COP5725 DATABASE MANAGEMENT SYSTEMS

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DATABASE SOFTWARE PROJECT ON ANALYSIS OF YOUTUBE

TRENDING VIDEOS

PROJECT DELIVERABLE-2

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1. INTRODUCTION

YouTube is the most used and most popular video platform in the world today. A list of trending videos are updated in YouTube constantly. For this project, a dataset with data about trending videos collected for about 205days over five different countries USA, Great Britain, Germany, Canada and France is taken for analysis.

This project deals with designing and implementing a database software system to analyze the data of more than 40,000 trending videos over different countries.

This project is aimed to provide an understanding to people or channels to increase popularity of their videos or channels and to identify the contribution and pattern by statistically analyzing different demographic factors like region, time of upload, trends, category of the video etc.,

1. Document Requirement

This document deals with how the colloquial queries specified in project deliverable phase 1 are conceptually realized in the form of Entity Relationship diagram and User Interface Diagram.

1. Colloquial Queries for the application
2. Which country has the most active users?
3. Co-relation of trending videos in different countries vs the number of days the video has been trending
4. Which channel has largest trending videos with respect to different countries? Also, what kind of category of videos to put in order to attract the subscribers or viewers. (based on category ID)
5. Which category (music, education, sports, news etc.,) is the most trending? Country-wise as well as world-wide?
6. Analysis on the videos that are the most listed on the trending list based on categories.
7. How does the trending of videos corelate with likes and comments ratio?
8. How many videos have been rendered controversial and removed after they became trending?
9. How is trending of videos related to views and comments? (analysis of controversial videos)
10. ER DIAGRAM
    1. ER Diagram

A picture containing text, map

Description automatically generated

* 1. Table and Attribute Description

1. Videos Table:

Composite Key: Video-Id, Trending-date, Country-Id

Attributes:

* + - * 1. Video-Id: (Varchar) Identification number of the respective video record
        2. Trending-date: (Date) Date on which the video has started trending
        3. Country-Id: (Number)Identification number of the country from which the data related to respective video is collected
        4. Tags: (Varchar) Tags are words and phrases you can include in YouTube videos description. They let viewers and YouTube know what videos are about
        5. Category-Id: (Number) Identification number of the category to which the video belongs to
        6. Publish-Time: (Date) Date on which the video is published on YouTube
        7. Thumbnail-Link: (Varchar) URL link that has thumbnail image of video
        8. Title: (varchar) Title is a short description of video and is limited to 100 characters

1. Channels Table:

Foreign Key: Video\_Id

Attributes:

* + - * 1. Channel\_Title: (Varchar)Name of the channel that published the video with respective video Id
        2. Video\_Id: (Varchar) Identification number of the respective video record

1. Country Table:

Primary Key: Country-Id

Attributes:

* + - * 1. Country-Id: (Number) Identification number of the country from

which the data related to respective video is collected

* + - * 1. Country-Name: (Varchar) Name of the country from which the data related to respective video is collected

1. Statistics Table:

Composite Keys: Video-Id, Trending-Date

Attributes:

* + - * 1. Video-Id: (varchar) Identification number of the respective video record
        2. Trending-Date: (Date) Date on which the video has started trending
        3. Like\_Count: (Number) Count of likes given to the video
        4. Dislike\_Count: (Number)Count of dislikes given to the video
        5. Comment-Count: (Number) Total number of comments provided to the video
        6. View\_Count: (Number)Total number views gathered by the video
        7. Comments-disabled: (Boolean) **True** if comments are disabled for the video and **False** if not.
        8. Ratings-disabled: (Boolean) **True** if ratings are disabled for the video and **False** if not.
        9. Video-error-or-removed: (Boolean) **True** if video has been removed after uploading or if error occurred and **False** if not.

1. USER INTERFACE DIAGRAM
   1. UI Diagram

![A screenshot of a cell phone

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* 1. Web Pages and Process Flow
     1. Home Page:
* Has title of the web application, About Tab has the information on what exactly does this application do.
* This page asks the user to select one or more countries from the 5 countries provided.
* Once the user selects the countries and clicks next button, the application redirects to the trend analysis page
* The countries that are selected here are taken as **global preference** and are used for all the subsequent pages
  + 1. Trend Analysis Webpage:
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Trend Analysis
* Has **8 buttons** which on clicking each button will redirect to a different webpage
  + 1. Most active Users Webpage:
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Most Active Users
* Description: Mapping the countries selected by the user to the number of users of different countries
* **Pie chart:** drawn with this mapping
* Back Button: On clicking goes to the previous web page.
  + 1. Popular videos vs the number of days the video was popular
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Select a video name from below to fine correlation
* Based on the global preference of countries, 5 common videos that are popular among those countries are displayed and the user is asked to select one among those.
* On selecting a video name, the application redirects to a new page Correlation Graph
  + - 1. Correlation Graph Page:
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Correlation of the video with respect to countries
* Graph Title: Countries vs. No. of days the video was popular
* Bar Graph: A bar graph is displayed with the correlation between the no. of days the video became popular and the countries
  + 1. Most trending channels
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Most Trending Channels
* Description and Bar Graph: A bar graph is displayed mapping the different channels (Netflix, ESPN, etc.,) with the number of popular videos associated with each channel
* Graph Title: No. of popular videos vs. Channels
  + 1. Most trending categories
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Most trending categories
* Description and Bar Graph: A bar graph is displayed mapping the different categories (Music, Sports, News etc.,) with the number of popular videos associated with each category.
* Graph Title: No. of popular videos vs. Categories
  + 1. Analysis on the videos based on category.
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Analysis on the videos based on category
* Displays List of 5 top trending videos in each category and the videos are grouped by categories
  + 1. Trend Analysis based on likes and comments ratio
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Trend Analysis based on likes and comments ratio
* Displays top 5 most liked videos from each country in the preference provided by user
* This list is grouped by country
  + 1. Controversial Video Statistics
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Controversial Video Statistics
* Description and Bar Graph: A bar graph is displayed mapping the different countries from the preference with the number of videos that were removed or caused error after uploading
* Graph Title: Controversial video Statistics compared globally
  + 1. Trending Analysis based on views and comments
* Home Button: This page has a home button which on clicking redirects to home page
* Title: title of the web application
* Subtitle: Trending Analysis based on views and comments
* Description: Videos with lowest ratio of views and comments are likely to be highly controversial.
* List of top 5 videos with lowest view to comment ratio from each country in the preference list are displayed and are grouped by countries.