# YouTube Trending Video Analytics - Final Report

**1. Introduction**

The YouTube Trending Video Analytics project focuses on understanding what makes videos trend across different regions. By analyzing a synthetic dataset of trending videos in countries like the US, India, and the UK, we aim to uncover patterns in views, categories, and sentiment to help optimize content strategies.

**2. Abstract**

This project includes dataset preparation, sentiment analysis using VADER, and interactive data visualizations built in Power BI. The dataset was cleaned and enriched using Python in Google Colab, then visualized to understand the impact of video categories, user engagement metrics, and sentiment on trending patterns.

**3. Tools Used**

- Python (Pandas, NLTK, Plotly)  
- Power BI for Dashboard Visualizations  
- Google Colab for Code Execution  
- Microsoft Word for Report Creation

**4. Dataset Description**

The dataset includes 300 records of trending videos across 3 countries with features like:  
- video\_id, title, tags, category, country  
- views, likes, dislikes, comment\_count  
- publish\_time, trending\_date  
- sentiment\_score, sentiment\_label

**5. Key Steps**

1. Data Cleaning:  
 - Removed special characters from title and tags  
 - Converted publish\_time and trending\_date to datetime  
  
2. Sentiment Analysis:  
 - Used NLTK VADER to generate sentiment scores from titles  
 - Classified titles into Positive, Neutral, and Negative  
  
3. Data Visualization:  
 - Created Power BI dashboard with insights like:  
 - Sentiment distribution  
 - Category-wise views  
 - Country-wise video count  
 - Likes vs Views correlation

**6. Insights**

- Positive sentiment titles are more common among high-view videos  
- Music and Entertainment are the most viewed categories  
- India contributes the highest number of trending videos in the dataset  
- Titles with keywords like 'Top', 'Best', or 'Watch' have stronger positive sentiment scores

**7. Conclusion**

This project showcases how data analytics can provide insights into digital content performance. The combination of sentiment analysis, category distribution, and country-wise comparisons offers a robust approach to understanding YouTube trends and optimizing future content strategies.

**8. Deliverables**

- Cleaned\_YouTube\_Trending\_Data.csv  
- Python notebook with sentiment analysis and EDA  
- Power BI dashboard (.pbix)  
- This report (YouTube\_Trending\_Report.docx)