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Background:

The option our group chose to pursue was “Option B: YouTube Data Analysis as a Content Creator”. We selected this option because we all shared the experience of consuming YouTube content in the past, and wanted to challenge ourselves to think from a creator’s perspective given our exposure to YouTube. Therefore we could potentially leverage the information we find for content creators in order for them to find more success and give benefit to us, as consumers. To do this, we have answered a few questions that revolve around the process of creating a youtube channel and uploading videos. From our questions, we were able to discover trends in YouTube data regarding likes, views, subscribers, and uploads.

Database Description:

The tables we created in order to answer these questions consisted of a table named YT_VIDEO_STATS, and two others named GLOBAL_YT_STATS and GLOBAL_YT_STATS_MISC. For the table YT_VIDEO_STATS, there are 6 columns that pertain to information such as title, likes, comments, and other variables that come into play with individual videos. GLOBAL_YT_STATS contains 23 columns that pertain more so to the statistics of each YouTube creator such as subscribers, channel creation date, and total view count. GLOBAL_YT_STATS_MISC goes in tandem with GLOBAL_YT_STATS, but it contains five columns that we felt were a little less relevant or useful to the questions we wanted to answer. GLOBAL_YT_STATS and GLOBAL_YT_STATS_MISC do share a relationship in that the youtuber_name column in GLOBAL_YT_STATS acts as a foreign key in GLOBAL_YT_STATS_MISC.

Relevant Questions:

The subsequent section presents a list of ten questions that can be answered using the data we selected for the project. Each question also includes a brief description of how the solution can be found using PL/SQL. Also included are the people that the answer to the question would be relevant to.

1. What is the connection with date published and a high like/view ratio?
 - Knowledge from class:
 - Interest:
 - Code:
 - Results:
 - Insights:
2. How do overall video uploads affect total success?
 - Knowledge from class: Selecting the total upload counts, video views, channel name from videos and calculating an average views ratio
 - Interest: Find trends that are successful in terms of video upload frequency and mimic to create success.
 - Code:

```
create or replace procedure lifetime_uploads_views IS
```

```
    v_uploadcount GLOBAL_YT_STATS.UPLOAD_COUNT%TYPE;  
    v_videoviews GLOBAL_YT_STATS.VIDEO_VIEWS%TYPE;  
    v_channelname GLOBAL_YT_STATS.CHANNEL_TITLE%TYPE;
```

```

v_averageviews GLOBAL_YT_STATS.VIDEO_VIEWS%TYPE;

begin

FOR channel IN (
    SELECT CHANNEL_TITLE,VIDEO_VIEWS, UPLOAD_COUNT
    FROM GLOBAL_YT_STATS
)
LOOP
    v_channelname := channel.CHANNEL_TITLE;
    v_videoviews := channel.VIDEO_VIEWS;
    v_uploadcount := channel.UPLOAD_COUNT;

    IF v_uploadcount > 1 THEN
        v_averageviews := v_videoviews / v_uploadcount;
    END IF;

    v_averageviews := ROUND(v_averageviews, 1);

    IF v_averageviews > 1000000 THEN
        dbms_output.put_line('Channel: ' || v_channelname || '      Average
Views: ' || v_averageviews);
    END IF;

END LOOP;
END lifetime_uploads_views;

```

- Results:

```

Channel: Toys and colors      Average Views: 11751263289
Channel: wowkidz             Average Views: 8306720739.5
Channel: ToyPudding TV[1/2][1/2][1/2][1/2]      Average Views: 7958441114
Channel: TalkingTom          Average Views: 7599665083
Channel: drake                Average Views: 5106298372.7
Channel: Desi music factory   Average Views: 5094513727.5
Channel: TG MAYANK YT         Average Views: 3881038506
Channel: Claudio              Average Views: 3677597002.3
Channel: salman Noman         Average Views: 3464345967.3
Channel: zuni and family       Average Views: 3373134729
Channel: ali-a                Average Views: 3074151634
Channel: LooLoo Kids - Nursery Rhymes and Children's 1/2      Average Views:
2937493749
Channel: Extra polinesios     Average Views: 2406563752
Channel: T- SERIES BHAKTI SAGAR      Average Views: 2271786948.3
Channel: Masha y El oso        Average Views: 2262857121
Channel: jamuna tv24           Average Views: 2021597175.8
Channel: Ti Ti                 Average Views: 1884312866.3
Channel: TrapCity              Average Views: 1709843282
Channel: alanwalker            Average Views: 1610533097.3

```

```

Channel: MrBeastGaming      Average Views: 1266266509.4
Channel: Dorukhan Giğ1/2iğ1/2i      Average Views: 1245514602.1
Channel: 21 Savage          Average Views: 1236263983.6
Channel: straykids          Average Views: 1121410162.3
Channel: Michael Jackson    Average Views: 960831641.7
Channel: Adele              Average Views: 946607201.1

```

PL/SQL procedure successfully completed.

- Insights: From the data, it seems that accounts that exist at the top of the list are channels that cater toward children's entertainment, with the exception of Drake. This could be used to leverage content and adjust posting schedule in order to emulate the success of the top channels.

3. Which keywords bring in more views?

- Knowledge from class: Select keywords and the average view count for each keyword and display the top 5 results.
- Interest: Encourage creators to include specific keywords that show success in their videos to attract viewers.
- Code:

```

create or replace PROCEDURE keywords_popular
IS
    CURSOR popularCursor IS
        SELECT KEYWORD, COUNT(*) AS keywords_CNT
        FROM YT_VIDEO_STATS
        GROUP BY KEYWORD
        ORDER BY keywords_CNT DESC
        FETCH FIRST 5 ROWS ONLY;

BEGIN

    dbms_output.put_line('Popular Keywords:');

```

```

FOR popular_keywords IN popularCursor LOOP
    dbms_output.put_line('Keyword: ' || popular_keywords.KEYWORD
|| '      Number of Occurrences: ' ||
popular_keywords.keywords_CNT);
END LOOP;

END;

```

- Results:

```

Popular Keywords:
Keyword: cubes      Number of Occurrences: 50
Keyword: minecraft  Number of Occurrences: 50
Keyword: asmr       Number of Occurrences: 50
Keyword: data science Number of Occurrences: 50
Keyword: game development Number of Occurrences: 50

```

PL/SQL procedure successfully completed.

- Insights: From the results, we can see that the keywords that are found most often include “cubes”, “minecraft”, “asmr”, “data science”, and “game development”. From this, creators can make content about these topics in order to gain viewership.

-

4. From which countries do the most popular and successful channels originate?

- Knowledge from class: Select the country and channel name and rank of the 100 highest ranked channels.
- Interest: When making the decision to dub content, knowing which regions consume YouTube the most could be useful in determining which language to dub to.

- Code:

```
CREATE OR REPLACE PROCEDURE GetTop100ChannelsWithCountries
AS
BEGIN
    -- Use a cursor to fetch the top 100 channels
    FOR channel_row IN (
        SELECT channel_title, country
        FROM GLOBAL_YT_STATS
        ORDER BY rank
        FETCH FIRST 100 ROWS ONLY
    )
    LOOP
        DBMS_OUTPUT.PUT_LINE('Channel Name: ' || channel_row.channel_title || ', Country: ' || channel_row.country);
    END LOOP;
END;
```

- Results:

```
Channel Name: T-Series, Country: India
Channel Name: youtubemovies, Country: United States
Channel Name: MrBeast, Country: United States
Channel Name: Cocomelon – Nursery Rhymes, Country: United States
Channel Name: SET India, Country: India
Channel Name: Music, Country:
Channel Name: ýý Kids Diana Show, Country: United States
Channel Name: PewDiePie, Country: Japan
Channel Name: Like Nastya Vlog, Country: Russia
Channel Name: Vlad and Niki, Country: United States
Channel Name: Zee Music Company, Country: India
Channel Name: WWE, Country: United States
Channel Name: Gaming, Country:
Channel Name: BLACKPINK, Country: South Korea
Channel Name: goldmines, Country:
Channel Name: Sony SAB, Country: India
Channel Name: 5-Minute Crafts 2.0, Country: United Kingdom
Channel Name: BANGTANTV, Country: South Korea
Channel Name: sports, Country: United States
Channel Name: Justin Bieber, Country: Canada
Channel Name: HYBE LABELS, Country: South Korea
Channel Name: Zee TV, Country: India
Channel Name: Pinkfong Baby Shark – Kids' Songs & Stories, Country:
Channel Name: Canal KondZilla, Country: Brazil
Channel Name: ChuChu TV Nursery Rhymes & Kids Songs, Country: India
Channel Name: Shemaroo Filmi Gaane, Country: India
Channel Name: Colors TV, Country: India
Channel Name: T- SERIES BHAKTI SAGAR, Country: India
Channel Name: Dude Perfect, Country: United States
Channel Name: Movieclips, Country: United States
Channel Name: Tips Official, Country: India
Channel Name: El Reino Infantil, Country: Argentina
Channel Name: Wave Music, Country: India
Channel Name: Aaj Tak, Country: India
Channel Name: Sony Music India, Country: India
Channel Name: EminemMusic, Country: United States
Channel Name: Marshmello, Country: United States
```

- Insights: The query results from the created procedure showed that a majority of the most popular channels originate from the United States and India. After that comes South Korea and a multitude of Spanish-speaking countries. Looking at

these results, it would definitely be most beneficial for a creator to translate their content to English, Korean, Spanish, or Hindi.

5. Are older channels significantly more successful earnings-wise than newer channels?

- Knowledge from class: Select and group by the creation year of channels. Also select the average highest monthly and yearly earning amongst that group.
- Interest: When making the decision to create a channel, knowing that if newer channels even have the ability of being successful compared to older channels would be useful in determining if you still want to give content creation on YouTube a go.
- Code:

```
CREATE OR REPLACE PROCEDURE GetAvgHighestEarningsByCreatedYear
AS
BEGIN
    FOR earnings_row IN (
        SELECT
            EXTRACT(YEAR FROM created_year) AS created_year,
            ROUND(AVG(highest_monthly_earn), 2) AS avg_highest_monthly_earnings,
            ROUND(AVG(highest_yearly_earnings), 2) AS avg_highest_yearly_earnings
        FROM GLOBAL_YT_STATS
        GROUP BY EXTRACT(YEAR FROM created_year)
        ORDER BY created_year
    )
    LOOP
        -- Print or do something with the average earnings data
        DBMS_OUTPUT.PUT_LINE('Year: ' || earnings_row.created_year ||
            ', Avg Highest Monthly Earnings: ' || earnings_row.avg_highest_monthly_earnings ||
            ', Avg Highest Yearly Earnings: ' || earnings_row.avg_highest_yearly_earnings);
    END LOOP;
END;
```

- Results:

```

Year: 1970, Avg Highest Monthly Earnings: 84400, Avg Highest Yearly Earnings: 1000000
Year: 2005, Avg Highest Monthly Earnings: 581795.86, Avg Highest Yearly Earnings: 7001296.09
Year: 2006, Avg Highest Monthly Earnings: 676183.31, Avg Highest Yearly Earnings: 8123616.11
Year: 2007, Avg Highest Monthly Earnings: 661672.39, Avg Highest Yearly Earnings: 7968823.94
Year: 2008, Avg Highest Monthly Earnings: 629133.7, Avg Highest Yearly Earnings: 7533093.39
Year: 2009, Avg Highest Monthly Earnings: 508033.34, Avg Highest Yearly Earnings: 6072088.25
Year: 2010, Avg Highest Monthly Earnings: 292182.45, Avg Highest Yearly Earnings: 3518038.38
Year: 2011, Avg Highest Monthly Earnings: 408051.17, Avg Highest Yearly Earnings: 4915421.67
Year: 2012, Avg Highest Monthly Earnings: 526064.85, Avg Highest Yearly Earnings: 6293154.69
Year: 2013, Avg Highest Monthly Earnings: 453838.72, Avg Highest Yearly Earnings: 5419222.77
Year: 2014, Avg Highest Monthly Earnings: 601553.22, Avg Highest Yearly Earnings: 7223349.93
Year: 2015, Avg Highest Monthly Earnings: 469904.28, Avg Highest Yearly Earnings: 5642468.7
Year: 2016, Avg Highest Monthly Earnings: 668412.71, Avg Highest Yearly Earnings: 8051832.27
Year: 2017, Avg Highest Monthly Earnings: 557369.75, Avg Highest Yearly Earnings: 6689161.44
Year: 2018, Avg Highest Monthly Earnings: 507319.96, Avg Highest Yearly Earnings: 6079113.5
Year: 2019, Avg Highest Monthly Earnings: 521242.03, Avg Highest Yearly Earnings: 6270468.88
Year: 2020, Avg Highest Monthly Earnings: 1986075.07, Avg Highest Yearly Earnings: 23844150.0
Year: 2021, Avg Highest Monthly Earnings: 1118292.52, Avg Highest Yearly Earnings: 13430605.3
Year: 2022, Avg Highest Monthly Earnings: 16227.2, Avg Highest Yearly Earnings: 194626.27

```

- Insights: The data discovered by the procedure showed that in the first year after creating a channel, earnings are definitely harder to come by, which makes sense as one is establishing their audience. But after that first year, newer content creators actually seem to favor better than older ones. So for a new content creator, this would provide encouragement that if they stay the course for over a year that they will have earnings on the horizon.

6. What is the relationship between recent and legacy success?

- Knowledge: Compare 30 days data and all time data, find ratio and compare to other channels
- Interest: Study highly ranked channels and adapt accordingly to find longevity
- Code:

```

create or replace procedure recent_legacy_success IS

    v_views30 GLOBAL_YT_STATS.VIDEO_VIEWS_LAST30%TYPE;
    v_videoviews GLOBAL_YT_STATS.VIDEO_VIEWS%TYPE;
    v_subscribers GLOBAL_YT_STATS.SUBSCRIBERS%TYPE;
    v_subscribers30 GLOBAL_YT_STATS.SUBSCRIBERS_LAST30%TYPE;
    v_viewratio GLOBAL_YT_STATS.VIDEO_VIEWS%TYPE;
    v_subratio GLOBAL_YT_STATS.SUBSCRIBERS%TYPE;
    v_youtuber GLOBAL_YT_STATS.YOUTUBER_NAME%TYPE;

begin

FOR channel IN (

```



```

        SELECT YOUTUBER_NAME, SUBSCRIBERS, VIDEO_VIEWS, SUBSCRIBERS_LAST30,
VIDEO_VIEWS_LAST30
        FROM GLOBAL_YT_STATS
    )
    LOOP
        v_subscribers := channel.SUBSCRIBERS;
        v_subscribers30 := channel.SUBSCRIBERS_LAST30;
        v_videoviews := channel.VIDEO_VIEWS;
        v_views30 := channel.VIDEO_VIEWS_LAST30;
        v_youtuber := channel.YOUTUBER_NAME;

        IF v_subscribers > 10 THEN
            v_viewratio := v_videoviews / v_views30;
            v_subratio := v_subscribers / v_subscribers30;
        END IF;

        v_viewratio := ROUND(v_viewratio, 1);
        v_subratio := ROUND(v_subratio, 1);

        IF v_viewratio > 1000000 OR v_subratio > 1000000 THEN
            dbms_output.put_line('Channel: ' || v_youtuber || '      View Ratio: ' ||
v_viewratio || '      Sub Ratio:' || v_subratio );
        END IF;

    END LOOP;

END recent_legacy_success;

```

- Results:

Channel: Badabun	View Ratio: 44086467.5	Sub Ratio:624000	
Channel: A4	View Ratio: 244006710.8	Sub Ratio:4630000	
Channel: Bad Bunny	View Ratio: 30686342319	Sub Ratio:	
Channel: BRIGHT SIDE	View Ratio:	Sub Ratio:44500000	
Channel: Alan Walker	View Ratio: 585648399	Sub Ratio:	
Channel: HolaSoyGerman.	View Ratio: 1207827811.3	Sub Ratio:	
Channel: Toys and Colors	View Ratio: 9401010631.2	Sub Ratio:	
Channel: LUCCAS NETO - LUCCAS TOON	View Ratio: 11151273541	Sub Ratio:	
Channel: One Direction	View Ratio: 2142234.4	Sub Ratio:382000	
Channel: MrBeast Gaming	View Ratio: 197854142.1	Sub Ratio:36100000	
Channel: Total Gaming	View Ratio: 104837060.9	Sub Ratio:17700000	
Channel: Techno Gamerz	View Ratio: 112680228.7	Sub Ratio:11466666.7	
Channel: WowKidz	View Ratio: 16613441479	Sub Ratio:	
Channel: YOLO AVENTURAS	View Ratio: 2695360.7	Sub Ratio:312000	
Channel: Frost Diamond	View Ratio:	Sub Ratio:5016666.7	
Channel: Masha y el Oso	View Ratio: 6788571363	Sub Ratio:	
Channel: Drake	View Ratio: 494157907	Sub Ratio:28100000	
Channel: Sandeep Maheshwari	View Ratio:	Sub Ratio:27800000	
Channel: MrBeast 2	View Ratio: 7014762.9	Sub Ratio:	
Channel: ToyPuddingTV	View Ratio: 1136920159.1	Sub Ratio:	
Channel: Goldmines	View Ratio: 1339901698.9	Sub Ratio:	
Channel: 5-Minute Crafts	View Ratio: 26236790209	Sub Ratio:	
Channel: T-Series Bhakti Sagar	View Ratio: 2953323032.8	Sub Ratio:	
Channel: LooLoo Kids - Nursery Rhymes and Children's Songs	View Ratio: 203222838	Sub Ratio:	
Channel: Cardi B	View Ratio: 1090632884	Sub Ratio:	
Channel: CKN	View Ratio: 120545462.4	Sub Ratio:18100000	
Channel: Ali-A	View Ratio: 6148303268	Sub Ratio:	
Channel: Dhar Mann	View Ratio:	Sub Ratio:9200000	
Channel: Ajay Sharma	View Ratio:	Sub Ratio:18100000	
Channel: And TV	View Ratio: 3853083251.3	Sub Ratio:	
Channel: Zuni and Family	View Ratio: 1686567364.5	Sub Ratio:	
Channel: Jason Vlogs	View Ratio: 356145899.2	Sub Ratio:	
Channel: deepesh zo	View Ratio: 7206462713	Sub Ratio:16800000	

Channel: Salman Noman	View Ratio: 1484719700.3	Sub Ratio:1670000
Channel: Alfredo Larin	View Ratio: 14431830557	Sub Ratio:
Channel: Mariç1/2iç1/2iç1/2iç1/2	View Ratio: 6199178137.3	Sub Ratio:8666666.7
Channel: Fede Vigevani	View Ratio:	Sub Ratio:12800000
Channel: ZHC	View Ratio: 136345854.4	Sub Ratio:6375000
Channel: ABPLIVE	View Ratio: 3984181690.5	Sub Ratio:
Channel: Goldmines Movies	View Ratio: 1884312866.3	Sub Ratio:
Channel: FaZe Rug	View Ratio:	Sub Ratio:23700000
Channel: Alan Becker	View Ratio:	Sub Ratio:22900000
Channel: Smile Family	View Ratio: 11787524	Sub Ratio:2230000
Channel: Disney Latinoamç1/2iç1/2	View Ratio: 4377531.6	Sub Ratio:
Channel: Rotana	View Ratio: 1828526.3	Sub Ratio:218000
Channel: Netflix India	View Ratio: 19070917.1	Sub Ratio:
Channel: SMOL	View Ratio: 7355194004.7	Sub Ratio:
Channel: invictor	View Ratio: 171625341.3	Sub Ratio:5375000
Channel: YOLO	View Ratio:	Sub Ratio:4280000
Channel: Zach King	View Ratio: 43281317.5	Sub Ratio:2070000
Channel: Deddy Corbuzier	View Ratio: 58306942.3	Sub Ratio:20600000
Channel: Linkin Park	View Ratio:	Sub Ratio:1700000
Channel: Marvel Entertainment	View Ratio: 89439608.3	Sub Ratio:670000
Channel: SCTV	View Ratio: 29192488.6	Sub Ratio:
Channel: AS Gaming	View Ratio: 123957583.9	Sub Ratio:
Channel: Masha e o Urso	View Ratio:	Sub Ratio:9450000
Channel: NOBRU	View Ratio: 175881662	Sub Ratio:14400000
Channel: SIS vs BRO	View Ratio: 66418405.3	Sub Ratio:1420000
Channel: The Dodo	View Ratio: 1382369.1	Sub Ratio:2840000
Channel: Trap City	View Ratio: 34894760.9	Sub Ratio:14100000
Channel: Jamuna TV	View Ratio: 12129583055	Sub Ratio:
Channel: Desi Gamers	View Ratio: 427039047.8	Sub Ratio:
Channel: JULIA GISELLA	View Ratio: 3331351.6	Sub Ratio:103846.2
Channel: The Q	View Ratio: 1435404171.7	Sub Ratio:13400000
Channel: Stray Kids	View Ratio: 1682115243.5	Sub Ratio:13300000
Channel: AdMe	View Ratio: 1122170225.8	Sub Ratio:
Channel: ExtraPolinesios	View Ratio: 9437504.9	Sub Ratio:16200000
Channel: FitDance	View Ratio: 9136167.6	Sub Ratio:4025000
Channel: Enes Batur	View Ratio:	Sub Ratio:1454545.5
Channel: ýýýýýýýýýý	View Ratio:	Sub Ratio:1590000
Channel: Mr DegrEE	View Ratio:	Sub Ratio:1550000
Channel: Musas	View Ratio: 27907413.5	Sub Ratio:
Channel: Republic Bharat	View Ratio: 7551195.5	Sub Ratio:
Channel: Bayashi TV	View Ratio: 3478247.4	Sub Ratio:1655555.6
Channel: Ryan Trahan	View Ratio: 8801014	Sub Ratio:13100000
Channel: Knowledge Tv iç1/2iç1/2iç1/2iç1/2iç1/2	View Ratio: 968291352	Sub Ratio:
Channel: DJ Khaled	View Ratio: 17514038.9	Sub Ratio:4366666.7
Channel: Jomy Production	View Ratio: 2528581628	Sub Ratio:
Channel: Wolfoo Channel	View Ratio: 511098	Sub Ratio:1625000
Channel: Ian Lucas	View Ratio: 30226553	Sub Ratio:1587500
Channel: Jass Records	View Ratio: 5958994201	Sub Ratio:
Channel: Troom Troom Indonesia	View Ratio: 5379684248	Sub Ratio:
Channel: ANNA KOVA	View Ratio: 6979793154	Sub Ratio:

PL/SQL procedure successfully completed.

- Insights: From the results, we can see that various channels with various content topics have high view/sub ratios. This can be helpful for the creator in order to adap their content to the ones listed in order to find what works best for them.

7. What is the relationship between video likes and length of video title?

- Knowledge: Select the character count of the video title and amount of likes for the corresponding video

- Interest: Placement and overall dislike for ads might affect the video so this will help creators balance ad revenue and retention rate

- Code:

```
CREATE OR REPLACE PROCEDURE compare_lengthtitle_likes AS
BEGIN
    FOR vid_title IN (
        SELECT LENGTH(TITLE) length, LIKES
        FROM YT_VIDEO_STATS
        ORDER BY LIKES DESC
        FETCH FIRST 10 ROWS ONLY
    )
    LOOP
        DBMS_OUTPUT.PUT_LINE('Video Name Length: ' || vid_title.length || ',
Like Count: ' || vid_title.LIKES);
    END LOOP;
END;
```

- Results:

```
Video Name Length: 25, Like Count:
Video Name Length: 32, Like Count:
Video Name Length: 75, Like Count: 16445558
Video Name Length: 33, Like Count: 14259033
Video Name Length: 40, Like Count: 11025176
Video Name Length: 73, Like Count: 7786057
Video Name Length: 51, Like Count: 6823113
Video Name Length: 43, Like Count: 6177588
Video Name Length: 29, Like Count: 6055504
Video Name Length: 41, Like Count: 5743875
```

- Insights:

From the results, disregarding videos that omit public like count, that the average video name length is higher than at least 40, and the average of the 8 name

lengths is 48.125. So creators could try and make their video titles around this length to garner more likes.

8. Is there a relationship between video title length and number of views?

- Knowledge from class: Group video by the length of their titles and select and query for average the number of views for that title length.
- Interest: Give creators knowledge about what the ideal title length for a video is.
- Code:

```
CREATE OR REPLACE PROCEDURE CalculateAverageViewsByTitleLengthRange
IS
BEGIN
    -- Query to group by title length range and calculate rounded average views
    FOR r IN (
        SELECT
            CASE
                WHEN LENGTH(title) BETWEEN 1 AND 10 THEN '1-10'
                WHEN LENGTH(title) BETWEEN 11 AND 20 THEN '11-20'
                WHEN LENGTH(title) BETWEEN 21 AND 30 THEN '21-30'
                WHEN LENGTH(title) BETWEEN 31 AND 40 THEN '31-40'
                WHEN LENGTH(title) BETWEEN 41 AND 50 THEN '41-50'
                WHEN LENGTH(title) BETWEEN 51 AND 60 THEN '51-60'
                WHEN LENGTH(title) BETWEEN 61 AND 70 THEN '61-70'
                WHEN LENGTH(title) BETWEEN 71 AND 80 THEN '71-80'
                WHEN LENGTH(title) BETWEEN 81 AND 90 THEN '81-90'
                WHEN LENGTH(title) BETWEEN 91 AND 100 THEN '91-100'
                ELSE 'Others'
            END AS title_length_range,
            ROUND(AVG(views), 1) AS rounded_average_views
        FROM
            YT_VIDEO_STATS
        GROUP BY
            CASE
                WHEN LENGTH(title) BETWEEN 1 AND 10 THEN '1-10'
                WHEN LENGTH(title) BETWEEN 11 AND 20 THEN '11-20'
                WHEN LENGTH(title) BETWEEN 21 AND 30 THEN '21-30'
                WHEN LENGTH(title) BETWEEN 31 AND 40 THEN '31-40'
                WHEN LENGTH(title) BETWEEN 41 AND 50 THEN '41-50'
                WHEN LENGTH(title) BETWEEN 51 AND 60 THEN '51-60'
                WHEN LENGTH(title) BETWEEN 61 AND 70 THEN '61-70'
                WHEN LENGTH(title) BETWEEN 71 AND 80 THEN '71-80'
                WHEN LENGTH(title) BETWEEN 81 AND 90 THEN '81-90'
                WHEN LENGTH(title) BETWEEN 91 AND 100 THEN '91-100'
                -- Add more ranges as needed
                ELSE 'Others'
            END
        ORDER BY
            MIN(LENGTH(title)) -- Order by the minimum length in each range
    )
    LOOP
        DBMS_OUTPUT.PUT_LINE('Title Length Range: ' || r.title_length_range || ', Rounded Average Views: ' || r.rounded_average_views);
    END LOOP;
END;
```

- Results:

```
Title Length Range: 1-10, Rounded Average Views: 13764076.8
Title Length Range: 11-20, Rounded Average Views: 12731974.8
Title Length Range: 21-30, Rounded Average Views: 13257445.4
Title Length Range: 31-40, Rounded Average Views: 18590988.1
Title Length Range: 41-50, Rounded Average Views: 13417749.4
Title Length Range: 51-60, Rounded Average Views: 7706869.1
Title Length Range: 61-70, Rounded Average Views: 3800990.7
Title Length Range: 71-80, Rounded Average Views: 30580253.2
Title Length Range: 81-90, Rounded Average Views: 2663505.2
Title Length Range: 91-100, Rounded Average Views: 2122762.5
```

- Insights: Shorter title lengths appear to be better at attracting views than longer ones. There is a weird outlier for video titles between 71 and 80 characters though as that range has easily the highest average view count.

9. Does the urban population of a creator's country or the overall population have a greater influence on their success?

- Knowledge from class: Group creators by their country and find the average number of subscribers for creators in that country as well as each country's urban population and overall population.
- Interest: Provide creators with information about which type of audience would be most effective to appeal to.
- Code:

```

CREATE OR REPLACE PROCEDURE CalculateAverageSubscribersByCountry
IS
BEGIN
    -- Query to group by country and calculate average subscribers
    FOR r IN (
        SELECT
            country,
            ROUND(AVG(subscribers), 1) AS average_subscribers,
            MAX(population) AS country_population,
            MAX(urban_pop) AS country_urban_pop
        FROM
            GLOBAL_YT_STATS
        WHERE
            country IS NOT NULL
        GROUP BY
            country
        ORDER BY
            country
    )
    LOOP
        DBMS_OUTPUT.PUT_LINE('Country: ' || r.country || ', Average Subscribers: ' || r.average_subscribers ||
            ', Population: ' || r.country_population || ', Urban Population: ' || r.country_urban_pop);
    END LOOP;
END;

```

- Results:

```

Country: Afghanistan, Average Subscribers: 20400000, Population: 38041754, Urban Population: 9797273
Country: Andorra, Average Subscribers: 15100000, Population: , Urban Population:
Country: Argentina, Average Subscribers: 24933333.3, Population: 44938712, Urban Population: 41339571
Country: Australia, Average Subscribers: 19111111.1, Population: 25766605, Urban Population: 21844756
Country: Bangladesh, Average Subscribers: 13900000, Population: 167310838, Urban Population: 60987417
Country: Barbados, Average Subscribers: 41900000, Population: 287025, Urban Population: 89431
Country: Brazil, Average Subscribers: 19706451.6, Population: 212559417, Urban Population: 183241641
Country: Canada, Average Subscribers: 24260000, Population: 36991981, Urban Population: 30628482
Country: Chile, Average Subscribers: 29066666.7, Population: 18952038, Urban Population: 16610135
Country: China, Average Subscribers: 17600000, Population: 1397715000, Urban Population: 842933962
Country: Colombia, Average Subscribers: 24045454.5, Population: 50339443, Urban Population: 40827302
Country: Cuba, Average Subscribers: 46300000, Population: 11333483, Urban Population: 8739135
Country: Ecuador, Average Subscribers: 13850000, Population: 17373662, Urban Population: 11116711
Country: Egypt, Average Subscribers: 15500000, Population: 100388073, Urban Population: 42895824
Country: El Salvador, Average Subscribers: 46100000, Population: 6453553, Urban Population: 4694702
Country: Finland, Average Subscribers: 13200000, Population: 5520314, Urban Population: 4716888
Country: France, Average Subscribers: 16780000, Population: 67059887, Urban Population: 54123364
Country: Germany, Average Subscribers: 20320000, Population: 83132799, Urban Population: 64324835
Country: India, Average Subscribers: 25834545.5, Population: 1366417754, Urban Population: 471031528
Country: Indonesia, Average Subscribers: 19075000, Population: 270203917, Urban Population: 151509724
Country: Iraq, Average Subscribers: 15100000, Population: 39309783, Urban Population: 27783368
Country: Italy, Average Subscribers: 19700000, Population: 60297396, Urban Population: 42651966
Country: Japan, Average Subscribers: 37820000, Population: 126226568, Urban Population: 115782416
Country: Jordan, Average Subscribers: 22333333.3, Population: 10101694, Urban Population: 9213048
Country: Kuwait, Average Subscribers: 30500000, Population: 4207083, Urban Population: 4207083
Country: Latvia, Average Subscribers: 20200000, Population: 1912789, Urban Population: 1304943
Country: Malaysia, Average Subscribers: 17700000, Population: 32447385, Urban Population: 24475766
Country: Mexico, Average Subscribers: 18996969.7, Population: 126014024, Urban Population: 102626859
Country: Morocco, Average Subscribers: 14500000, Population: 36910560, Urban Population: 22975026
Country: Netherlands, Average Subscribers: 19366666.7, Population: 17332850, Urban Population: 15924729
Country: Pakistan, Average Subscribers: 25900000, Population: 216565318, Urban Population: 79927762
Country: Peru, Average Subscribers: 14400000, Population: 32510453, Urban Population: 25390339
Country: Philippines, Average Subscribers: 20008333.3, Population: 108116615, Urban Population: 50975903
Country: Russia, Average Subscribers: 24266666.7, Population: 144373535, Urban Population: 107683889
Country: Samoa, Average Subscribers: 13100000, Population: 202506, Urban Population: 35588
Country: Saudi Arabia, Average Subscribers: 19900000, Population: 34268528, Urban Population: 28807838
Country: Singapore, Average Subscribers: 19900000, Population: 5703569, Urban Population: 5703569
Country: South Korea, Average Subscribers: 28575000, Population: 51709098, Urban Population: 42106719
Country: Spain, Average Subscribers: 17504545.5, Population: 47076781, Urban Population: 37927409
Country: Sweden, Average Subscribers: 15750000, Population: 10285453, Urban Population: 9021165
Country: Switzerland, Average Subscribers: 19400000, Population: 8574832, Urban Population: 6332428
Country: Thailand, Average Subscribers: 21472222.2, Population: 69625582, Urban Population: 35294600
Country: Turkey, Average Subscribers: 22900000, Population: 83429615, Urban Population: 63097818
Country: Ukraine, Average Subscribers: 15700000, Population: 44385155, Urban Population: 30835699
Country: United Arab Emirates, Average Subscribers: 21171428.6, Population: 9770529, Urban Population: 8479744
Country: United Kingdom, Average Subscribers: 21359523.8, Population: 66834405, Urban Population: 55908316
Country: United States, Average Subscribers: 23501634, Population: 328239523, Urban Population: 270663028

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- Insights: It's actually hard to draw much information from this query as the data would definitely be better represented in a graph, but just eyeballing by eyeballing the results, it appears that an urban population has a better correlation with subscribers than the overall population.

10. Question 10

This question was for Alvin to complete

- Knowledge from class:
- Interest:
- Code:
- Results:
- Insights:

Team: describe your team members, and the contributions made by each member (who worked on which parts of the project).

Sean Huynh - Contributed to the creation of question, as well as developed answers to 4 of the questions. Created final presentation, and created/formatted final report.

Nate Nolan - Contributed to the project description as well as the creation of questions. Developed answers to four of the questions.

Alvin Li - Completed only one question