TRAINITY PROJECT -2

INSTAGRAM USER ANALYTICS: ANALYZING USER ENGAGEMENT AND TRENDS

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SUBMITTED ON:07/08/2024

PROJECT DESCRIPTION

OBJECTIVE OF THE PROJECT

The objective of this project is to analyse Instagram user data to derive actionable insights for the marketing and investor teams. This involves examining user engagement patterns, identifying loyal and inactive users, and determining the effectiveness of hashtags and ad campaigns.

PURPOSE:

- To identify the oldest and most loyal users.
- To determine which users are inactive and might benefit from re-engagement strategies.
- To find the winner of a contest based on photo likes.
- To research popular hashtags and recommend them for increased reach.
- To assess the best day of the week for launching ad campaigns.
- To evaluate user engagement metrics and identify potential fake accounts.

APPROACH:

- **Data Setup**: Imported the provided database into MySQL Workbench to prepare for analysis.
- **SQL Queries**: Developed and executed SQL queries to extract relevant data.
- **Data Analysis**: Interpreted the results to answer specific business questions and provide recommendations.

TECH-STACK USED

- **MySQL Workbench**: Chosen for its comprehensive SQL capabilities, ease of use for database management, and robust query execution features.

INSIGHTS

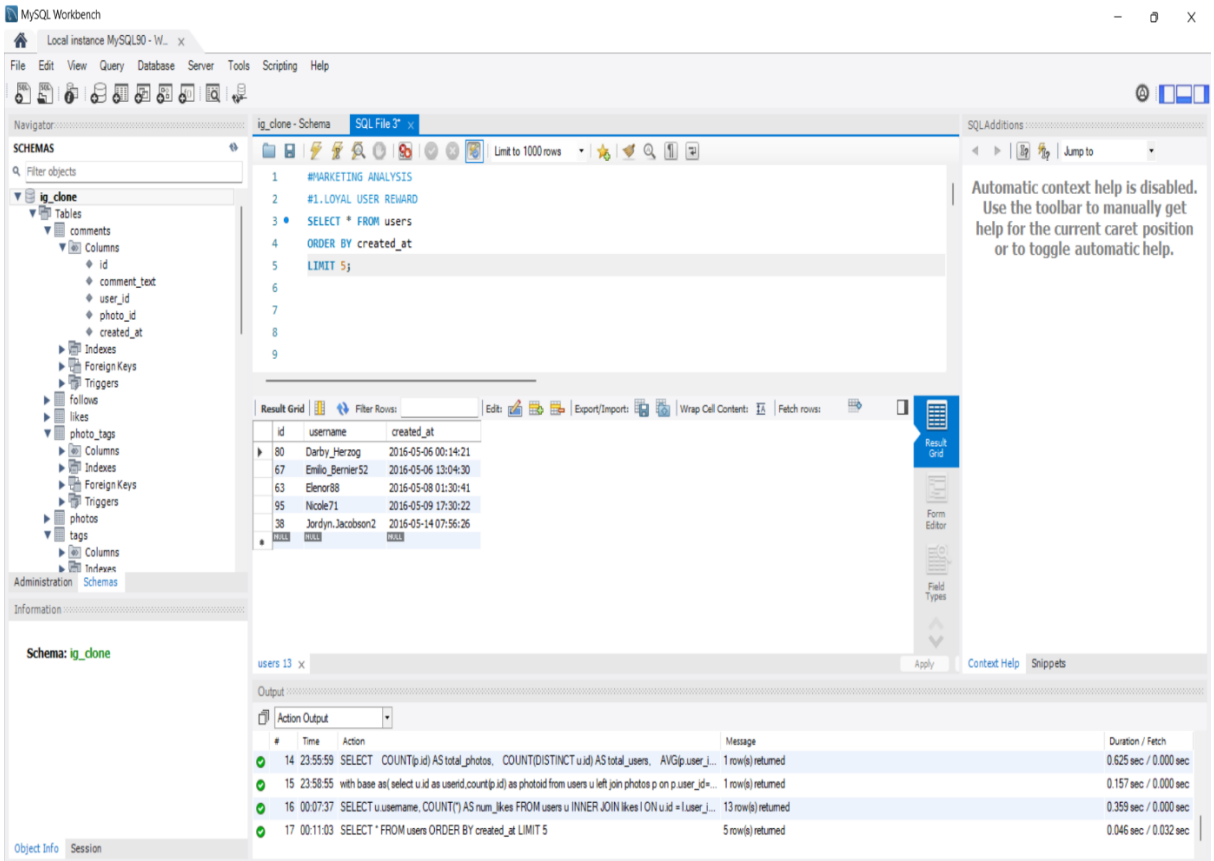
Marketing Analysis:

1.Loyal User Reward: Identified the oldest users, who are likely to be the most loyal. This information can be used to target them for exclusive rewards or recognition.

SQL QUERY:

```
SELECT * FROM users

ORDER BY created_at

LIMIT 5;
```

RESULT:



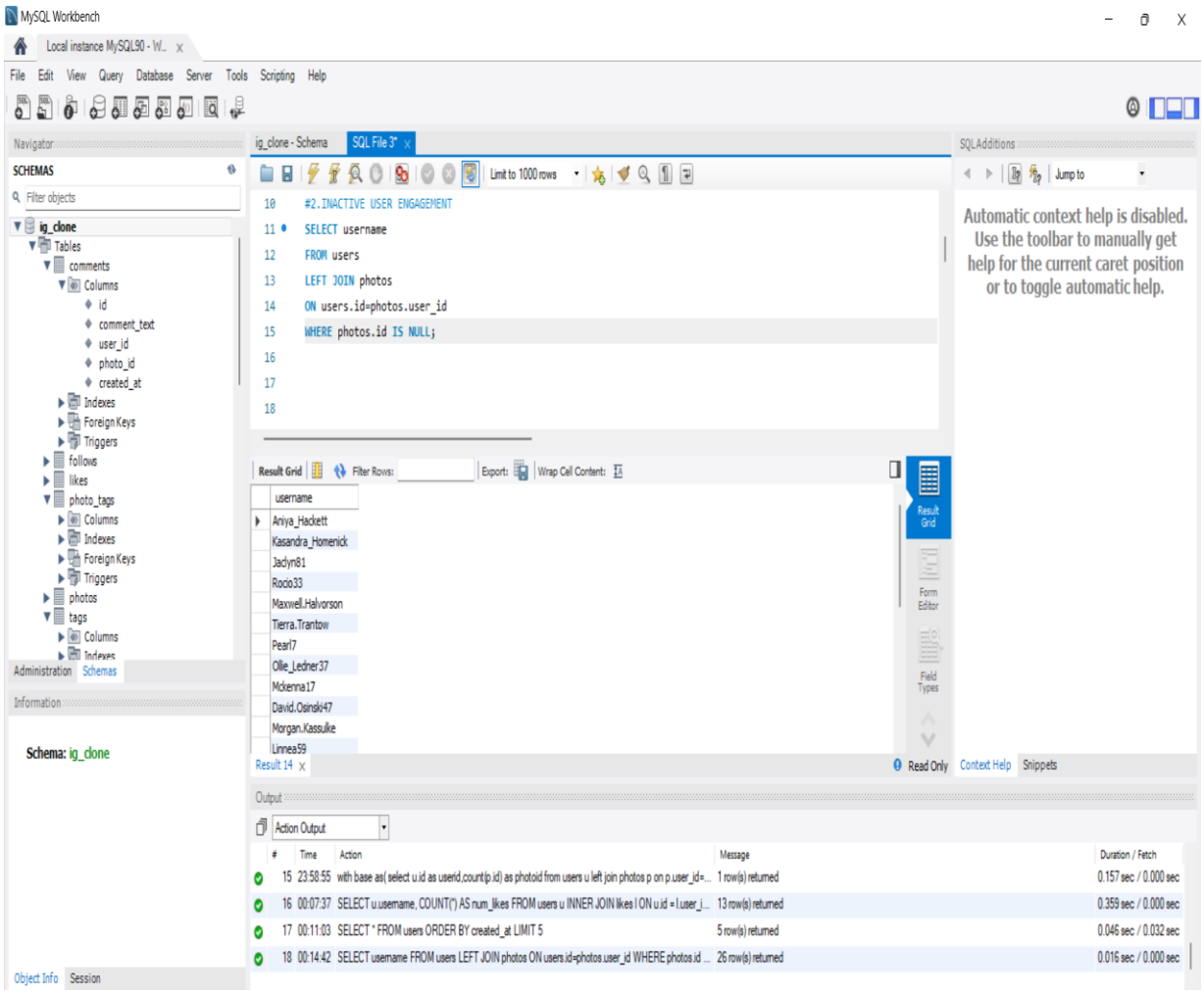
The top five oldest users on Instagram are listed above. These users have been using the platform since its early days and are considered the most loyal users. They are the candidates for a loyalty reward program.

2. Inactive User Engagement: Found users who have never posted, suggesting they might be targets for re-engagement campaigns.

SQL QUERY:

```
SELECT username
FROM users
LEFT JOIN photos
ON users.id=photos.user_id
WHERE photos.id IS NULL;
```

RESULT:



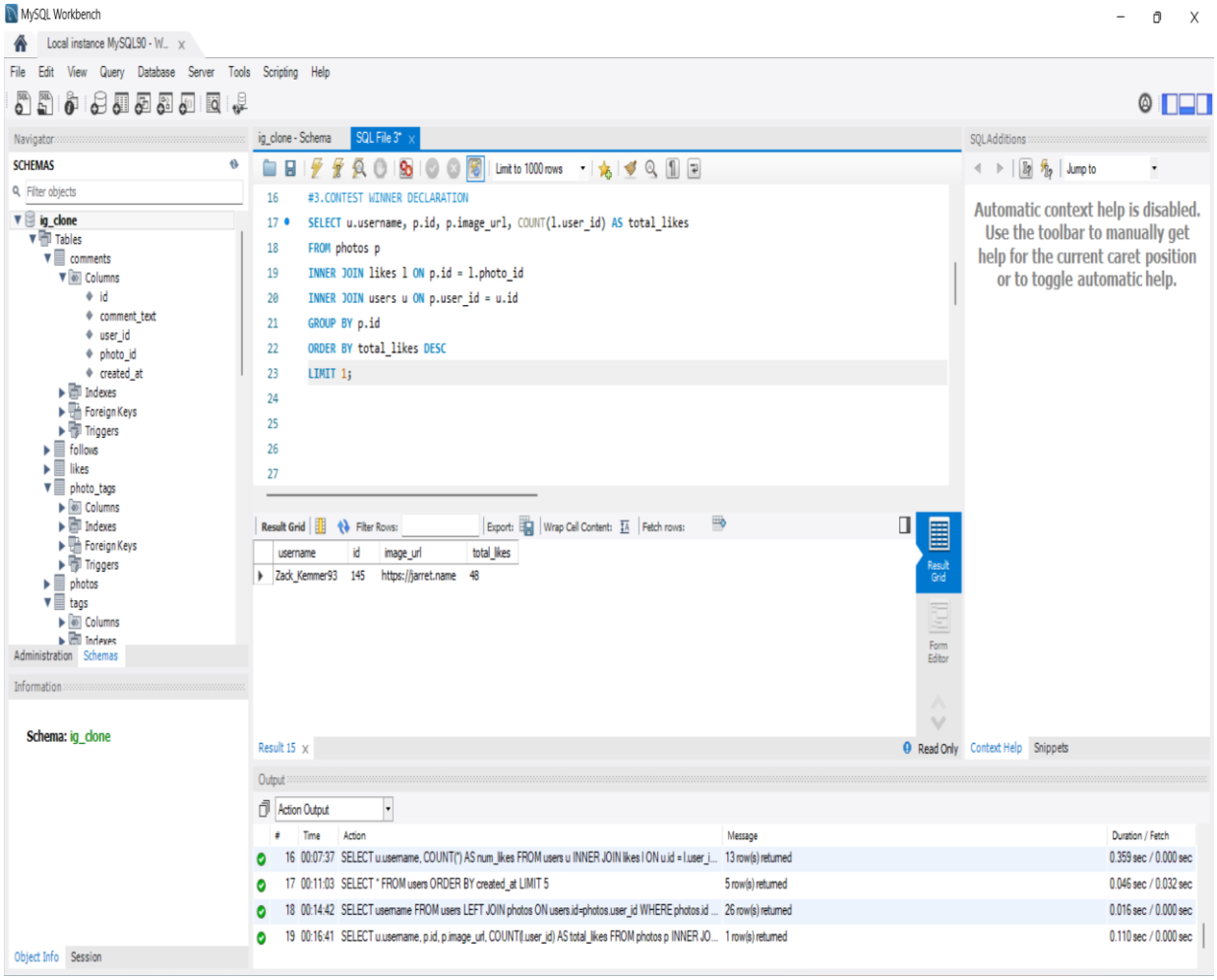
These users have never posted a single photo on Instagram. Engaging them through promotional emails might encourage them to become more active on the platform.

3.<u>Contest Winner</u>: Determined the user with the highest number of likes on a single photo, useful for recognizing and promoting top content creators.

SQL QUERY:

```
SELECT u.username, p.id, p.image_url, COUNT(l.user_id) AS total_likes
FROM photos p
INNER JOIN likes l ON p.id = l.photo_id
INNER JOIN users u ON p.user_id = u.id
GROUP BY p.id
ORDER BY total_likes DESC
LIMIT 1;
```

RESULT:



Zack_Kemmer93 is the winner of the contest with the most likes on a single photo i.e.

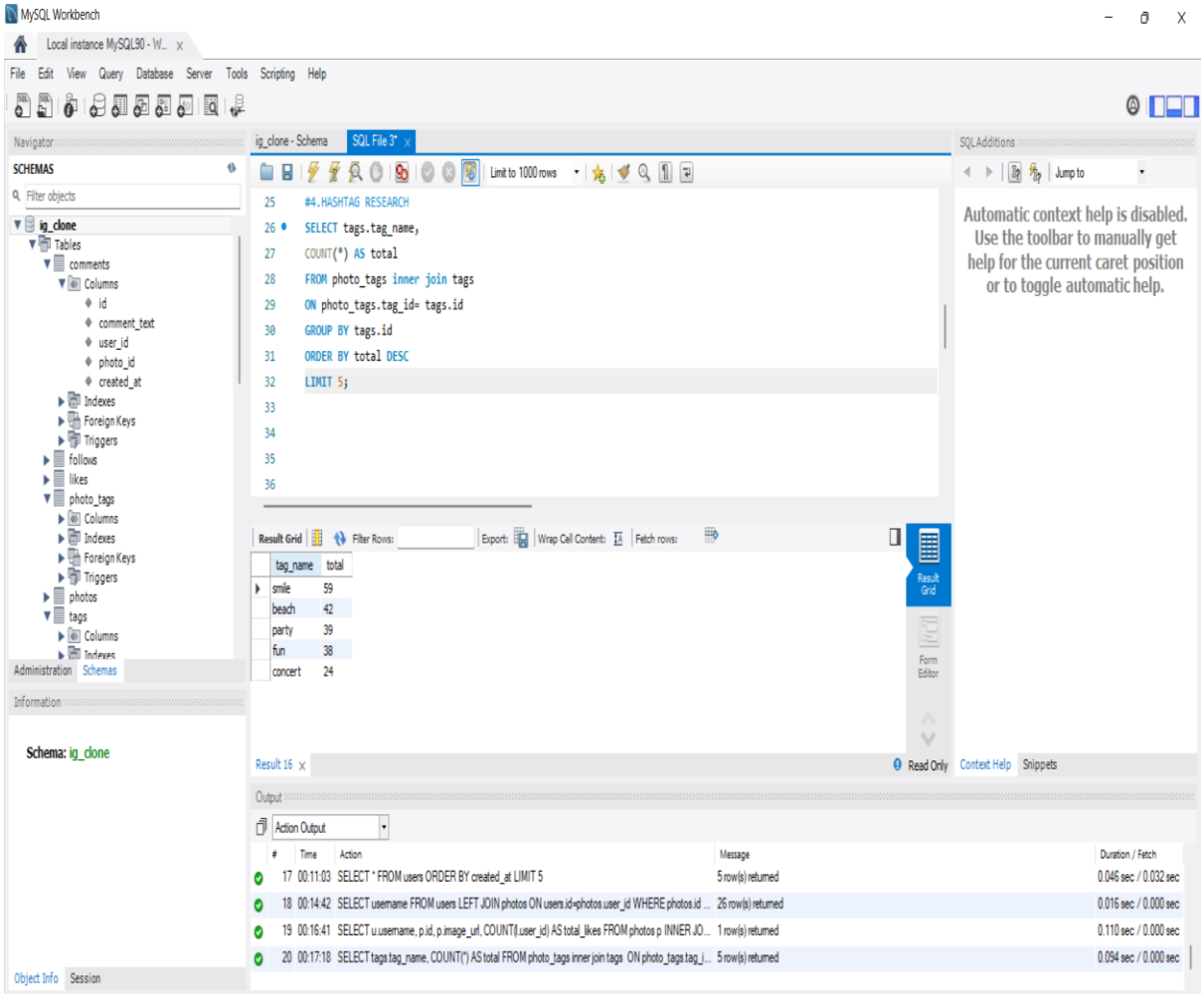
48 likes.

4. <u>Hashtag Research</u>: Discovered the most frequently used hashtags, which can help brands optimize their social media strategy for better reach and engagement.

SQL QUERY:

```
SELECT tags.tag_name,
COUNT(*) AS total
FROM photo_tags inner join tags
ON photo_tags.tag_id= tags.id
GROUP BY tags.id
ORDER BY total DESC
LIMIT 5;
```

RESULT:



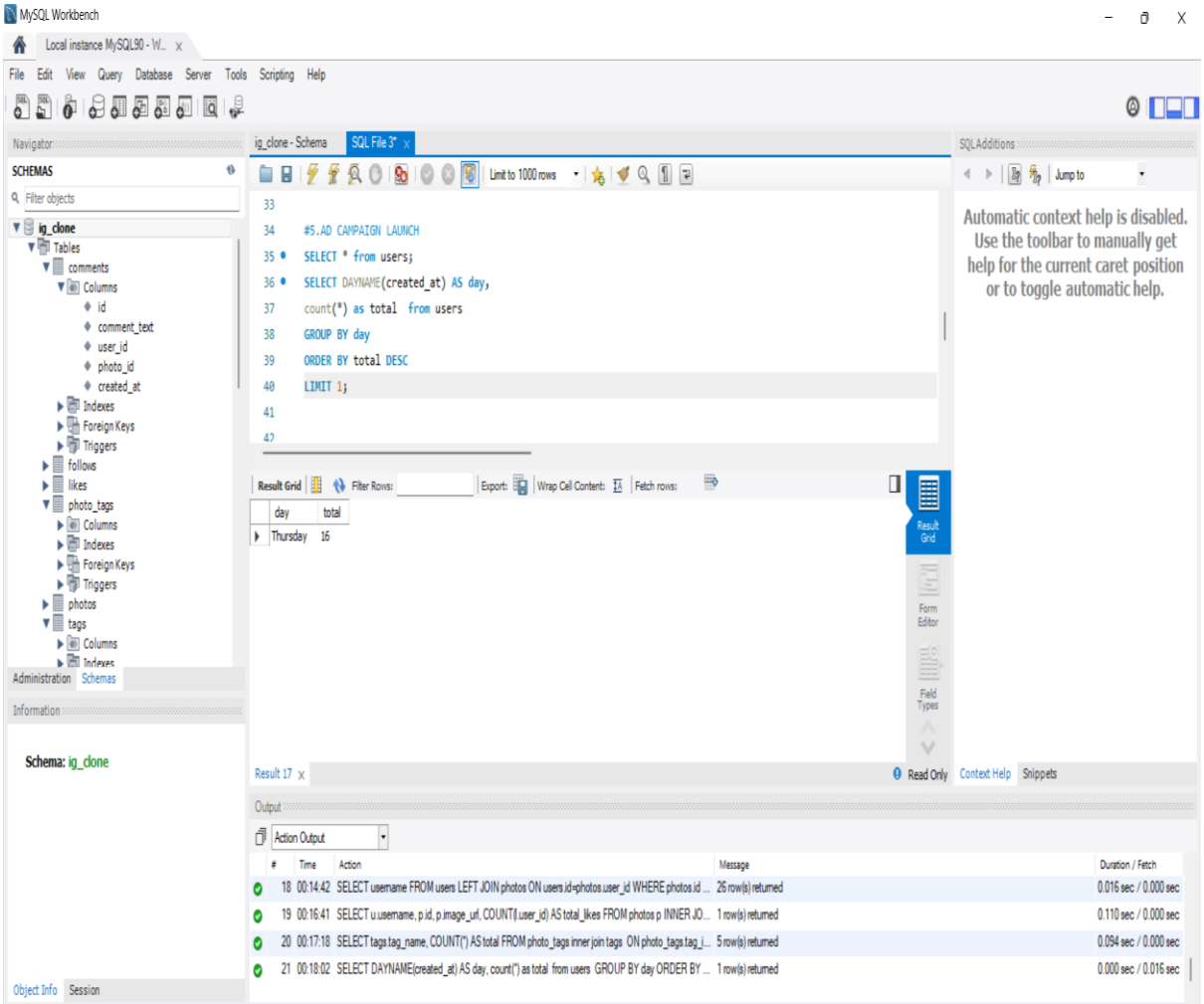
These hashtags are highly popular and can be recommended for use in posts to increase reach and engagement. Brands and users can leverage these hashtags to connect with a larger audience.

5.**<u>Ad Campaign Launch</u>**: Identified the day of the week with the highest user registrations, providing an optimal time for launching advertising campaigns.

SQL QUERY:

```
SELECT * from users;

SELECT DAYNAME(created_at) AS day,

count(*) as total  from users

GROUP BY day

ORDER BY total DESC

LIMIT 1;
```

RESULT:



Thursday is the most popular day for user registrations. Launching ad campaigns on this day could maximize visibility and engagement.

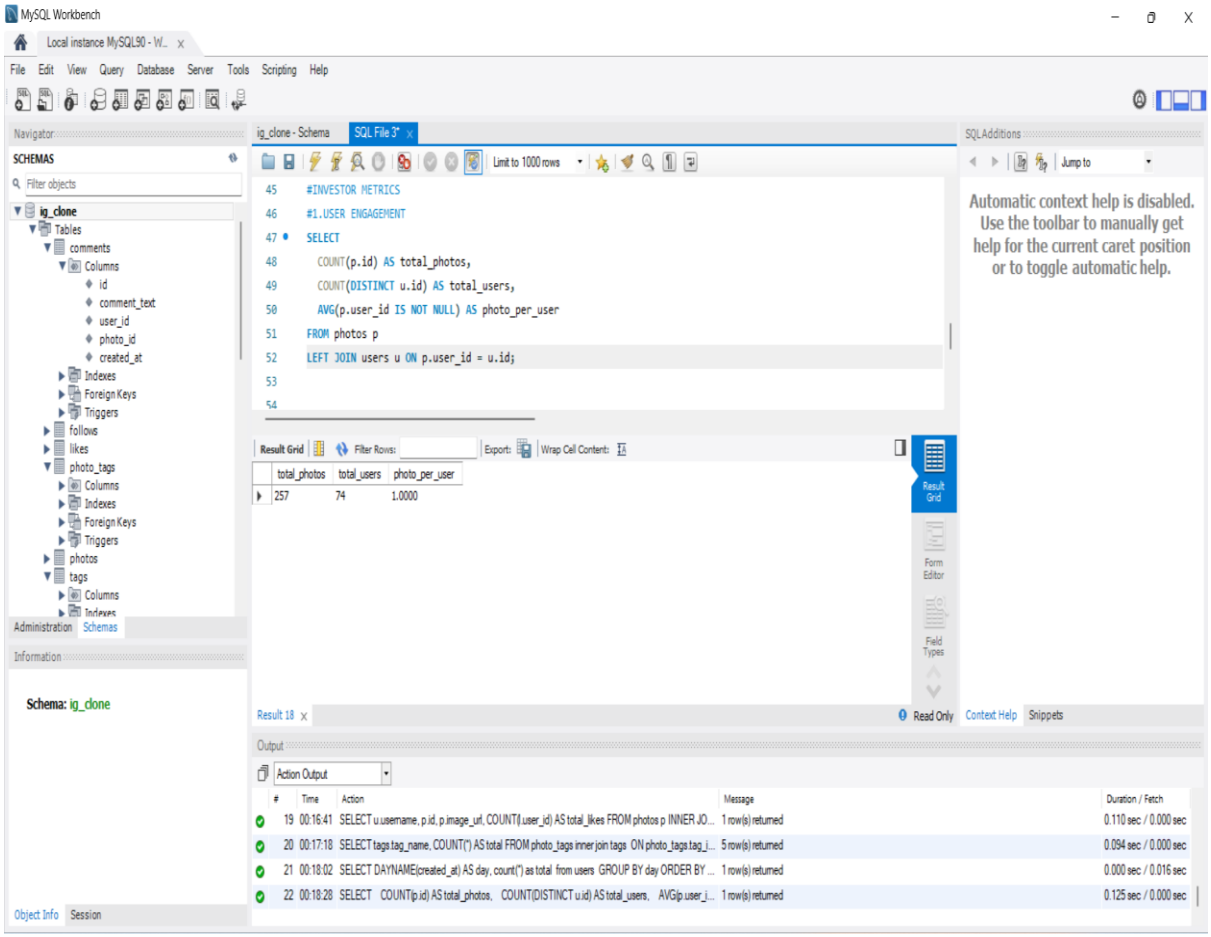
Investor Metrics:

1.User Engagement: Calculated average posts per user and total photos per user to assess overall user activity and platform engagement.

SQL QUERY:

```
SELECT
COUNT(p.id) AS total_photos,
COUNT(DISTINCT u.id) AS total_users,
AVG(p.user_id IS NOT NULL) AS photo_per_user
FROM photos p
LEFT JOIN users u ON p.user_id = u.id;
```

RESULT:



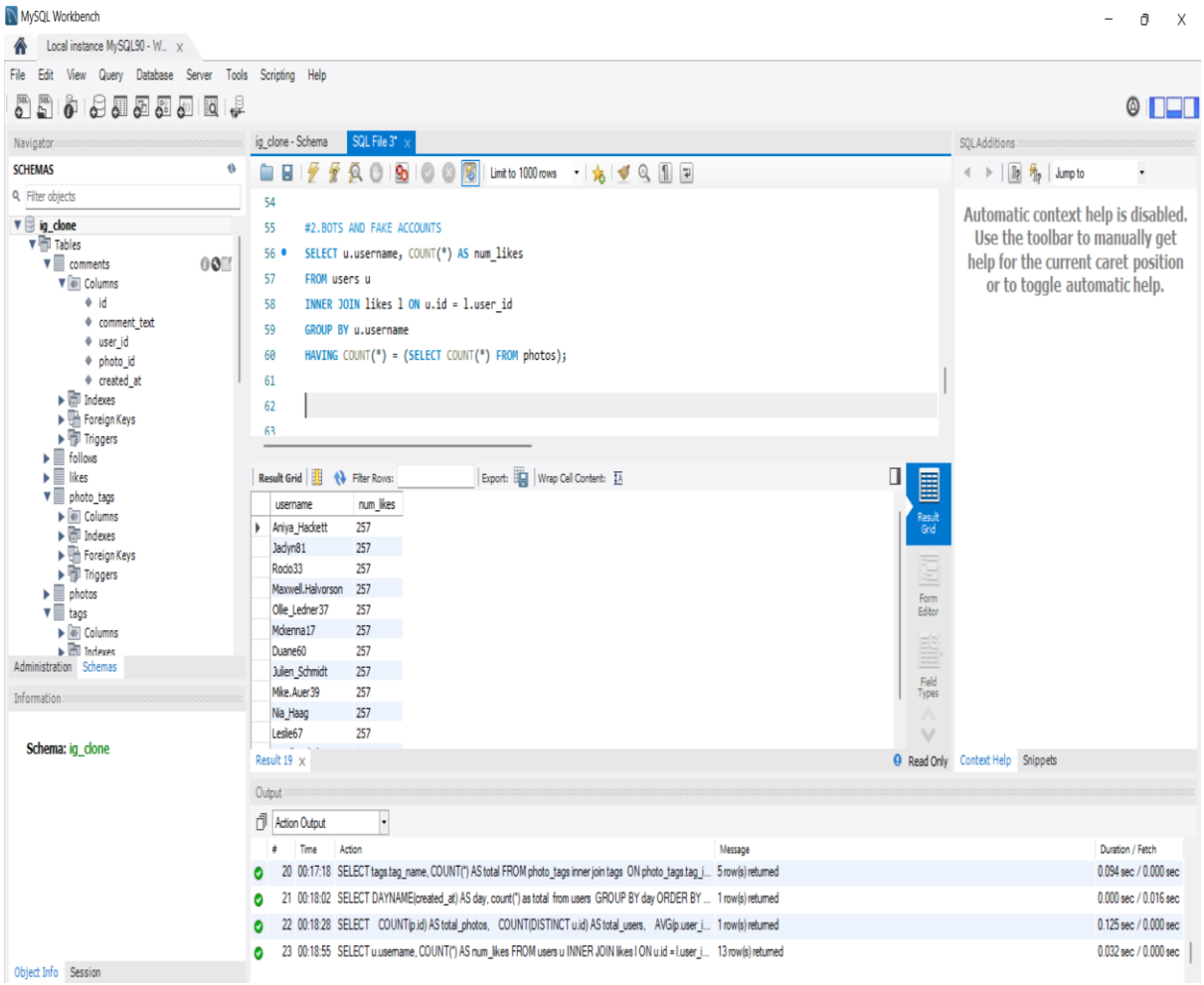
This metric confirms the average post count per user, providing a consistent measure of user activity.

2.**Bots & Fake Accounts**: Identified potential fake accounts by detecting users who liked every photo, which helps in maintaining platform integrity.

SQL QUERY:

```
SELECT u.username, COUNT(*) AS num_likes

FROM users u

INNER JOIN likes l ON u.id = l.user_id

GROUP BY u.username

HAVING COUNT(*) = (SELECT COUNT(*) FROM photos);
```

RESULT:



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THANK YOU!!!!