Analyzing YouTube Trending Data Across 10 Countries: Insights and Business Applications

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Introduction

From the YouTube Trending dataset, we get a significant amount of useful information regarding how much people watch videos and what types of videos are popular in different countries. The dataset that we have used in this project provides the data of 10 different countries from several regions: BR, CA, MX, DE, FR, GB, US, KR, IN, and JP.

The trending dataset provides all the necessary information regarding videos such as video ID, title, publication date, channel information, category ID, view counts, likes, dislikes, and comments. Additional information regarding the video, such as categorical metadata, has been provided in the JSON dataset.

We will demonstrate the complete data pipeline from ingestion and cleaning to analysis and business interpretation — using Snowflake SQL. The report is divided into four major parts:

1. Part 1: Data Ingestion: The datasets (CSV and JSON) are moved from Azure Blob Storage to Snowflake. There are both external and internal tables, and a final dataset that has been merged is also ready.

2. Part 2: Cleaning the data means getting rid of duplicates, making sure that formats are the same, and making sure that data is consistent across nations and categories.

3. Part 3: Data Analysis: Looking at popular material, such the most watched videos, BTS video appearances, monthly popularity, country-level category patterns, and finding the channel with the greatest variety.

4. Part 4: Business Question: Using the results of the analysis to answer real-world questions, like figuring out which category to focus on when making a new YouTube channel in Japan (other than Music and Entertainment) and whether or not this will work around the world.

Our approach focuses on addressing technical requirements while highlighting actionable insights from the dataset. The findings may assist creators, marketers, and businesses in understanding viewing behaviour across countries and optimizing content strategy for higher visibility in YouTube's trending lists.

Data Description

This project uses data from the YouTube Trending dataset only for research and scholarly purposes. There are two key parts to it:

1. Trending CSV Files

There is one CSV file for each of the ten countries: BR, CA, DE, FR, GB, IN, JP, KR, MX, and US.

Content: Each file has a list of the videos that were on the trending page each day.

Main Columns:

video_id: a number that is different for each video.

title: The name of the video.

publishedAt: The date and time the file was first uploaded.

channelId and channelTitle are channel metadata.

categoryId: ID for the category reference.

trending_date — The date the video became popular.

Engagement metrics include view count, likes, dislikes, and comment count.

tags, a description, and flags like "comments_disabled" or "ratings_disabled."

Size of the files: Each one is between 45MB and 60MB.

There are around 2.6 million rows in total throughout all 10 nations.

2. Files in the Category JSON

There is one JSON file for each of the ten countries.

Content: Gives category information that matches the categoryId field in the trending data.

Important Fields:

id = ID of the category.

snippet.title is the category name that others may read (for example, Music, Gaming, News & Politics).

3. Structure that works together

Snowflake takes in CSV and JSON data and joins them by nation and category ID. This creates a single table with the following enhanced schema:

Video information (ID, title, and date of publication).

ID and title for the channel.

Metrics for engagement include views, likes, dislikes, and comments.

Information about the category, such as the category ID and a descriptive title.

Code for the country.

Unique surrogate key (UUID_STRING() is used for internal tracking).

By integrating data in a systematic manner, we can examine it consistently across different formats and locations, providing insights at both the category and nation levels as well as at the level of individual videos.

Part 1 – Data Ingestion

We started by loading the YouTube Trending dataset into Snowflake to set the framework for further cleaning and analysis. Multiple methodical stages made up the procedure

Database and Schema Setup

To keep all the parts of the project separate and organised, a unique database (ASSIGNMENT_1) and schema (PUBLIC) were created. To make sure that CSV and JSON structures are handled the same way every time, we made two more file formats: ff_csv and ff_json.

	name	size	md5	last_modified
1	azure://youtubeassignment.blob.core.windows.net/youtube/trending	47199410	0616f0795cebfadf1ce964ea16a61481	Sat, 16 Aug 2025 21:35:05 GMT
2	azure://youtubeassignment.blob.core.windows.net/youtube/trending	45791750	d4021e7f5d6d74bafc39d0469a23714e	Sat, 16 Aug 2025 21:32:54 GMT
3	azure://youtubeassignment.blob.core.windows.net/youtube/trending	47129543	4d06fed5ca7e2b0a654bf59a76020b1e	Sat, 16 Aug 2025 21:35:41 GMT
4	azure://youtubeassignment.blob.core.windows.net/youtube/trending	45759465	21b58c7aab00d97bb013a365e8018426	Sat, 16 Aug 2025 21:35:46 GMT
5	azure://youtubeassignment.blob.core.windows.net/youtube/trending	45980192	62eb1565cc46debe27130158bb7e7be0	Sat, 16 Aug 2025 21:36:35 GMT
6	azure://youtubeassignment.blob.core.windows.net/youtube/trending	51661481	7b9087069ec1e6c226776cb871d8aa6f	Sat, 16 Aug 2025 21:36:39 GMT
7	azure://youtubeassignment.blob.core.windows.net/youtube/trending	59213841	3cc1eba02136243ee08a6b41325eacc0	Sat, 16 Aug 2025 21:36:53 GMT

Fig 1: CSV Data snippet

	name	size	md5	last_modified
4	azure://youtubeassignment.blob.core.windows.net/youtube/categoric	10096	e5f8d4189665ae35616bd65ff261c42b	Sat, 16 Aug 2025 21:40:19 GMT
5	azure://youtubeassignment.blob.core.windows.net/youtube/categoric	10096	e5f8d4189665ae35616bd65ff261c42b	Sat, 16 Aug 2025 21:40:19 GMT
6	azure://youtubeassignment.blob.core.windows.net/youtube/categoric	10096	e5f8d4189665ae35616bd65ff261c42b	Sat, 16 Aug 2025 21:40:18 GMT
7	azure://youtubeassignment.blob.core.windows.net/youtube/categoric	10096	e5f8d4189665ae35616bd65ff261c42b	Sat, 16 Aug 2025 21:40:18 GMT
8	azure://youtubeassignment.blob.core.windows.net/youtube/categoric	10096	e5f8d4189665ae35616bd65ff261c42b	Sat, 16 Aug 2025 21:40:18 GMT
9	azure://youtubeassignment.blob.core.windows.net/youtube/categoric	10096	e5f8d4189665ae35616bd65ff261c42b	Sat, 16 Aug 2025 21:40:18 GMT
10	azure://youtubeassignment.blob.core.windows.net/youtube/categoric	10428	2f0eedcd9eb11400fafd9cd320d7028d	Sat, 16 Aug 2025 21:40:18 GMT

Fig 2; JSON file snapshot

Stage Creation

In order to connect Snowflake to the Azure Blob Storage container, I created an external stage named STAGE_ASSIGNMENT. Here you can see all the country-specific CSV and JSON files stored in the trending/ and categorical/ directories.

As soon as Snowflake was ready, it could read data without waiting for file uploads because to a secure Azure SAS token. To enable Snowflake to list and manage files in the stage, directory functionality was introduced.

The configuration facilitates the loading of raw data into the external tables of Snowflake. It guarantees that all 10 nations may always access the CSV files (video-level trending data) and the JSON files (category information).

External Tables

Two external tables were defined to enable schema-on-read access from the staged files:

- **EX_TABLE_YOUTUBE_TRENDING**: This function reads all of the CSV files in the trending/ subdirectory that are currently trending. The schema obtains attributes for each video, such as the video ID, title, channel, timestamps, and interaction metrics,

directly from the CSV arrays. A regular expression created a country column from the file name automatically.

- **EX_TABLE_YOUTUBE_CATEGORY_JSON**: Reads all the JSON files in the categorical/ subdirectory. The raw JSON is taken in as a VARIANT field and then made flat. A nation column was also constructed from the file name so that category data could be matched with each area.

Internal Tables

After that, internal staging tables were made to hold curated records in a relational format:

- **TABLE_YOUTUBE_TRENDING** – This table keeps track of videos' IDs, titles, channel metadata, trending dates, engagement metrics, and countries.
- **TABLE_YOUTUBE_CATEGORY** – keeps track of the category metadata (category ID and category title) for each country.

Data Loading

- COPY INTO was used to move data from the external trending CSVs into TABLE_YOUTUBE_TRENDING. This step utilised TRY_TO_TIMESTAMP_NTZ to read timestamps and TRY_TO_NUMBER to update fields that were numbers.

- Using LATERAL FLATTEN to extend the nested JSON structure (items array → id and snippet.title), data from the external category JSONs was added to TABLE_YOUTUBE_CATEGORY

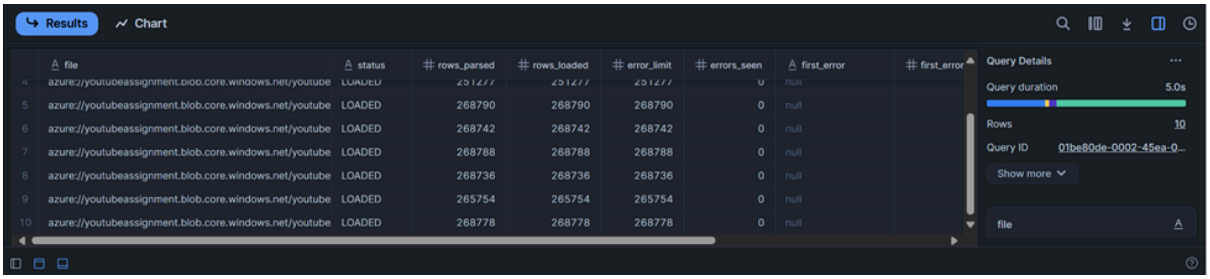


Fig 3: Data Loading CSV

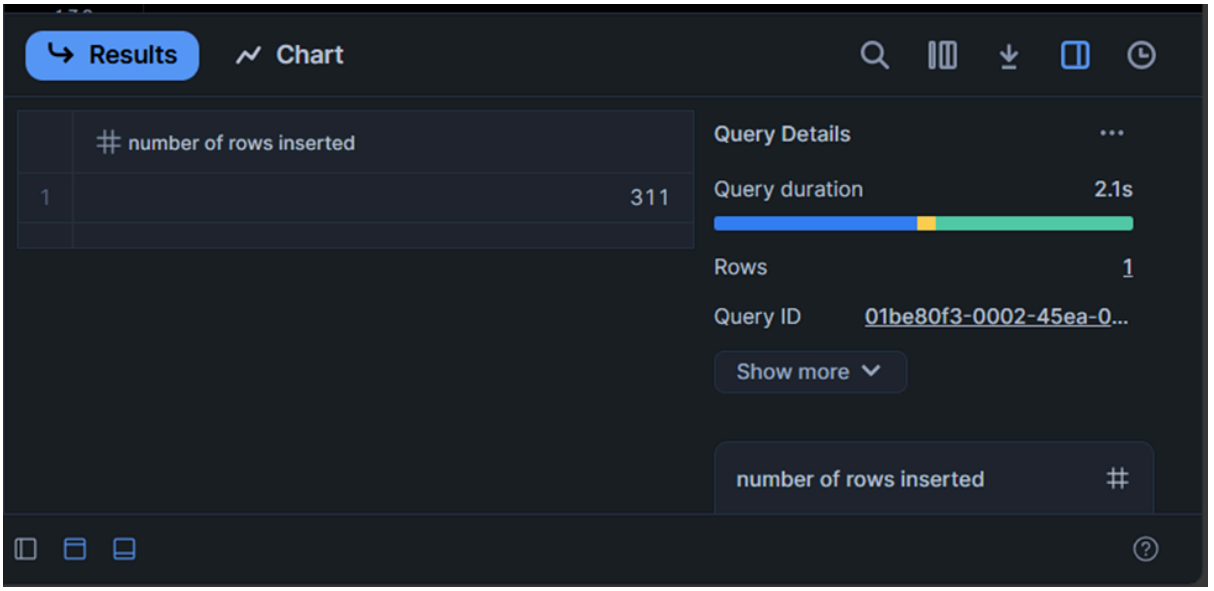


Fig 4: Data Loading JSON

Data Normalization

Two normalised tables were developed to make sure that things were the same in all nations and categories:

TABLE_YOUTUBE_TRENDING_NORM: This table makes ensuring that all entries have the same format for CATEGORY_ID and COUNTRY. To fix the problems, the CATEGORY_ID values were shortened and changed to strings, and the nation codes were changed to uppercase.

TABLE_YOUTUBE_CATEGORY_NORM made sure that the values for CATEGORY_ID and CATEGORY_TITLE were cut down and made the same, and that country codes were saved in all caps.

This normalisation method solved issues with identifiers that came up because the source files were formatted differently.

Final Unified Table

The final analytical dataset, TABLE_YOUTUBE_FINAL, was created by connecting the normalised trending table and the normalised category table using the nation and category ID.

The unified table had:

The metadata for a video comprises the video ID, title, and date it was published. Details about the channel, such as its ID and title. Engagement metrics include views, likes, dislikes, and comments. The category ID and title are part of the category metadata. The country's code.

To keep track of objects and make sure that each row is different, a unique surrogate key is created using UUID_STRING().

Validation

We ran a number of validation checks to make sure that the ingestion and integration were successful:

- **Row count check** – Before cleaning, the final table had about 2.67 million rows, which was what we expected.

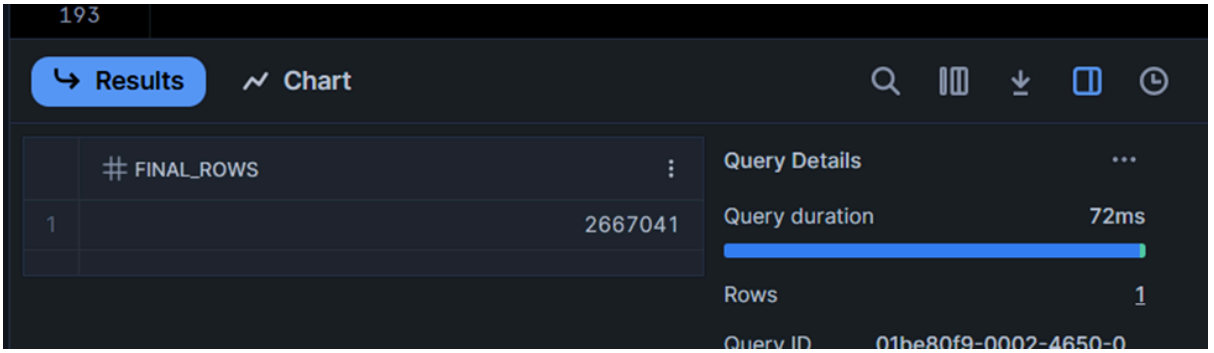


Fig 5: Rows validation

- **Country check** – Confirmed that all ten countries—BR, CA, DE, FR, GB, IN, JP, KR, MX, and US—were present.

Fig 6: Country validation

- **Distribution check** – The number of rows at the country level matched the expected volumes, which means that no data was lost during ingestion.

These tests showed that the ingestion pipeline was working correctly and gave us confidence that the dataset was ready to be cleaned in the next step.

Part 2 – Data Cleaning

After ingestion, the dataset was cleaned in Snowflake to make it more accurate and consistent for later analysis. The next steps were taken:

Duplicate Category Titles

We looked at TABLE_YOUTUBE_CATEGORY to find duplicate category titles in different countries, leaving out CATEGORY_ID. The query showed that "Comedy" had more than one category ID, which means that YouTube's metadata wasn't consistent across countries.

```sql
   Q1) CATEGORY_TITLEs with duplicates (ignoring ID)
   ------------------------------------------------ */
SELECT CATEGORY_TITLE
FROM TABLE_YOUTUBE_CATEGORY
GROUP BY CATEGORY_TITLE
HAVING COUNT(DISTINCT CATEGORY_ID) > 1
ORDER BY CATEGORY_TITLE;

/* ------------------------------------------------
   Q2) CATEGORY_TITLEs that appear in only ONE country
   ------------------------------------------------ */
SELECT
  CATEGORY_TITLE,
```

Results | Chart

	CATEGORY_TITLE
1	Comedy

Unique Categories by Country

+

There was a check to see if any category titles were only in one country. The result showed "Nonprofits & Activism," which only showed up in the United States (US). This made the definitions of categories for each country stand out.

```sql
   ------------------------------------------------ */
SELECT
  CATEGORY_TITLE,
  MIN(COUNTRY) AS ONLY_COUNTRY
FROM TABLE_YOUTUBE_CATEGORY
GROUP BY CATEGORY_TITLE
HAVING COUNT(DISTINCT COUNTRY) = 1
ORDER BY CATEGORY_TITLE;

/* ------------------------------------------------
   Q3) Missing CATEGORY_TITLEs in FINAL
   ------------------------------------------------ */
SELECT
  COUNTRY,
```

Results | Chart

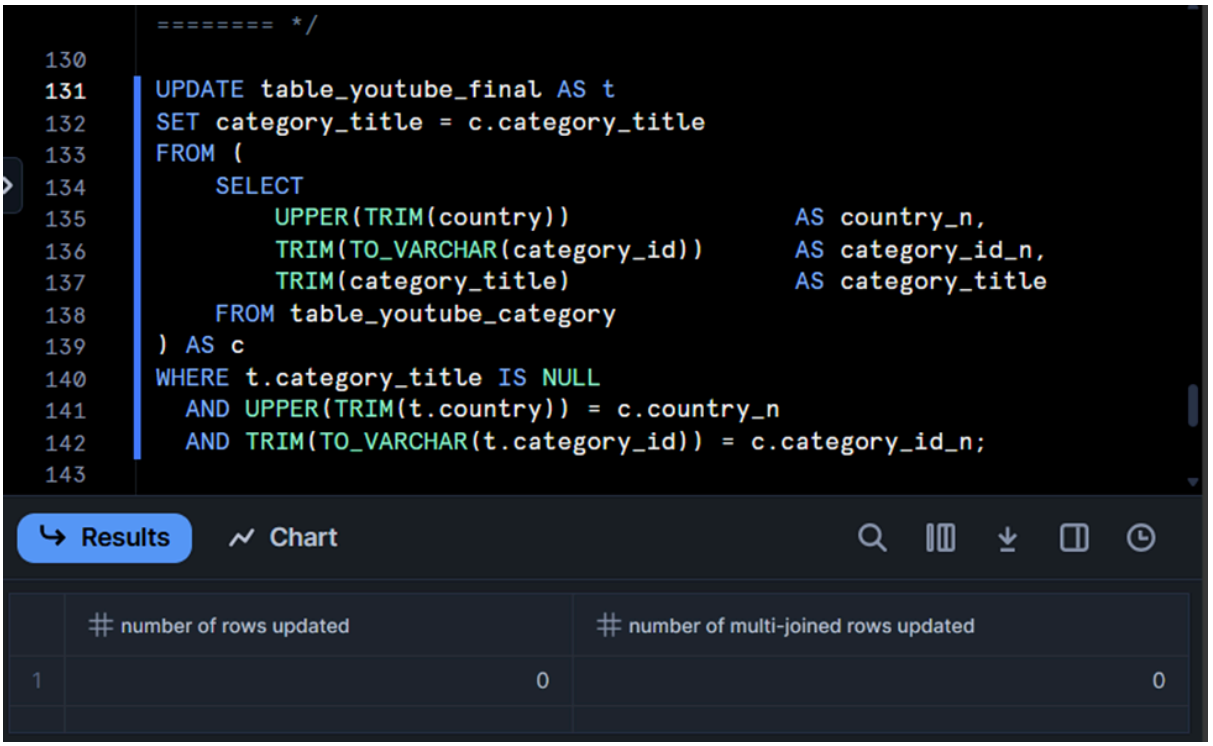
	CATEGORY_TITLE	ONLY_COUNTRY
1	Nonprofits & Activism	US

Missing Category Titles in Final Table

A review was conducted to determine whether any category titles appeared exclusively in one country. The result showed "Nonprofits & Activism," which only showed up in the United States (US). This made the definitions of categories for each country stand out..

Updating Missing Category Titles

We tried to update TABLE_YOUTUBE_FINAL by joining it back with TABLE_YOUTUBE_CATEGORY to add the missing titles. But there were still 1,533 NULL rows after the update, which meant that those IDs were not in the category reference file and could not be fixed.



Videos Without Channel Titles

We checked for videos that didn't have a CHANNEL_TITLE or that only had blanks or spaces. We identified these issues because each video should have a corresponding channel.

```sql
/* ------------------------------------------------
   Q5) Videos missing CHANNEL_TITLE
   ------------------------------------------------ */
SELECT DISTINCT TITLE
FROM TABLE_YOUTUBE_FINAL
WHERE CHANNEL_TITLE IS NULL OR TRIM(CHANNEL_TITLE) = '';

/* ------------------------------------------------
   Q6) Delete bad VIDEO_ID = '#NAME?'
   ------------------------------------------------ */
DELETE FROM TABLE_YOUTUBE_FINAL
WHERE VIDEO_ID = '#NAME?';
```

Results | Chart

	TITLE
1	Kala Official Teaser | Tovino Thomas | Rohith V S | Juvis Productions | Adventure Company

Country with missing_category_id

We also have lots of videos belongs to different countries where the category_id is missing that means we have lots of videos for them it is difficult to relate them to exact category

```sql
SELECT
    country,
    title AS category_id_missing
FROM table_youtube_final
WHERE category_title IS NULL
GROUP BY country, title
ORDER BY country, category_id_missing;


/*
```

Results | Chart

	COUNTRY	CATEGORY_ID_MISSING
1	BR	#AoVivo Lançamento dos cursos de formação técnica do programa Saúde
2	BR	Arthur do Val, o Mamãe Falei, diz em áudio vazado que mulher da Ucrânia
3	BR	CORTEI O CABELO SOZINHA! *SE ARRUME COMIGO!* 😱✨😍
4	BR	Coldplay and BTS Share New Song My Universe | Global Citizen Live
5	BR	FINAL DE SEMANA COM A GENTE NO RESORT! *OLHA NO QUE DEU*
6	BR	MINHA CERIMÔNIA DE CASAMENTO
7	BR	Melhores jogadas #ShortsFIFAWorldCup

Final Validation

The row count was checked after cleaning 2,597,494 rows were finally cleaned.Validation confirmed that there we
re exactly 10 different countries and that all duplicates and errors had been removed.

```sql
/* ──────────────────────────────────────
   Q9) Final validation
   Expect: 2,597,494 rows
   ────────────────────────────────────── */
SELECT COUNT(*) AS FINAL_CLEAN_ROWS
FROM TABLE_YOUTUBE_FINAL;

SELECT
  CASE WHEN COUNT(*) = 2597494 THEN 'OK ✅ 2,597,494'
       ELSE 'MISMATCH ❌ Expected 2,597,494'
  END AS ROWCOUNT_STATUS
FROM TABLE_YOUTUBE_FINAL;
```

Results | Chart

	ROWCOUNT_STATUS
1	OK ✅ 2,597,494

Part 3 – Exploratory Analysis

3.1 Top Gaming Videos on April 1, 2024

Games were first inspected on April 1, 2024. We also found the top three gaming videos in each nation using rating methods. Comparing gaming content performance to other markets on the same day provides us a notion of industry health. Some songs and video games are global blockbusters, while others are localised.

```sql
USE SCHEMA PUBLIC;

/* ──────────────────────────────────────
   Q1) 3 most viewed videos per country in Gaming category
       for trending_date = '2024-04-01'
   ────────────────────────────────────── */
WITH daily AS (
  SELECT
    COUNTRY,
    VIDEO_ID,
    TITLE,
    CHANNEL_TITLE,
    VIEW_COUNT
  FROM TABLE_YOUTUBE_FINAL
  WHERE DATE(TRENDING_DATE) = '2024-04-01'
    AND CATEGORY_TITLE ILIKE 'Gaming%'
```

Results | Chart

COUNTRY	TITLE	CHANNEL_TITLE	VIEW_COUNT	RK
BR	DAGGER DUCHESS - New Tower Troop! (Official Music Video)	Clash Royale	4923026	1
BR	IShowSpeed x MC Kevin O Chris - Amar de (Official Music Video)	IShowSpeed	2971782	2
BR	Confrontation - The Skibidi Saga 05	Maxedy	2323375	3
CA	DAGGER DUCHESS - New Tower Troop! (Official Music Video)	Clash Royale	4923026	1
CA	If my viewers break my secret rule, I ban them	DougDoug	2988844	2
CA	Confrontation - The Skibidi Saga 05	Maxedy	2323375	3

3.2 BTS Video Appearances

BTS content's worldwide reach was estimated by searching all videos using the keyword. Unique video IDs were counted to eliminate duplication. Data shows that several countries watched BTS videos simultaneously. This shows their worldwide domination. Looks vary. Different sites have more BTS. This made the band famous worldwide and showed fervent supporters.

```sql
/* ------------------------------------------------------------
   Q2) Count DISTINCT videos with 'BTS' in title (case-insensitive)
   ------------------------------------------------------------ */
SELECT
  COUNTRY,
  COUNT(DISTINCT VIDEO_ID) AS ct
FROM TABLE_YOUTUBE_FINAL
WHERE TITLE ILIKE '%BTS%'
GROUP BY COUNTRY
ORDER BY ct DESC, COUNTRY;

/* ------------------------------------------------------------
   Q3) For each (country, year_month) in 2024,
       pick the most viewed video and compute likes_ratio (%)
   ------------------------------------------------------------ */
WITH y2024 AS (
  SELECT
    COUNTRY,
```

Results | Chart

	COUNTRY	CT
1	KR	468
2	IN	288
3	US	268
4	CA	262
5	MX	254
6	JP	251

3.3 Monthly Top Videos and Engagement Ratios

We went through the 2024 dataset one month at a time to discover the top popular video for each month and nation. To evaluate how engaged people were in these popular videos, we looked at the likes-to-views ratio. The study found that certain movies always had a lot of views, but the number of individuals who watched them and the number of people who enjoyed them were extremely different. Some videos earned a lot of views but not a lot of likes. This suggests that people were more inclined to merely look at them. Some of the other videos earned a lot of likes, which means people really loved them.

```sql
/* ------------------------------------------------------------
   Q3) For each (country, year_month) in 2024,
       pick the most viewed video and compute likes_ratio (%)
   ------------------------------------------------------------ */
WITH y2024 AS (
  SELECT
    COUNTRY,
    TO_CHAR(DATE(TRENDING_DATE), 'YYYY-MM') AS year_month,
    VIDEO_ID,
    TITLE,
    CHANNEL_TITLE,
    CATEGORY_TITLE,
    VIEW_COUNT,
    LIKES
  FROM TABLE_YOUTUBE_FINAL
  WHERE EXTRACT(YEAR FROM DATE(TRENDING_DATE)) = 2024
),
best AS (
```

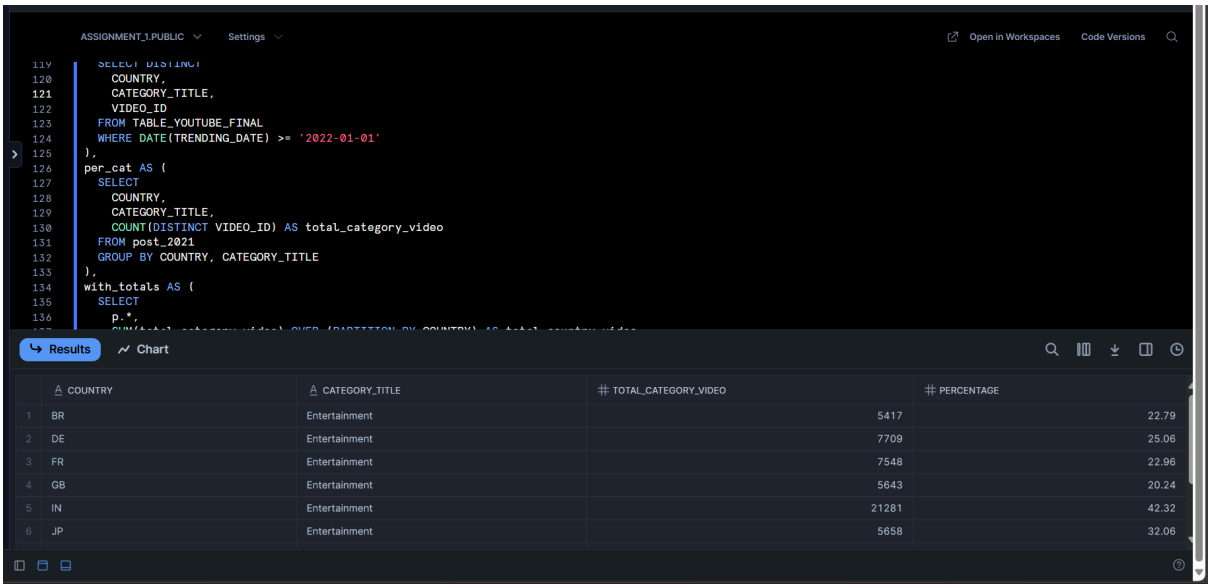
Results | Chart

	COUNTRY	YEAR_MONTH	TITLE	CHANNEL_TITLE	CATEGORY_TITLE	VIEW_COUNT	LIKES_RATIO
1	BR	2024-01	Survive 100 Days Trapped, Win $500,000	MrBeast	Entertainment	139504939	3.20
2	CA	2024-01	Still Here | Season 2024 Cinematic - League of Leg	League of Legends	Gaming	104159411	1.68
3	DE	2024-01	Still Here | Season 2024 Cinematic - League of Leg	League of Legends	Gaming	104159411	1.68
4	FR	2024-01	Still Here | Season 2024 Cinematic - League of Leg	League of Legends	Gaming	104159411	1.68
5	GB	2024-01	Still Here | Season 2024 Cinematic - League of Leg	League of Legends	Gaming	104159411	1.68
6	IN	2024-01	Protect $500,000 Keep It!	MrBeast	Entertainment	85458562	4.21

3.4 Most Popular Categories by Country

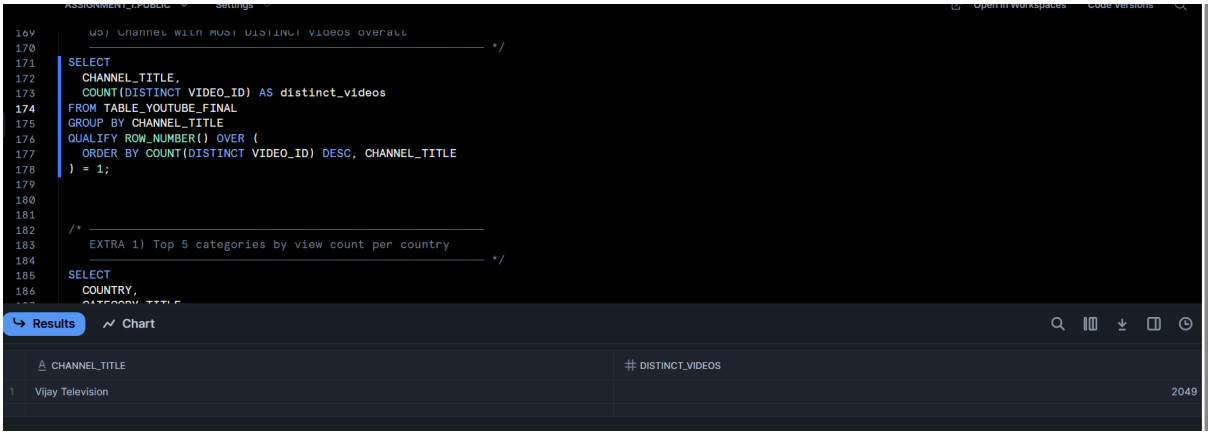
The analysis indicated that starting in 2022, the category with the most unique trending videos in each nation. This indicated which types of material were the most popular in each nation and how much of the overall content they made up. Most of the time, Music and Entertainment were at the top of the list across the globe. However, Gaming, News &

Politics, and Sports were more popular in certain places. These findings indicated that individuals from various nations like to watch different things.



3.5 Most Prolific Channels

A further research examined the channels that often included distinctive films on their trending lists. We uncovered a tiny group of artists that always submitted movies that became famous in numerous nations by measuring the number of unique video IDs per channel. These prolific producers demonstrate that they can remain famous throughout the globe by being in videos over and over again, which is a fundamental aspect of YouTube success.



3.6 Extended Insights

We learned more about trends on the platform by asking more questions. Some of these tasks were to find videos that had a lot of likes compared to their views, which showed high engagement; show the most popular categories; figure out which channels were trending the most; look at the total monthly views across all countries to find seasonal spikes and long-term patterns; and look for the top five categories by total views per country.

```sql
/* ------------------------------------------------------
   EXTRA 1) Top 5 categories by view count per country
   ------------------------------------------------------ */
SELECT
  COUNTRY,
  CATEGORY_TITLE,
  SUM(VIEW_COUNT) AS total_views,
  ROW_NUMBER() OVER (PARTITION BY COUNTRY ORDER BY SUM(VIEW_COUNT) DESC) AS rk
FROM TABLE_YOUTUBE_FINAL
GROUP BY COUNTRY, CATEGORY_TITLE
QUALIFY rk <= 5
ORDER BY COUNTRY, rk;

/* ------------------------------------------------------
   EXTRA 2) Most frequent channels in trending (top 10 overall)
   ------------------------------------------------------ */
SELECT
```

Results | Chart

	COUNTRY	CATEGORY_TITLE	TOTAL_VIEWS	RK
1	BR	Music	182217518537	1
2	BR	Entertainment	96079285188	2
3	BR	Gaming	41923583045	3
4	BR	Sports	31624237825	4
5	BR	People & Blogs	26723156541	5
6	CA	Entertainment	170719779647	1

```sql
/* ------------------------------------------------------
   EXTRA 2) Most frequent channels in trending (top 10 overall)
   ------------------------------------------------------ */
SELECT
  CHANNEL_TITLE,
  COUNT(*) AS times_trended
FROM TABLE_YOUTUBE_FINAL
GROUP BY CHANNEL_TITLE
ORDER BY times_trended DESC
LIMIT 10;

/* ------------------------------------------------------
   EXTRA 3) Temporal trend: total views per month (all countries)
   ------------------------------------------------------ */
SELECT
```

Results | Chart

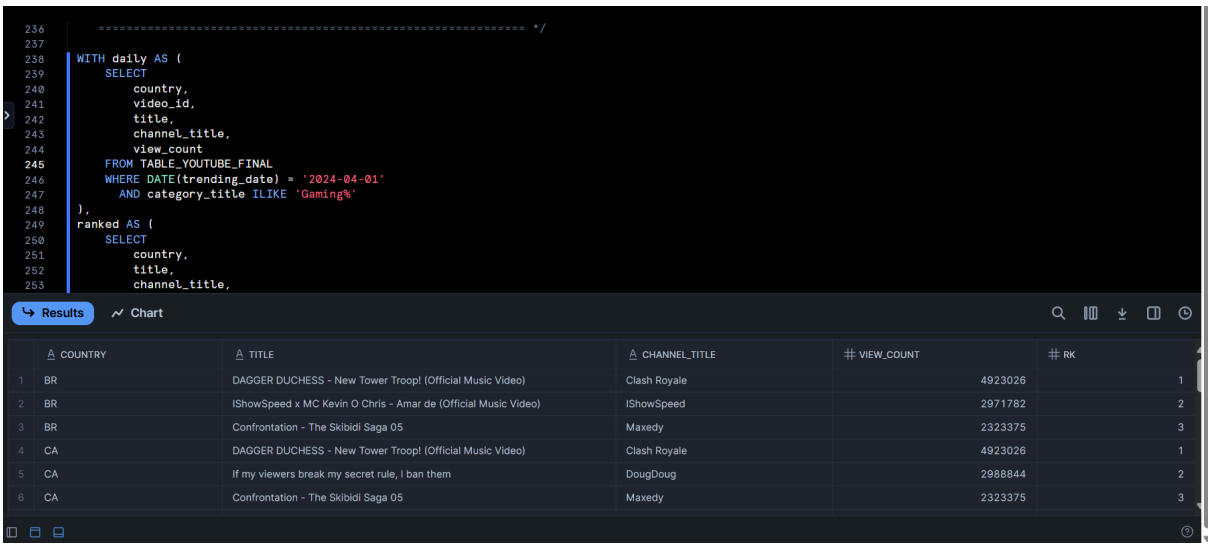
CHANNEL_TITLE	TIMES_TRENDED
HYBE LABELS	6685
JYP Entertainment	6145
BANGTANTV	6043
SMTOWN	5815
FORMULA 1	4999
MrBeast	4762

```sql
/* ------------------------------------------------------
   EXTRA 3) Temporal trend: total views per month (all countries)
   ------------------------------------------------------ */
SELECT
  TO_CHAR(DATE(TRENDING_DATE), 'YYYY-MM') AS year_month,
  SUM(VIEW_COUNT) AS total_views
FROM TABLE_YOUTUBE_FINAL
GROUP BY year_month
ORDER BY year_month;

/* ------------------------------------------------------
   EXTRA 4) Outliers check - videos with unusually high likes_ratio
   ------------------------------------------------------ */
SELECT
  VIDEO_ID,
```

Results | Chart

	YEAR_MONTH	TOTAL_VIEWS
1	2020-08	87243357568
2	2020-09	99695535896
3	2020-10	116125207130
4	2020-11	106624730906
5	2020-12	98632522189
6	2021-01	102860883402



```
    ============================================================ */

WITH daily AS (
    SELECT
        country,
        video_id,
        title,
        channel_title,
        view_count
    FROM TABLE_YOUTUBE_FINAL
    WHERE DATE(trending_date) = '2024-04-01'
      AND category_title ILIKE 'Gaming%'
),
ranked AS (
    SELECT
        country,
        title,
        channel_title,
```

Results | Chart

	COUNTRY	TITLE	CHANNEL_TITLE	VIEW_COUNT	RK
1	BR	DAGGER DUCHESS - New Tower Troop! (Official Music Video)	Clash Royale	4923026	1
2	BR	IShowSpeed x MC Kevin O Chris - Amar de (Official Music Video)	IShowSpeed	2971782	2
3	BR	Confrontation - The Skibidi Saga 05	Maxedy	2323375	3
4	CA	DAGGER DUCHESS - New Tower Troop! (Official Music Video)	Clash Royale	4923026	1
5	CA	If my viewers break my secret rule, I ban them	DougDoug	2988844	2
6	CA	Confrontation - The Skibidi Saga 05	Maxedy	2323375	3

3.7 Summary of Analysis

The initial study found a number of different things regarding how YouTube patterns have evolved over time. others things were the same in both nations, while others were not. People all throughout the globe heard about BTS, but people in various regions preferred different sorts of news and games. By looking at monthly and category breakdowns, we could understand how patterns alter over time. We learned how crucial it is to maintain posting a lot of material from sites that do. Finally, Part 4 informs us how to answer the business issue of what sort of material would be ideal for a new YouTube account in Japan.

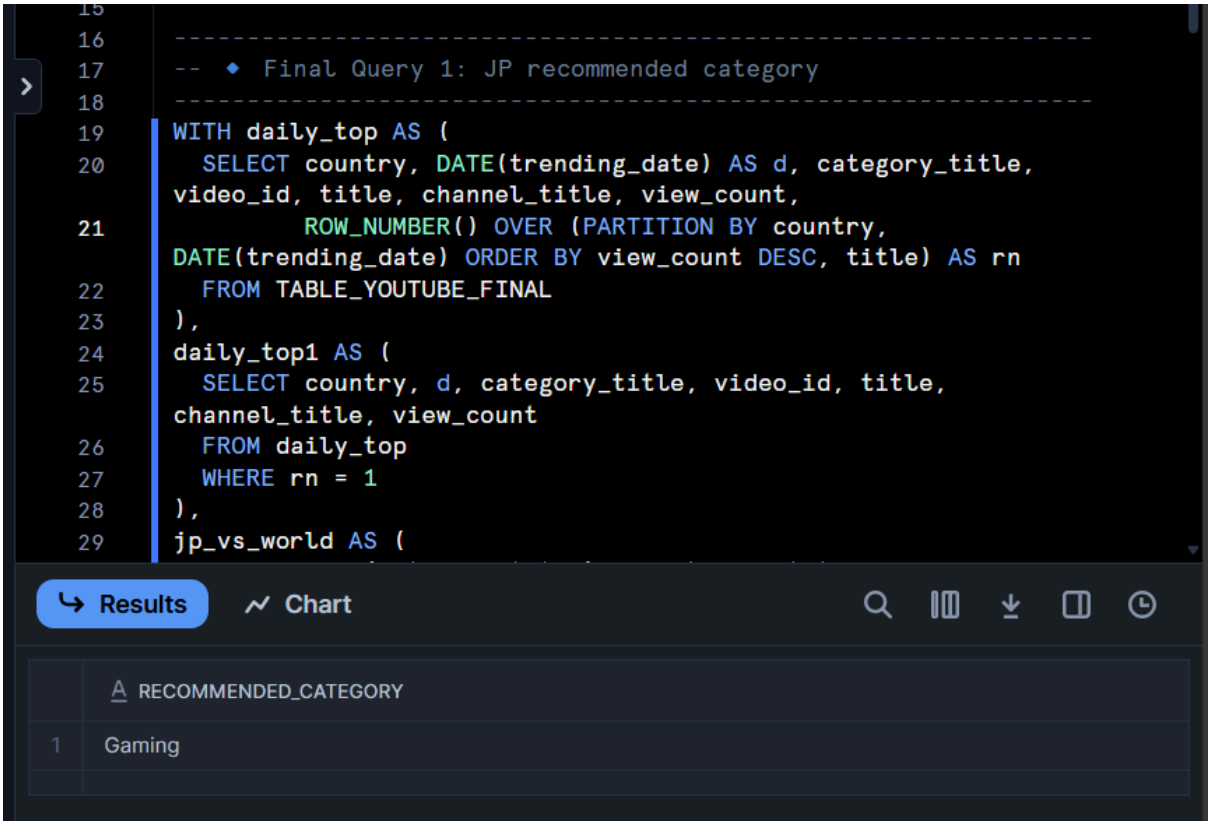
Part 4 – Business Question & Strategy

The last part of the analysis looked at the business problem: If a new YouTube channel were to start in Japan, which category, besides Music and Entertainment, would have the best chance of becoming popular? Also, would this choice work on a global scale? We used the cleaned and normalised dataset to look at Japan's top categories, compare them to the rest of the world, and see if the trends were only happening in Japan or were happening all over the world.

4.1 Recommended Category for Japan

To find the best category, the dataset was changed so that only the most popular trending video from each country was shown each day. Music and entertainment were not included

because they are already the most popular things in the world. The research showed that gaming was the most popular category in Japan over time. Gaming is the best way to get a new channel noticed quickly in the Japanese market because it has been around for a long time and is still popular.



4.2 Global Applicability of the Chosen Category

After learning that gaming was the most popular category in Japan, the company looked into how well it did in other countries. We looked at the total number of trending days in each country and compared them to the number of days when Gaming was the most popular category. The data shows that Japan has a much bigger gaming population than other countries. Japan had a lot of gamers, but not as many in other countries. This shows that gaming is a great way to get people in your area to work together, but it won't help the channel grow if it wants to go global.

```
47
48  ------------------------------------------------------------
49  --  ◆  Final Query 2: How often chosen category tops each country
50  ------------------------------------------------------------
51  WITH daily_top AS (
52    SELECT country, DATE(trending_date) AS d, category_title,
    video_id, title, channel_title, view_count,
53          ROW_NUMBER() OVER (PARTITION BY country,
    DATE(trending_date) ORDER BY view_count DESC, title) AS rn
54    FROM TABLE_YOUTUBE_FINAL
55  ),
56  daily_top1 AS (
57    SELECT country, d, category_title, video_id, title,
    channel_title, view_count
58    FROM daily_top
59    WHERE rn = 1
60  ),
61  jp_vs_world AS (
62    SELECT TRIM(category_title) AS category_title,
63          SUM(IFF(country = 'JP', 1, 0))  AS jp_top_days,
64          SUM(IFF(country <> 'JP', 1, 0)) AS rest_top_days
```

Results | Chart

	COUNTRY	DAYS_CHOSEN_CAT_TOP	DAYS_WITH_DATA	PCT_OF_DAYS_TOP
1	US	62	1323	4.68
2	GB	54	1323	4.08
3	FR	51	1323	3.85
4	DE	50	1323	3.77

4.3 Supporting Evidence from Japan

This conclusion was corroborated by collecting samples of the most popular gaming videos in Japan. Famous Japanese content creators hosted these live streams, reviewed the games, and gave tips on how to play them. The huge number of people who watch and comment on these videos shows that gaming is very popular in Japan. These examples suggest that the Gaming category is most likely to become popular in Japan.

```
97
98  ------------------------------------------------------------
99  -- 🔹 Final Query 3: JP top examples (evidence)
100 ------------------------------------------------------------
101 WITH daily_top AS (
102   SELECT country, DATE(trending_date) AS d, category_title,
    video_id, title, channel_title, view_count,
103         ROW_NUMBER() OVER (PARTITION BY country,
    DATE(trending_date) ORDER BY view_count DESC, title) AS rn
104   FROM TABLE_YOUTUBE_FINAL
105 ),
106 daily_top1 AS (
107   SELECT country, d, category_title, video_id, title,
    channel_title, view_count
108   FROM daily_top
109   WHERE rn = 1
110 ),
111 jp_vs_world AS (
112   SELECT TRIM(category_title) AS category_title,
113         SUM(IFF(country = 'JP', 1, 0))  AS jp_top_days,
114         SUM(IFF(country <> 'JP', 1, 0)) AS rest_top_days
115   FROM daily_top1
```

Results | Chart

	DATE	TITLE	CHANNEL_TITLE	VIEW_COUNT
1	2023-12-18	Grand Theft Auto VI Trailer 1	Rockstar Games	152415351
2	2023-12-17	Grand Theft Auto VI Trailer 1	Rockstar Games	151246853
3	2023-12-16	Grand Theft Auto VI Trailer 1	Rockstar Games	149808495
4	2023-12-15	Grand Theft Auto VI Trailer 1	Rockstar Games	148301708

4.4 Improbability Measure (Japan vs. Rest of World)

To find out how rare gaming is in Japan, we had to use an improbability metric. This shows how many days gaming was at the top of the charts in Japan compared to the rest of the world. The data showed that Gaming had a much bigger share of the market in Japan. So, it's clear that gaming is very popular in Japan and all over the world. This shows that Gaming is a good strategic choice for a channel that focuses on Japan, but it might not work in other countries.

```
LIMIT 20;

-- ------------------------------------------------------------
-- ◆ Extra Query: Improbability measure (JP vs Rest of World)
-- ------------------------------------------------------------
WITH daily_top AS (
  SELECT
    country,
    DATE(trending_date) AS d,
    category_title,
    video_id,
    ROW_NUMBER() OVER (
      PARTITION BY country, DATE(trending_date)
      ORDER BY view_count DESC
    ) AS rn
  FROM TABLE_YOUTUBE_FINAL
)
, daily_top1 AS (
  SELECT country, d, category_title, video_id
```

Results | Chart

	CATEGORY_TITLE	JP_DAYS	PCT_JP	OTHER_DAYS	PCT_OTHER
1	Gaming	38	25.850300	412	54.281900
2	Sports	35	23.809500	344	45.322800
3	People & Blogs	24	16.326500	321	42.292500
4	Science & Technology	20	13.605400	251	33.069800

4.5 Strategic Implications

According to the study's findings, a fresh YouTube channel from Japan may achieve viral status by showcasing gaming content. The firm risks stunting its global development if it narrows its emphasis to simply games. Both techniques are most effective for sustainable growth:

Japanese area of concentration: There is a high demand for gaming material, so you may get a lot of followers very fast.

Foreign categories such as Sports, Lifestyle, and News & Politics may be a good addition to gaming. This combined strategy would combine regional focus with international clout.

Conclusion

This project cleaned, analysed, and met a real business need after loading YouTube Trending data into Snowflake. We had a reliable dataset with 2.59 million rows after cleaning the data. This dataset showed us useful information about how people behave.

Even though BTS and other global events go beyond national borders, the research shows that genres like gaming do well even when there are big differences between regions. More than any other channel, Japanese people voted for a new gaming channel. If you want to be successful around the world, though, you need a wider range of materials.

The study says that platform data can teach artists and businesses a lot, and with the right design and analysis, it could help them succeed on a local and global level.