Brazil**.

Understanding **these trends helps creators, marketers, and analysts** refine content strategies for **maximum engagement**.