Prepared by : Ayush Kumar Singh

Date : April 2025

Tools & Technologies Used :

Data Source: Kaggle (YouTube Trending Videos Dataset)

Languages: Python (Pandas, NumPy, Matplotlib, Seaborn)

Data Analysis: Jupyter Notebook (for EDA)

Data Visualization: Power BI

Design: Figma (for custom UI template)

Project Overview:

This project involved analyzing a large dataset of YouTube trending videos across multiple countries. The goal was to extract insights on viewer engagement, identify trends by geography, publish times, and popular creators, and present the findings in a clean, interactive Power BI dashboard.

Step-by-Step Process:

# 1. Dataset Collection

Downloaded from Kaggle:

File size: ~4 GB

Contains trending video data from multiple countries with fields like title, views, likes, comment\_count, publishedAt, category, etc.

# 2. Data Cleaning using Python (Pandas)

Removed irrelevant columns: description, video\_tags, language

Handled missing values

Converted date columns to datetime objects

Normalized column names Created calculated columns: days\_trending: number of unique days video appeared as trending like\_view\_ratio: likes / views comment\_like\_ratio: comments / likes

# 3. Exploratory Data Analysis (EDA) Performed in Jupyter Notebook:

Distribution of views, likes, and comments

Most popular categories by region

Time-based patterns in publishing

Outlier detection using boxplots

Correlation matrix between engagement metrics

# 4. Design with Figma

Created a landing page template in Figma

Included buttons for each analysis section:

Home

Region

Publish

Creators

Trending

Imported the Figma design into Power BI for enhanced UI/UX

# 5. Dashboard Creation in Power BI Loaded cleaned dataset into Power BI Created the following pages:

## Home

Central navigation using custom Figma buttons

## Region

Views by Country (Bar Chart)

Average Likes per Country

Category Distribution by Country

## Publish

Views by Day of Week

Engagement by Publish Hour

Calendar heatmap of uploads

## Creators

Top Creators by Views

Engagement by Channel

Number of Videos per Creator

## Trending

Days Trending by Video (Bar Chart)

Top Trending Videos by Country Like/View and Comment/Like Ratio Charts

Key Achievements:

* Successfully handled large dataset (~4 GB) efficiently
* Created calculated columns using DAX in Power BI
* Designed a clean, navigable dashboard using Figma UI elements
* Developed interactive filters for Country, Category, and Date Outcome:
* A professional-grade YouTube Analytics Dashboard that provides:
* Visual insights into video engagement
* Regional popularity metrics
* Optimal publishing behavior