VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"JnanaSangama", Belgaum -590014, Karnataka.

PROJECT WORK-4 REPORT
on

YouTube Trending Video Analysis

Submitted by

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Under the Guidance of
Dr. Saritha A N
Assistant Professor, BMSCE

in partial fulfillment for the award of the degree of
BACHELOR OF ENGINEERING
in
COMPUTER SCIENCE AND ENGINEERING

B. M. S. COLLEGE OF ENGINEERING
(Autonomous Institution under VTU)
BENGALURU-560019

Mar-2021 to Jun-2021

B. M. S. College of Engineering,

Bull Temple Road, Bangalore 560019

(Affiliated To Visvesvaraya Technological University, Belgaum)

Department of Computer Science and Engineering

CERTIFICATE

This is to certify that the project work entitled "**YOUTUBE TRENDING VIDEOS ANALYSIS**" carried out by **SUMANTH VS (1BM18CS113), SURAJ PERDOOR (1BM18CS114), VYSHNAVI M N (1BM18CS125) AND SNEHITA I(1BM18CS109)** who are bonafide students of **B. M. S. College of Engineering.** It is in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Engineering** of the Visveswaraiah Technological University, Belgaum during the year 2021. The project report has been approved as it satisfies the academic requirements in respect of **Project Work-4 (20CS6PWPW4)** work prescribed for the said degree.

Signature of the Guide
Dr. Saritha A N
Assistant Professor
BMSCE, Bengaluru

Signature of the HOD
Dr. Umadevi V
Associate Prof. & Head, Dept. of CSE
BMSCE, Bengaluru

External Viva

Name of the Examiner — Signature with date

1._____ _____

2. _____ _____

B. M. S. COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DECLARATION

We, Sumanth VS (1BM18CS113), Suraj Perdoor (1BM18CS114), Vyshnavi MN (1BM18CS125), Snehita I (1BM18CS0109), students of 5th Semester, B.E, Department of Computer Science and Engineering, B. M. S. College of Engineering, Bangalore, hereby declare that, this Project Work-1entitled "Project Title" has been carried out by us under the guidance of Dr. Saritha A N, Assistant Professor, Department of CSE, B. M. S. College of Engineering, Bangalore during the academic semester Mar-2021-Jun-2021

We also declare that to the best of our knowledge and belief, the development reported here is not from part of any other report by any other stud

Signature

SUMANTH VS (1BM18CS113)

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VYSHNAVI MN (1BM18CS125)

SNEHITA I (1BM18CS109)

1. Introduction

YouTube is the most popular and most used video platform in the world today. YouTube has a list of trending videos that is updated constantly. Here we will use Python with some packages like Pandas, Matplotlib, Seaborn to analyse a dataset that was collected over 205 days. For each of those days, the dataset contains data about the trending videos of that day. It contains data about more than 40,000 trending videos. We will analyse this data to get insights into YouTube trending videos, to see what is common between these videos. Those insights might also be used by people who want to increase popularity of their videos on YouTube.

We have come up with results on questions like

- How many views do our trending videos have? Do most of them have a large number of views? Is having a large number of views required for a video to become trending?
- How many likes do our trending videos have? Do most of them have a large number of likes? Is having a large number of likes required for a video to become trending?
- Which video remained the most on the trending-videos list?
- How many trending videos contain a fully-capitalized word in their titles?
- What are the lengths of trending video titles? Is this length related to the video becoming trendy?
- How are views, likes, dislikes, comment count, title length, and other attributes correlate with (relate to) each other? How are they connected?
- What are the most common words in trending video titles?
- Which YouTube channels have the largest number of trending videos?
- Which video category (e.g. Entertainment, Gaming, Comedy, etc.) has the largest number of trending videos?
- When were trending videos published? On which days of the week? at which times of the day?
- Information about subscriptions.

2. Problem Definition and Algorithm

2.1 Objectives

- To understand characteristics that make a video end up in the trending section on YouTube.
- To grasp knowledge about YouTube's algorithm and extract key aspects that can be used to improve growth of YouTube channels.
- Provide content creators and other digital businesses with information about features required to make a video that trends and reaches to maximum people.
- To accelerate a channel's growth and increase their subscriber count by making trending videos.
- By increasing subscriber count and views this can help you youtuber's to earn more money, sponsorships and opportunities to excel in their social media carrier

2.2 Task Definition

Trending helps viewers see what's happening on YouTube and in the world. Trending aims to surface videos that a wide range of viewers would find interesting. Some trends are predictable, like a new song from a popular artist or a new movie trailer. Others are surprising, like a viral video.

YouTube is a widely used and famous online video platform in the world today. YouTube has a list of trending videos that is updated constantly. Analyzing these trending videos can give content creators greater perspective and knowledge for increasing their popularity and brand of their channels. Companies and businesses using social media and digital platform can also use this analysis to boost their growth in business by publishing videos or sponsoring appropriate channels at right time

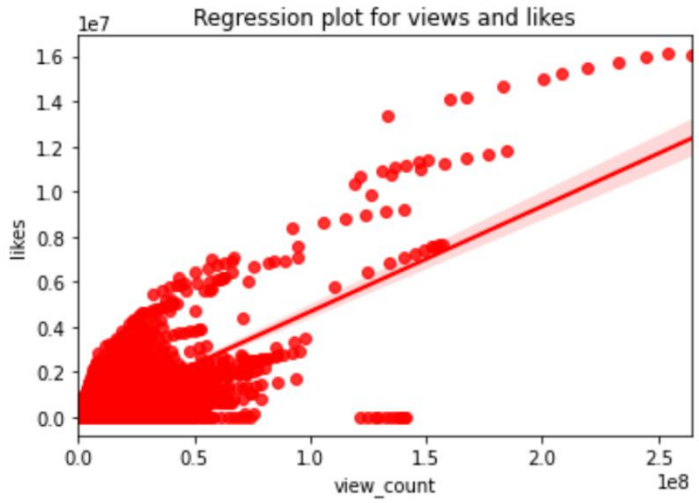
Hence, we finally came up with information useful for the users in making their video viral.

2.3 Algorithms

2.3.1 Classification

It is a process of creating classes that represent users and use cases. Class Probability Estimation tries to predict how to classify each single individual data asset. Based on the specific question to be answered, classes are created. Other qualities of the asset are evaluated in making the prediction

```
[151… Text(0.5, 1.0, 'Regression plot for views and likes')
```



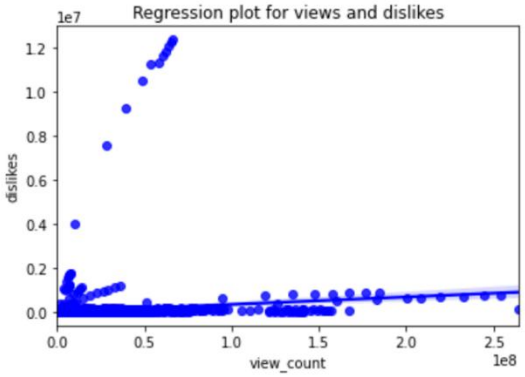
+ Code + Markdown

This plot is showing a linear relationship between views and likes.

2.3.2 Regression

The most commonly-used forecasting method is the Regression method. Regression can be confused with classification methods because to predict an outcome, the process of using known values is the same. It is a model used to predict continuous value. Linear regression, Logistic Regression, Polynomial Regression are some types of regression.

```
[152… Text(0.5, 1.0, 'Regression plot for views and dislikes')
```

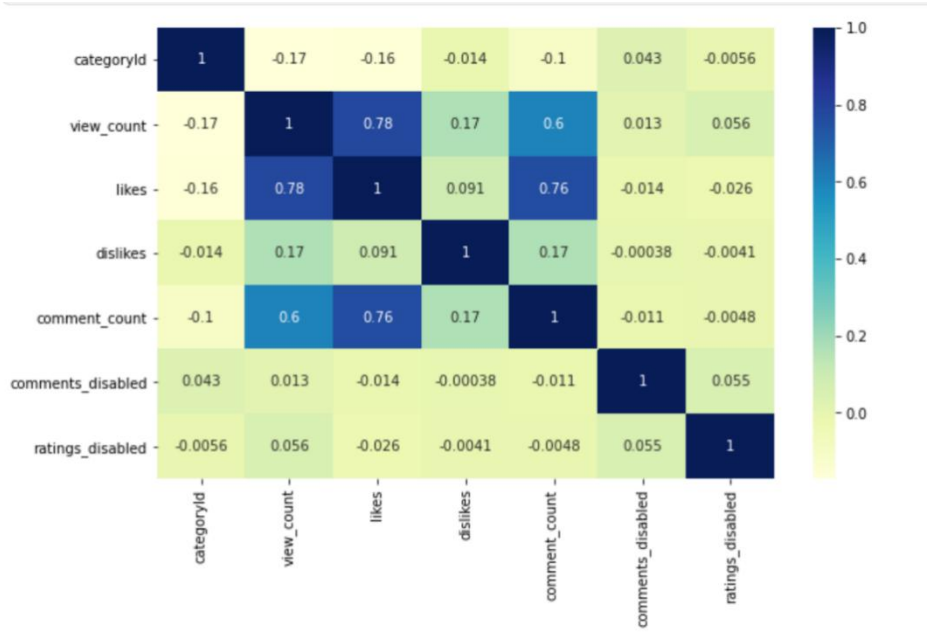


+ Code + Markdown

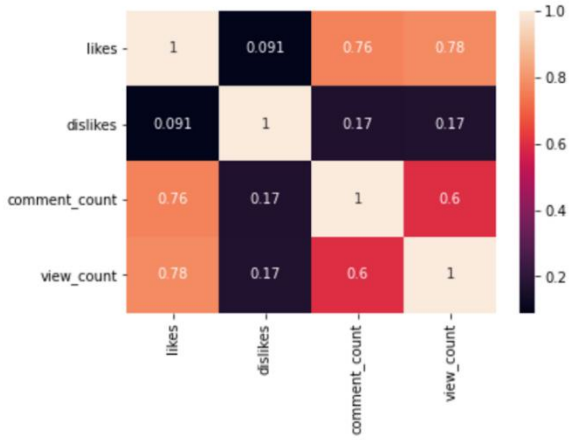
Compared to the first plot, the dislikes increase as the views increase, but not as much as the first plot. Notice the steeper line in the first graph.

2.3.3 Similarity Matching

Similarity Matching looks for correlation of attributes in order to recognize similarities between individuals. If two customers or products are similar in certain ways, it's reasonable to predict that they will be similar in other ways as well. This can be used to find customers for targeted marketing campaigns or for managing the company's image with targeted online ads. The similarity profile will reflect characteristics that will have a bearing on the question at hand, so it could include attributes such as age and purchase history



[154… <matplotlib.axes._subplots.AxesSubplot at 0x7f06674e6e50>



Notice a high correlation between views and likes. That makes sense! people who like a video tend to leave a comment and vice versa. Howver people who dislike tend not to leave a comment or vice versa.

3. Experimental Evaluation

3.1 Methodology

3.1.1 Analyzing the Basic Statistics of Trending Section videos.

One of the methods is by obtaining all the data associated with trending videos for example statistics such as number of views for each trending videos, time taken for video to end up in trending section, number of likes, comments and description for that videos etc. These statistics will help in understanding basic conditions for a video to appear in trending section of YouTube page. This data can be extracted by using YouTube API provided by YouTube. It offers lot of services such as downloading video content, description, titles, thumbnails and other basic statistics.

3.1.2 Studying the Difference between Trending and Non Trending Videos.

Comparing the statistics of both, trending and nontrending videos on YouTube can be another method for performing this analysis. By comparing certain attributes such as number of views, likes, comments, shares count for each hour or time interval after the video is uploaded, for both the type of videos, can help in understanding how a particular video navigates through YouTube's algorithm steps and ends up in trending section while other does not appear in trending section. For this type of analysis equal amount of data about trending and non-trending videos will make the results more accurate and form better conclusion

3.1.3 Analyzing Youtubers who upload Most Trending Videos.

The third method of analysis is by studying particular you-tubers or content creators that post most trending videos in a particular region or in a category. By reviewing their performance statistics, we can also form some assumptions that can provide us results and information about trending videos. This youtubers might have certain practices that they adopt while publishing their videos on YouTube. This study of their behavior can help us in obtaining crucial facts about what interest audience in watching their videos and also about YouTube algorithm that make these videos appear in trending section.

3.1.4 Correlation Matrix

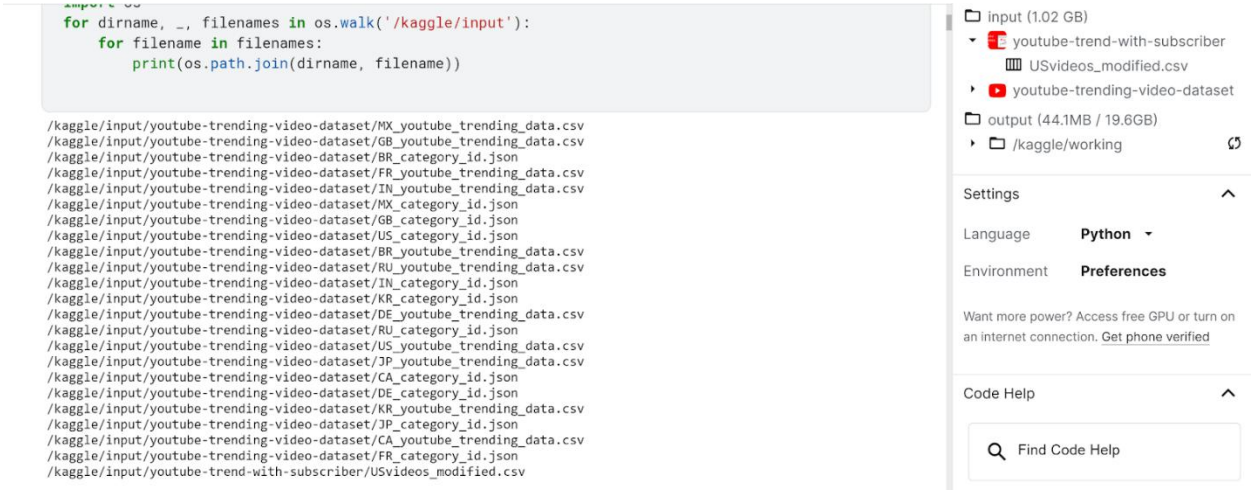
Similarity Matching looks for correlation of attributes in order to recognize similarities between individuals. If two customers or products are similar in certain ways, it's reasonable to predict that they will be similar in other ways as well. This can be used to find customers for targeted

marketing campaigns or for managing the company's image with targeted online ads. The similarity profile will reflect characteristics that will have a bearing on the question at hand, so it could include attributes such as age and purchase history

3.2 Results

Screenshots

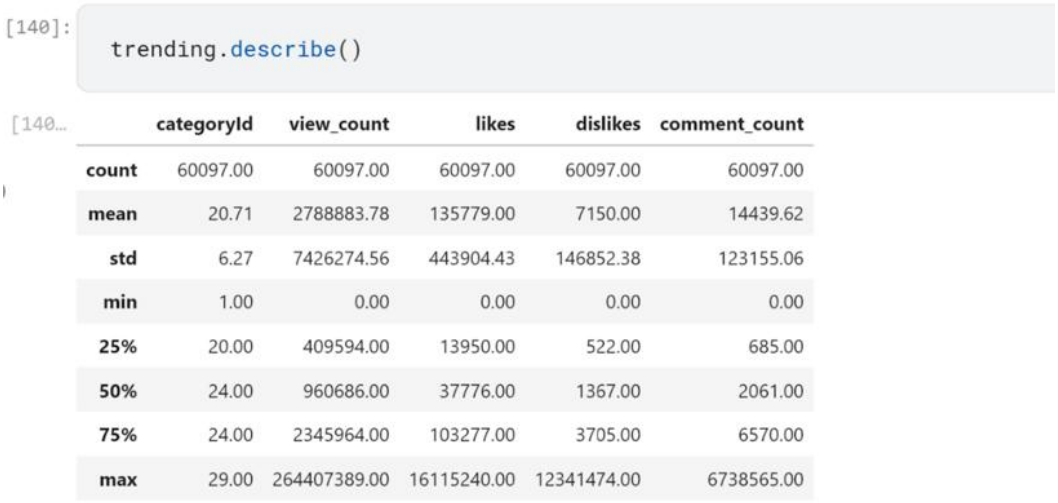
- **Datasets Used :**



```
for dirname, _, filenames in os.walk('/kaggle/input'):
    for filename in filenames:
        print(os.path.join(dirname, filename))
```

```
/kaggle/input/youtube-trending-video-dataset/MX_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/GB_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/BR_category_id.json
/kaggle/input/youtube-trending-video-dataset/FR_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/IN_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/MX_category_id.json
/kaggle/input/youtube-trending-video-dataset/GB_category_id.json
/kaggle/input/youtube-trending-video-dataset/US_category_id.json
/kaggle/input/youtube-trending-video-dataset/BR_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/RU_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/IN_category_id.json
/kaggle/input/youtube-trending-video-dataset/KR_category_id.json
/kaggle/input/youtube-trending-video-dataset/DE_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/RU_category_id.json
/kaggle/input/youtube-trending-video-dataset/US_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/JP_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/CA_category_id.json
/kaggle/input/youtube-trending-video-dataset/DE_category_id.json
/kaggle/input/youtube-trending-video-dataset/KR_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/JP_category_id.json
/kaggle/input/youtube-trending-video-dataset/CA_youtube_trending_data.csv
/kaggle/input/youtube-trending-video-dataset/FR_category_id.json
/kaggle/input/youtube-trend-with-subscriber/USvideos_modified.csv
```


- **Statistics for numerical and non-numerical columns:**

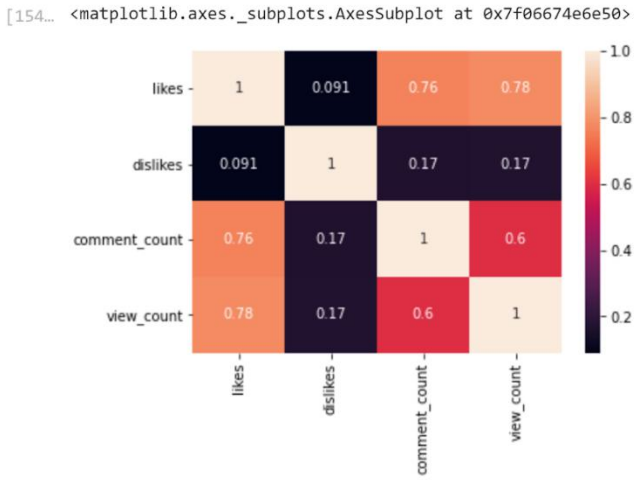


[140]:
```
trending.describe()
```

[140…

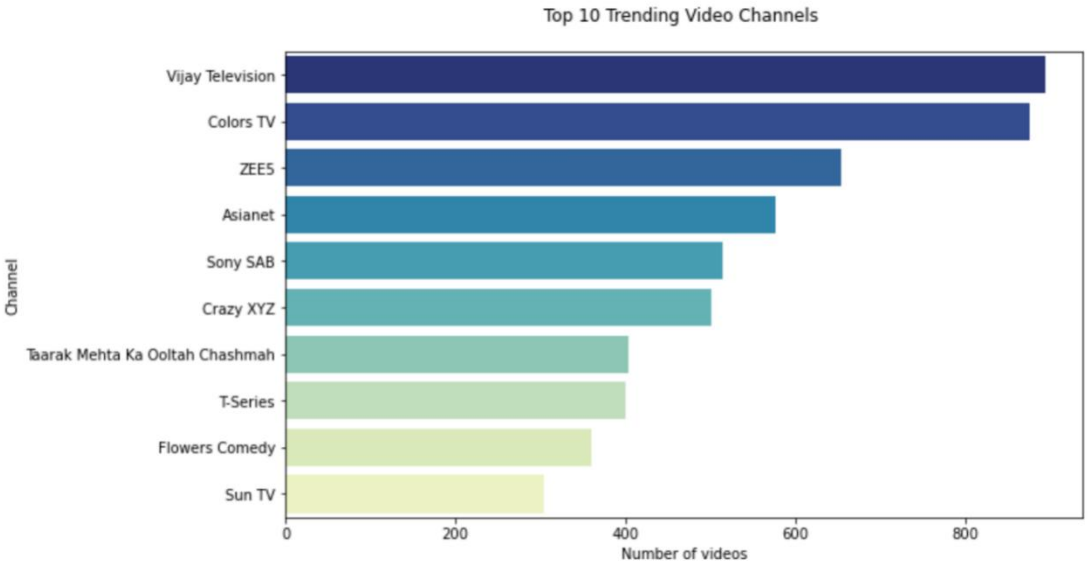
	categoryId	view_count	likes	dislikes	comment_count
count	60097.00	60097.00	60097.00	60097.00	60097.00
mean	20.71	2788883.78	135779.00	7150.00	14439.62
std	6.27	7426274.56	443904.43	146852.38	123155.06
min	1.00	0.00	0.00	0.00	0.00
25%	20.00	409594.00	13950.00	522.00	685.00
50%	24.00	960686.00	37776.00	1367.00	2061.00
75%	24.00	2345964.00	103277.00	3705.00	6570.00
max	29.00	264407389.00	16115240.00	12341474.00	6738565.00

- **Correlation Matrix:**

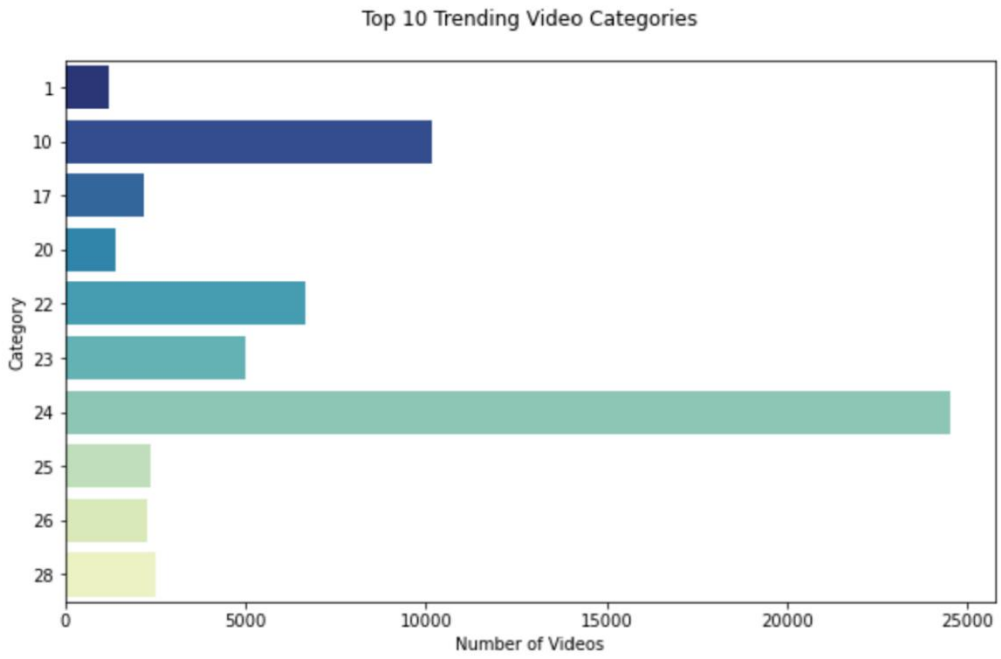


Notice a high correlation between views and likes. That makes sense! people who like a video tend to leave a comment and vice versa. Howver people who dislike tend not to leave a comment or vice versa.

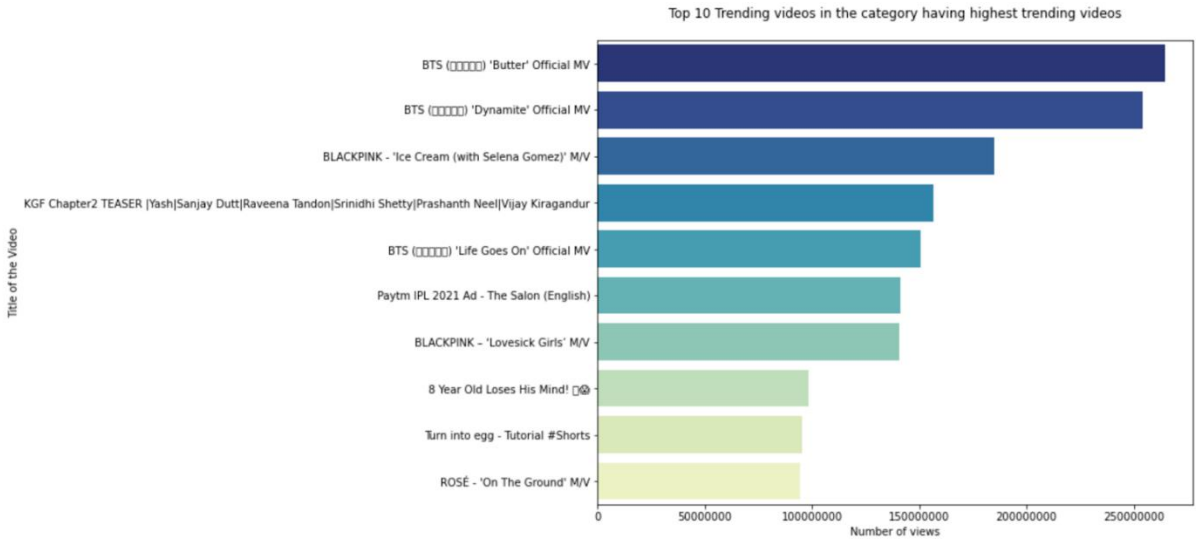
- **Top 10 Channels having highest trending video:**



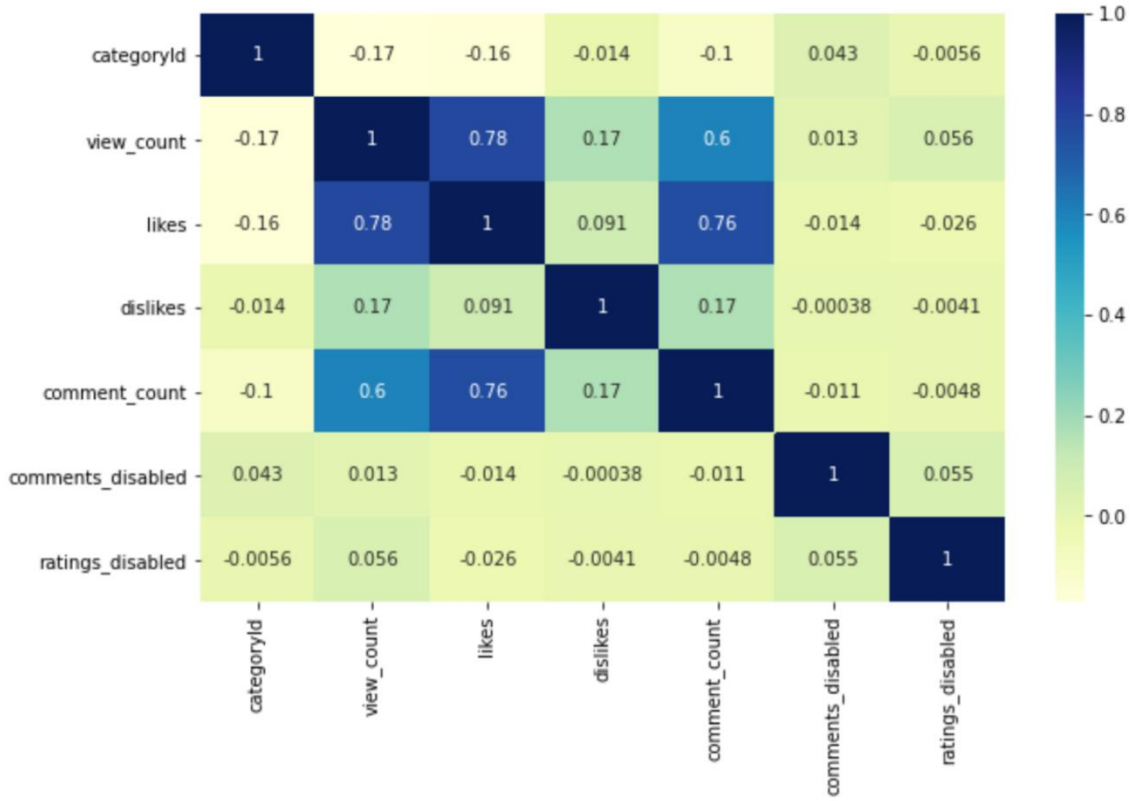
- **Top 10 Categories having highest trending videos:**

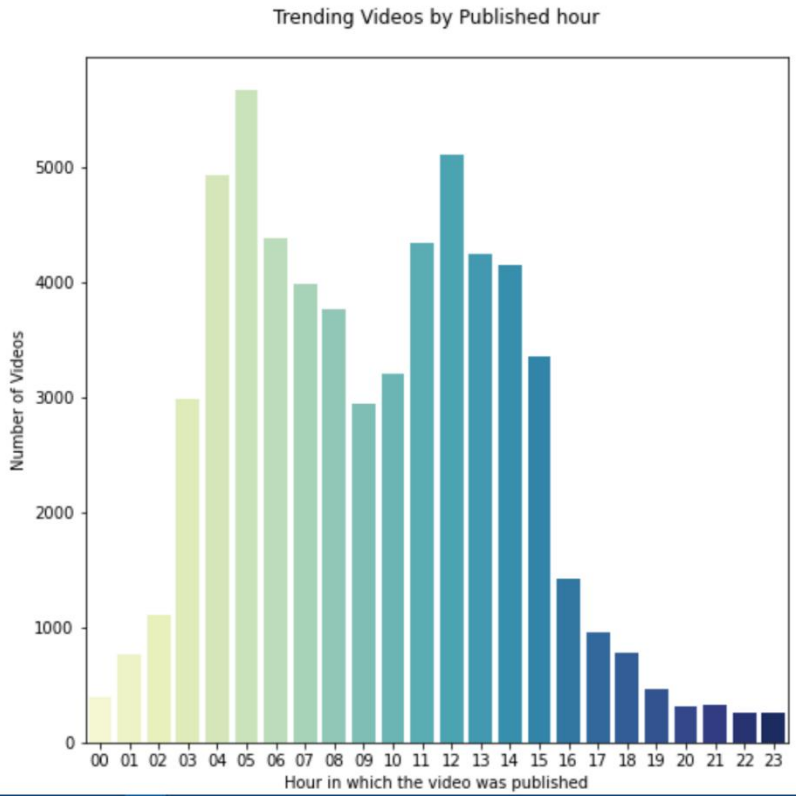


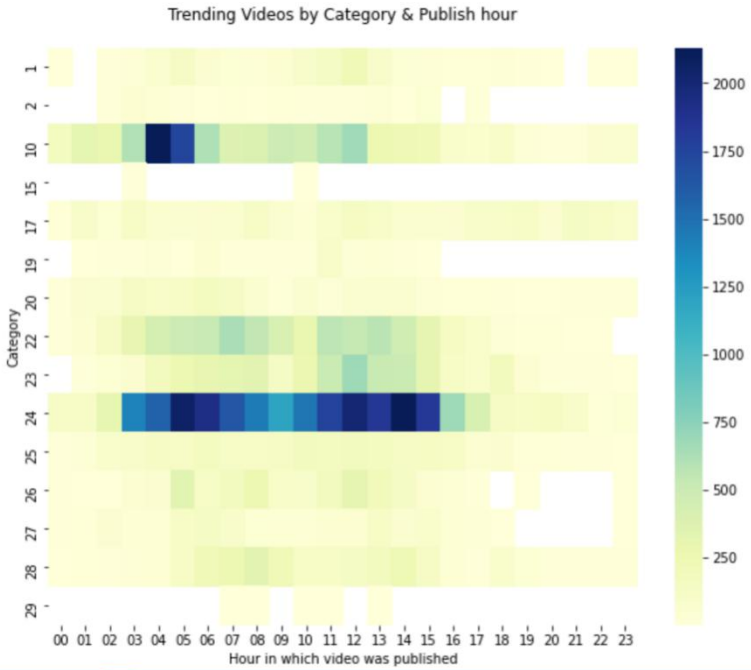
- **Top 10 Trending videos in the category having highest trending videos:**



- **Impact of video published hour on trending videos:**

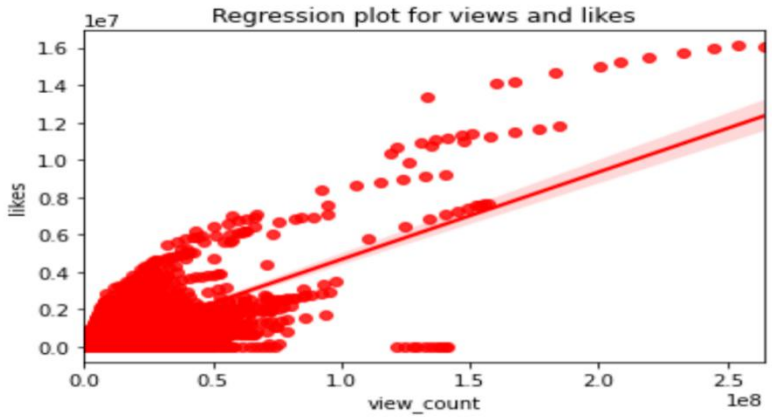

categoryId
view_count
likes
dislikes
comment_count
comments_disabled
ratings_disabled
1 -0.17 -0.16 -0.014 -0.1 0.043 -0.0056
-0.17 1 0.78 0.17 0.6 0.013 0.056
-0.16 0.78 1 0.091 0.76 -0.014 -0.026
-0.014 0.17 0.091 1 0.17 -0.00038 -0.0041
-0.1 0.6 0.76 0.17 1 -0.011 -0.0048
0.043 0.013 -0.014 -0.00038 -0.011 1 0.055
-0.0056 0.056 -0.026 -0.0041 -0.0048 0.055 1
1.0
0.8
0.6
0.4
0.2
0.0


Trending Videos by Published hour
Number of Videos
0
1000
2000
3000
4000
5000
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23
Hour in which the video was published



Analysis on views, likes, dislikes:

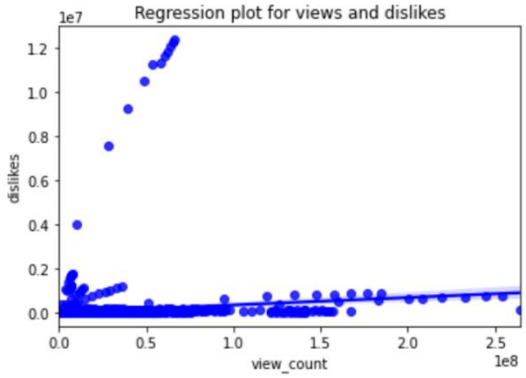
```
[151… Text(0.5, 1.0, 'Regression plot for views and likes')
```



+ Code + Markdown

This plot is showing a linear relationship between views and likes.

[152… Text(0.5, 1.0, 'Regression plot for views and dislikes')



+ Code + Markdown

Compared to the first plot, the dislikes increase as the views increase, but not as much as the first plot. Notice the steeper line in the first graph.

- **Video titles with most likes count:**

[155]:
```
# What are the video titles with most likes count
trending[['title', 'likes']].groupby('title').sum().sort_values(by= 'likes', ascen
```

[155…

title	likes
BTS (방탄소년단) 'Dynamite' Official MV	139247236
BLACKPINK - 'Ice Cream (with Selena Gomez)' M/V	91800242
BTS (방탄소년단) 'Life Goes On' Official MV	78747652
KGF Chapter2 TEASER |Yash|Sanjay Dutt|Raveena Tandon|Srinidhi Shetty|Prashanth Neel|Vijay Kiragandur	75880519
BLACKPINK – 'Lovesick Girls' M/V	63844531

- **Video titles with most dislikes count:**

```
[156]: # What are the video titles with most dislikes count
       trending[['title', 'dislikes']].groupby('title').sum().sort_values(by= 'disli
```

[156...

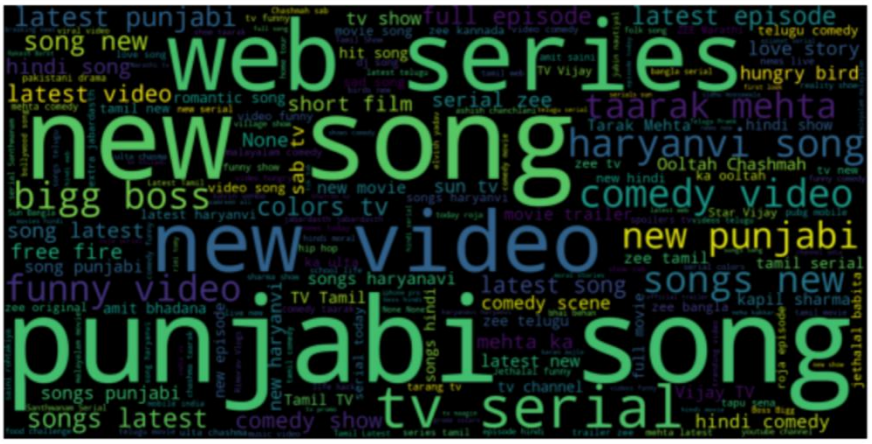
title	dislikes
Sadak 2 | Official Trailer | Sanjay | Pooja | Alia | Aditya | Jisshu | Mahesh Bhatt | 28 Aug	113912935
Khaali Peeli | Teaser | Ishaan | Ananya Panday | Maqbool Khan | Coming Soon	11146126
Chocolate - Tony Kakkar ft. Riyaz Aly & Avneet Kaur | Satti Dhillon | Anshul Garg	7144754
BLACKPINK - 'Ice Cream (with Selena Gomez)' M/V	6739622
BTS (방탄소년단) 'Dynamite' Official MV	5763604

- **Analysis on trending tags:**

```
[158... 0    sadak|sadak 2|mahesh bhatt|vishesh films|pooja...
        1                                              [None]
        2    clash diljit dosanjh|diljit dosanjh|diljit dos...
        3    hindi songs|2020 hindi songs|2020 new songs|t-...
        4    VYRL Original|Mohsin Khan|Shivangi Joshi|Payal...
        5    haircut mythpat|haircut vlog funny|mythpat fun...
        6    Paapi Munda|Mankirt Aulakh|Mankirt Aulakh Paap...
        7    Naagin 5|Naagin|Season 5|Hina Khan|Dheeraj Dho...
        8    funny video|ludo video|funny ludo|ludo players...
        9    kambi|jatti jaandi|mahi sharma|kambi new song|...
        Name: tags, dtype: object
```

- **Visualization of our word cloud:**

[167… (-0.5, 1999.5, 999.5, -0.5)



+ Code + Markdown

The size of the wordcloud indiacates the significance of the tag.

- **Emoji Analysis:**

[174… dict_items([('😂', 21), ('😉', 21), ('😋', 38), ('🌈', 10), ('😡', 11), ('🤣', 339), ('😊', 122), ('🏈', 1), ('🚙', 6), ('😁', 43), ('〰', 9), ('😮', 3), ('✋', 4), ('😄', 8), ('💛', 3), ('®', 14), ('🧃', 49), ('🧜', 5), ('😵', 30), ('✈', 8), ('🌺', 12), ('😖', 19), ('🤷', 3), ('🀄', 3), ('🎇', 9), ('📷', 13), ('🙂', 11), ('😑', 7), ('😴', 48), ('😳', 3), ('🦷', 15), ('🚢', 4), ('™', 4), ('😲', 152), ('🎁', 23), ('💪', 5), ('🌟', 1), ('🚜', 2), ('💎', 15), ('🤳', 2), ('🏌', 4), ('🟡', 5), ('😍', 218), ('💀', 2), ('😉', 27), ('🚒', 6), ('👏', 2), ('🚓', 12), ('🎓', 5), ('🎻', 22), ('👊', 6), ('🖤', 33), ('😱', 354), ('✌', 9), ('🛒', 1), ('🙃', 11), ('🚑', 4), ('😶', 6), ('🤷', 2), ('🚒', 7), ('🐟', 5), ('🔴', 4), ('🚨', 1), ('🙌', 5), ('🍌', 16), ('🟨', 10), ('💼', 4), ('💰', 5), ('🧬', 4), ('🌙', 5), ('🚀', 1), ('😊', 12), ('😁', 50), ('🧲', 5), ('❌', 25), ('🤡', 15), ('🔮', 4), ('🤳', 23), ('💥', 98), ('😨', 42), ('🦊', 21), ('🚲', 1), ('🙂', 2), ('😟', 7), ('😰', 22), ('📢', 6), ('🤡', 37), ('😊', 40), ('🚘', 13), ('💔', 45), ('😩', 610), ('😡', 51), ('✅', 13), ('❕', 3), ('\U0001f90d', 6), ('👉', 22), ('ᴜ', 15), ('🍗', 23), ('⚡', 310), ('😣', 8), ('🛋', 10), ('ˢ', 10), ('🤦', 34), ('®', 11), ('😑', 12), ('😠', 6), ('♥', 540), ('😋', 146), ('😱', 181), ('😬', 6), ('🪧', 5), ('😇', 123), ('ᴘ', 5), ('🍎', 11), ('😘', 6), ('😎', 86), ('🧃', 12), ('🍀', 3), ('🎬', 4), ('🌟', 44), ('🥤', 4), ('💙', 3), ('🤦', 23), ('👌', 56), ('🚓', 9), ('😻', 3), ('♥', 66), ('📞', 4), ('ɪ', 40), ('💡', 7), ('🙈', 68), ('😆', 55), ('😻', 5), ('😇', 11), ('😋', 65), ('😠', 8), ('🔍', 6), ('🥒', 3), ('❕', 4), ('🤦', 5), ('😢', 18), ('😬', 5), ('😞', 5), ('3', 7), ('🧍', 9), ('ʀ', 5), ('🍕', 16), ('🍉', 4), ('♂', 58), ('😏', 2), ('😫', 10), ('🚨', 5), ('💥', 23), ('😇', 4), ('🏆', 31), ('😕', 83), ('🔥', 3), ('😟', 2), ('🎄', 5), ('🔋', 2), ('🌸', 17), ('🀄', 98), ('🚗', 9), ('🔵', 4), ('😩', 13), ('😟', 5), ('🥓', 5), ('😢', 36), ('👀', 12), ('ʜ', 5), ('🙂', 45), ('🚚', 10), ('☀', 8), ('💯', 44), ('🚮', 5), ('🐯', 12), ('🔥', 1878), ('💀', 3), ('🦠', 4), ('🏠', 44), ('🛌', 2), ('🤷', 2), ('🚦', 18), ('🍋', 6), ('🐾', 2), ('🐠', 4), ('😊', 25), ('🦐', 3), ('🤷', 4), ('🏈', 1), ('😟', 2), ('🤴', 27), ('👍', 16), ('🅾', 3), ('⚠', 25), ('👏', 2), ('♀', 41), ('🟥', 4), ('🤦', 16), ('😯', 23), ('🍪', 26), ('🥣', 4), ('🍯', 2), ('🤷', 21), ('🥫', 4), ('😮', 4), ('☎', 2), ('🧷', 4), ('🚣', 3), ('😋', 2), ('🐄', 2), ('🍋', 12), ('😐', 3), ('🤷', 26), ('🦌', 6), ('😐', 46), ('😊', 17), ('😡', 43), ('😨', 30), ('😛', 105), ('\', 3), ('☠', 2), ('💚', 1), ('🎈', 4), ('\U0001fa81', 3), ('🚫', 1), ('🔴', 52), ('🥶', 13), ('📹', 3), ('🔊', 3), ('😕', 8), ('💛', 21), ('🔺', 5), ('😁', 15), ('🦋', 3), ('😊', 25), ('📷', 8), ('🌻', 12), ('😴', 2), ('😀', 17), ('🎷', 13), ('\U0001f90e', 4), ('🍆', 6), ('🧸', 4), ('👕', 3), ('🧸', 8), ('🐈', 3), ('🤘', 3), ('🥶', 1), ('😟', 26), ('😑', 17), ('🎶', 7), ('👹', 3), ('🦙', 2), ('🙏', 112), ('🀄', 13), ('🔍', 8), ('🎧', 2), ('🤢', 2), ('😶', 14), ('😂', 523), ('💞', 40), ('▶', 14), ('\U0001fa94', 23), ('🎆', 5), ('🔲', 5), ('🎲', 4), ('🤮', 37), ('😠', 16), ('🌹', 6), ('💜', 9), ('💝', 8), ('ᴄ', 5), ('🤜', 10), ('👏', 7), ('😁', 4), ('💋', 11), ('😟', 37), ('💍', 26), ('👎', 3), ('😊', 55), ('🔮', 10), ('💰', 49), ('❤', 22), ('💔', 11), ('🏂', 10), ('ɴ', 45),

3.3 Discussions

Good practices for uploading YouTube videos

Some tips that can be obtained after performing the analysis and summary of analysis are:

- Optimize Meta Data for Better Search and Visibility: Some of the things that algorithm considers are you need to ensure your video title, description & content matches to what user is searching for, to become a high rank in YouTube video searching.
- Use relevant keywords: Try to make a video by adding clear and understandable keywords to your title and description. So, user could be able to read and click it to watch full video.
- Use an Engaging Thumbnail: Use a custom thumbnail that is peculiar only to your channel so that users can see there is a difference from other autogenerated ones.
- Video Translation: Essential to do video translation by providing subtitles along with the video or some textual information that can help the viewers to understand if a particular individual cannot understand or hear the language spoken in the video. Different people have different rate of absorbing content hence providing some form of textual aide can help the viewer retain more information and appreciate the video.
- Call included for action: At the beginning of the video or while concluding it is good practice to encourage audience to like, share and subscribe the videos. Also asking users to post comments about what they feel about the video can increase the audience engagement. This in turn can make the video have higher chances of appearing in trending list, as more people are talking about it.
- Use YouTube Analytics: YouTube offers platform like YouTube studio to content creators that includes analytics section page from which a particular user can obtain overall statistics and performance of his/her own videos. These statistics can give insights to the youtuber about viewer's behaviors and certain patterns. For example, a youtuber can know which age group of audience is watching his/her videos, at what time they watch and from which region or country the viewers are in more numbers. This platform can help users by making content for these specific users.
- Be a consistent Youtuber: YouTube's algorithm favors channel promotion over single video promotion. By consistently uploading videos and having constant interaction with viewers can increase views and subscriber count of channel and improve the reach of video there by increasing the chances of the video to end up in trending page.
- All Clicks Are NOT Created Equal: "Long clicks" are more valuable than "short clicks. "Short clicks are called when if a viewer watches your video for only 8 seconds and ends his or her session, then

YouTube's algorithm figures that he or she wasn't satisfied with your content. Long click means, if a viewer watches your video for 2 minutes or longer and continues to watch more videos during that session, then YouTube's algorithm figures that he or she was satisfied with your content.

4. Related Work

4.1 Analysis on Channels

Just by counting channels and trending videos number we can get which channels produce most trending videos. This can be done using the using functions from panda's libraries on data frame containing the number of times the channel was on trending section. Sum of count for each channel is calculated and then plotted in graph with the help of python's mat plot library

4.2 Analysis on Category

Machine learning algorithms such as classification can be used to classify the categories of videos with their number of trending videos count to understand which category has more trending videos.

4.3 Comments, likes and ratings

Correlation represents as value between +1, 0 and - 1 where +1 denotes highly positive correlation, -1 denotes highly negative correlation and 0 denotes No correlation. The highly positively correlated which has correlation value as-Between Views and Likes: 0.85, Likes and Comments: 0.80, Dislikes and Comments: 0.70. There is some positive correlation between Views and Dislikes, Views and Comments, Likes and Dislikes. Some Results obtained by observing comments like ratings are we see only 2% of Trending Videos prevented users from commenting. We see that only 169 trending videos out of 40949 prevented users from commenting. Videos have both comments and ratings disabled. So there are just 106 trending videos that have both comments and ratings disabled.

4.4 Analysis on best time to upload videos

By extracting publishing time for every video with videos count for every time slot we can understand best time for a trending video to get uploaded and published. Hence by using algorithm like regression we can predict that a video published in a given time slot having certain set of features can trend or not. Some summaries after doing analysis on day and time are the best day and time to upload video on YouTube is in midweek afternoons. Best hours are: On Monday, Tuesday and Wednesday from 2pm to 4pm and on

Thursday and Friday from 12 pm till 3 pm. After collecting data from 120 million views of total 1300 channels, we can know on weekends, Saturday and Sunday the best time to upload videos is between 9 to 11 am. To post videos on YouTube from all the days of week, Thursday and Friday are best. Most YouTube viewers are children's or adults. The viewership extends on Thursday, increases on Saturday and then decreases on Sunday afternoon. In weekdays, the best time to upload videos on YouTube is between 2pm and 4pm.You may think it's early but YouTube traffic is high in the evening between 7pm and 10pm. However, the reason for uploading videos earlier is just as Google indexing blog content. For videos, YouTube does the same, allow your video to be indexed and show up in searched results by uploading your videos a few hours earlier. You need to post your YouTube videos between 10 to 11am because in the afternoon many people are active on YouTube. To know only best time to upload YouTube videos is not enough to make millions of views for your videos.

4.5 Analysis on video tags

When you upload a video to YouTube, you can add tags to the video. Tags cannot display on the video page but you can see tags by viewing the source code of the page or using browser extensions such as, Tube buddy and video.

- Trending videos has 21 tags as of average.
- Only 3.5% of trending videos have no tags.
- The minimum number of tags a trending video has is 0.

5. Future Work

- Create a model to change their behavior and adapt to their changing workforce.
- We would like to work on some other factors to be considered such as Good Titles, Good thumbnails, Video SEO, proper tagging, and the number of subscribers are all factors that is a key generating views for your content. Understanding this Statistics will not only help YouTube to develop better algorithms to process videos but also benefit to make decisions for individual youtubers.

6. Conclusion

We presented our findings for measuring, analyzing, and comparing key aspects of YouTube trending videos. To know only best time to upload a video on YouTube is not enough to generate a millions of views for your Videos to become trend. There are some other factors to considered are Good Titles, Good thumbnails, Video SEO, proper tagging, and the number of subscribers are all factors that is a key generating views for your content. Understanding this Statistics will not only help YouTube to develop better algorithms to process videos but also benefit to make decisions for individual youtubers.
Follow general best practices, follow what works for you, and keep doing what you're doing - if you have a video that a lot of different people start to enjoy - you might just make it to the hallowed Trending tab. It may not make you an overnight phenomenon, but it will bring in a few more new viewers and it sure will feel good. Until then, enjoy the daily zeitgeist that is manifest in what's trending on YouTube.

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