

CNIT 372 Group Project

Final Report

Megan Clecak
Yasmine Graham
Elliot Martin
Marshall Bledsoe

Background:

Our group chose to research Option B: YouTube Data Analysis as a Content Creator. This data can be used to analyze genres, videos, and popular youtube channels within those genres. YouTube is a growing platform where individuals or groups can upload videos and create content for a specified audience. An average content creator (YouTuber) can make \$0.18 per view or \$18 per 1,000 views. One of the most popular YouTubers made an estimated \$54 million in 2021, with some of his videos reaching an upwards of 142 million views¹. We can analyze popular content creators like MrBeast to measure the number of uploads, content category, and amount of views. We can also analyze the earnings of the content to gain insights into which content generates the most income. This information could help future YouTubers create successful channels that meet a target audience.

We are using the Global YouTube Statistics dataset from Kaggle. We plan on analyzing which categories are most popular, in which country they are most popular, and how much earnings are generated. Based on that information, a potential content creator will gain insightful information about what content is successful and in which country.

¹ Daugherty & Sineriz. "How Much Do Youtubers Make?"

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

Megan Clecak:

About me:

Senior pursuing Bachelor's of Science in Computer Information and Technology.

Contributions:

Milestone 1:

- collected each members phone numbers to create a groupchat
- Initiated the communication within the group
- Collected emails so that we could share a folder to work in the same environment
- Supported communication for project decision
- Added tables Youtube Content Creators/Videos
- Added description of data
- Created ERD of tables

Milestone 2:

- Listed 3 ideas based on the Milestone 1 document and formed use-case questions.
- Described how the questions I came up with would be useful in a realistic situation

Milestone 3:

- Assisted creating 3 new tables for data set
- Assisted helping clean data set with google sheets
- Created tables in SQL and imported data
- Created "master database" and granted permissions to all group members
- Assisted creating the import data set into empty database script worksheet
- De-bugged and fixed query for question 3
- Completed descriptions/solution portions of question 1 & 2

Final:

- Completed database description for the 3 new tables created from milestone 3, ERD, and relationships of the tables
- Completed Question 6 query, output, and descriptions
- Updated Instruction set in the Github repository
- Assisted with creating and editing slides for group presentation
- Updated Question 7 & 9 descriptions and solution
- Revised Question 9 and description

Yasmine Graham:

About me:

Senior in Computer and Information Technology pursuing a Bachelors of Science. Minor in Forensic Sciences and Advanced Global Technology.

Contributions:

Milestone 1:

- Organized outline on document for Milestone 1
- Supported communication for the project decision
- Suggested using “**VidIQ**” youtube extension that collects data and supports our analysis and data points
- Added table for Trending Status
- Added descriptions for the table
- Included a source for a large dataset of US trending videos that may be used
- Added description for the Trending Status table

Milestone 2:

- Listed 2 ideas based on the Milestone 1 document and formed use-case questions.
- Described how the questions I came up with would be useful in a realistic situation.

Milestone 3:

- Cleaned the data so that it would import into SQL seamlessly
- Changed the “NAN” values to “NULL” so SQL could understand the value
- Imported data into SQL Developer
- Granted SELECT, UPDATE access to the teammates
- Created import data set into empty database script
- Updated Problem Description
- Wrote a query to solve question 1

Final:

- Created presentation
- Outlined the presentation
- Wrote project outline for presentation
- Wrote solution 1 and solution 5 for the presentation
- Created solutions for question 1
- Wrote descriptions for question 1
- Revised problem description
- Created solution for question 6
- Wrote description for question 6
- Revised/Wrote question 8 description

Elliot Martin:

About me:

Junior in Computer and Information Technology with minors in Design and Innovation and Organizational Leadership

Contributions:

Milestone 1:

- Added description for Content creators table
- Added description for Videos table

Milestone 2:

- Listed 2 ideas based on the Milestone 1 document and formed use-case questions.
- Described how the question I came up with would be useful in a realistic situation.

Milestone 3:

- Fixed the Milestone 1 questions and descriptions
- Helped create PL/SQL solutions
- Created PL/SQL solutions for questions 2 and 4
- Helped edit and finish question descriptions

Final:

- Created PL/SQL solutions for questions 8 and 9
- Created package for code
- Create package slides for presentation

Marshall Bledsoe:

About me:

Senior pursuing a Bachelor's of Science in Computer and Information Technology with minors in Communication and Organizational Leadership. Graduating this December.

Contributions:

Milestone 1:

- Aided in brainstorming potential table ideas
- Expanded the data description section
- Expanded on how it could help us create more successful youtube videos

Milestone 2:

- Expanded on how it could help us create more successful youtube videos
- Listed 3 ideas based on the Milestone 1 document and formed use-case questions.

Milestone 3:

- Cleaned data set with google sheets and created 3 new data sheets
- Assisted creating 3 new tables for data set
- Created tables in SQL and imported data
- Created working database
- Wrote the procedure for question 5
- Debugged all five question solutions
- Wrote the rationale and SQL knowledge sections for question 4

Final:

- Prepared slides for the 'Tables in our Database' slide in the PowerPoint
- Created visuals for questions 1 and 2 in the PowerPoint
- Remade the problem rationale and the solution for question 10
- Compiled all our procedures and functions into one package
- Uploaded the SQL file with our procedures onto the project's GitHub repository.
- Revised the question and solution for Question 10
- Created a trigger to fire whenever a row is deleted from the Channel_Stats table
- Added the updated Question 10 to the package
- Uploaded the updated package to the GitHub Repository

Database Description:

The first table is the YoutuberInfo table. This contains information about a specific youtuber, for example Mr. Beast, such as their rank (world wide), rank in country, category (genre), uploads to their channel, country (where they're from), and channel type. This information is useful because we can analyze information regarding the specific Youtuber such as their in-country rank versus their worldwide rank.

The second table is the CountryStats table. This table contains a country id unique to each country, country name, and population of that country. The primary key for this table is country, since each country name is unique. This table was created for various applications in our Youtube content creator analysis such as comparing Youtuber income to population of a country.

The last and final table was the channe_stats table. This table contained information about a specific Youtube channel such as channel id, rank (in country), youtuber, subscribers, video views, lowest yearly earnings, highest yearly earnings, and country. This table contains one primary key: channel id and two foreign keys: youtuber (referencing the youtuberinfo table) and country (referencing the CountryStats table). This table was created to contain more information specifically about Youtube channels and can be used to analyze trends of income, rank, or videos based on a specific country or Youtuber.

The ERD (Figure 1) contains the relationship of all tables, with a 1 to 1 relationship with youtuberinfo and channel_stats tables and a 1 to many relationship with the countrystats and channel_stats table. Each table is also outlined in three charts below displaying the column name and datatype. A side note for all three tables: The ERD contains INTEGER where NUMBER should be. Visual Paradigm did not have this option for me when I created the ERD, so I substituted with INT datatype instead.

Countrystats	
Column Name	Datatype
country (PK)	Varchar2(255)
countryID	Number
population	Number

YoutuberInfo	
Column Name	Datatype
youtuber (PK)	Varchar2(255)
rank	Number
rank_in_country	Number
category	Varchar2(255)
uploads	Number
country	Varchar2(255)
channel_type	Varchar2(255)
created_date	Date

Channel_stats	
Column Name	Datatype
channel_id (PK)	Number
rank	Number
subscribers	Number
video_views	Number
lowest_yearly_earnings	Number
highest_yearly_earnings	Number
country (FK)	Varchar2(255)
youtuber (FK)	Varchar2(255)

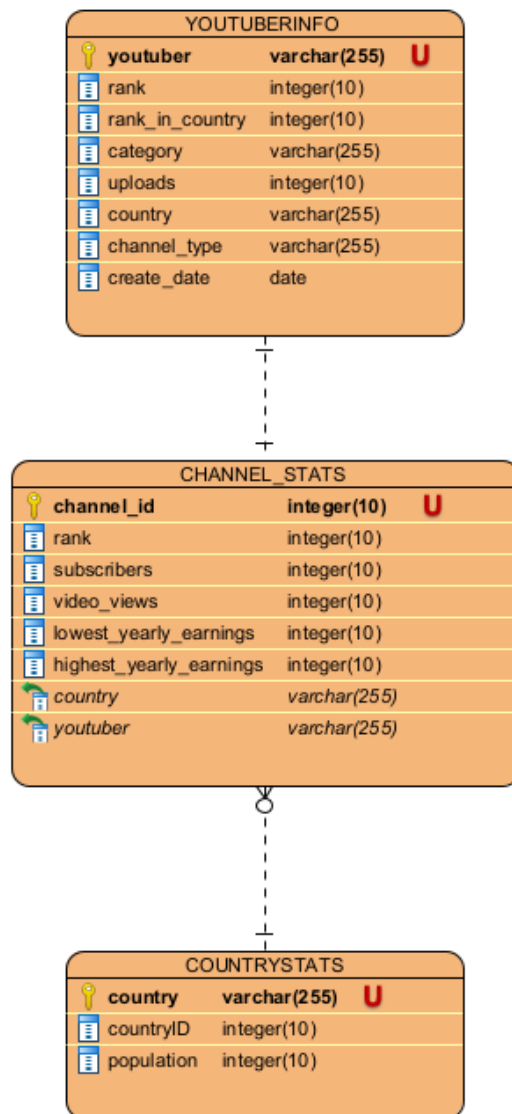


Figure 1: ERD of YoutuberInfo, channel_stats, and countrystats table

Questions:

Question 1:

Which channel categories or niches are found in the dataset?

This question is important for a new or aspiring youtube content creator because they may want to look at what categories there are for youtube. Based on this query, you can also look at the frequency of counts per category, which may give some insight on how popular one category is over another. A new creator may also consider how popular this category is, indicating it may also be difficult to start a channel in that category because of how many youtubers are already creating content. For example, while broad, Entertainment may not be a good category to choose from because there are over 241 counts in this category.

The solution created for this question was a procedure that counts the number of categories from the YoutuberInfo table. The results given are the counts of how many youtubers create content in this category per the data set used from Kaggle. Using our prior knowledge of PL/SQL procedures, we created a query that will use a for loop to select the categories from each row and create a list of the different categories along with the count of the times it occurs. Since it is a procedure, we run the code by execution. The DBMS outputs the category and the count in a list.

Solution:

```
CREATE OR REPLACE PROCEDURE GetCategoryCounts AS
BEGIN
  FOR category_rec IN (SELECT category, COUNT(*) AS category_count
                        FROM youtuberinfo
                        GROUP BY category
                        ORDER BY category_count DESC)
  LOOP
    DBMS_OUTPUT.PUT_LINE('Category: ' || category_rec.category);
    DBMS_OUTPUT.PUT_LINE('Count: ' || category_rec.category_count);
    DBMS_OUTPUT.PUT_LINE("");
  END LOOP;
END GetCategoryCounts;
/

EXEC GetCategoryCounts;
```

Results:

```
Category: Entertainment
Count: 241
Category: Music
Count: 202
```

Category: People & Blogs
Count: 132
Category: Gaming
Count: 94
Category: Comedy
Count: 69
Category: Film & Animation
Count: 45
Category: Education
Count: 45
Category: Howto & Style
Count: 40
Category:
Count: 39
Category: News & Politics
Count: 26
Category: Science & Technology
Count: 17
Category: Shows
Count: 13
Category: Sports
Count: 11
Category: Pets & Animals
Count: 4
Category: Trailers
Count: 2
Category: Autos & Vehicles
Count: 2
Category: Nonprofits & Activism
Count: 2
Category: Movies
Count: 2
Category: Travel & Events
Count: 1

Question 2:

For each country, what is the most (and least) popular genre or category for channel content?

This question is important because as a content creator, growth can be achieved much faster if you know what topic and/or genre is most popular in your area or country at large. The categories provide information regarding the preferences for the general viewer. Listing the categories for a specified country will allow a new content creator to specifically cater to a greater audience. While there are some common categories with multiple countries, it is still beneficial information to gauge and base the new youtube channel on those targeted audiences.

For this solution we created a procedure called FindPopularGenres with a loop to sort through the YoutuberInfo table and find the most and least popular genre based on those youtubers in the data set used from Kaggle. From our previous knowledge of PL/SQL Procedures, to create two variables, most_popular_category and least_popular_category, to store the data found from the table query. The program will loop through each distinct country to find the most and least popular genre. The solution also gives a DBMS output that displays the country and the two created variables in a column, separating each country's data with dashes.

Solution:

```
CREATE OR REPLACE PROCEDURE FindPopularGenres AS
BEGIN
  FOR country_rec IN (SELECT DISTINCT country FROM YOUTUBERINFO)
  LOOP

    DECLARE
      most_popular_category VARCHAR2(255);
      least_popular_category VARCHAR2(255);
    BEGIN

      SELECT category
      INTO most_popular_category
      FROM YOUTUBERINFO
      WHERE Country = country_rec.Country
      ORDER BY uploads DESC
      FETCH FIRST 1 ROWS ONLY;

      SELECT category
      INTO least_popular_category
      FROM YOUTUBERINFO
      WHERE country = country_rec.country
      ORDER BY uploads ASC
      FETCH FIRST 1 ROWS ONLY;
```

```

        DBMS_OUTPUT.PUT_LINE('Country: ' || country_rec.Country);
        DBMS_OUTPUT.PUT_LINE('Most Popular Category: ' || most_popular_category);
        DBMS_OUTPUT.PUT_LINE('Least Popular Category: ' || least_popular_category);
        DBMS_OUTPUT.PUT_LINE('-----');
    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            DBMS_OUTPUT.PUT_LINE('No data found for Country: ' || country_rec.Country);
            DBMS_OUTPUT.PUT_LINE('-----');
    END;
END LOOP;
END FindPopularGenres;

EXECUTE FINDPOPULARGENRES;

```

Results:

Country: United States
 Most Popular Category: Nonprofits & Activism
 Least Popular Category: Film & Animation

Country: Indonesia
 Most Popular Category: News & Politics
 Least Popular Category: Entertainment

Country: Thailand
 Most Popular Category: News & Politics
 Least Popular Category: Music

Country: Saudi Arabia
 Most Popular Category: Gaming
 Least Popular Category: Entertainment

Country: Bangladesh
 Most Popular Category: News & Politics
 Least Popular Category: News & Politics

Country: Finland
 Most Popular Category: Gaming
 Least Popular Category: Gaming

Country: Brazil
 Most Popular Category: Entertainment
 Least Popular Category: Music

Country: Argentina

Most Popular Category: Gaming

Least Popular Category: Music

Country: South Korea

Most Popular Category: Entertainment

Least Popular Category: Music

Country: Malaysia

Most Popular Category: Film & Animation

Least Popular Category: Film & Animation

Country: Morocco

Most Popular Category: Music

Least Popular Category: Music

Country: Russia

Most Popular Category: Gaming

Least Popular Category: People & Blogs

Country: Spain

Most Popular Category: Gaming

Least Popular Category: Entertainment

Country: Iraq

Most Popular Category: Music

Least Popular Category: Comedy

Country: Japan

Most Popular Category: Entertainment

Least Popular Category: Entertainment

Country: Barbados

Most Popular Category: Entertainment

Least Popular Category: Entertainment

Country: Venezuela

Most Popular Category: People & Blogs

Least Popular Category: People & Blogs

Country: Netherlands

Most Popular Category: Music

Least Popular Category: Howto & Style

Country: Singapore
Most Popular Category: Entertainment
Least Popular Category: People & Blogs

Country: Italy
Most Popular Category: Entertainment
Least Popular Category: Entertainment

Country: Egypt
Most Popular Category: Howto & Style
Least Popular Category: People & Blogs

Country: Chile
Most Popular Category: Gaming
Least Popular Category: Gaming

Country: Germany
Most Popular Category: Entertainment
Least Popular Category: Comedy

Country: Latvia
Most Popular Category: Comedy
Least Popular Category: Comedy

Country: France
Most Popular Category: Gaming
Least Popular Category: People & Blogs

Country: Cuba
Most Popular Category: Gaming
Least Popular Category: Gaming

Country: Peru
Most Popular Category: Entertainment
Least Popular Category: Entertainment

Country: Samoa
Most Popular Category: Music
Least Popular Category: Music

Country: Mexico
Most Popular Category: People & Blogs
Least Popular Category: Comedy

No data found for Country:

Country: Afghanistan

Most Popular Category: Music

Least Popular Category: Music

Country: Ukraine

Most Popular Category: News & Politics

Least Popular Category: Entertainment

Country: Vietnam

Most Popular Category: Music

Least Popular Category: Entertainment

Country: El Salvador

Most Popular Category: Gaming

Least Popular Category: Gaming

Country: Pakistan

Most Popular Category: News & Politics

Least Popular Category:

Country: Australia

Most Popular Category: Gaming

Least Popular Category: Gaming

Country: Kuwait

Most Popular Category: Gaming

Least Popular Category: Gaming

Country: Philippines

Most Popular Category: News & Politics

Least Popular Category:

Country: Sweden

Most Popular Category:

Least Popular Category: Gaming

Country: Canada

Most Popular Category: Music

Least Popular Category: Gaming

Country: China

Most Popular Category: Howto & Style

Least Popular Category: Howto & Style

Country: Jordan

Most Popular Category: Entertainment

Least Popular Category: Music

Country: Andorra

Most Popular Category: Howto & Style

Least Popular Category: Howto & Style

Country: Ecuador

Most Popular Category: People & Blogs

Least Popular Category: Entertainment

Country: United Arab Emirates

Most Popular Category: People & Blogs

Least Popular Category: Gaming

Country: India

Most Popular Category: People & Blogs

Least Popular Category: Entertainment

Country: United Kingdom

Most Popular Category: News & Politics

Least Popular Category: Howto & Style

Country: Colombia

Most Popular Category: Music

Least Popular Category: Music

Country: Turkey

Most Popular Category: Music

Least Popular Category: Entertainment

Country: Switzerland

Most Popular Category: Sports

Least Popular Category: Sports

Question 3:

What are the top-ranked YouTubers for various countries, highlighting their respective categories or genres, that contribute to their popularity?

The question allows a potential content creator to understand a bit more about which categories are most popular in a country. Also, we can understand more based on the top ranked YouTubers. The new creator could find out who the top creators are and do further research such as watching their videos. Another unique feature of this question is that the content creator could specifically look for their country or target their audience in a country who may prefer the category that the new content creator makes.

We used a procedure called “topRanked” to list the YouTuber name, the country, and the channel type from the channel_stats table. This data then retrieves the rows where the rank_in_country attribute is equal to 1. It then loops through the dataset until no more rows are detected, then the loop ends. The results then list the youtuber, their country, and their channel type in a comfortably formatted manner

Solution:

```
create or replace procedure topRanked
as
begin
    for current_youtuber in (
        select channel_stats.youtuber, youtuberinfo.country, channel_type
        from channel_stats
        inner join youtuberinfo
        on channel_stats.youtuber = youtuberinfo.youtuber
        where rank_in_country = '1') loop
        dbms_output.put_line('Youtuber: ' || RPAD(current_youtuber.youtuber, 50) || ' Country: ' ||
RPAD(current_youtuber.country, 30) || ' Channel Type: ' || RPAD(current_youtuber.channel_type, 30));
    end loop;
end topRanked;
/
```

EXEC topRanked;

Results:

Youtuber: yyyyyyyy yyyyyyyy yyyyyyyy toyoraljanahtv	Country: Jordan	Channel Type: Music
Youtuber: Spinnin' Records	Country: Netherlands	Channel Type: Music
Youtuber: Bounce Patrol - Kids Songs	Country: Australia	Channel Type: Music
Youtuber: PANDA BOI	Country: Italy	Channel Type: Entertainment
Youtuber: Tsuriki Show	Country: Germany	Channel Type: Comedy
Youtuber: mmoshaya	Country: Saudi Arabia	Channel Type: Entertainment
Youtuber: SQUEEZIE	Country: France	Channel Type: Entertainment
Youtuber: Like Nastya VNM	Country: Vietnam	Channel Type: Entertainment
Youtuber: Les' Copaque Production	Country: Malaysia	Channel Type: Entertainment
Youtuber: yyyyyyyy Liziqi	Country: China	Channel Type: Howto
Youtuber: yyyyyyyy - Al-Remas	Country: Iraq	Channel Type: Music
Youtuber: LEGO	Country: Singapore	Channel Type: Entertainment
Youtuber: yyyyyyyy yyyyyyyy yyyyy 5 yyyyyyyy	Country: Egypt	Channel Type: Howto

Youtuber: Doc Tops	Country: Ecuador	Channel Type: Entertainment
Youtuber: Saad Lamjarred $i_k/2i_k/2i_k/2i_k/2i_k$	Country: Morocco	Channel Type: Music
Youtuber: Drawblogs	Country: Peru	Channel Type: Entertainment
Youtuber: Avicii	Country: Sweden	Channel Type: Music
Youtuber: SlivkiShow	Country: Ukraine	Channel Type: Entertainment
Youtuber: dednahype	Country: Latvia	Channel Type: Comedy
Youtuber: FIFA	Country: Switzerland	Channel Type: Sports
Youtuber: T-Series	Country: India	Channel Type: Music
Youtuber: MrBeast	Country: United States	Channel Type: Entertainment
Youtuber: PewDiePie	Country: Japan	Channel Type: Entertainment
Youtuber: BLACKPINK	Country: South Korea	Channel Type: Music
Youtuber: Justin Bieber	Country: Canada	Channel Type: Music
Youtuber: Canal KondZilla	Country: Brazil	Channel Type: Music
Youtuber: El Reino Infantil	Country: Argentina	Channel Type: Music
Youtuber: Ed Sheeran	Country: United Kingdom	Channel Type: Music
Youtuber: JuegaGerman	Country: Chile	Channel Type: Games
Youtuber: Get Movies	Country: Russia	Channel Type: Film
Youtuber: Fernanfloo	Country: El Salvador	Channel Type: Games
Youtuber: HAR PAL GEO	Country: Pakistan	Channel Type: Entertainment
Youtuber: ABS-CBN Entertainment	Country: Philippines	Channel Type: Entertainment
Youtuber: Shakira	Country: Colombia	Channel Type: Howto
Youtuber: Rihanna	Country: Barbados	Channel Type: Music
Youtuber: shfa2 - $i_k/2i_k/2$	Country: United Arab Emirates	Channel Type: People
Youtuber: Mikecrack	Country: Spain	Channel Type: Games
Youtuber: WorkpointOfficial	Country: Thailand	Channel Type: Entertainment
Youtuber: PowerKids TV	Country: Channel Type: Film	
Youtuber: Jess No Limit	Country: Indonesia	Channel Type: Entertainment
Youtuber: BETER Bi $i_k/2i_k/2$	Country: Turkey	Channel Type: Games
Youtuber: AboFlah	Country: Kuwait	Channel Type: Entertainment
Youtuber: Brawl Stars	Country: Finland	Channel Type: Games

Question 4:

How do the average earnings of top YouTubers vary by country?

In order for a YouTuber to increase their income, they may want to emulate the content of the top earners on the site and, more importantly, the YouTuber's country. The average earnings data allows a content creator to analyze their potential success depending on the country they are from. The analysis being performed on the top YouTubers highlights creators who may be sought after by new content creators due to their success in their category and country. This information is important as well because content creators may be wanting to move countries in the near future and their channel could potentially not be as successful in another country.

The solution created for this question uses our previous knowledge of Procedures, Subqueries, DBMS Output lines, and variables. This procedure finds the average earnings of the top n youtubers in each country. If the procedure is executed without the number parameter, it will show the top 3 YouTubers by default. One parameter is required, the country name. Based on this country name, the procedure will find a list of the top YouTubers from that country. This procedure uses our knowledge of user defined variables, input parameters, subqueries, inner joins, loops, and basic arithmetic to compute a YouTubers ranking.

Solution:

```
create or replace procedure top5EachCountry(country_choice in varChar2, numrows in number)
as
```

```
    earnings number;
    lowest number;
    highest number;
begin
    for current_youtuber in(
        select youtuberinfo.youtuber, rank_in_country, youtuberinfo.country,
        ((channel_stats.lowest_yearly_earnings + channel_stats.highest_yearly_earnings)/2),
        channel_stats.lowest_yearly_earnings, channel_stats.highest_yearly_earnings
        from youtuberinfo
        inner join channel_stats
        on youtuberinfo.youtuber = channel_stats.youtuber
        where rank_in_country <= numrows+1 AND youtuberinfo.country is not null AND
        youtuberinfo.country = country_choice
        order by channel_stats.country, rank_in_country) loop
        lowest := current_youtuber.lowest_yearly_earnings;
        highest := current_youtuber.highest_yearly_earnings;
        earnings := (lowest + highest)/2;
        dbms_output.put_line('Youtuber: ' || RPAD(current_youtuber.youtuber, 50) || ' Country: ' ||
        RPAD(current_youtuber.country, 30) || ' Channel Rank: ' || RPAD(earnings, 30));
    end loop;
```

```
end top5EachCountry;  
/  

```

```
exec top5EachCountry('India', 5);
```

Results:

Youtuber: T-Series	Country: India	Channel Rank: 57600000
Youtuber: SET India	Country: India	Channel Rank: 46500000
Youtuber: Zee Music Company	Country: India	Channel Rank: 20500000
Youtuber: Sony SAB	Country: India	Channel Rank: 42300000
Youtuber: Zee TV	Country: India	Channel Rank: 43500000

Question 5:

What is the average earnings for YouTubers per content category?

Understanding the average earnings per content category will help inform youtubers about which content categories are most profitable. This will likely drive certain categories to be really popular when they go viral. This will also show which categories may go under represented in the algorithm, and have room for growth. This question can provide insight on what average earnings are for Youtubers for categories and what new content creators could potentially use in order to determine what their channel content may be.

This procedure estimates average earnings for each YouTube category by adding all the category's lowest yearly earnings and the category's highest yearly earnings then dividing that number by the number of YouTubers in that category. Since this information is in different tables an inner join statement was used. This procedure uses group by functions to perform the calculations on each category. The result is grouped by category and ordered by average earnings in descending order. This procedure uses a cursor and a loop to display the results in the DBMS Output window.

Solution:

CREATE or REPLACE procedure CategoryAvgEarnings

as

CURSOR All_Categories is

select Category, sum(Lowest_yearly_earnings)+sum(highest_yearly_earnings)/(2*count(*)) as

AvgEarnings, count(*) as NumInCategory

from Channel_Stats STATS inner join YouTuberInfo INFO

on STATS.Youtuber = INFO.YouTuber

group by Category

order by AvgEarnings desc;

begin

DBMS_OUTPUT.PUT(RPAD('Category', 25, ' '));

DBMS_OUTPUT.PUT(LPAD('AvgEarnings', 15, ' '));

DBMS_OUTPUT.PUT_LINE(RPAD(' NumInCategory', 15, ' '));

DBMS_OUTPUT.PUT(RPAD('-', 24, '-'));

DBMS_OUTPUT.PUT(RPAD(' ', 16, '-'));

DBMS_OUTPUT.PUT_LINE(RPAD(' ', 15, '-'));

for current_category in All_Categories LOOP

DBMS_OUTPUT.PUT(RPAD(nvl(current_category.Category, 'N/A'), 20, ' '));

DBMS_OUTPUT.PUT(LPAD(to_char(current_category.AvgEarnings, '\$999,999,999,999'),20,' '));

DBMS_OUTPUT.PUT_LINE(LPAD(current_category.NumInCategory, 12, ' '));

end LOOP;

end CategoryAvgEarnings;

/

execute CategoryAvgEarnings;

Results:

Category	AvgEarnings	NumInCategory
Shows	\$12,955,381	13
N/A	\$7,402,073	39
Autos & Vehicles	\$6,994,875	2
Sports	\$5,109,023	11
Pets & Animals	\$5,091,696	4
Film & Animation	\$4,776,213	45
Education	\$4,421,939	45
Comedy	\$4,269,795	69
News & Politics	\$4,095,717	26
Entertainment	\$3,975,413	241
Music	\$3,529,024	202
People & Blogs	\$3,484,644	132
Movies	\$2,895,525	2
Nonprofits & Activism	\$2,496,375	2
Trailers	\$2,310,700	2
Gaming	\$1,727,601	94
Science & Technology	\$1,283,507	17
Howto & Style	\$1,230,536	40
Travel & Events	\$796,500	1

Question 6:

What is the gross income of the most popular genres in each country based on population?

This question is important because a potential Youtube content creator could make a comparison of gross income in each country based on popular genres. It is important to analyze this data to look at potential income for new channels created in a country. New content creators can also look how much income they would be earning in a country based on the population. Some countries like Kuwait average \$1.80 per person in a country whereas Afghanistan is showing \$0 per person (this is actually false, but the income made per capita is such a large disparity that it's showing as 0 in the results). This information is important to analyze when starting a Youtube channel because it's important to understand what the most popular categories are and what income a content creator would make based on the population in the country. A country with a much smaller population could potentially show better average earnings per population, but the channel overall could make less money than a channel in another country.

The solution created for this question was using our previous knowledge of Procedures, Inner Joins, Subqueries, and DBMS Output lines. The procedure created used some code from Question 2 in order to find the most popular category in each country. Once each category is found, we need to find the income per capita by taking the sum of the highest yearly earnings and dividing it by the sum of the population for each country. The results are displayed in alphabetical order of each country with up to 7 decimal points on the capita variable in order to get the best data possible.

Solution:

```
CREATE OR REPLACE PROCEDURE IncomePerCapita AS
    average_income_capita NUMBER;
    most_popular_category VARCHAR2(255);
BEGIN
    FOR country_rec IN (SELECT DISTINCT Country FROM YOUTUBERINFO ORDER BY country)
    LOOP
        BEGIN
            SELECT category
            INTO most_popular_category
            FROM YOUTUBERINFO
            WHERE Country = country_rec.country
            ORDER BY uploads DESC, category ASC
            FETCH FIRST 1 ROWS ONLY;

            SELECT (SUM(channel_stats.highest_yearly_earnings)/SUM(countrystats.population))
            INTO average_income_capita
            FROM YOUTUBERINFO
            INNER JOIN COUNTRYSTATS ON youtuberinfo.country = countrystats.country
            INNER JOIN CHANNEL_STATS ON youtuberinfo.youtuber = channel_stats.youtuber
            WHERE youtuberinfo.country = country_rec.country AND youtuberinfo.category =
            most_popular_category;
```



```

DBMS_OUTPUT.PUT_LINE('Country: ' || country_rec.Country);
DBMS_OUTPUT.PUT_LINE('Most Popular Category: ' || most_popular_category);
DBMS_OUTPUT.PUT_LINE('Average Income Per Capita: ' || to_char(average_income_capita,
'$99999.9999999'));
DBMS_OUTPUT.PUT_LINE('-----');
EXCEPTION
    WHEN NO_DATA_FOUND THEN
        DBMS_OUTPUT.PUT_LINE('No data found for Country: ' || country_rec.Country);
        DBMS_OUTPUT.PUT_LINE('-----');
    WHEN ZERO_DIVIDE THEN
        DBMS_OUTPUT.PUT_LINE('No population or earnings were found for this country: ' ||
country_rec.Country);
        DBMS_OUTPUT.PUT_LINE('-----');

END;
END LOOP;
END IncomePerCapita;

EXECUTE IncomePerCapita;

```

Results:

```

Country: Afghanistan
Most Popular Category: Music
Average Income Per Capita:    $.0000000
-----
Country: Andorra
Most Popular Category: Howto & Style
Average Income Per Capita:    $.0000506
-----
Country: Argentina
Most Popular Category: Gaming
Average Income Per Capita:    $.0689828
-----
Country: Australia
Most Popular Category: Gaming
Average Income Per Capita:    $.0297543
-----
Country: Bangladesh
Most Popular Category: News & Politics
Average Income Per Capita:    $.0000000
-----
Country: Barbados
Most Popular Category: Entertainment

```

Average Income Per Capita: \$30.6593502

Country: Brazil

Most Popular Category: Entertainment

Average Income Per Capita: \$.0134927

Country: Canada

Most Popular Category: Music

Average Income Per Capita: \$.1789577

Country: Chile

Most Popular Category: Gaming

Average Income Per Capita: \$.1407061

Country: China

Most Popular Category: Howto & Style

Average Income Per Capita: \$.0007870

Country: Colombia

Most Popular Category: Music

Average Income Per Capita: \$.1943946

Country: Cuba

Most Popular Category: Gaming

Average Income Per Capita: \$.0000004

Country: Ecuador

Most Popular Category: People & Blogs

Average Income Per Capita: \$.1726752

Country: Egypt

Most Popular Category: Howto & Style

Average Income Per Capita: \$.0159381

Country: El Salvador

Most Popular Category: Gaming

Average Income Per Capita: \$.2479254

Country: Finland

Most Popular Category: Gaming

Average Income Per Capita: \$.1771095

Country: France

Most Popular Category: Gaming

Average Income Per Capita: \$.0342977

Country: Germany

Most Popular Category: Entertainment

Average Income Per Capita: \$.3963538

Country: India

Most Popular Category: People & Blogs

Average Income Per Capita: \$.0086602

Country: Indonesia

Most Popular Category: News & Politics

Average Income Per Capita: \$.0199849

Country: Iraq

Most Popular Category: Music

Average Income Per Capita: \$.1373704

Country: Italy

Most Popular Category: Entertainment

Average Income Per Capita: \$.4991924

Country: Japan

Most Popular Category: Entertainment

Average Income Per Capita: \$.1814201

Country: Jordan

Most Popular Category: Entertainment

Average Income Per Capita: \$.4850672

Country: Kuwait

Most Popular Category: Gaming

Average Income Per Capita: \$1.8064773

Country: Latvia

Most Popular Category: Comedy

Average Income Per Capita: \$31.2632496

Country: Malaysia

Most Popular Category: Film & Animation

Average Income Per Capita: \$.1756690

Country: Mexico

Most Popular Category: People & Blogs

Average Income Per Capita: \$.0162505

Country: Morocco

Most Popular Category: Music

Average Income Per Capita: \$.0487665

Country: Netherlands

Most Popular Category: Music

Average Income Per Capita: \$.2769308

Country: Pakistan

Most Popular Category: News & Politics

Average Income Per Capita: \$.0221642

Country: Peru

Most Popular Category: Entertainment

Average Income Per Capita: \$.0014795

Country: Philippines

Most Popular Category: News & Politics

Average Income Per Capita: \$.0678280

Country: Russia

Most Popular Category: Gaming

Average Income Per Capita: \$.0314000

Country: Samoa

Most Popular Category: Music

Average Income Per Capita: \$.0000889

Country: Saudi Arabia

Most Popular Category: Gaming

Average Income Per Capita: \$.0802486

Country: Singapore

Most Popular Category: Entertainment

Average Income Per Capita: \$.9818414

Country: South Korea

Most Popular Category: Entertainment

Average Income Per Capita: \$.0631311

Country: Spain

Most Popular Category: Gaming

Average Income Per Capita: \$.0669813

Country: Sweden

Most Popular Category:

Average Income Per Capita:

Country: Switzerland

Most Popular Category: Sports

Average Income Per Capita: \$.3265370

Country: Thailand

Most Popular Category: News & Politics

Average Income Per Capita: \$.1551154

Country: Turkey

Most Popular Category: Music

Average Income Per Capita: \$.2445175

Country: Ukraine

Most Popular Category: News & Politics

Average Income Per Capita: \$.4010350

Country: United Arab Emirates

Most Popular Category: People & Blogs

Average Income Per Capita: \$.8085540

Country: United Kingdom

Most Popular Category: News & Politics

Average Income Per Capita: \$.0478795

Country: United States

Most Popular Category: Nonprofits & Activism

Average Income Per Capita: \$.0067024

Country: Venezuela

Most Popular Category: People & Blogs

Average Income Per Capita: \$.0000060

Country: Vietnam

Most Popular Category: Music

Average Income Per Capita: \$.1275112

No data found for Country:

Question 7:

What is the gross income of the least popular genres in each country?

The inquiry involves comparing the gross income of the least popular genres on YouTube in each country which provides insightful data for creators. It establishes a baseline for the minimum exposure and engagement creators can expect, which helps for content planning and expectations. Pairing this information with earnings from the least popular, creators can use this information to identify areas or categories for growth. This information is also important because a new creator can analyze both the least and most popular genres and what type of income can be expected.

The solution created for this question was using our previous knowledge of Procedures, Inner Joins, Subqueries, and DBMS Output lines. The procedure created used most of the code from Question 6 in order to find the least popular category in each country. Once each category is found, we need to find the income per capita by taking the sum of the lowest yearly earnings and dividing it by the sum of the population for each country. The results are displayed in alphabetical order of each country with up to 7 decimal points on the capita variable in order to get the best data possible.

Solution:

```
CREATE OR REPLACE PROCEDURE LeastIncomePerCapita AS
    average_income_capita NUMBER;
    least_popular_category VARCHAR2(255);
BEGIN
    FOR country_rec IN (SELECT DISTINCT Country FROM YOUTUBERINFO ORDER BY country)
    LOOP
        BEGIN
            SELECT category
            INTO least_popular_category
            FROM YOUTUBERINFO
            WHERE Country = country_rec.country
            ORDER BY uploads ASC, category DESC
            FETCH FIRST 1 ROWS ONLY;

            SELECT (SUM(channel_stats.lowest_yearly_earnings)/SUM(countrystats.population))
            INTO average_income_capita
            FROM YOUTUBERINFO
            INNER JOIN COUNTRYSTATS ON youtuberinfo.country = countrystats.country
            INNER JOIN CHANNEL_STATS ON youtuberinfo.youtuber = channel_stats.youtuber
            WHERE youtuberinfo.country = country_rec.country AND youtuberinfo.category =
least_popular_category;

            DBMS_OUTPUT.PUT_LINE('Country: ' || country_rec.Country);
            DBMS_OUTPUT.PUT_LINE('Least Popular Category: ' || least_popular_category);
```

```

        DBMS_OUTPUT.PUT_LINE('Average Income Per Capita: ' || to_char(average_income_capita,
'$99999.9999999'));
        DBMS_OUTPUT.PUT_LINE('-----');
    EXCEPTION
        WHEN NO_DATA_FOUND THEN
            DBMS_OUTPUT.PUT_LINE('No data found for Country: ' || country_rec.Country);
            DBMS_OUTPUT.PUT_LINE('-----');
        WHEN ZERO_DIVIDE THEN
            DBMS_OUTPUT.PUT_LINE('No population or earnings were found for this country: ' ||
country_rec.Country);
            DBMS_OUTPUT.PUT_LINE('-----');

    END;
END LOOP;
END LeastIncomePerCapita;
/

```

exec LeastIncomePerCapita;

Solution:

Country: Afghanistan

Least Popular Category: Music

Average Income Per Capita: \$.0000000

Country: Andorra

Least Popular Category: Howto & Style

Average Income Per Capita: \$.0000033

Country: Argentina

Least Popular Category: Music

Average Income Per Capita: \$.0162605

Country: Australia

Least Popular Category: Gaming

Average Income Per Capita: \$.0018292

Country: Bangladesh

Least Popular Category: News & Politics

Average Income Per Capita: \$.0000000

Country: Barbados

Least Popular Category: Entertainment

Average Income Per Capita: \$1.9120286

Country: Brazil
Least Popular Category: Music
Average Income Per Capita: \$.0026448

Country: Canada
Least Popular Category: Gaming
Average Income Per Capita: \$.0018835

Country: Chile
Least Popular Category: Gaming
Average Income Per Capita: \$.0087906

Country: China
Least Popular Category: Howto & Style
Average Income Per Capita: \$.0000480

Country: Colombia
Least Popular Category: Music
Average Income Per Capita: \$.0121609

Country: Cuba
Least Popular Category: Gaming
Average Income Per Capita: \$.0000000

Country: Ecuador
Least Popular Category: Entertainment
Average Income Per Capita: \$.0028319

Country: Egypt
Least Popular Category: People & Blogs
Average Income Per Capita: \$.0013767

Country: El Salvador
Least Popular Category: Gaming
Average Income Per Capita: \$.0157278

Country: Finland
Least Popular Category: Gaming
Average Income Per Capita: \$.0110682

Country: France
Least Popular Category: People & Blogs
Average Income Per Capita: \$.0000000

Country: Germany
Least Popular Category: Comedy
Average Income Per Capita: \$.0000000

Country: India
Least Popular Category: Entertainment
Average Income Per Capita: \$.0005415

Country: Indonesia
Least Popular Category: Entertainment
Average Income Per Capita: \$.0009474

Country: Iraq
Least Popular Category: Comedy
Average Income Per Capita: \$.0026965

Country: Italy
Least Popular Category: Entertainment
Average Income Per Capita: \$.0314242

Country: Japan
Least Popular Category: Entertainment
Average Income Per Capita: \$.0113553

Country: Jordan
Least Popular Category: Music
Average Income Per Capita: \$.0502094

Country: Kuwait
Least Popular Category: Gaming
Average Income Per Capita: \$.1125958

Country: Latvia
Least Popular Category: Comedy
Average Income Per Capita: \$1.9343482

Country: Malaysia
Least Popular Category: Film & Animation
Average Income Per Capita: \$.0108853

Country: Mexico
Least Popular Category: Entertainment
Average Income Per Capita: \$.0014314

Country: Morocco
Least Popular Category: Music
Average Income Per Capita: \$.0030533

Country: Netherlands
Least Popular Category: Howto & Style
Average Income Per Capita: \$.0062194

Country: Pakistan
Least Popular Category:
Average Income Per Capita:

Country: Peru
Least Popular Category: Entertainment
Average Income Per Capita: \$.0000923

Country: Philippines
Least Popular Category:
Average Income Per Capita:

Country: Russia
Least Popular Category: People & Blogs
Average Income Per Capita: \$.0032364

Country: Samoa
Least Popular Category: Music
Average Income Per Capita: \$.0000049

Country: Saudi Arabia
Least Popular Category: Entertainment
Average Income Per Capita: \$.0002150

Country: Singapore
Least Popular Category: People & Blogs
Average Income Per Capita: \$.0000000

Country: South Korea
Least Popular Category: Music
Average Income Per Capita: \$.0107613

Country: Spain
Least Popular Category: Entertainment
Average Income Per Capita: \$.0002245

Country: Sweden
Least Popular Category: Gaming
Average Income Per Capita: \$.0011278

Country: Switzerland
Least Popular Category: Sports
Average Income Per Capita: \$.0205952

Country: Thailand
Least Popular Category: Music
Average Income Per Capita: \$.0037552

Country: Turkey
Least Popular Category: Entertainment
Average Income Per Capita: \$.0020718

Country: Ukraine
Least Popular Category: Entertainment
Average Income Per Capita: \$.0023274

Country: United Arab Emirates
Least Popular Category: Gaming
Average Income Per Capita: \$.0246148

Country: United Kingdom
Least Popular Category: Howto & Style
Average Income Per Capita: \$.0000000

Country: United States
Least Popular Category: Science & Technology
Average Income Per Capita: \$.0003553

Country: Venezuela
Least Popular Category: People & Blogs
Average Income Per Capita: \$.0000004

Country: Vietnam
Least Popular Category: Entertainment
Average Income Per Capita: \$.0026269

No data found for Country:

Question 8:

What is the impact of video frequency (number of uploads) and the number of subscribers for YouTubers in specific categories?

Evaluating the number of uploads for a YouTube channel would help to provide insight to how frequently a content creator should upload videos in order to gain popularity and subscribers. Comparing the number of uploads in a channel to the number of subscribers will allow us to see the correlations or insights to what a reasonable amount of uploads for a growing channel should be. The relationship between video uploads and subscriber count offers valuable insights for creators who are trying to build a loyal audience. This information can offer a guide to content creators determining their posting schedule to foster a more consistent subscriber count and therefore channel success.

Our solution utilized a procedure called “ContentRatio” where we joined the YouTuberInfo table and the channel_stats table. We used an inner join to select the “category” column for all of the rows. Then, we also added a calculation where the number of uploads divided by the number of subscribers in order to create a solution to quantify the “influence” of a channel. The “influence” is based on how many videos have been published along with the number of subscribers. The For Loop iterates through the data, calculating the ratio for each YouTube channel and outputs the YouTuber name and the calculated ratio.

Solution:

```
CREATE OR REPLACE PROCEDURE contentratio (
    usergenre IN VARCHAR2
) AS
BEGIN
    FOR current_youtuber IN (
        SELECT
            youtuberinfo.youtuber,
            category,
            ( uploads / subscribers ) AS ratio
        FROM
            youtuberinfo
            INNER JOIN channel_stats ON youtuberinfo.youtuber = channel_stats.youtuber
        WHERE
            category = usergenre
    ) LOOP
        dbms_output.put_line('Youtuber: '
                               || rpad(current_youtuber.youtuber, 50)
                               || 'Ratio: '
                               || rpad(round(current_youtuber.ratio, 10), 50));
    END LOOP;
END contentratio;

exec contentratio('Gaming');
```

Results:

Youtuber: FFUNTV	Ratio: 747.6453835714
Youtuber: Mobile Legends: Bang Bang	Ratio: 100.234291039
Youtuber: LOKESH GAMER	Ratio: 107.1946441176
Youtuber: Makiman131	Ratio: 280.5321947682
Youtuber: EdisonPts	Ratio: 441.6230368212
Youtuber: MoreAliA	Ratio: 290.1618032667
Youtuber: League of Legends	Ratio: 477.3167313333
Youtuber: PlayStation	Ratio: 316.095628
Youtuber: Kwebbelkop	Ratio: 459.2869537333
Youtuber: BigSchool	Ratio: 666.4088710667
Youtuber: TazerCraft	Ratio: 399.7445368456
Youtuber: Lachlan	Ratio: 356.0175293919
Youtuber: Jesser	Ratio: 246.8189182877
Youtuber: PrestonPlayz	Ratio: 394.9758230822
Youtuber: Gyan Gamingi½	Ratio: 154.4529090278
Youtuber: NOBRU	Ratio: 24.4280086111
Youtuber: TommyInnit	Ratio: 146.8162779577
Youtuber: E-MasterSensei	Ratio: 276.0957430986
Youtuber: PewDiePie	Ratio: 261.7841842072
Youtuber: JuegaGerman	Ratio: 304.1935611019
Youtuber: A4	Ratio: 495.3915942333
Youtuber: Fernanfloo	Ratio: 223.9347417137
Youtuber: elrubiusOMG	Ratio: 183.4291254455
Youtuber: Mikecrack	Ratio: 412.2297103069
Youtuber: MrBeast Gaming	Ratio: 175.3831730471
Youtuber: Total Gaming	Ratio: 156.9594415254
Youtuber: Markiplier	Ratio: 576.645773267
Youtuber: Techno Gamerz	Ratio: 281.7005716279
Youtuber: VEGETTA777	Ratio: 456.5955385799
Youtuber: SSSniperWolf	Ratio: 697.1122972997
Youtuber: rezendeevil	Ratio: 406.9077806231
Youtuber: Dream	Ratio: 92.4295072871
Youtuber: AboFlah	Ratio: 148.2483258689
Youtuber: Frost Diamond	Ratio: 241.777207309
Youtuber: jacksepticeye	Ratio: 539.7550111628
Youtuber: DanTDM	Ratio: 708.6820259124
Youtuber: VanossGaming	Ratio: 602.3806913953
Youtuber: Preston	Ratio: 344.9585184167
Youtuber: Ninja	Ratio: 107.3337533333
Youtuber: FaZe Rug	Ratio: 314.4216089451
Youtuber: Jelly	Ratio: 628.8099805532
Youtuber: SSundee	Ratio: 614.8965924889

Youtuber: FGTeEV	Ratio: 1078.8940294619
Youtuber: invictor	Ratio: 391.1461266047
Youtuber: LazarBeam	Ratio: 427.7413296098
Youtuber: MiawAug	Ratio: 301.9130982178
Youtuber: AuthenticGames	Ratio: 443.7881264677
Youtuber: AS Gaming	Ratio: 145.460430102
Youtuber: Clash of Clans	Ratio: 202.1080835714
Youtuber: Ali-A	Ratio: 328.786271016
Youtuber: யய்யய்யய்ய யய்யய்யய்யய்ய யய்யய்யய்யய்ய Arab Games Networ	Ratio: 471.0352446237
Youtuber: Marmok	Ratio: 186.8982897838
Youtuber: IShowSpeed	Ratio: 85.0274884699
Youtuber: SQUEEZIE	Ratio: 551.5505570718
Youtuber: TheGrefg	Ratio: 355.8251131667
Youtuber: zbing z.	Ratio: 526.6576176136
Youtuber: The Game Theorists	Ratio: 213.2015489773
Youtuber: DeGoBooM	Ratio: 358.3070776136
Youtuber: IGN	Ratio: 920.4066599429
Youtuber: Aphmau	Ratio: 1020.8957748851
Youtuber: PopularMMOs	Ratio: 847.2765057558
Youtuber: Willyrex	Ratio: 292.098194593
Youtuber: Guava Juice	Ratio: 539.1124395266
Youtuber: CoryxKenshin	Ratio: 425.3272826946
Youtuber: Technoblade	Ratio: 101.6228560736
Youtuber: W2S	Ratio: 292.5380652761
Youtuber: JJ Olatunji	Ratio: 251.6476927778
Youtuber: Antrax	Ratio: 189.36705675
Youtuber: Enes Batur	Ratio: 611.6622044375
Youtuber: Lyna	Ratio: 410.963925283
Youtuber: Unspeakable	Ratio: 569.3312926415
Youtuber: Kuplinov ᵢᵒ¹⁄₂ᵢᵒ¹⁄₂ᵢᵒ	Ratio: 439.9057317949
Youtuber: AM3NIC	Ratio: 354.28448
Youtuber: யய்யய்யய்யய்யய்ய	Ratio: 551.4102222857
Youtuber: Jazzghost	Ratio: 408.1545153237
Youtuber: யய்யய்யய்ய/Atro	Ratio: 179.7795421739
Youtuber: Desi Gamers	Ratio: 155.8536670803
Youtuber: Acenix	Ratio: 156.0339717647
Youtuber: BUDI01 GAMING	Ratio: 87.5031444444
Youtuber: Typical Gamer	Ratio: 318.6356748148
Youtuber: H2ODelirious	Ratio: 325.1258370149
Youtuber: theRadBrad	Ratio: 454.8949446617
Youtuber: penguinz0	Ratio: 584.4769630827
Youtuber: BanderitaX	Ratio: 310.4698808271
Youtuber: AzzyLand	Ratio: 482.1288398496
Youtuber: Brawl Stars	Ratio: 154.2733634848

[illegible]

Question 9:

How much income is being generated per each viewer for the top Youtubers in each country?
(In other words, How much income does each viewer contribute to the content creator's income?)

This can give us insight on expected earning for each viewer and the effects of losing viewers and how much income loss would be generated. This can also help us estimate total earnings for each youtuber according to how many total video views their channel got each month. It will also show any correlation between channel size and income generated per view. This will also show what countries have the highest earning individuals compared to others. Based on this information, a new Youtube content creator could analyze and determine what genres would generate the most income for a potential channel based on income of other Youtubers.

The solution created for this question was using our previous knowledge of Procedures, Inner Joins, Subqueries, and DBMS Output lines. The procedure created used some code from Question 3 in order to find the first ranked Youtuber in each country. Once the highest ranked Youtuber is found, we need to find the income ratio by adding the highest and lowest yearly earnings, dividing by 2, and dividing by video views to find the capita per each video, The results are displayed with up to 7 decimal points on the capita in order to get the best data possible. This procedure iterates through a loop and performs math calculations based on the data available for each youtuber provided from the data set.

Solution:

```
CREATE OR REPLACE PROCEDURE toprankedratio AS
BEGIN
```

```
  FOR current_youtuber IN (
    SELECT
      channel_stats.youtuber,
      youtuberinfo.country,
      channel_type,
      ( ( highest_yearly_earnings + lowest_yearly_earnings ) / 2 ) / video_views AS ratio
    FROM
      channel_stats
      INNER JOIN youtuberinfo ON channel_stats.youtuber = youtuberinfo.youtuber
    WHERE
      rank_in_country = '1'
  ) LOOP
    dbms_output.put_line('Youtuber: '
      || rpad(current_youtuber.youtuber, 50)
      || '
Country: '
      || rpad(current_youtuber.country, 30)
      || '
Ratio: '
      || rpad(to_char(current_youtuber.ratio, '$999.9999999'), 30));
```


END LOOP;
END toprankedratio;

EXEC TOPRANKEDRATIO;

Results:

Youtuber: yyyyyyyy yyyyyyyyyyyyyyyy yyy 5 yyyyyyyyyyy

Country: Egypt

Ratio: \$.0001888

Youtuber: Doc Tops

Country: Ecuador

Ratio: \$.0001601

Youtuber: Saad Lamjarred | i₆¹/₂i₆¹/₂i₆¹/₂i₆¹/₂i₆

Country: Morocco

Ratio: \$.0002216

Youtuber: Drawblogs

Country: Peru

Ratio: \$.0000157

Youtuber: T-Series

Country: India

Ratio: \$.0002526

Youtuber: MrBeast

Country: United States

Ratio: \$.0012108

Youtuber: PewDiePie

Country: Japan

Ratio: \$.0000347

Youtuber: BLACKPINK

Country: South Korea

Ratio: \$.0003951

Youtuber: Justin Bieber

Country: Canada

Ratio: \$.0001475

Youtuber: Canal KondZilla

Country: Brazil

Ratio: \$.0000000

Youtuber: El Reino Infantil

Country: Argentina

Ratio: \$.0002724

Youtuber: Ed Sheeran

Country: United Kingdom

Ratio: \$.0001697

Youtuber: JuegaGerman

Country: Chile
Ratio: \$.0001162
Youtuber: Get Movies
Country: Russia
Ratio: \$.0002537
Youtuber: Fernanfloo
Country: El Salvador
Ratio: \$.0000824
Youtuber: HAR PAL GEO
Country: Pakistan
Ratio: \$.0008289
Youtuber: ABS-CBN Entertainment
Country: Philippines
Ratio: \$.0000898
Youtuber: Shakira
Country: Colombia
Ratio: \$.0003283
Youtuber: Rihanna
Country: Barbados
Ratio: \$.0002080
Youtuber: shfa2 - ï¿½ï¿½
Country: United Arab Emirates
Ratio: \$.0002647
Youtuber: Mikecrack
Country: Spain
Ratio: \$.0004185
Youtuber: WorkpointOfficial
Country: Thailand
Ratio: \$.0000926
Youtuber: PowerKids TV
Country:
Ratio: \$.0004287
Youtuber: Jess No Limit
Country: Indonesia
Ratio: \$.0035201
Youtuber: BETER Bï¿½ï¿½
Country: Turkey
Ratio: \$.0019447
Youtuber: AboFlah
Country: Kuwait
Ratio: \$.0008928
Youtuber: ÿÿÿÿÿÿ ÿÿÿÿÿÿ ÿÿÿÿÿÿÿÿ | toyoraljanahtv
Country: Jordan
Ratio: \$.0001074

Youtuber: Spinnin' Records
Country: Netherlands
Ratio: \$.0001301

Youtuber: Bounce Patrol - Kids Songs
Country: Australia
Ratio: \$.0001541

Youtuber: PANDA BOI
Country: Italy
Ratio: \$.0018156

Youtuber: Tsuriki Show
Country: Germany
Ratio: \$.0006128

Youtuber: mmoshaya
Country: Saudi Arabia
Ratio: \$.0001063

Youtuber: Avicii
Country: Sweden
Ratio: \$.0002013

Youtuber: SlivkiShow
Country: Ukraine
Ratio: \$.0001579

Youtuber: dednahype
Country: Latvia
Ratio: \$.0015177

Youtuber: FIFA
Country: Switzerland
Ratio: \$.0002692

Youtuber: SQUEEZIE
Country: France
Ratio: \$.0001224

Youtuber: Like Nastya VNM
Country: Vietnam
Ratio: \$.0002206

Youtuber: Les' Copaque Production
Country: Malaysia
Ratio: \$.0003341

Youtuber: ýýýýýýýý Liziqi
Country: China
Ratio: \$.0001960

Youtuber: ýýýýýýýýýýýýýýýý - Al-Remas
Country: Iraq
Ratio: \$.0002575

Youtuber: LEGO
Country: Singapore

Ratio: \$.0001450
Youtuber: Brawl Stars
Country: Finland
Ratio: \$.0002551

Question 10:

How much does a country's total income change from removing the top and bottom 10 YouTubers in a country? And which youtubers are in the new top/bottom 10 spots?

This question is important because knowing how much income is generated from just the top 10 and bottom 10 creators would help someone calculate a more realistic income expectation, based on the other creator's in the user's country. It would also help content creators to see which YouTubers are the most popular in their country, and could tailor their content to match a specific YouTuber's style, or they could keep running the procedure to find a YouTuber whose content is the most similar to what the user wants to create. With each run of the procedure, the user could see how the country's annual income is affected.

This procedure uses input parameters, cursors, stored variables, loops, DML, and database outputs to answer our question and display it to the user. It first stores the sum of every YouTubers' lowest yearly earnings from a user defined country into a variable. The procedure then opens a cursor and starts a loop to delete the top 10 YouTubers from that country. This delete will set off a trigger that prints out the name and rank of each youtuber that will be deleted from the entire database. The procedure then does the same thing for the bottom 10 YouTubers in that country. After that, the country's yearly earnings with the top and bottom 10 YouTubers are displayed, followed by the country's yearly earnings with those names removed. And then a new loop runs which uses the same cursor, but this time it will read and display new values.

Solution:

```
create or replace trigger YouTuber_Deleted
  before delete on Channel_Stats
  for each row
begin
  dbms_output.put_line(rpad(:OLD.Rank, 15, ' ') || :OLD.YouTuber);
end;
/
```

```
CREATE OR REPLACE PROCEDURE IncomeMinusOutliers
```

```
(
  p_country IN VARCHAR2
)
AS
  Cursor Top_YouTubers is
    select * from Channel_Stats
    where Country = p_country
    order by rank asc;

  Cursor Bottom_YouTubers is
    select * from Channel_Stats
```

```
where Country = p_country  
order by rank desc;
```

```
current_top_youtuber Channel_Stats%ROWTYPE;  
current_bottom_youtuber Channel_Stats%ROWTYPE;
```

```
counter NUMBER := 0;  
CountryEarnings NUMBER;
```

```
BEGIN
```

```
select sum(lowest_Yearly_earnings)  
into CountryEarnings  
from channel_stats  
where country = p_country;
```

```
open Top_Youtubers;
```

```
fetch Top_Youtubers into current_top_youtuber;
```

```
dbms_output.put_line(rpad('Rank', 15, ' ') || 'Top YouTubers Removed');  
dbms_output.put_line(rpad('-', 40, '-'));
```

```
while counter < 10 and Top_Youtubers%FOUND LOOP
```

```
delete from CHANNEL_STATS where Youtuber = current_Top_YouTuber.Youtuber;  
fetch Top_Youtubers into current_top_youtuber;  
counter := counter + 1;
```

```
end LOOP;
```

```
close Top_YouTubers;  
dbms_output.put_line("");  
counter := 0;  
open Bottom_Youtubers;
```

```
fetch Bottom_Youtubers into current_bottom_youtuber;
```

```
dbms_output.put_line(rpad('Rank', 15, ' ') || 'Bottom YouTubers Removed');  
dbms_output.put_line(rpad('-', 40, '-'));
```

```
while counter < 10 and Bottom_YouTubers%FOUND LOOP
```

```
delete from CHANNEL_STATS where Youtuber = current_bottom_youtuber.Youtuber;  
fetch Bottom_Youtubers into current_bottom_youtuber;  
counter := counter + 1;
```

```
end LOOP;
```

```
close Bottom_YouTubers;
```

```
dbms_output.put_line("");
dbms_output.put_line('Earnings in country "' || p_country || '" including top and lowest 10 in country: ' ||
countryEarnings);
```

```
select sum(lowest_Yearly_earnings)
into CountryEarnings
from debug_youtube
where country = p_country;
```

```
dbms_output.put_line('Earnings in country "' || p_country || '" excluding top and lowest 10 in country: ' ||
countryEarnings);
dbms_output.put_line("");
```

```
counter := 0;
open Top_Youtubers;
```

```
fetch Top_Youtubers into current_top_youtuber;
```

```
dbms_output.put_line(rpad('Rank', 15, ' ') || 'New Top YouTubers');
dbms_output.put_line(rpad('-', 40, '-'));
while counter < 10 and Top_Youtubers%FOUND LOOP
    dbms_output.put(rpad(current_top_youtuber.rank, 15, ' '));
    dbms_output.put_line(current_top_youtuber.YouTuber);
    fetch Top_Youtubers into current_top_youtuber;
    counter := counter + 1;
end LOOP;
```

```
close Top_Youtubers;
dbms_output.put_line("");
```

```
counter := 0;
open Bottom_Youtubers;
```

```
fetch Bottom_Youtubers into current_bottom_youtuber;
```

```
dbms_output.put_line(rpad('Rank', 15, ' ') || 'New Bottom YouTubers');
dbms_output.put_line(rpad('-', 40, '-'));
while counter < 10 and Bottom_Youtubers%FOUND LOOP
    dbms_output.put(rpad(current_bottom_youtuber.rank, 15, ' '));
    dbms_output.put_line(current_bottom_youtuber.YouTuber);
    fetch Bottom_Youtubers into current_bottom_youtuber;
    counter := counter + 1;
end LOOP;
```

close Bottom_YouTubers;

END IncomeMinusOutliers;

/

exec IncomeMinusOutliers;

Results:

Rank Top YouTubers Removed

3 MrBeast
4 Cocomelon - Nursery Rhymes
7 ýýý Kids Diana Show
10 Vlad and Niki
12 WWE
23 Pinkfong Baby Shark - Kids' Songs & Stories
29 Dude Perfect
30 Movieclips
36 EminemMusic
37 Marshmello

Rank Bottom YouTubers Removed

990 Migos ATL
989 Caylus
988 Avril Lavigne
984 MoniLina
974 LOUD
971 _vector_
958 Bebefinn - Nursery Rhymes & Kids Songs
956 First We Feast
951 Wolfoo Family
950 People Vs Food

Earnings in country "United States" including top and lowest 10 in country: 136041530.32

Earnings in country "United States" excluding top and lowest 10 in country: 112945547.32

Rank New Top YouTubers

42 Taylor Swift
43 Ariana Grande
44 BillionSurpriseToys - Nursery Rhymes & Cartoons
46 Billie Eilish
50 SonyMusicIndiaVEVO
59 Katy Perry
68 Masha and The Bear
69 Like Nastya Show
73 Little Baby Bum - Nursery Rhymes & Kids Songs
80 XXXTENTACION

Rank New Bottom YouTubers

947 NickiMinajAtVEVO
945 CaseyNeistat
942 Heidi y Zidane
939 Blossom
938 YoungBoy Never Broke Again
937 Future
935 Diana and Roma IND

930	Beyoncé 1/2 1/2
928	Adam W
920	Enrique Iglesias VEVO

Citations

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<https://financebuzz.com/how-much-youtubers-make#:~:text=The%20average%20YouTuber%20makes%20about,%2C%20up%2040%25%20from%202020>