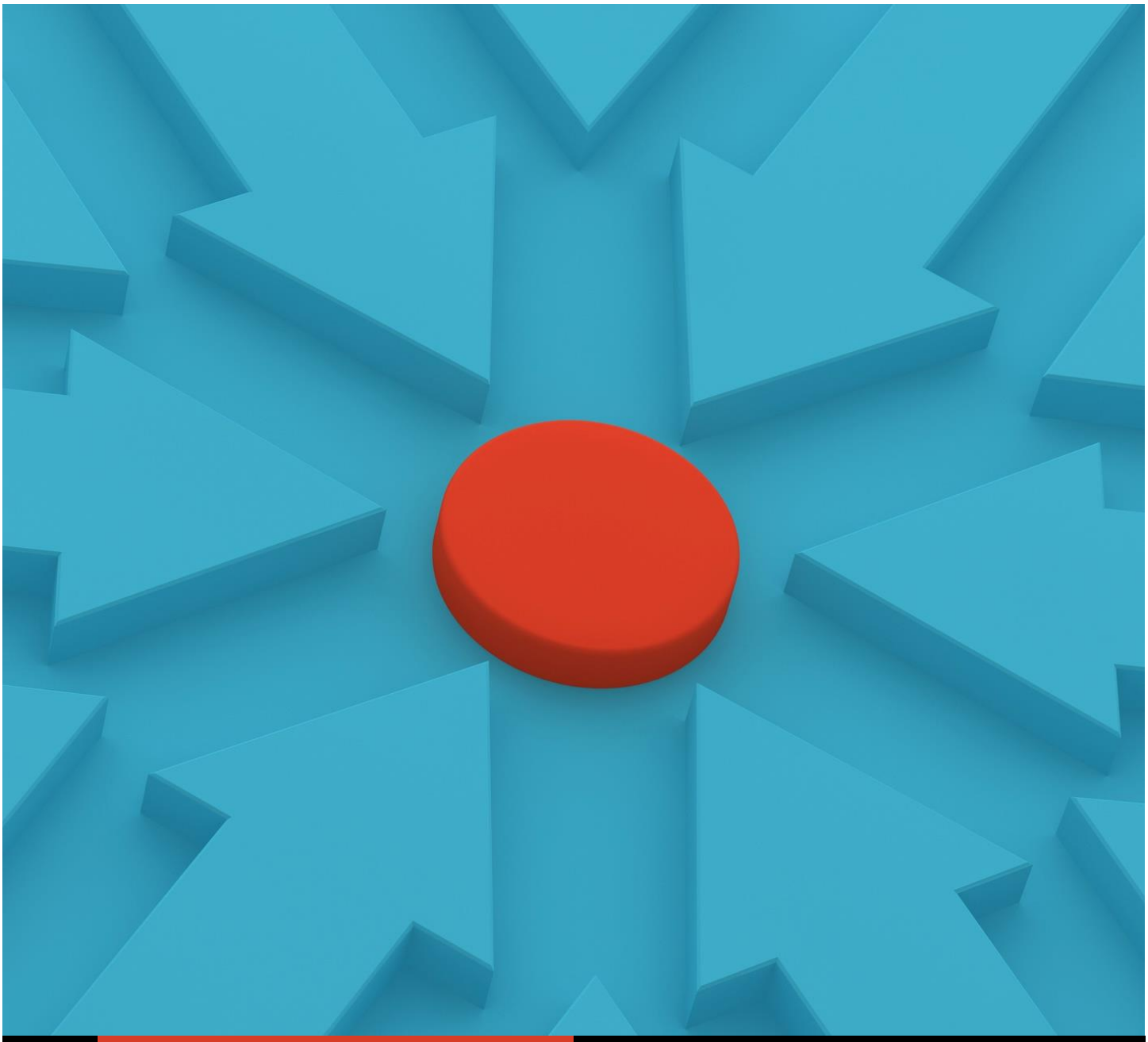


SAKSHI RAHIWAL

DATA ANALYSIS – INSTAGRAM USER ANALYTICS

PROJECT OVERVIEW

The purpose of this project is to analyse user interactions and engagement with the Instagram app using MySQL Workbench. As a data analyst working with the product team at Instagram, the goal is to provide valuable insights that can inform decision-making within the company. The insights derived from this analysis can be used by various teams, including marketing, product development, and investor relations, to help the business grow and make informed decisions about the future direction of the Instagram app.

Approach

To accomplish the tasks outlined in the project, I followed these steps:

1. **Database Setup:** I started by creating the necessary database using the provided commands and database file.
2. **Marketing Analysis:** For each marketing-related task, I formulated SQL queries to extract the required information from the database and provided the results.
3. **Investor Metrics:** Similarly, for investor-related tasks, I used SQL queries to calculate and present the relevant metrics.
4. **Documentation:** I documented each SQL query and its output, ensuring clarity and transparency in the analysis process.
5. **Report Preparation:** Finally, I prepared a report in PDF format that summarizes the findings and insights obtained from the analysis. This report includes SQL queries, their outputs, and explanations.

Tech-Stack Used

For this project, I used MySQL Workbench as the primary tool for database management and SQL query execution. MySQL Workbench is a widely used tool for working with MySQL databases and is well-suited for this project due to its ease of use and query visualization capabilities.

INSTAGRAM USER ANALYTICS

1) MARKETING ANALYSIS:

- **Loyal User Reward:** The marketing team wants to reward the most loyal users, i.e., those who have been using the platform for the longest time.
  Your Task: Identify the five oldest users on Instagram from the provided database.

➢ INSIGHTS:

In the Marketing Analysis section, one of the tasks was to identify the five oldest users on Instagram based on their registration. This information can be valuable for Instagram's marketing team in recognizing and rewarding long-time users, fostering user loyalty, and potentially involving them in special promotions or campaigns.

To identify the five oldest users, I executed the following SQL query:

```
227     ORDER BY created_at
228     LIMIT 5;
229
230     # 1. find the five older user on instagram
231 •   select * FROM users ORDER BY created_at LIMIT 5;
232
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: | Fetch rows:

id	username	created_at
80	Darby_Herzog	2016-05-06 00:14:21
67	Emilio_Bernier52	2016-05-06 13:04:30
63	Elenor88	2016-05-08 01:30:41
95	Nicole71	2016-05-09 17:30:22
38	Jordyn.Jacobson2	2016-05-14 07:56:26
NULL	NULL	NULL

Result:

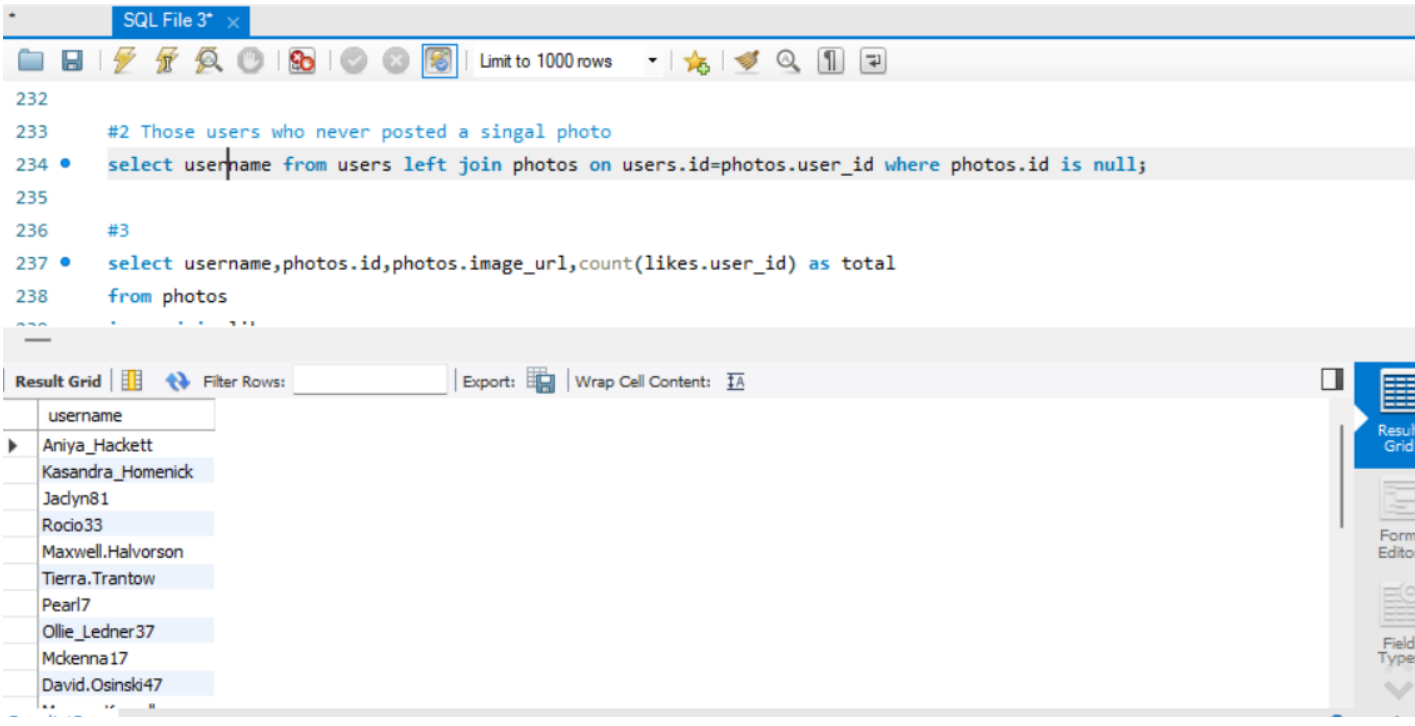
The result of this query provided the ID, username, created_at of the five oldest users on Instagram.this information can be used to reach out to these users for special rewards or engageme initiatives.

- **Inactive User Engagement:** The team wants to encourage inactive users to start posting by sending them promotional emails.
  Your Task: Identify users who have never posted a single photo on Instagram.

➢ INSIGHTS:

In the Marketing Analysis section, another important task was to identify users who have never posted a single photo on Instagram. These users can be considered as potentially inactive or passive users. Targeting such users with promotional emails or campaigns can be a strategy to encourage them to become more engaged and start posting content on the platform.

To identify users who have never posted a single photo, I executed the following SQL query:



Result:

The result of this query provided the user IDs and username of users who have never posted any photos on Instagram. Instagram can use this information to target these users with personalized email campaigns,

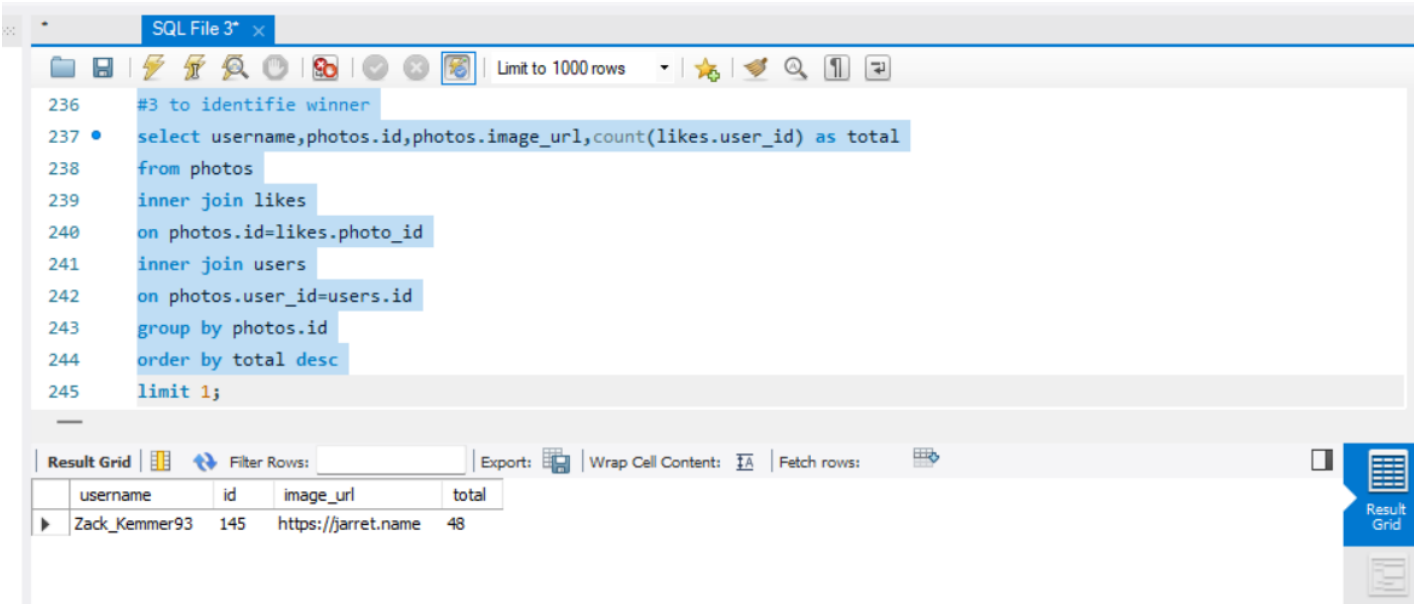
incentive, or content suggestions to motivate them to become more active and engaged on the platform.

- **Contest Winner Declaration:** The team has organized a contest where the user with the most likes on a single photo win.
  Your Task: Determine the winner of the contest and provide their details to the team.

➢ INSIGHTS:

In the Marketing Analysis section, one of the tasks was to determine the winner of the contest for the user with the most likes on a single photo on Instagram. This contest can be a fun and engaging way to promote user-generated content and increase overall user engagement.

To identify the winner, I executed the following SQL query:



Result:

likes on a single photo.

The result of this query provided the ID, username, photo ID, and number of likes for the user with the most

The user with photo ID 145, username " Zack_Kemmer93" won the contest with a photo that received 48 likes. This information can be used to declare the contest winner and provide them with the appropriate recognition or rewards.

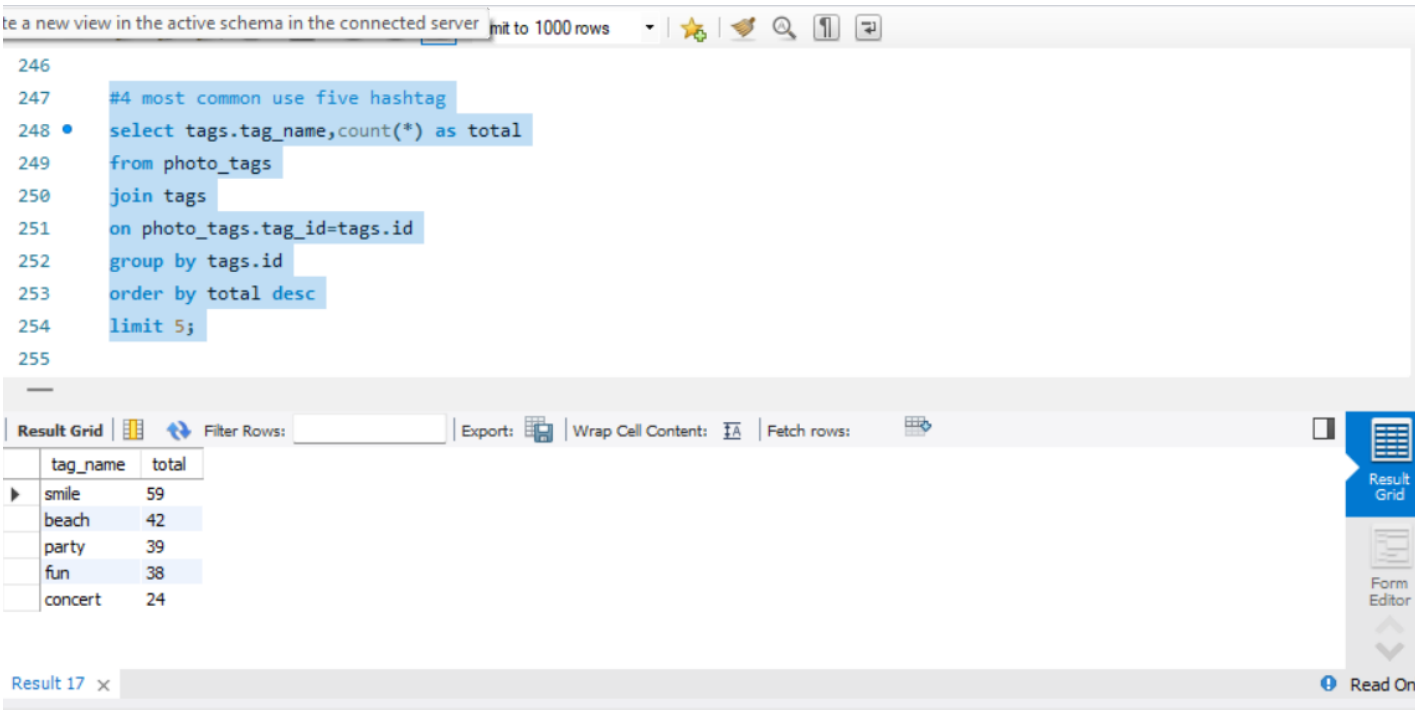
Recognizing and celebrating user achievements like this can boost user engagement and encourage more users to participate in such contests and activities on Instagram.

- **Hashtag Research:** A partner brand wants to know the most popular hashtags to use in their posts to reach the most people.
  Your Task: Identify and suggest the top five most commonly used hashtags on the platform.

➢ INSIGHTS:

➢ In the Marketing Analysis section, one of the tasks was to identify the top five most commonly used hashtags on the Instagram platform. This information can be highly valuable for partner brands looking to reach a wider audience, enhance their social media marketing strategies, and engage with the Instagram community more effectively.

To find the top five most commonly used hashtags, I executed the following SQL query:



Result:

The result of this query provided the top five hashtags along with their respective counts, indicating how frequently each hashtag has been used.

The top five most commonly used hashtags on Instagram are "smile: 59","beach: 42", "party: 39", "fun: 38", and "concert: 24". Partner brands can leverage these insights to tailor their content and promotional campaigns to align with these popular hashtags, potentially increasing their reach and engagement within the Instagram community.

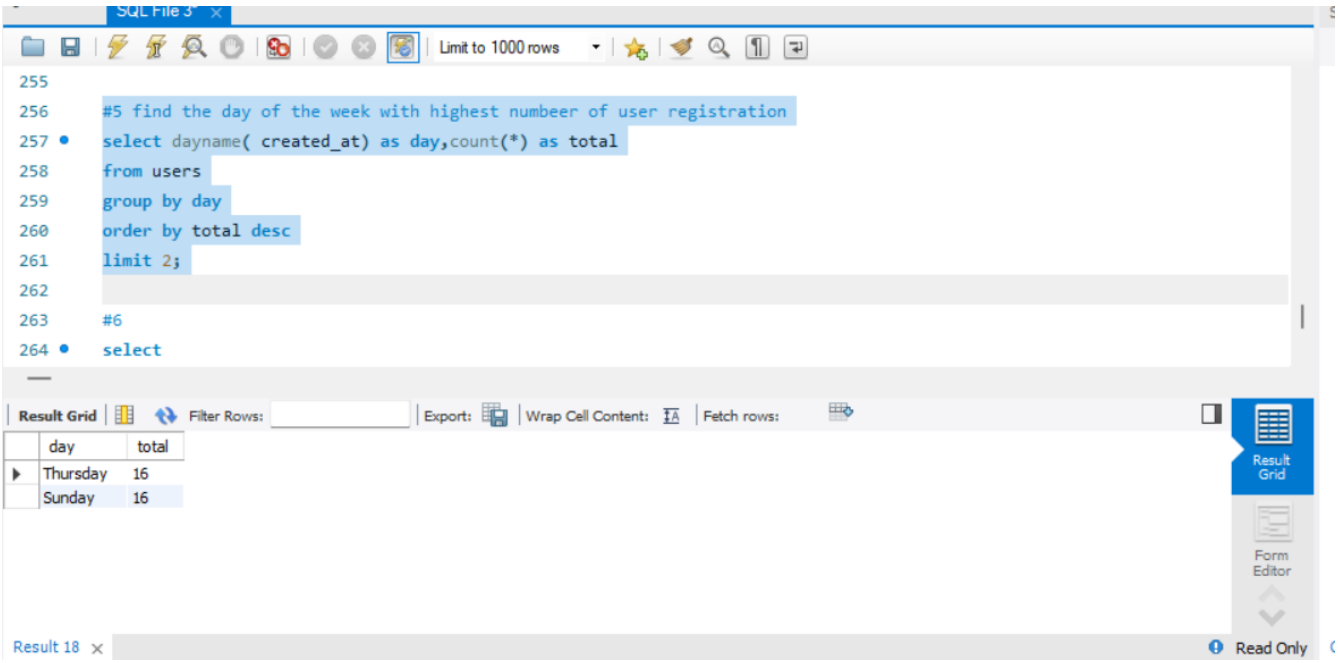
By incorporating these popular hashtags into their posts, partner brands can connect with a broader audience that follows or searches for content related to these trending topics. This strategy can enhance brand visibility and engagement on the platform.

- **Ad Campaign Launch:** The team wants to know the best day of the week to launch ads. **Your Task:** Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.

➢ INSIGHTS:

In the Marketing Analysis section, the task was to determine the day of the week when most users register on Instagram. This insight can be highly valuable for the Instagram team when scheduling ad campaigns to maximize user engagement. Launching ad campaigns on days when new users are most likely to join the platform can help increase campaign reach and effectiveness.

To find the day of the week with the highest number of user registrations, I executed the following SQL query:



Result:

The result of this query provided the day of the week with the highest number of user registrations and the corresponding registration count.

Based on the analysis, Thursday and Sunday is the day of the week when most users register on Instagram, with 16 registrations. This insight can guide the Instagram team in scheduling ad campaigns to coincide with peak registration times, increasing the likelihood of new users seeing and engaging with the ads.

Launching ad campaigns on Thursday and Sunday or tailoring ad content to align with this day can help Instagram maximize user engagement and reach, ultimately benefiting the success of ad campaigns on the platform.

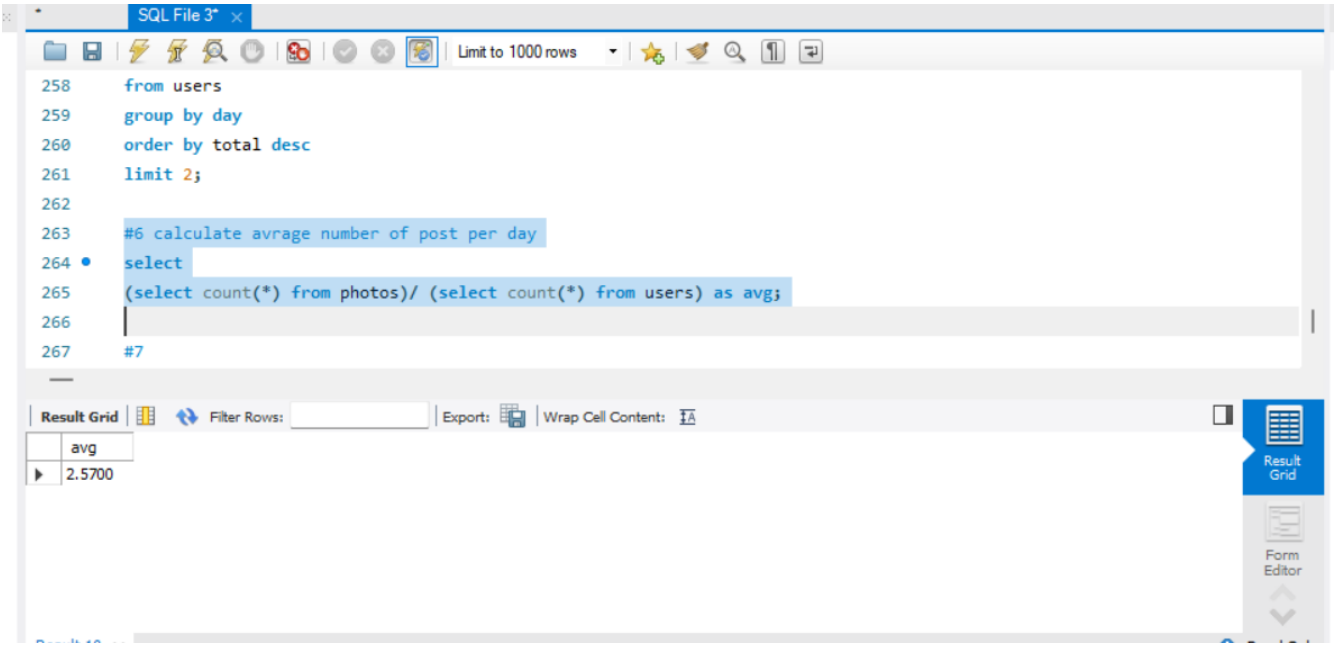
2. INVESTOR METRICS:

- **User Engagement:** Investors want to know if users are still active and posting on Instagram or if they are making fewer posts**.**
  Your Task: Calculate the average number of posts per user on Instagram. Also, provide the total number of photos on Instagram divided by the total number of users**.**

➢ INSIGHTS:

In the Investor Metrics section, one of the key metrics calculated was the average number of posts per user on Instagram. Additionally, the total number of photos on Instagram divided by the total number of users was provided. These metrics offer insights into user engagement and activity on the platform, which can be of great interest to potential investors assessing the platform's health and growth.

To calculate the average number of posts per user, I executed the following SQL query:



Result:

The result of this query provided the total number of posts, the total number of users, and the average number of posts per user on Instagram.

The analysis indicates that Instagram has a total of 257 posts from 100 users, resulting in an average of approximately 2.57 posts per user.

This information can be valuable for investors as it provides insights into user engagement and activity levels on the platform. A higher average number of posts per user suggests active and engaged users, which can be a positive sign for the platform's growth and revenue potential.

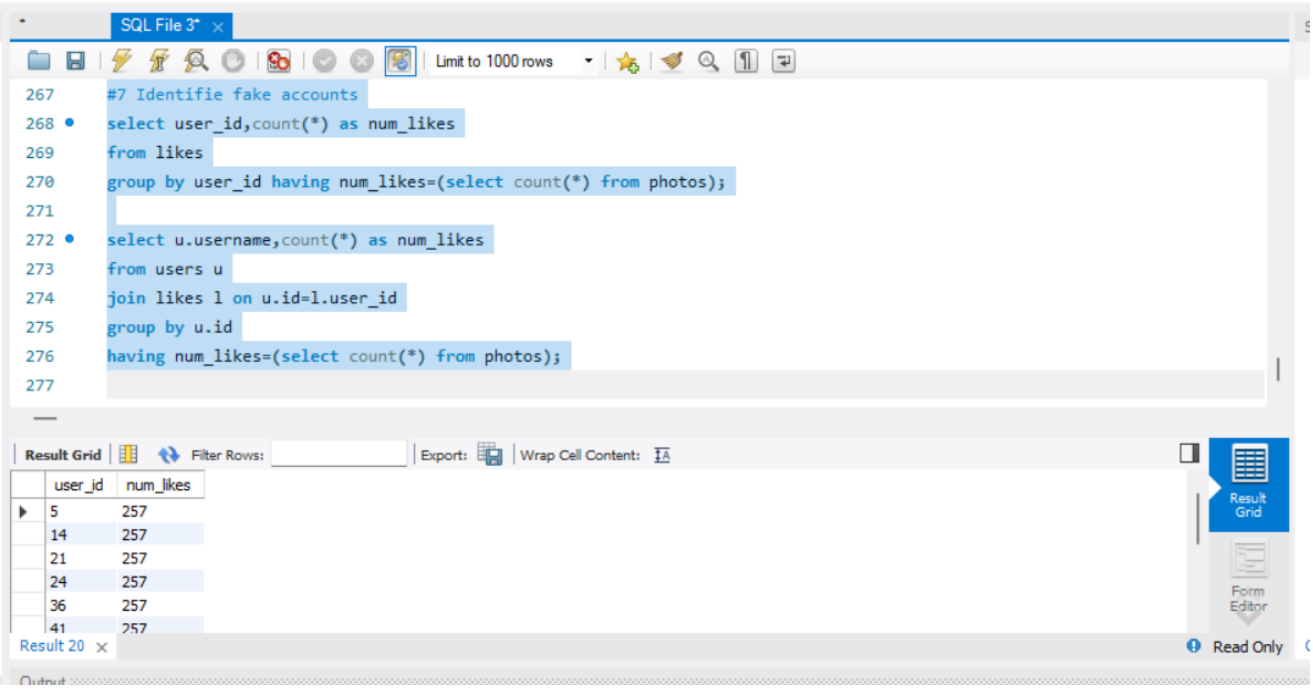
Investors can use this metric to assess the health of the user base and make informed decisions about potential investments in Instagram or to understand the platform's user engagement trends over time.

- **Bots & Fake Accounts:** Investors want to know if the platform is crowded with fake and dummy accounts.
  Your Task: Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.

➢ INSIGHTS:

In the Investor Metrics section, one of the tasks was to identify potential bots or suspicious accounts on the Instagram platform. These potential bots are users who have liked every single photo on the site, which is not typical behaviour for normal users. Detecting and addressing fake or bot accounts is crucial for maintaining the integrity and trustworthiness of the platform.

To identify potential bots, I executed the following SQL query:



Result:

The result of this query provided the user IDs and usernames of users who have liked every single photo on Instagram.

Identifying and flagging 13 users with such behaviour can be useful for Instagram in assessing the presence of potential fake or bot accounts on the platform. The platform can then take appropriate actions to investigate and address these accounts, ensuring a more genuine and trustworthy user experience for its community.

Addressing fake accounts is essential not only for user trust but also for maintaining the credibility and reputation of the platform, which can be critical for attracting and retaining users and advertisers.

Achievement and Benefits through this Analysis

Through this project, several valuable insights have been derived that can inform decision-making within Instagram and contribute to the growth and success of the platform:

Marketing Insights:

- Identified the five oldest users on Instagram, enabling the recognition and rewarding of loyal users.
- Identified users who have never posted a single photo, allowing for targeted engagement initiatives.
- Determined the winner of a contest for the most likes on a single photo, facilitating proper recognition.
- Identified the top five most commonly used hashtags, aiding partner brands in reaching a wider audience.
- Determined the best day of the week for user registration, guiding ad campaign scheduling.

Investor

- Calculated the average number of posts per user, providing insights into user engagement.
- Identified potential bots by finding users who liked every single photo, addressing fake account concerns.

These insights are invaluable for Instagram as they can:

1. Optimize marketing campaigns to target loyal users and encourage inactive users to engage more.
2. Enhance user engagement strategies based on average post per user metrics.
3. Improve the platform's trustworthiness by addressing potential fake accounts.
4. Guide ad campaign scheduling to maximize user registration and engagement.

Overall, the analysis conducted in this project has the potential to significantly benefit Instagram by not only improving user engagement but also by maintaining the platform's integrity and attracting advertisers and investors. These insights can play a vital role in shaping the future development and success of one of the world's most popular social media platforms