Instagram user analytics

A) Marketing Analysis:

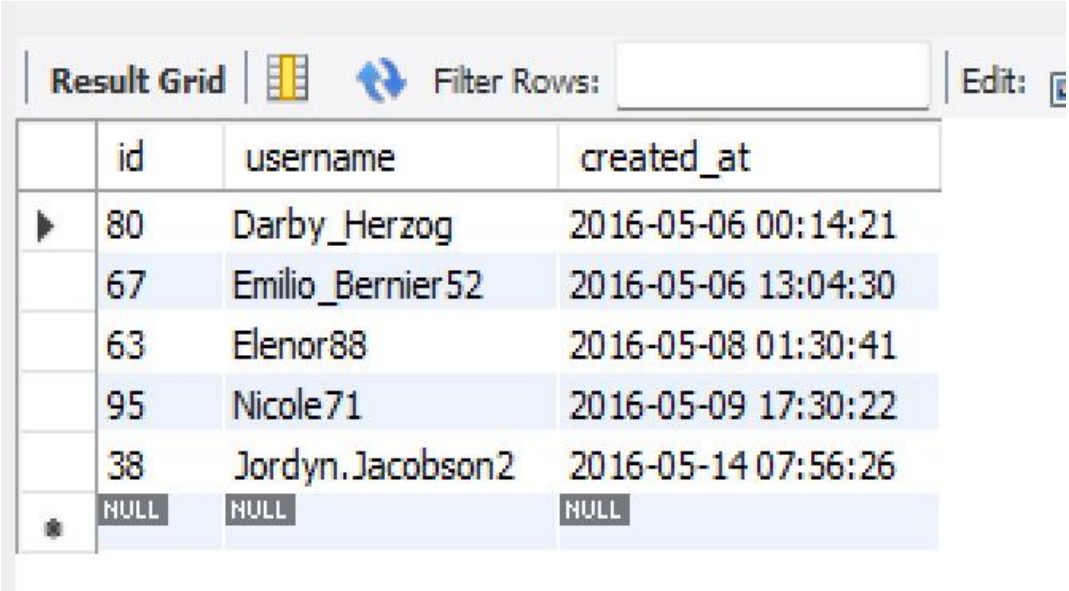
Loyal User Reward: The marketing team wants to reward the most loyal users, i.e., those who have been using the platform for the longest time.

Your Task: Identify the five oldest users on Instagram from the provided database.

SQL QUERIES

```
SELECT * FROM users
order by created_at asc
limit 5;
```

SQL OUTPUT



Result Grid | Filter Rows: | Edit:

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

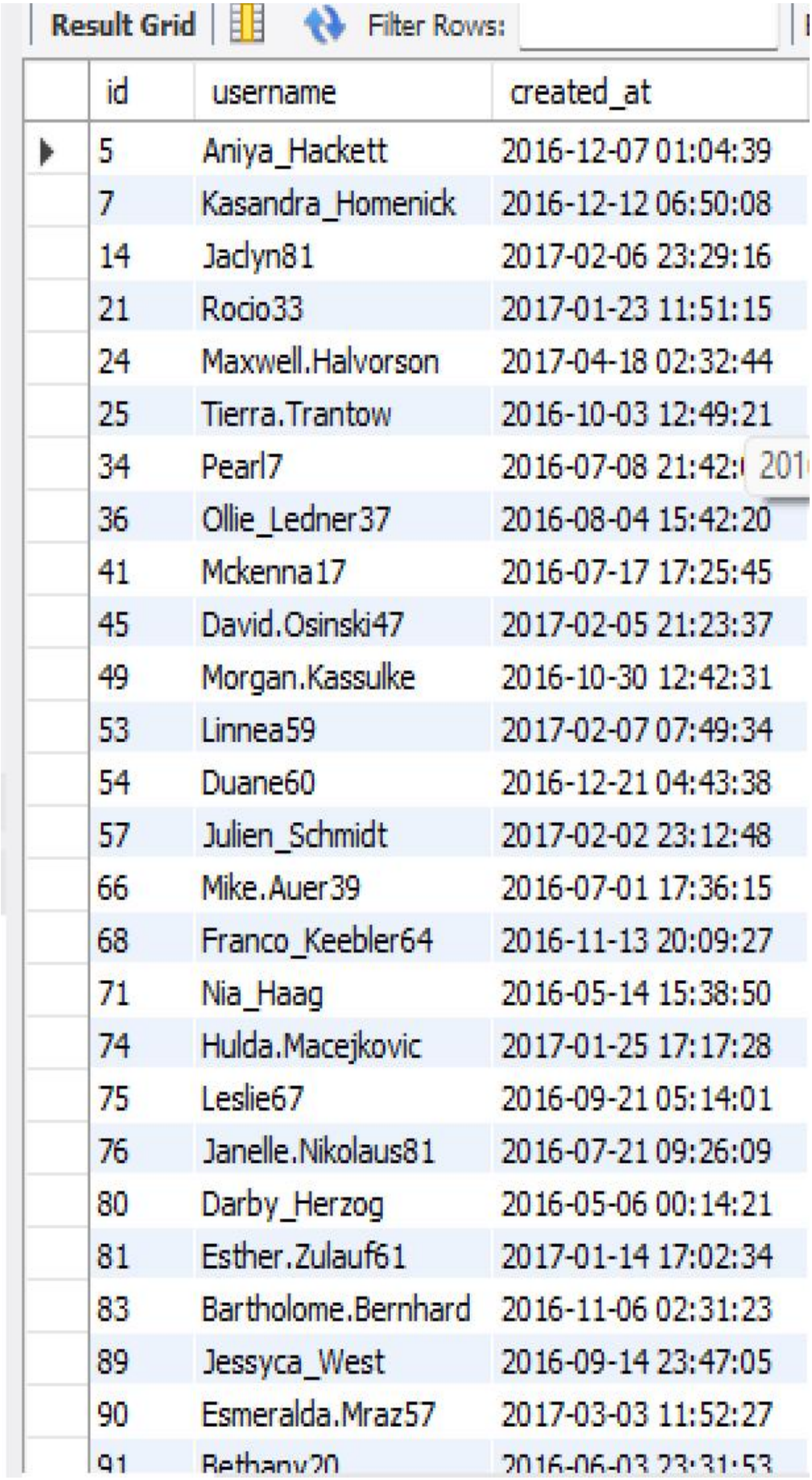
2. Inactive User Engagement: The team wants to encourage inactive users to start posting by sending them promotional emails.

Your Task: Identify users who have never posted a single photo on Instagram.

SQL QUERIES

```
select * from users as a
left join photos as b on
a.id=b.user_id and
b.user_id is null
```

SQL OPUTPUT


Result Grid | Filter Rows:

id	username	created_at
5	Aniya_Hackett	2016-12-07 01:04:39
7	Kasandra_Homenick	2016-12-12 06:50:08
14	Jadyn81	2017-02-06 23:29:16
21	Rocio33	2017-01-23 11:51:15
24	Maxwell.Halvorson	2017-04-18 02:32:44
25	Tierra.Trantow	2016-10-03 12:49:21
34	Pearl7	2016-07-08 21:42:(201
36	Ollie_Ledner37	2016-08-04 15:42:20
41	Mckenna17	2016-07-17 17:25:45
45	David.Osinski47	2017-02-05 21:23:37
49	Morgan.Kassulke	2016-10-30 12:42:31
53	Linnea59	2017-02-07 07:49:34
54	Duane60	2016-12-21 04:43:38
57	Julien_Schmidt	2017-02-02 23:12:48
66	Mike.Auer39	2016-07-01 17:36:15
68	Franco_Keebler64	2016-11-13 20:09:27
71	Nia_Haag	2016-05-14 15:38:50
74	Hulda.Macejkovic	2017-01-25 17:17:28
75	Leslie67	2016-09-21 05:14:01
76	Janelle.Nikolaus81	2016-07-21 09:26:09
80	Darby_Herzog	2016-05-06 00:14:21
81	Esther.Zulauf61	2017-01-14 17:02:34
83	Bartholome.Bernhard	2016-11-06 02:31:23
89	Jessyca_West	2016-09-14 23:47:05
90	Esmeralda.Mraz57	2017-03-03 11:52:27
91	Bethany20	2016-06-03 23:31:53

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

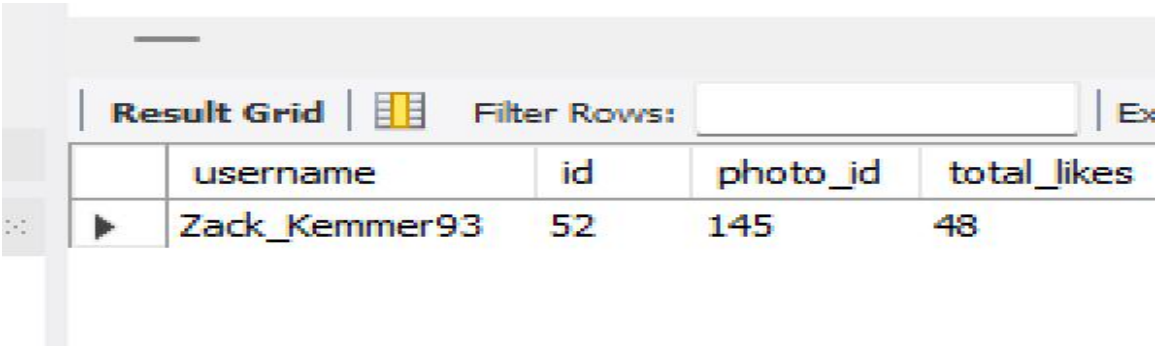
Your Task: Determine the winner of the contest and provide their details to the team.

SQL QUERIES:

```
SELECT
    photo_id
FROM
    likes
GROUP BY photo_id
ORDER BY COUNT(user_id) DESC
LIMIT 1;

with MostLikedPhoto as (SELECT
    photo_id, COUNT(user_id) as total_likes
FROM
    likes
GROUP BY photo_id
ORDER BY COUNT(user_id) DESC
LIMIT 1)
select u.username, u.id, p.id as photo_id, MostLikedPhoto.total_likes from MostLikedPhoto
join photos p on MostLikedPhoto.photo_id = p.id
join users u on p.user_id = u.id;
```

SQL OUTPUT:



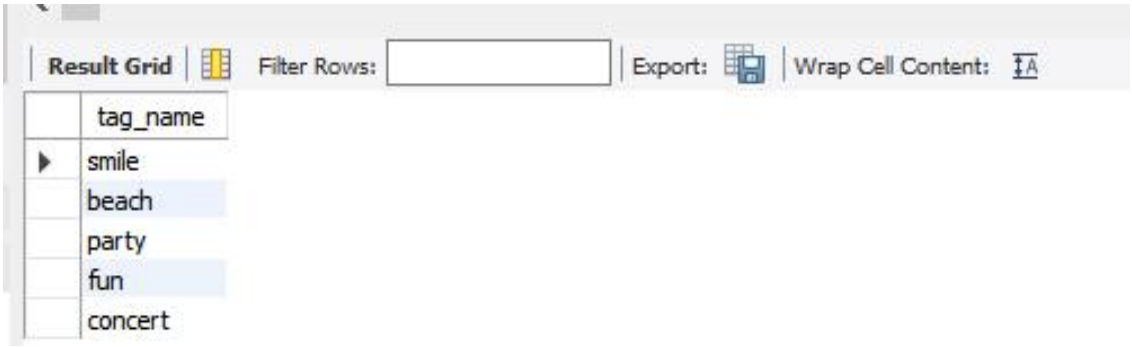
4. Hashtag Research: A partner brand wants to know the most popular hashtags to use in their posts to reach the most people.

Your Task: Identify and suggest the top five most commonly used hashtags on the platform.

SQL QUERIES:

```
select * from tags;
with top_tags as
(select tag_id from photo_tags
group by tag_id
order by count(tag_id) desc
limit 5)
select t.tag_name from top_tags
join tags t on top_tags.tag_id = t.id;
```

SQL OUTPUT:



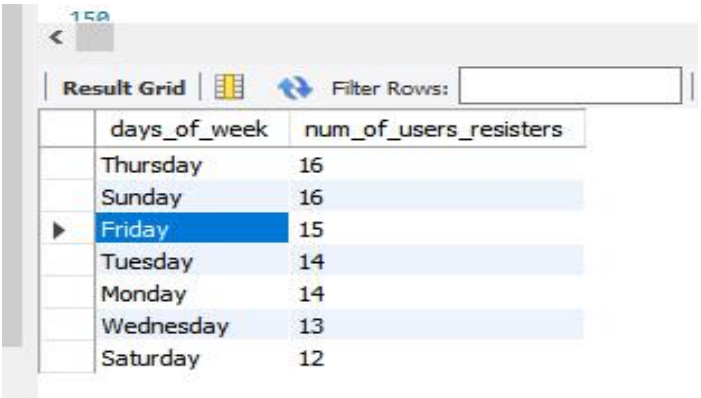
5. Ad Campaign Launch: The team wants to know the best day of the week to launch ads.

Your Task: Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.

SQL QUERIES:

```
select dayname(created_at) as days_of_week,
    count(*) as num_of_users_resisters
from users
group by dayname(created_at)
order by num_of_users_resisters desc;
```

SQL OUTPUT:



days_of_week	num_of_users_resisters
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

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.

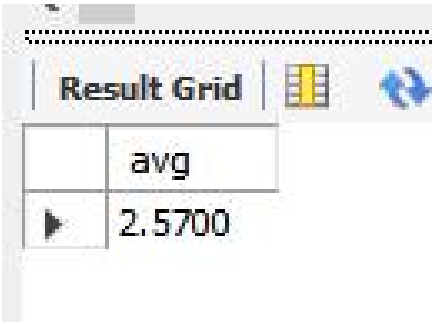
SQL QUERIES:

```
SELECT COUNT(DISTINCT id) AS total_users_on_instagram
FROM users;

SELECT COUNT(*) AS total_photos_on_instagram
FROM photos;

SELECT (SELECT Count(*)
        FROM   photos) / (SELECT Count(*)
                          FROM   users) AS avg;
```

OUTPUT:



average number of posts per user on Instagram:

post count by user

QUERIES:

```
select user_id, count(*)  as posts_count from photos
group by user_id
order by posts_count desc;
```

OUTPUT:

esult Grid | Filter Rows:

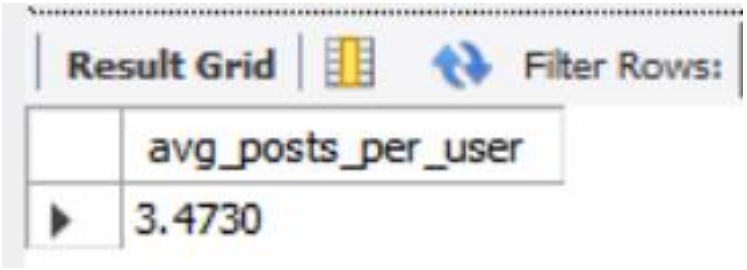
user_id	posts_count
15	4
87	4
4	3
10	3
50	3
67	3
17	3
42	3
92	3
96	3
99	3
38	2
100	2
82	2
84	2
85	2
60	2
62	2
19	2
93	2
95	2
30	2

average_post per user:

QUERIES:

```
SELECT AVG(posts_count) as avg_posts_per_user
FROM (
select user_id, count(*)  as posts_count from photos
group by user_id
order by posts_count desc) as user_posts;
```

OUTPUT:



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.

SQL QUERIES:

```
SELECT count(image_url)/count(a.id) as avg1 from users as a
left join photos as b
on a.id=b.user_id
group by b.user_id

select count(id) from users

select count(image_url) from photos
```

OUTPUT:

	avg1
▶	1.0000
	1.0000
	1.0000
	1.0000
	0.0000
	1.0000
	1.0000

	count(id)
▶	100

	count(image_url)
▶	257