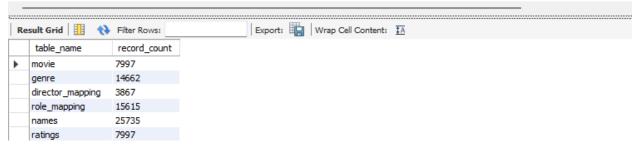
IMDB Dataset: SQL Queries and Solutions

This document provides 25 SQL queries to analyze the IMDB dataset, addressing the questions below.

1. Count the records in each table.

```
SELECT 'movie' AS table_name, COUNT(*) AS record_count FROM movie UNION ALL
SELECT 'genre', COUNT(*) FROM genre
UNION ALL
SELECT 'director_mapping', COUNT(*) FROM director_mapping
UNION ALL
SELECT 'role_mapping', COUNT(*) FROM role_mapping
UNION ALL
SELECT 'names', COUNT(*) FROM names
UNION ALL
SELECT 'ratings', COUNT(*) FROM ratings;
```

```
-- 1. Count the total number of records in each table.
       SELECT 'movie' AS table name, COUNT(*) AS record count FROM movie
       SELECT 'genre' AS table name, COUNT(*) FROM genre
 5
 6
       SELECT 'director_mapping' AS table_name, COUNT(*) FROM director_mapping
7
       SELECT 'role_mapping' AS table_name, COUNT(*) FROM role_mapping
9
      UNION ALL
10
      SELECT 'names' AS table name, COUNT(*) FROM names
      UNION ALL
11
      SELECT 'ratings' AS table name, COUNT(*) FROM ratings;
12
```



2. Find columns with null values in the movie table.

```
SELECT
SUM(CASE WHEN id IS NULL THEN 1 ELSE 0 END) AS id_nulls,
SUM(CASE WHEN title IS NULL THEN 1 ELSE 0 END) AS title_nulls,
SUM(CASE WHEN year IS NULL THEN 1 ELSE 0 END) AS year_nulls,
SUM(CASE WHEN date_published IS NULL THEN 1 ELSE 0 END) AS date_published_nulls,
SUM(CASE WHEN duration IS NULL THEN 1 ELSE 0 END) AS duration_nulls,
SUM(CASE WHEN country IS NULL THEN 1 ELSE 0 END) AS country_nulls,
SUM(CASE WHEN worlwide_gross_income IS NULL THEN 1 ELSE 0 END) AS worlwide_gross_income_nulls,
SUM(CASE WHEN languages IS NULL THEN 1 ELSE 0 END) AS languages_nulls,
SUM(CASE WHEN production_company IS NULL THEN 1 ELSE 0 END) AS production_company_nulls
FROM movie:
```

```
1
        -- 2. Identify which columns in the movie table contain null values.
 3 • SELECT
            SUM(CASE WHEN id IS NULL THEN 1 ELSE 0 END) AS id_nulls,
            SUM(CASE WHEN title IS NULL THEN 1 ELSE 0 END) AS title_nulls,
           SUM(CASE WHEN year IS NULL THEN 1 ELSE 0 END) AS year_nulls,
          SUM(CASE WHEN date_published IS NULL THEN 1 ELSE 0 END) AS date_published_nulls,
 8
          SUM(CASE WHEN duration IS NULL THEN 1 ELSE 0 END) AS duration_nulls,
          SUM(CASE WHEN country IS NULL THEN 1 ELSE 0 END) AS country_nulls,
SUM(CASE WHEN worlwide_gross_income IS NULL THEN 1 ELSE 0 END) AS worlwide_gross_income_nulls,
          SUM(CASE WHEN languages IS NULL THEN 1 ELSE 0 END) AS languages_nulls,
11
          SUM(CASE WHEN production_company IS NULL THEN 1 ELSE 0 END) AS production_company_nulls
     FROM movie;
Export: Wrap Cell Content: 🖽
  id_nulls title_nulls year_nulls date_published_nulls duration_nulls country_nulls worlwide_gross_income_nulls languages_nulls production_company_nulls
                                             0 20
                                                                     3724
                                                                                             194
                                                                                                            528
```

3. Analyze movie release trends by year and month.

-- Year-wise trend SFI FCT YEAR(date_published) AS release_year, COUNT(id) AS number of movies FROM movie GROUP BY release year ORDER BY release_year; -- Month-wise trend **SELECT** MONTHNAME(date published) AS release month, COUNT(id) AS number_of_movies FROM movie GROUP BY release month ORDER BY MONTH(date_published); -- 3. Determine the total number of movies released each year and month-wise. -- Year-wise trend SELECT YEAR(date_published) AS release_year, COUNT(id) AS number_of_movies FROM movie GROUP BY release_year ORDER BY release_year; -- Month-wise trend MONTHNAME(date_published) AS release_month, 11 COUNT(id) AS number_of_movies 12 FROM movie 13 14 GROUP BY release month ORDER BY MONTH(date_published); Export: Wrap Cell Content: 1A release_year number_of_movies 3052

4. Count movies from the USA or India in 2019.

2018 2944

2001

2019

SELECT COUNT(id) AS movie_count FROM movie WHERE (country LIKE '%USA%' OR country LIKE '%India%') AND year = 2019;

```
-- 4. How many movies were produced in
-- either the USA or India in the year 2019?

SELECT COUNT(id) AS movie_count
FROM movie
WHERE (country LIKE '%USA%' OR country LIKE '%India%')
AND year = 2019;
```



5. List unique genres and count single-genre movies.

-- Unique genres SELECT DISTINCT genre FROM genre;

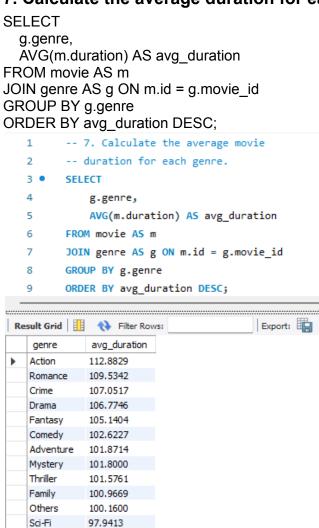
```
-- Count of movies with only one genre
SELECT COUNT(movie_id) AS single_genre_movie_count
FROM (
  SELECT movie id
  FROM genre
  GROUP BY movie id
  HAVING COUNT(genre) = 1
) AS single genre movies;
       -- 5. List the unique genres in the dataset,
   2
       -- and count how many movies belong exclusively to one genre.
   3
       -- Unique genres
   4 • SELECT DISTINCT genre FROM genre;
       -- Count of movies with only one genre
   5
   6 • SELECT COUNT(movie_id) AS single_genre_movie_count
     ⇒ FROM (
   8
         SELECT movie_id
         FROM genre
          GROUP BY movie_id
  10
         HAVING COUNT(genre) = 1
  11
      ) AS single_genre_movies;
  12
Export: Wrap Cell Content: 1A
   single_genre_movie_count
3289
```

6. Find the genre with the most movies.

SELECT genre, COUNT(movie_id) AS movie_count FROM genre GROUP BY genre ORDER BY movie_count DESC LIMIT 1;

```
-- 6. Which genre has the highest
  1
  2
        -- total number of movies produced?
  3 •
        SELECT genre, COUNT(movie_id) AS movie_count
 4
        FROM genre
  5
        GROUP BY genre
        ORDER BY movie_count DESC
  6
                                      Export: Wrap Cell Con
genre
         movie_count
  Drama
        4285
```

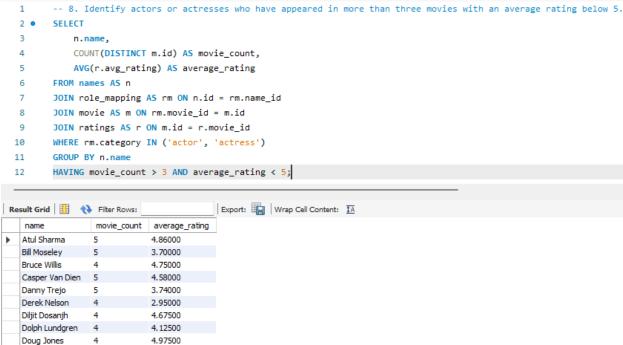
7. Calculate the average duration for each genre.



8. Find actors in >3 movies with an average rating < 5.

```
SELECT
n.name,
COUNT(DISTINCT m.id) AS movie_count,
AVG(r.avg_rating) AS average_rating
FROM names AS n
JOIN role_mapping AS rm ON n.id = rm.name_id
JOIN movie AS m ON rm.movie_id = m.id
JOIN ratings AS r ON m.id = r.movie_id
WHERE rm.category IN ('actor', 'actress')
```

GROUP BY n.name HAVING movie_count > 3 AND average_rating < 5; 1 -- 8. Identify actors or actresses who have appeared i 2 • SELECT

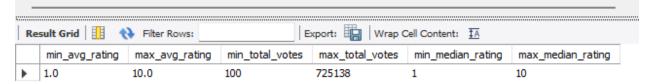


9. Find min/max values for each column in the ratings table (excluding movie_id).

```
SELECT
```

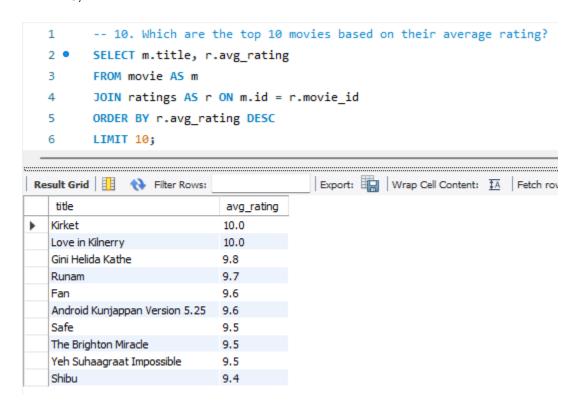
```
MIN(avg_rating) AS min_avg_rating,
MAX(avg_rating) AS max_avg_rating,
MIN(total_votes) AS min_total_votes,
MAX(total_votes) AS max_total_votes,
MIN(median_rating) AS min_median_rating,
MAX(median_rating) AS max_median_rating
FROM ratings;
```

```
-- 9. Find the minimum and maximum values for each column in the
 1
       -- ratings table, excluding the movie id column.
 3 •
       SELECT
 4
           MIN(avg rating) AS min avg rating,
 5
           MAX(avg rating) AS max avg rating,
           MIN(total_votes) AS min_total_votes,
 6
           MAX(total_votes) AS max_total_votes,
           MIN(median rating) AS min median rating,
 8
           MAX(median rating) AS max median rating
 9
       FROM ratings;
10
```



10. List the top 10 movies by average rating.

SELECT m.title, r.avg_rating
FROM movie AS m
JOIN ratings AS r ON m.id = r.movie_id
ORDER BY r.avg_rating DESC
LIMIT 10;



11. Summarize the ratings table by median rating.

SELECT median rating, COUNT(movie id) AS movie count, AVG(avg_rating) AS average_of_avg_ratings, SUM(total votes) AS total votes sum FROM ratings GROUP BY median_rating ORDER BY median rating; -- 11. Summarize the ratings table by grouping 2 -- movies based on their median ratings. **SELECT** 3 • 4 median_rating, COUNT(movie_id) AS movie_count, 5 AVG(avg_rating) AS average_of_avg_ratings, 6 SUM(total votes) AS total votes sum FROM ratings 8 GROUP BY median_rating 9 ORDER BY median rating; 10 Export: Wrap Cell Content: 1A median_rating movie_count average_of_avg_ratings total_votes_sum 2.31383 234810 2 119 2.75210 118830 3 283 3.21625 192478 4 479 3.85115 528033 5 985 4.67929 2002631 6 1975 5.62289 8660256 7 2257 6.47869 20241320 8 7.01854 1030 18041848

9

10

429

346

7.17366

7.20694

3236555

839635

12. Count movies from March 2017 in the USA of a specific genre with >1,000 votes.

-- Note: Replace 'YourGenreHere' with the actual genre you're interested in. SELECT COUNT(m.id) AS movie count FROM movie AS m JOIN genre AS g ON m.id = g.movie_id JOIN ratings AS r ON m.id = r.movie id WHERE YEAR(m.date published) = 2017 AND MONTH(m.date published) = 3AND m.country LIKE '%USA%' AND g.genre = 'YourGenreHere' -- <-- CHANGE THIS AND r.total votes > 1000; -- 12. How many movies, released in March 2017 in -- the USA within a specific genre, had more than 1,000 votes? 2 SELECT COUNT(m.id) AS movie_count 3 • FROM movie AS m 4 5 JOIN genre AS g ON m.id = g.movie id JOIN ratings AS r ON m.id = r.movie id 6 7 WHERE YEAR(m.date published) = 2017 AND MONTH(m.date published) = 38 AND m.country LIKE '%USA%' 9 AND g.genre = 'YourGenreHere' -- <-- CHANGE THIS 10 AND r.total_votes > 1000; 11 Export: Wrap Cell Content: IA movie_count 0 13. Find movies starting with "The" with an average rating > 8. SELECT g.genre, m.title, r.avg rating FROM movie AS m JOIN genre AS g ON m.id = g.movie_id JOIN ratings AS r ON m.id = r.movie id WHERE m.title LIKE 'The %' AND r.avg rating > 8 ORDER BY g.genre, m.title; 1 -- 13. Find movies from each genre that begin with the word -- "The" and have an average rating greater than 8. 3 • SELECT g.genre, m.title, r.avg rating FROM movie AS m JOIN genre AS g ON m.id = g.movie_id JOIN ratings AS r ON m.id = r.movie_id WHERE m.title LIKE 'The %' AND r.avg_rating > 8 ORDER BY g.genre, m.title; Export: Wrap Cell Content: IA genre title avg_rating Crime The Gambinos Crime The Irishman 8.7 Drama The Blue Elephant 2 Drama The Brighton Miracle 9.5 Drama The Colour of Darkness Drama The Gambinos Drama The Irishman

Drama The King and I 8.2
Drama The Mystery of Godliness: The Sequel 8.5
Horror The Blue Elephant 2 8.8

8.8

8.2

Mystery The Blue Elephant 2

Roma... The King and I

14. Count movies from Apr 2018 - Apr 2019 with a median rating of 8.

```
SELECT COUNT(m.id) AS movie count
FROM movie AS m
JOIN ratings AS r ON m.id = r.movie id
WHERE m.date_published BETWEEN '2018-04-01' AND '2019-04-01'
 AND r.median_rating = 8;
          -- 14. Of the movies released between April 1, 2018,
          -- and April 1, 2019, how many received a median rating of 8?
   2
          SELECT COUNT(m.id) AS movie count
          FROM movie AS m
   4
   5
          JOIN ratings AS r ON m.id = r.movie id
          WHERE m.date published BETWEEN '2018-04-01' AND '2019-04-01'
   7
            AND r.median rating = 8;
                                          Export: Wrap Cell Content: IA
 Result Grid Filter Rows:
    movie_count
    361
```

15. Compare the average votes for German vs. Italian movies.

SELECT 'German' AS country, AVG(r.total_votes) AS avg_votes FROM movie AS m JOIN ratings AS r ON m.id = r.movie id WHERE m.country LIKE '%Germany%' UNION ALL SELECT 'Italian' AS country, AVG(r.total_votes) AS avg_votes FROM movie AS m JOIN ratings AS r ON m.id = r.movie_id WHERE m.country LIKE '%Italy%'; -- 15. Do German movies receive more votes on average than Italian movies? 1 2 • SELECT 'German' AS country, AVG(r.total votes) AS avg votes 3 FROM movie A5 m JOIN ratings AS r ON m.id = r.movie id 4 5 WHERE m.country LIKE '%Germany%' UNION ALL 6 7 SELECT 'Italian' AS country, AVG(r.total_votes) AS avg_votes 8 FROM movie A5 m 9 JOIN ratings AS r ON m.id = r.movie_id 10 WHERE m.country LIKE '%Italv%'; Export: Wrap Cell Content: IA country avg_votes German 5332, 1658 Italian 3480.3168

16. Find columns with null values in the names table.

SELECT

SUM(CASE WHEN id IS NULL THEN 1 ELSE 0 END) AS id_nulls,

SUM(CASE WHEN name IS NULL THEN 1 ELSE 0 END) AS name_nulls, SUM(CASE WHEN height IS NULL THEN 1 ELSE 0 END) AS height_nulls, SUM(CASE WHEN date_of_birth IS NULL THEN 1 ELSE 0 END) AS date_of_birth_nulls, SUM(CASE WHEN known_for_movies IS NULL THEN 1 ELSE 0 END) AS known_for_movies_nulls FROM names;

```
-- 16. Identify the columns in the names table that contain null values.
  2 •
        SELECT
            SUM(CASE WHEN id IS NULL THEN 1 ELSE 0 END) AS id_nulls,
            SUM(CASE WHEN name IS NULL THEN 1 ELSE 0 END) AS name_nulls,
  4
            SUM(CASE WHEN height IS NULL THEN 1 ELSE 0 END) AS height_nulls,
            SUM(CASE WHEN date of birth IS NULL THEN 1 ELSE 0 END) AS date of birth nulls,
            SUM(CASE WHEN known_for_movies IS NULL THEN 1 ELSE 0 END) AS known_for_movies_nulls
  7
  8
        FROM names;
Export: Wrap Cell Content: IA
   id_nulls | name_nulls | height_nulls | date_of_birth_nulls | known_for_movies_nulls
 0
                    17335
                               13431
                                               15226
```

17. Find the top two actors in movies with a median rating >= 8.

```
SELECT
n.name,
COUNT(m.id) AS movie_count
FROM names AS n
JOIN role_mapping AS rm ON n.id = rm.name_id
JOIN movie AS m ON rm.movie_id = m.id
JOIN ratings AS r ON m.id = r.movie_id
WHERE rm.category = 'actor' AND r.median_rating >= 8
GROUP BY n.name
ORDER BY movie_count DESC
LIMIT 2;
```

```
-- 17. Who are the top two actors whose movies have a median rating of 8 or higher?
  1
  2 •
        SELECT.
            n.name,
            COUNT(m.id) AS movie_count
  5
        FROM names AS n
  6
        JOIN role mapping AS rm ON n.id = rm.name id
  7
        JOIN movie AS m ON rm.movie_id = m.id
  8
        JOIN ratings AS r ON m.id = r.movie_id
  9
        WHERE rm.category = 'actor' AND r.median_rating >= 8
 10
        GROUP BY n.name
 11
        ORDER BY movie count DESC
 12
        LIMIT 2;
                                          Export: Wrap Cell Content: TA Fetch rows:
Result Grid
              Filter Rows:
              movie_count
  Mammootty
             5
  Mohanlal
```

18. List the top three production companies by total votes.

SELECT m.production_company,

```
SUM(r.total_votes) AS total_votes_sum
FROM movie AS m
JOIN ratings AS r ON m.id = r.movie id
WHERE m.production company IS NOT NULL
GROUP BY m.production_company
ORDER BY total_votes_sum DESC
LIMIT 3:
   1
          -- 18. Which are the top three production companies
          -- based on the total number of votes their movies received?
          SELECT
   3
   4
              m.production_company,
   5
              SUM(r.total_votes) AS total_votes_sum
          FROM movie AS m
   6
          JOIN ratings AS r ON m.id = r.movie id
          WHERE m.production company IS NOT NULL
   8
   9
          GROUP BY m.production company
  10
          ORDER BY total_votes_sum DESC
  11
          LIMIT 3;
 Export: Wrap Cell Content: TA Fetch re
    production_company
                       total_votes_sum
    Marvel Studios
                      2656967
    Twentieth Century Fox 2411163
    Warner Bros.
                      2396057
```

19. Count directors who have worked on more than three movies.

```
SELECT COUNT(name id) AS director count
FROM (
  SELECT name id
  FROM director mapping
  GROUP BY name_id
  HAVING COUNT(movie_id) > 3
) AS prolific_directors;
         -- 19. How many directors have worked on more than three movies?
         SELECT COUNT(name id) AS director count
   3

→ FROM (
   4
             SELECT name id
   5
             FROM director mapping
             GROUP BY name id
   6
   7
             HAVING COUNT(movie id) > 3
         ) AS prolific directors;
   8
 Export: Wrap Cell Content: IA
    director_count
   9
```

20. Calculate the average height for actors and actresses separately.

```
SELECT rm.category, AVG(n.height) AS avg_height
```

```
FROM names AS n
JOIN role_mapping AS rm ON n.id = rm.name_id
WHERE rm.category IN ('actor', 'actress') AND n.height IS NOT NULL
GROUP BY rm.category;
           -- 20. Calculate the average height of actors and actresses separately.
    2 •
          SELECT
    3
              rm.category,
    4
              AVG(n.height) AS avg height
    5
          FROM names AS n
          JOIN role mapping AS rm ON n.id = rm.name id
    6
    7
          WHERE rm.category IN ('actor', 'actress') AND n.height IS NOT NULL
    8
          GROUP BY rm.category;
 Result Grid
              Filter Rows:
                                           Export: Wrap Cell Content: IA
             avg_height
     category
             162.1818
    actor
    actress
             162,4715
```

21. List the 10 oldest movies with their title, country, and director.

```
SELECT
   m.title,
  m.country,
   n.name AS director_name,
   m.year
FROM movie AS m
JOIN director mapping AS dm ON m.id = dm.movie id
JOIN names AS n ON dm.name_id = n.id
ORDER BY m.year ASC
LIMIT 10:
           -- 21. List the 10 oldest movies in the dataset along with their title, country, and director.
    1
    2
          SELECT
    3
               m.title,
    4
               m.country,
    5
              n.name AS director_name,
    6
              m.year
    7
          FROM movie AS m
          JOIN director_mapping AS dm ON m.id = dm.movie_id
    8
    9
          JOIN names AS n ON dm.name id = n.id
          ORDER BY m.year ASC
   10
   11
          LIMIT 10;
 Export: Wrap Cell Content: A Fetch rows:
                      country
                                     director_name
    Critical Eleven
                                                       2017
                     Indonesia
                                    Monty Tiwa
                   Indonesia
                                   Robert Ronny
    Critical Eleven
                                                       2017
    Deo Te-i-beul
                                                       2017
                     South Korea
                                    Jong-kwan Kim
    Far til fire på toppen Denmark, Norway Martin Miehe-Renard 2017
                                    Togan Gökbakar
    Recep Ivedik 5
                     Turkey
                                                       2017
                                   Caleb J. Phillips
    Brothers in Arms USA
                                                      2017
                                   Jonathan Wright
    Love Blossoms
                     Belgium, Canada
                                                       2017
    Killer Christmas
                                   Tony Shaker
                                                       2017
                    USA
    Mifv
                     Russia
                                    Aleksandr Molochnikov
                                                      2017
    Cheng feng po lang
                     China
                                    Han Han
                                                       2017
```

22. List the top 5 movies by total votes, including their genres.

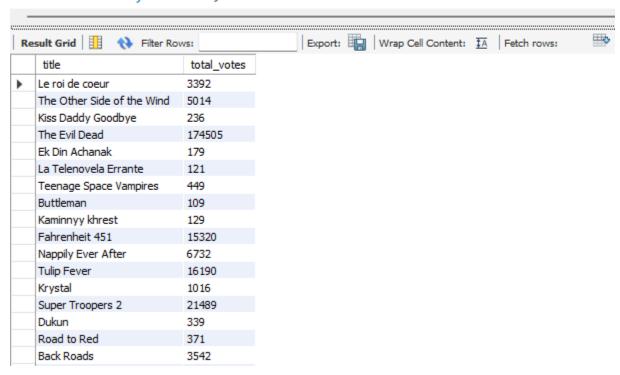
```
SELECT
  m.title,
  r.total_votes,
  GROUP CONCAT(g.genre SEPARATOR ', ') AS genres
FROM movie AS m
JOIN ratings AS r ON m.id = r.movie id
JOIN genre AS g ON m.id = g.movie_id
GROUP BY m.id, m.title, r.total votes
ORDER BY r.total votes DESC
LIMIT 5;
    1
          -- 22. List the top 5 movies with the highest total votes, along with their genres.
          SELECT
    3
              m.title,
              r.total_votes,
    4
              GROUP CONCAT(g.genre SEPARATOR ', ') AS genres
          FROM movie AS m
    6
          JOIN ratings AS r ON m.id = r.movie_id
    7
          JOIN genre AS g ON m.id = g.movie id
    8
    9
          GROUP BY m.id, m.title, r.total_votes
          ORDER BY r.total votes DESC
   10
          LIMIT 5;
   11
 Result Grid Filter Rows:
                                           Export: Wrap Cell Content: $\overline{A}$ Fetch rows:
                       total_votes genres
    Avengers: Infinity War
                       725138
                                 Action, Adventure, Sci-Fi
    Avengers: Endgame
                       602792
                                 Action, Adventure, Drama
    Logan
                       586106
                                  Action, Drama, Sci-Fi
    Black Panther
                      551245 Action, Adventure, Sci-Fi
    Thor: Ragnarok
                       518571
                                 Action, Adventure, Comedy
23. Find the longest movie with its genre and production company.
SELECT
  m.title,
  m.duration,
  m.production company,
  GROUP CONCAT(g.genre SEPARATOR ', ') AS genres
```

```
FROM movie AS m
JOIN genre AS g ON m.id = g.movie id
WHERE m.duration IS NOT NULL
GROUP BY m.id, m.title, m.duration, m.production company
ORDER BY m.duration DESC
LIMIT 1:
  1
        -- 23. Identify the movie with the longest duration, along with its genre and production company.
       SELECT
  2 •
           m.duration.
          m.production company,
           GROUP_CONCAT(g.genre SEPARATOR ', ') AS genres
       FROM movie AS m
       JOIN genre AS g ON m.id = g.movie_id
        WHERE m.duration IS NOT NULL
       GROUP BY m.id, m.title, m.duration, m.production_company
  10
       ORDER BY m.duration DESC
  12
       I TMTT 1:
                                 Export: Wrap Cell Content: 🚹 | Fetch rows:
 duration production_company genres
   title
▶ La flor 808
               El Pampero Cine
                             Drama, Fantasy
```

24. Get the total votes for each movie from 2018.

```
SELECT m.title, r.total_votes
FROM movie AS m
JOIN ratings AS r ON m.id = r.movie_id
WHERE m.year = 2018;
```

- 1 -- 24. Determine the total number of votes for each movie released in 2018.
- 2 SELECT m.title, r.total_votes
- 3 FROM movie AS m
- 4 JOIN ratings AS r ON m.id = r.movie id
- 5 WHERE m.year = 2018;



25. Find the most common movie language.

SELECT languages, COUNT(id) AS movie_count FROM movie WHERE languages IS NOT NULL GROUP BY languages ORDER BY movie_count DESC

LIMIT 1;

- 1 -- 25. What is the most common language in which movies were produced?
- 2 SELECT languages, COUNT(id) AS movie count
- 3 FROM movie
- 4 WHERE languages IS NOT NULL
- 5 GROUP BY languages
- 6 ORDER BY movie_count DESC
- 7 LIMIT 1;

