Instagram user data analytics

Project Description: In this project, I 'll be using SQL and MySQL Workbench as to analyze Instagram user data and answer questions posed by the management team. The insights will help the product manager and the rest of the team make informed decisions about the future direction of the Instagram app.

The goal of this project is to use SQL skills to extract meaningful insights from the data. The findings could potentially influence the future development of one of the world's most popular social media platforms.

Approach:

A) Marketing Analysis:

1. 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.

```
87
88      -- 1. Find the 5 oldest users of the instagram from the database
89
90 •    SELECT username, created_at
91      FROM users
92      ORDER BY created_at LIMIT 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell

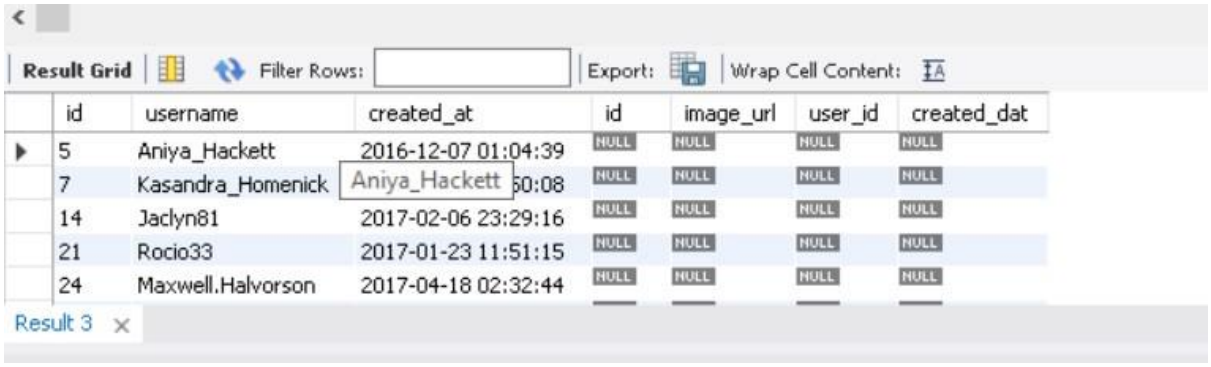
username	created_at
Darby_Herzog	2016-05-06 00:14:21
Emilio_Bernier52	2016-05-06 13:04:30
Elenor88	2016-05-08 01:30:41
Nicole71	2016-05-09 17:30:22
Jordyn.Jacobson2	2016-05-14 07:56:26

2. 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.

```sql
-- 2. Identify users who have never posted a single photo on Instagram.


SELECT *
FROM users u
LEFT JOIN photos p
ON u.id = p.user_id
WHERE p.image_url IS NULL;
```



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

id	username	created_at	id	image_url	user_id	created_dat
5	Aniya_Hackett	2016-12-07 01:04:39	NULL	NULL	NULL	NULL
7	Kasandra_Homenick	Aniya_Hackett 50:08	NULL	NULL	NULL	NULL
14	Jaclyn81	2017-02-06 23:29:16	NULL	NULL	NULL	NULL
21	Rocio33	2017-01-23 11:51:15	NULL	NULL	NULL	NULL
24	Maxwell.Halvorson	2017-04-18 02:32:44	NULL	NULL	NULL	NULL

Result 3

3. Contest Winner Declaration: The team has organized a contest where the user with the most likes on a single photo wins.

Your Task: Determine the winner of the contest and provide their details to the team.

```sql
105
106     -- 3. The team has organized a contest where the user with the most likes on a single photo wins.
107     --      Your Task: Determine the winner of the contest and provide their details to the team.
108
109
110 •   SELECT likes.photo_id, users.username, count(likes.user_id) as no_of_likes
111     FROM likes INNER JOIN photos ON likes.photo_id = photos.id
112     INNER JOIN users ON photos.user_id = users.id
113     GROUP BY likes.photo_id, users.username
114     ORDER BY no_of_likes DESC;
```

Result Grid | Filter Rows: | Export:

photo_id	username	no_of_likes
145	Zack_Kemmer93	48
127	Malinda_Streich	43
182	Adelle96	43
123	Seth46	42
30	Presley_McClure	41

4. 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.

```
111     -- 4.  Identify and suggest the top five most commonly used hashtags on the platform.
112
113
114 •   SELECT t.tag_name, count(p.photo_id) as count_photo
115     FROM photo_tags p
116     INNER JOIN tags t
117     ON p.tag_id = t.id
118     GROUP BY t.tag_name
119     ORDER BY count_photo DESC LIMIT 5;
120
```

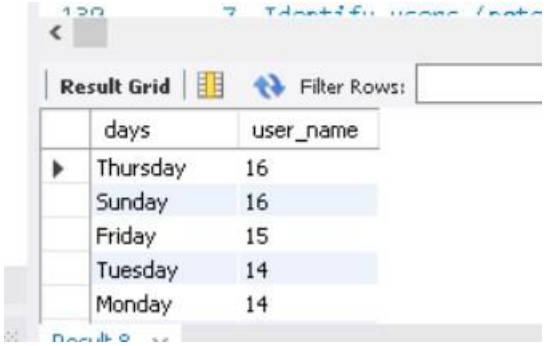
Result Grid | Filter Rows:

tag_name	count_photo
smile	59
beach	42
party	39
fun	38
concert	24

5. 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.

```
28      -- 5. Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.
29
30
31 •    SELECT DATE_FORMAT((created_at), '%W') AS days,
32      count(username)  AS user_name FROM users
33      GROUP BY days
34      ORDER BY user_name DESC;
35
```



Result Grid | Filter Rows:

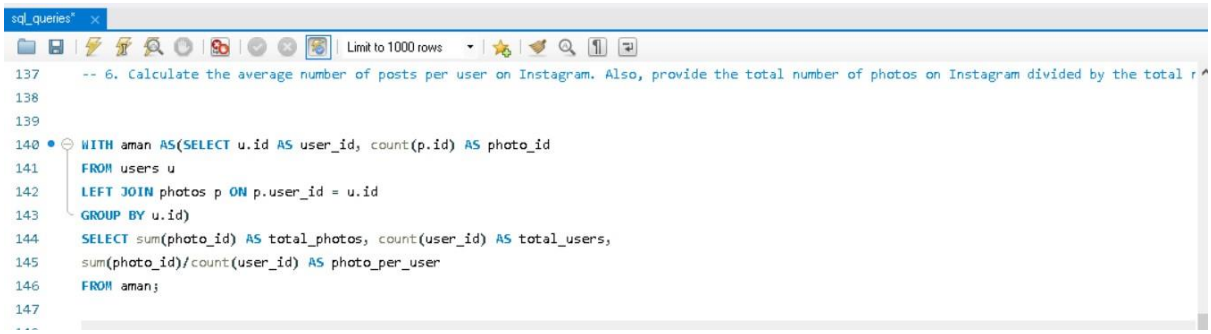
days	user_name
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14

Thursday and Sunday both are good for the ad campaign.

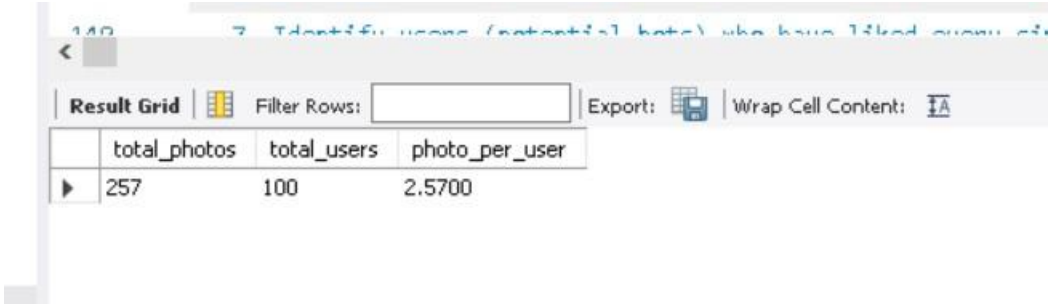
B) Investor Metrics:

1. 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.



```
137  -- 6. Calculate the average number of posts per user on Instagram. Also, provide the total number of photos on Instagram divided by the total r
138
139
140  WITH aman AS(SELECT u.id AS user_id, count(p.id) AS photo_id
141  FROM users u
142  LEFT JOIN photos p ON p.user_id = u.id
143  GROUP BY u.id)
144  SELECT sum(photo_id) AS total_photos, count(user_id) AS total_users,
145  sum(photo_id)/count(user_id) AS photo_per_user
146  FROM aman;
147
```



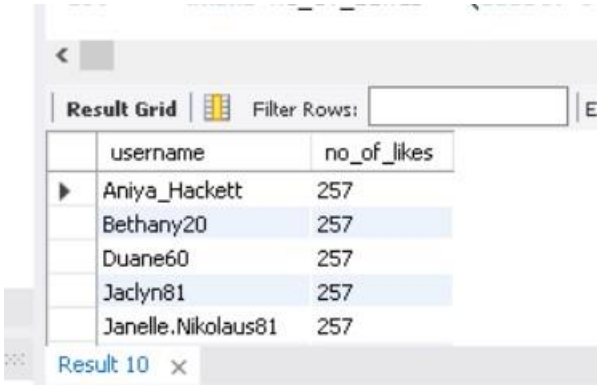
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_photos	total_users	photo_per_user
257	100	2.5700

2. 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.

```
148
149     -- 7. Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.
150
151
152 •   WITH aman as(SELECT u.username, count(l.photo_id) AS no_of_likes
153     FROM likes AS l
154     INNER JOIN users AS u
155     ON u.id = l.user_id
156     GROUP BY u.username)
157     SELECT username, no_of_likes
158     FROM aman
159     WHERE no_of_likes = (SELECT count(*) FROM photos) ORDER BY username;
```



Result Grid | Filter Rows:

username	no_of_likes
Aniya_Hackett	257
Bethany20	257
Duane60	257
Jaclyn81	257
Janelle.Nikolaus81	257

Result 10