



# YOUTUBE



S O N G   A N A L Y S I S

USING MICROSOFT POWER BI

# PROBLEM STATEMENT:

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**This internship project uses Power BI to analyze YouTube songs data, including attributes like video ID, channel title, view count, and more. The goal is to create visualizations that reveal trends in song performance, popularity, and user engagement, aiding content creators and stakeholders in optimizing their YouTube content.**



# DATA DESCRIPTION

1. **video\_id**: Unique identifier for each YouTube video.
2. **channelTitle**: Title of the YouTube channel publishing the song.
3. **title**: Title of the YouTube song video.
4. **description**: Description provided for the YouTube song video.
5. **tags**: Tags associated with the YouTube song video.
6. **publisheddate**: Date when the YouTube song video was published.
7. **publishedTime**: Time when the YouTube song video was published.
8. **viewCount**: Number of views received by the YouTube song video.
9. **likeCount**: Number of likes received by the YouTube song video.
10. **favoriteCount**: Number of times the YouTube song video has been marked as a favorite.
11. **commentCount**: Number of comments posted on the YouTube song video.
12. **duration**: Duration of the YouTube song video.
13. **definition**: Video definition or quality (e.g., HD, SD).
14. **caption**: Availability of captions for the YouTube song video.



# PROJECT OBJECTIVES:

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1. Data Cleaning and Preparation
  2. Exploratory Data Analysis (EDA)
  3. Content and Channel Analysis
  4. Temporal Trends
  5. User Engagement Insights



# DATA CLEANING AND PREPARATION

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After downloading the dataset into Power BI Desktop, I performed data cleaning by deleting irrelevant columns. I split the published date column into separate date and time columns and applied the appropriate data types.

For better analysis, I created some custom columns. Additionally, I removed the few null values present, as their absence did not impact the overall dataset.





# SOME GLIMPSE OF DATA CLEANING

FileHomeTransformAdd ColumnViewToolsHelp

Close & ApplyClose

New SourceNew Query

Recent SourcesEnter Data

Data source settingsData Sources

Manage ParametersParameters

Refresh PreviewQuery

PropertiesAdvanced EditorManage

Choose ColumnsManage Columns

Remove ColumnsReduce Rows

Keep RowsSort

Remove Rows

Split ColumnGroup By

12 Replace ValuesTransform

12 Merge QueriesCombine

12 Append QueriesCombine Files

Text AnalyticsVisionAzure Machine Learning

AI Insights

Queries [2]Sheet1Sheet1 (2)

Column1

ValidErrorEmpty

CopyRemoveRemove Other ColumnsDuplicate ColumnAdd Column From Examples...Remove DuplicatesRemove ErrorsChange TypeTransformReplace Values...Replace Errors...Group By...FillUnpivot ColumnsUnpivot Other ColumnsUnpivot Only Selected ColumnsRename...MoveDrill DownAdd as New Query

channelTitle

Valid100%Error0%Empty0%

T-Series

T-Series

T-Series

T-Series

4 NNA21SoGqss

title

Valid100%Error0%Empty0%

RAFTA RAFTA (Lo-Fi Mix) | Dj Moody | KK | Jeet Gannguli | Soulful KK ...

TUM HO MERA PYAR (Lo-Fi Mix) | Dj Moody | KK, Suzzane | Haunted ...

ISHQ HOTHON SE (Lo-Fi Mix) (Audio) | Dj Moody | KK, Shreya Ghoshal ...

HUMKO PYAR HUA (Lo-Fi Mix) (Audio) | Dj Moody | KK, Tulsi Kumar | ...

Har Har Mahadev (Lyrical Video): Sachet Tandon, Parampara Tandon | ...

description

Valid100%Error0%Empty0%

Ppresenting the song "RAFTA RAFTA (Lo-Fi Mix) (Audio) | Dj Moody | KK, Jeet Gannguli | Soulful KK ...

Ppresenting the song "TUM HO MERA PYAR (Lo-Fi Mix) (Audio) | Dj Moody | KK, Suzzane | Haunted ...

Ppresenting the song "ISHQ HOTHON SE (Lo-Fi Mix) (Audio) | Dj Moody | KK, Shreya Ghoshal ...

Ppresenting the song "HUMKO PYAR HUA (Lo-Fi Mix) (Audio) | Dj Moody | KK, Tulsi Kumar | ...

T-Series Presents "Har Har Mahadev (Lyrical Video): Sachet Tandon, Parampara Tandon | ...

Query Settings

PROPERTIESNameSheet1 (2)All Properties

APPLIED STEPSSourceNavigationPromoted HeadersX Changed Type

REMOVING IRRELEVANT COLUMN

# SOME GLIMPSE OF DATA CLEANING

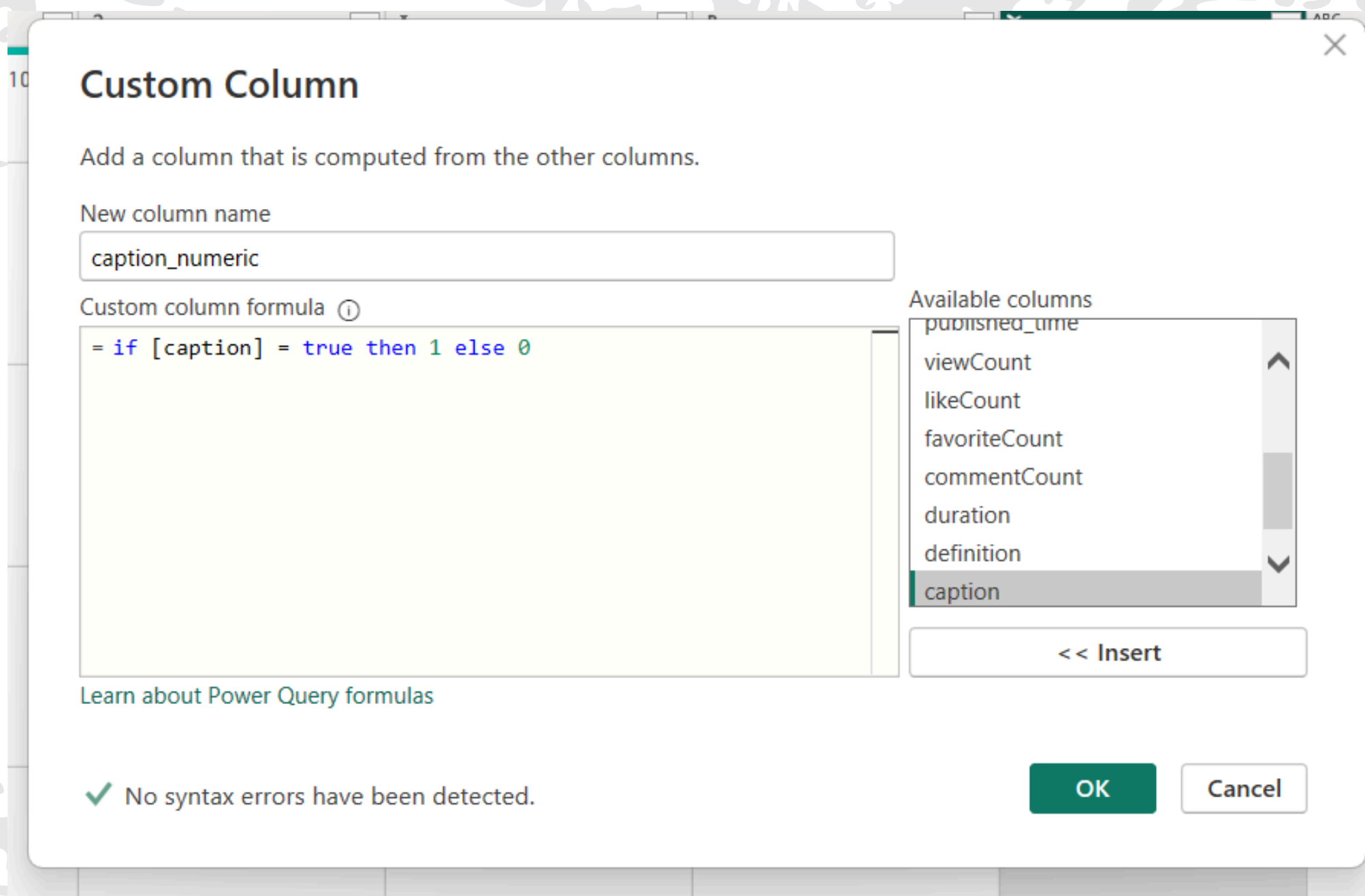
Table.TransformColumnTypes("#Split Column by Delimiter",{{"publishedAt.1", type date}, {"publishedAt.2", type time}})

	tags	publishedAt.1	publishedAt.2	viewCount	likes
	99% Valid 0% Error < 1% Empty	100% Valid 0% Error 0% Empty			
1	Fi Mix)" by Dj Moody, Sung by ...	['hindi songs 2023', 'hindi songs new', 'bollywood songs 2023', 'bollyw...		0:08	7299
2	AR (Lo-Fi Mix)" by Dj Moody, S...	['hindi songs 2023', 'hindi songs new', 'bollywood songs 2023', 'bollyw...		0:01	4212
3	Lo-Fi Mix)" by Dj Moody, Sung...	['hindi songs 2023', 'hindi songs new', 'bollywood songs 2023', 'tseries'...		0:00	2849
4	A (Lo-Fi Mix)" by Dj Moody, Sun...	['hindi songs 2023', 'hindi songs new', 'bollywood songs 2023', 'bollyw...		0:05	3991
5	rical Video)" sung by #SachetP...	['hindi songs 2023', 'hindi songs new', 'bollywood songs 2023', 'bollyw...	20-08-2023	11:00:06	101950



RENAMING COLUMN

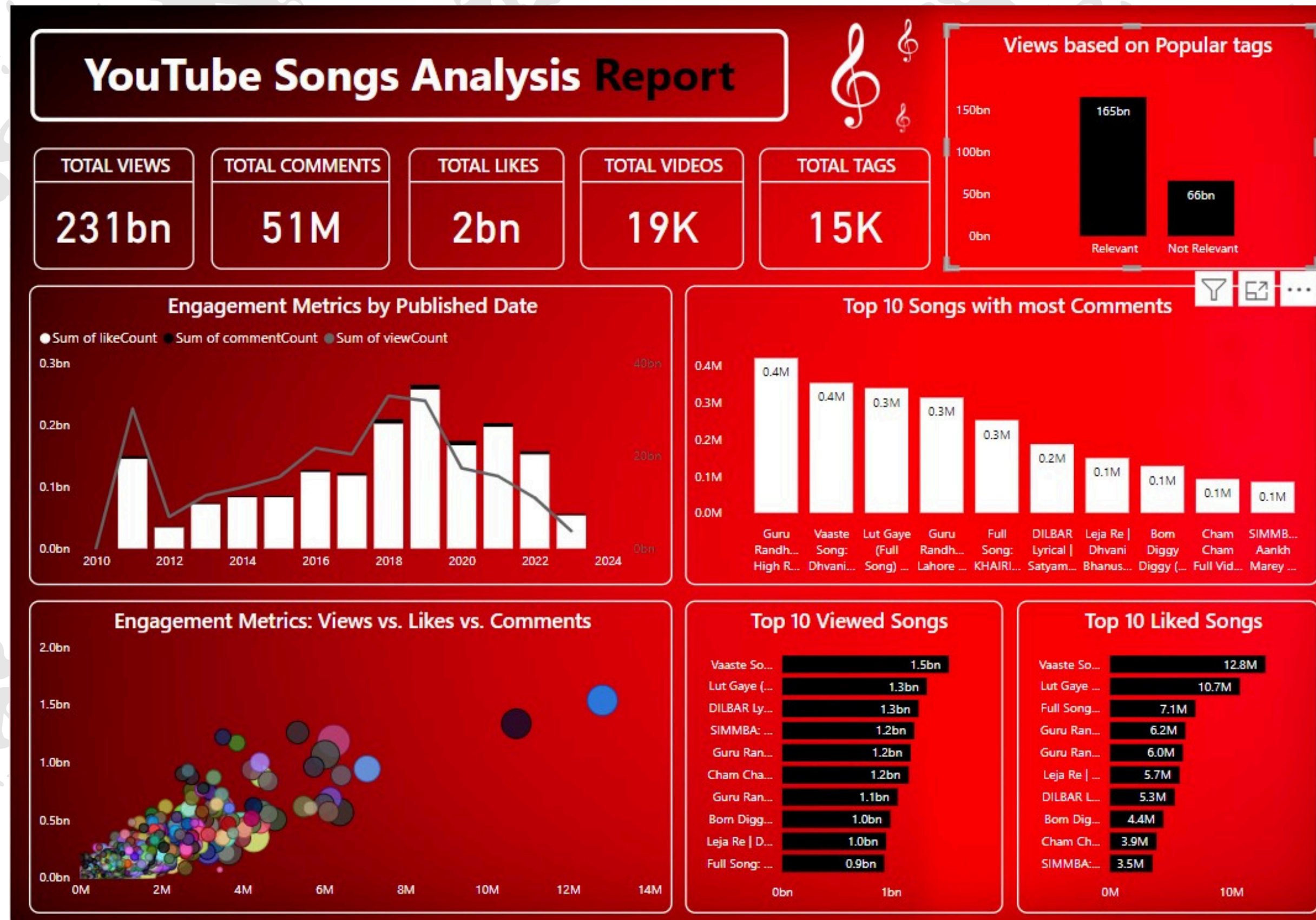
# SOME GLIMPSE OF DATA CLEANING



**CUSTOM COLUMN**

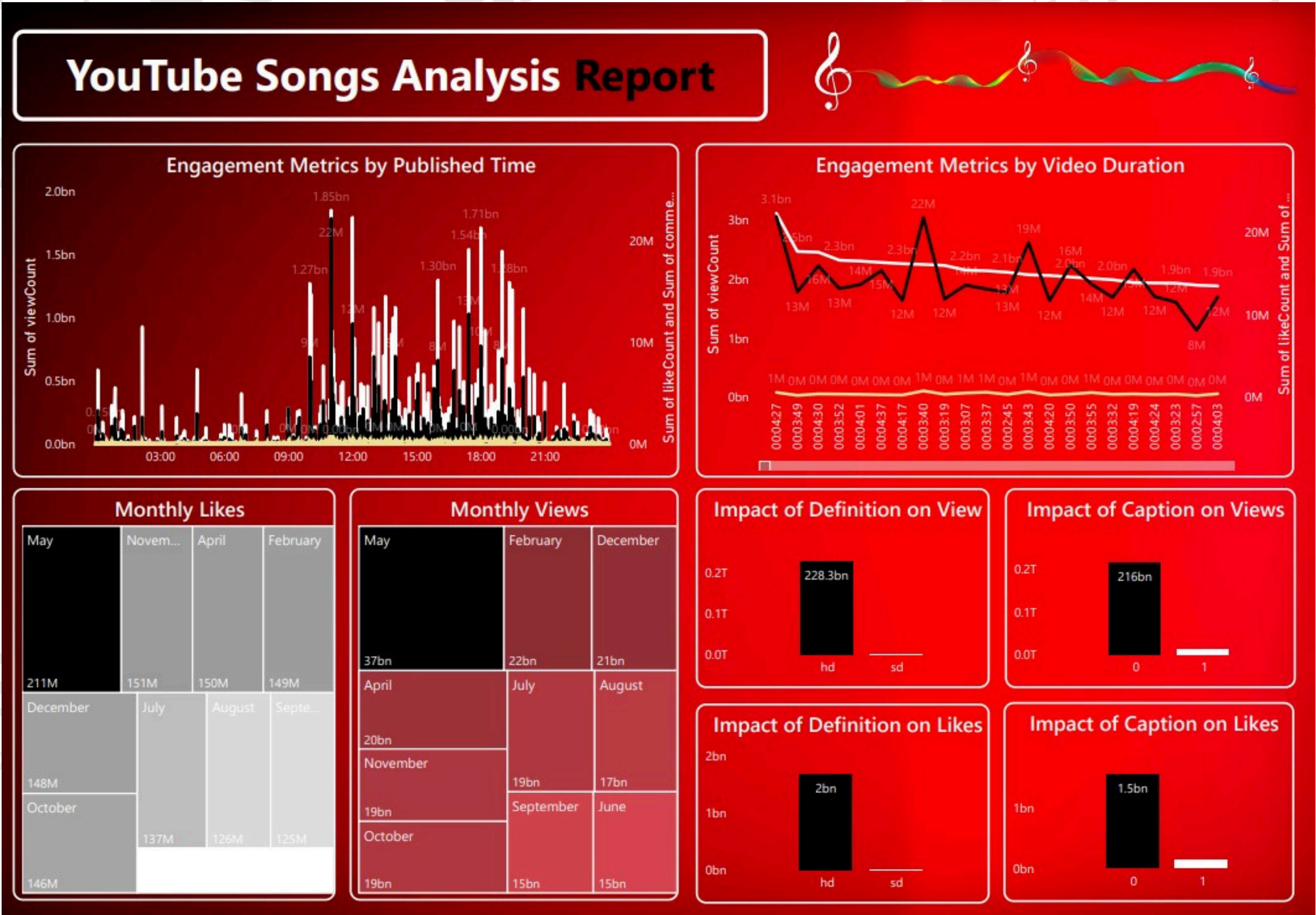


# DASHBOARD - 1





# DASHBOARD - 2



# INSIGHTS FROM DASHBOARD - 1

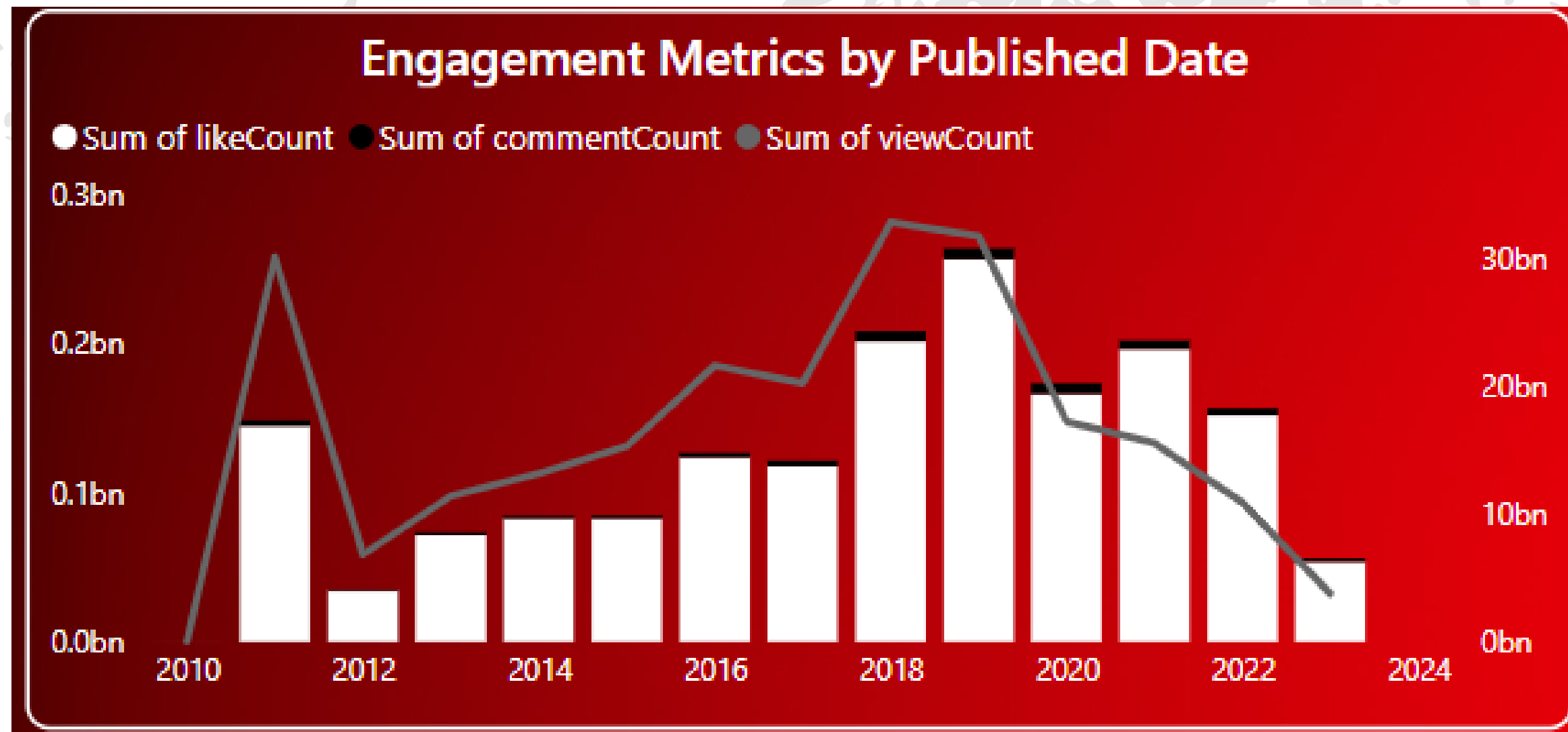
**Card visuals - KPIs:**

- **Total Views:** The dataset contains a total of 231 billion views, indicating significant audience engagement.
- **Total Comments:** There are 51 million comments, reflecting active user interaction.
- **Total Likes:** With 2 billion likes, the content is highly appreciated by viewers.
- **Total Videos:** The dataset includes 19,000 videos, showcasing a large variety of content.
- **Total Tags:** There are 15,000 tags used, showing diverse metadata for content classification.

TOTAL VIEWS	TOTAL COMMENTS	TOTAL LIKES	TOTAL VIDEOS	TOTAL TAGS
231bn	51M	2bn	19K	15K



# INSIGHTS FROM DASHBOARD - 1



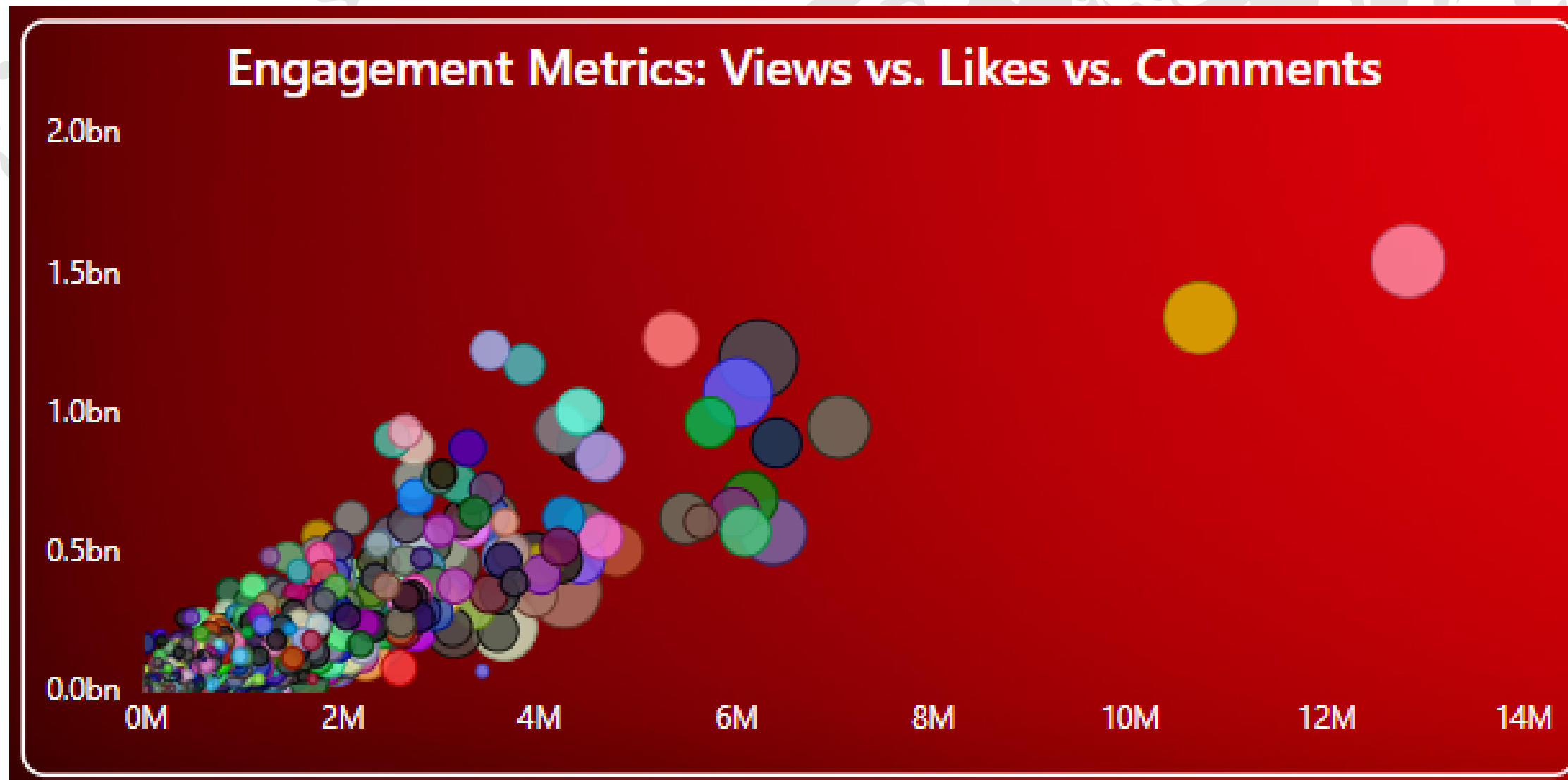
Line chart with Stacked Column - Engagement Metrics by Published Date:

- The highest number of views (32.9 billion) and likes (256.9 million) were achieved in 2018, suggesting that this year had highly popular content.
- The most comments (7.3 million) were posted in 2019, indicating a peak in user interaction during that year.





# INSIGHTS FROM DASHBOARD - 1

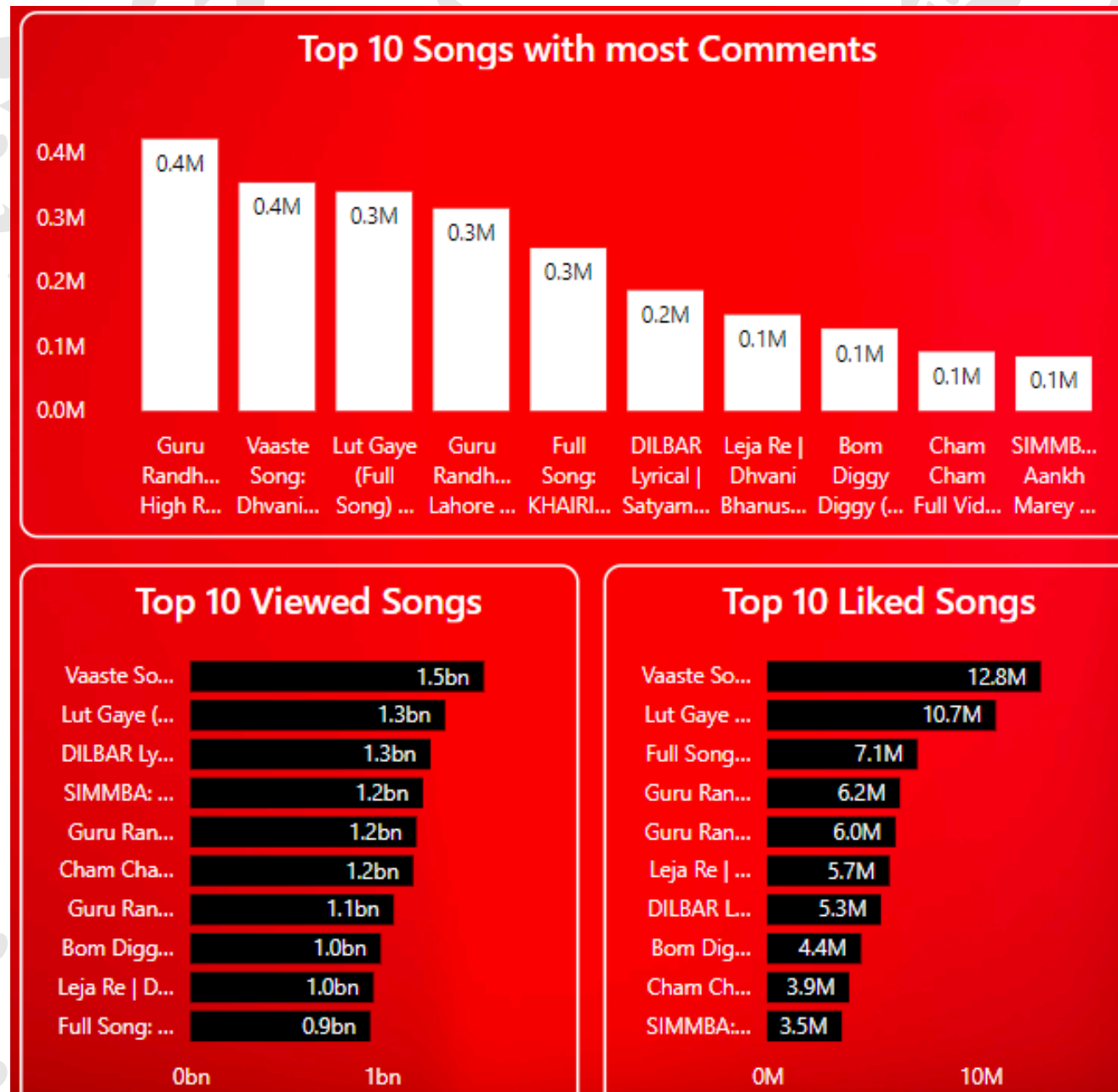


## Scatter Chart - Engagement Metrics and finding Outliers

- "Vaaste Song" by Dhvani Bhanushali: This song stands out with 1.54 billion views, 12.8 million likes, and 353,057 comments, showing exceptional popularity and engagement.
- "Lut Gaye Song" by Emran Hashmi: This track also shows high engagement with 1.33 billion views, 10.7 million likes, and 339,000 comments.



# INSIGHTS FROM DASHBOARD - 1



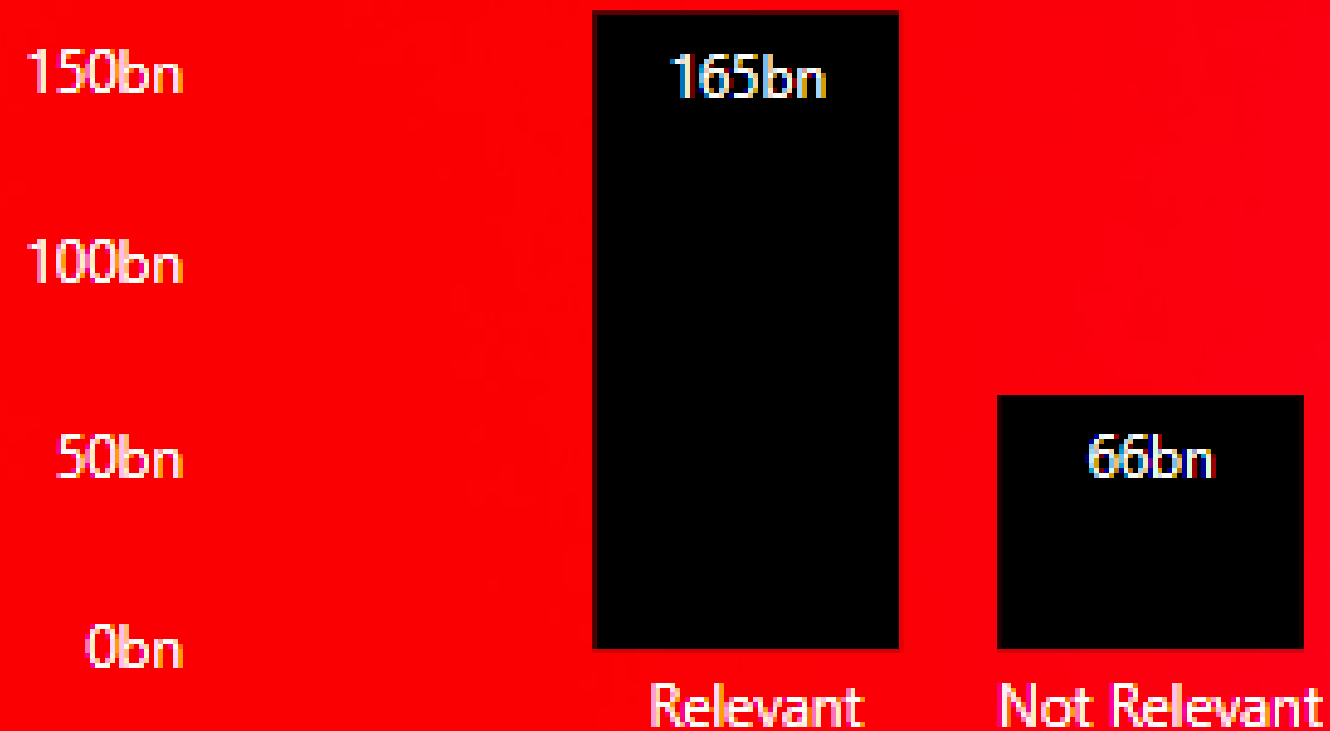
## Bar and Column Char - Top Songs:

- Highest Viewed Song: "Vaaste Song" by Dhvani Bhanushali with 1.54 billion views.
- Most Liked Song: "Vaaste Song" by Dhvani Bhanushali with 12.8 million likes.
- Most Commented Song: "High Rated Gabru" by Guru Randhawa with 731,7901 comments.



# INSIGHTS FROM DASHBOARD - 1

## Views based on Popular tags

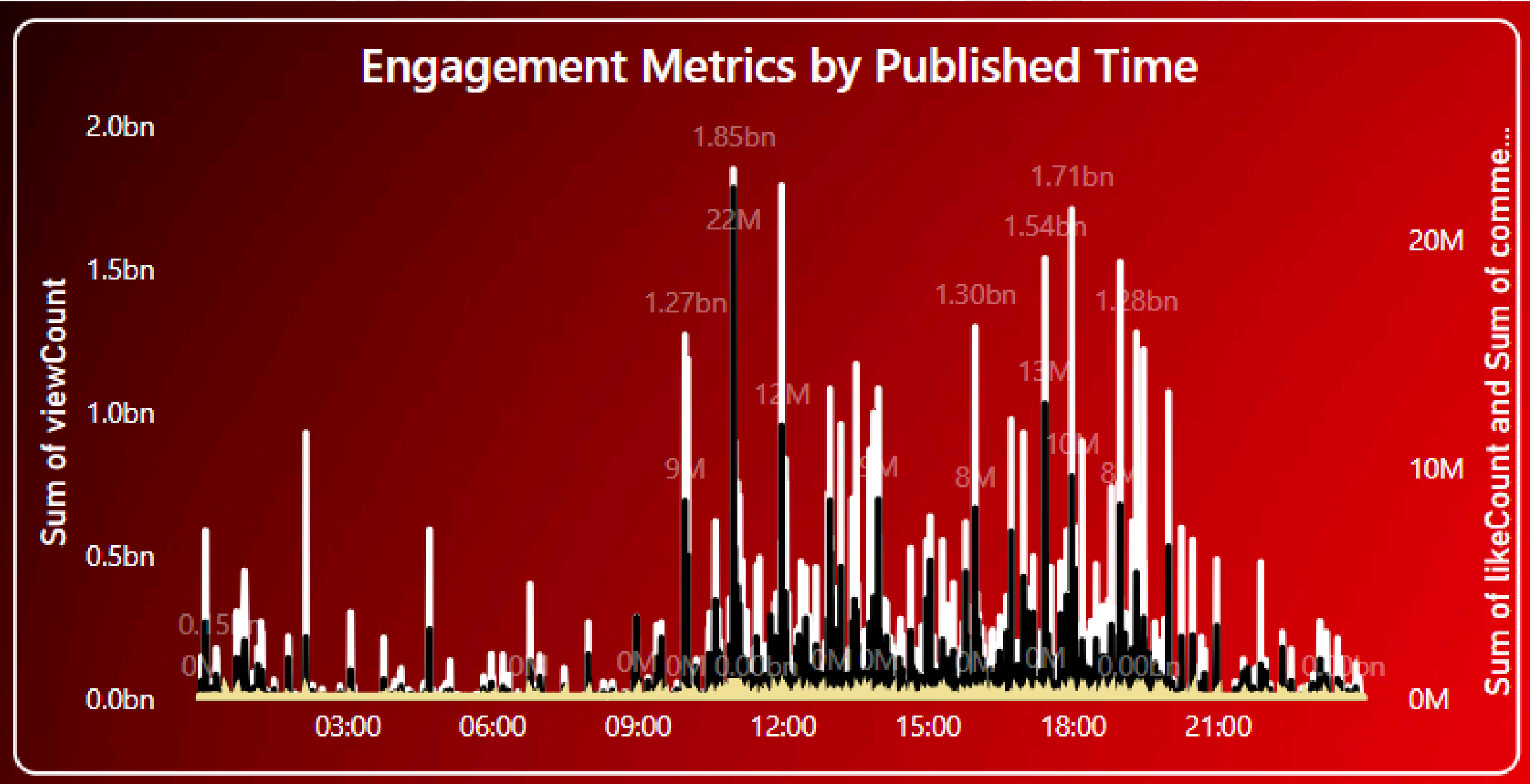


## Column Char - Views based on popular tags:

- **Relevant Tags:** Videos containing the relevant tags ('hindi songs', 'bollywood songs', 'tseries songs', 'romantic hindi songs') collectively garnered 165 billion views.
- **Non-Relevant Tags:** Videos with tags outside of the relevant ones accumulated 66 billion views.



# INSIGHTS FROM DASHBOARD - 2



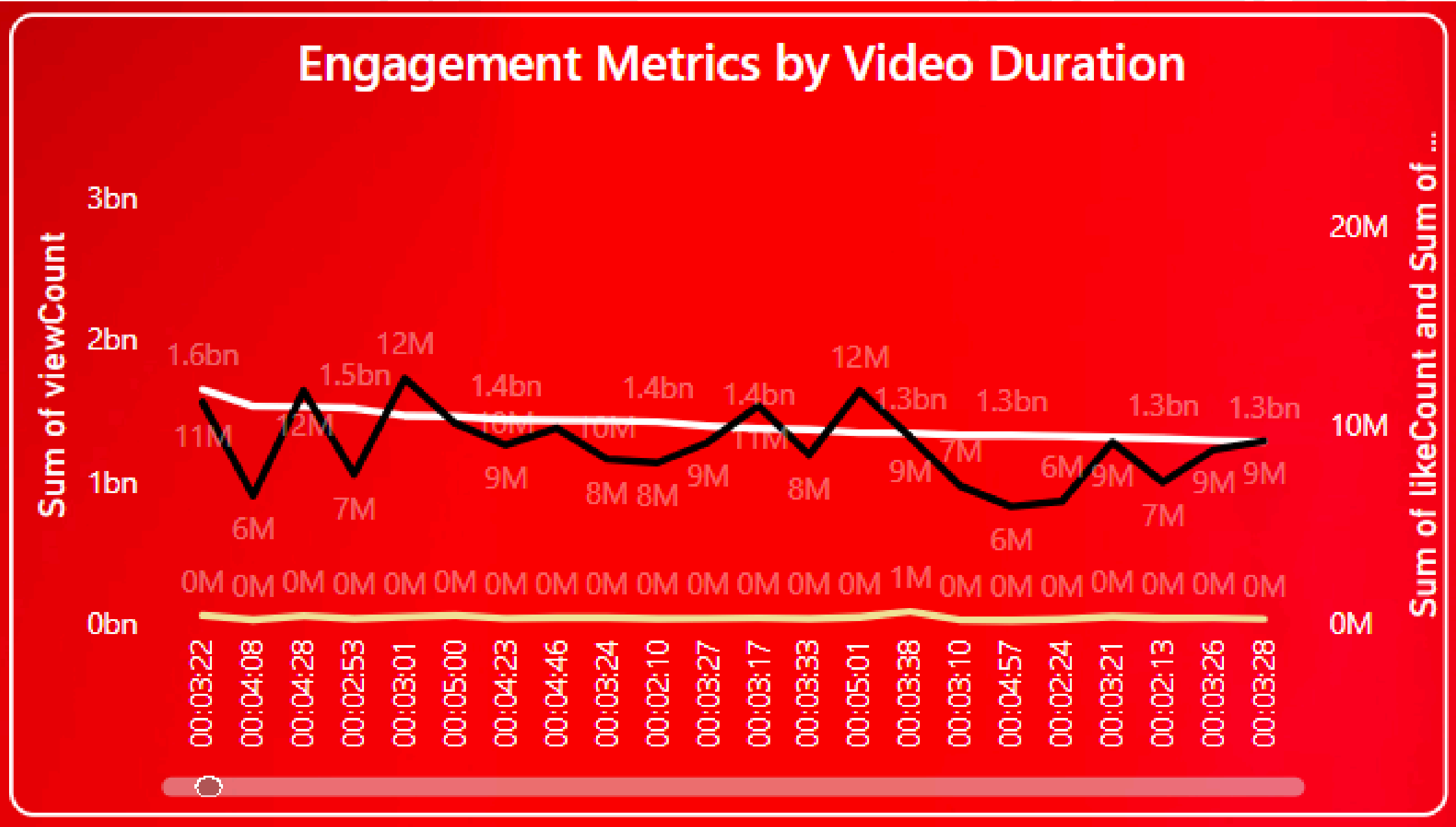
## Engagement Trends by Time of Day:

- A line chart showing that songs published at 11 o'clock garnered 12,797,889 views, 614,793 likes, and 20,176 comments, indicating high engagement during this hour.





# INSIGHTS FROM DASHBOARD - 2



## Impact of Song Duration:

- Another line chart revealing that songs with a duration of 04:27 accumulated 3,119,163,707 views, 21,895,220 likes, and 601,065 comments, highlighting the popularity of longer songs.



# INSIGHTS FROM DASHBOARD - 2

## Impact of Definition on View



## Impact of Caption on Views



## Impact of Definition on Likes



## Impact of Caption on Likes



### Video Definition and View Counts/Like Counts:

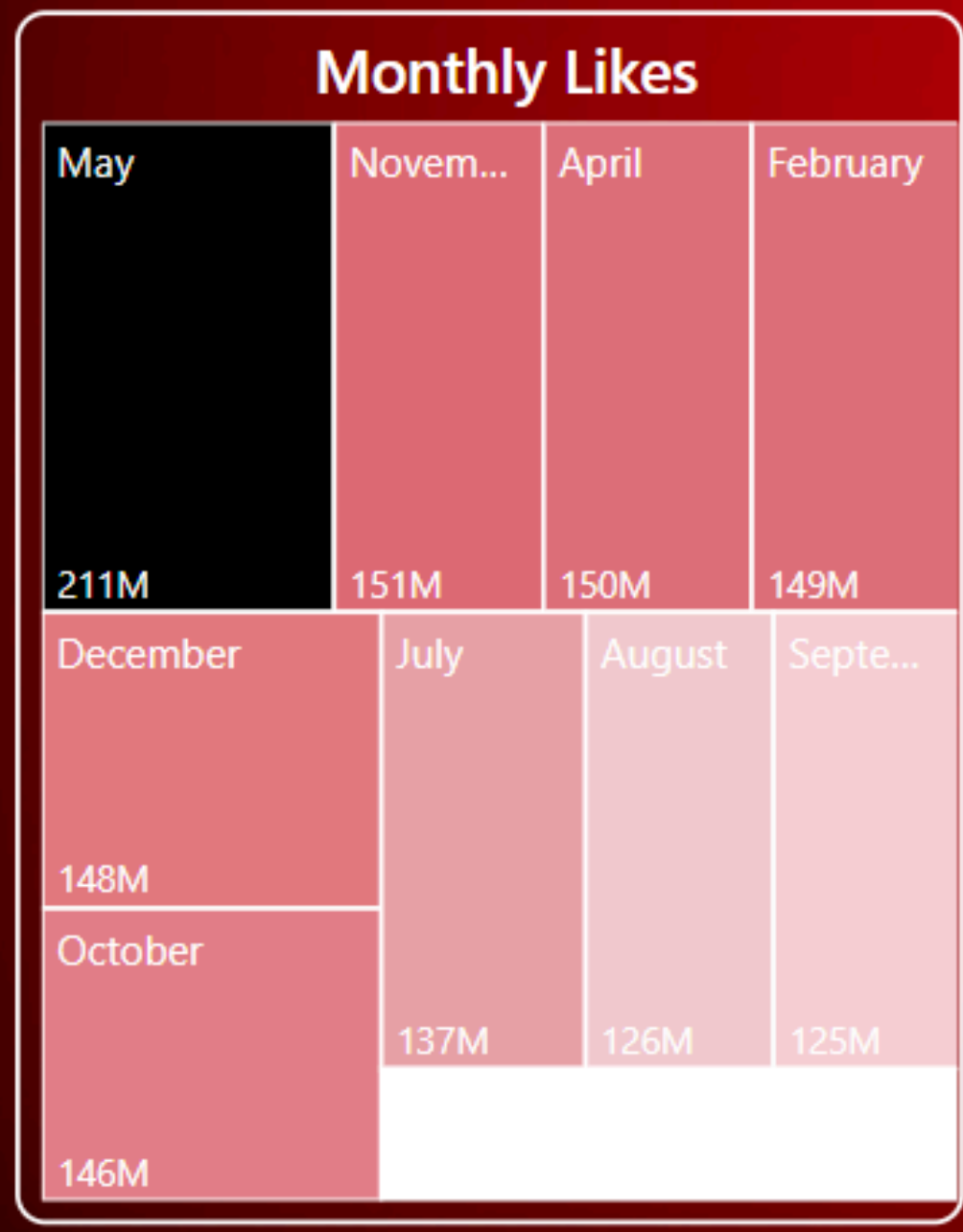
- A column chart indicates that HD videos received 228.3 billion views, whereas SD videos received 2.68 billion views, emphasizing the preference for higher-quality video content.
- Another column chart shows that HD videos received 2 billion likes, compared to 14.4 million likes for SD videos, highlighting the higher engagement for HD-quality videos.

### Caption vs. No Caption Views/Likes:

- Column chart revealing that videos without captions got 216 billion views and 1.5 billion likes, whereas captioned videos received 14.4 billion views and 140.3 million likes, indicating captioned and non-captioned does not create much impact.



# INSIGHTS FROM DASHBOARD - 2



**Popular Months for Likes:**

- A treemap displaying that May saw the highest engagement with 211 million likes throughout the year, suggesting a peak in audience appreciation during this period.

**Top Viewed Months:**

- Another treemap illustrating that songs published in May accumulated 37 billion views in total over the year, indicating a significant viewership during this month.



# RECOMMENDATIONS

## 1. Optimize Publishing Time:

Publish new content around 11 o'clock to maximize views, likes, and comments, as this time shows high engagement.

## 2. Focus on Longer Songs:

Produce songs lasting 4-5 minutes, which have gathered significant views, likes, and comments.

## 3. Target Key Months for Releases:

Plan major releases in May, as this month shows a peak in both views and likes, indicating high audience activity.

## 4. Prioritize HD Quality:

Ensure videos are uploaded in HD quality to attract more views and likes, as HD videos outperform SD videos significantly in engagement.

## 5. Content Strategy:

Leverage popular tags identified from top-performing videos like "Vaaste Song" and "High Rated Gabru" to align new content with viewer interests.

## 6. Engagement Focus:

Plan major releases in May, as this month shows a peak in both views and likes, indicating high audience activity.







# THANKYOU

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