PROJECT 2: INSTAGRAM USER ANALYTICS

Introduction

This project aims to extract useful insight from raw data using MYSQL workbench and the findings could potentially influence the future development of platforms and thereby increase your knowledge in MYSQL.

1) Marketing Analysis

1. Loyal User Reward:

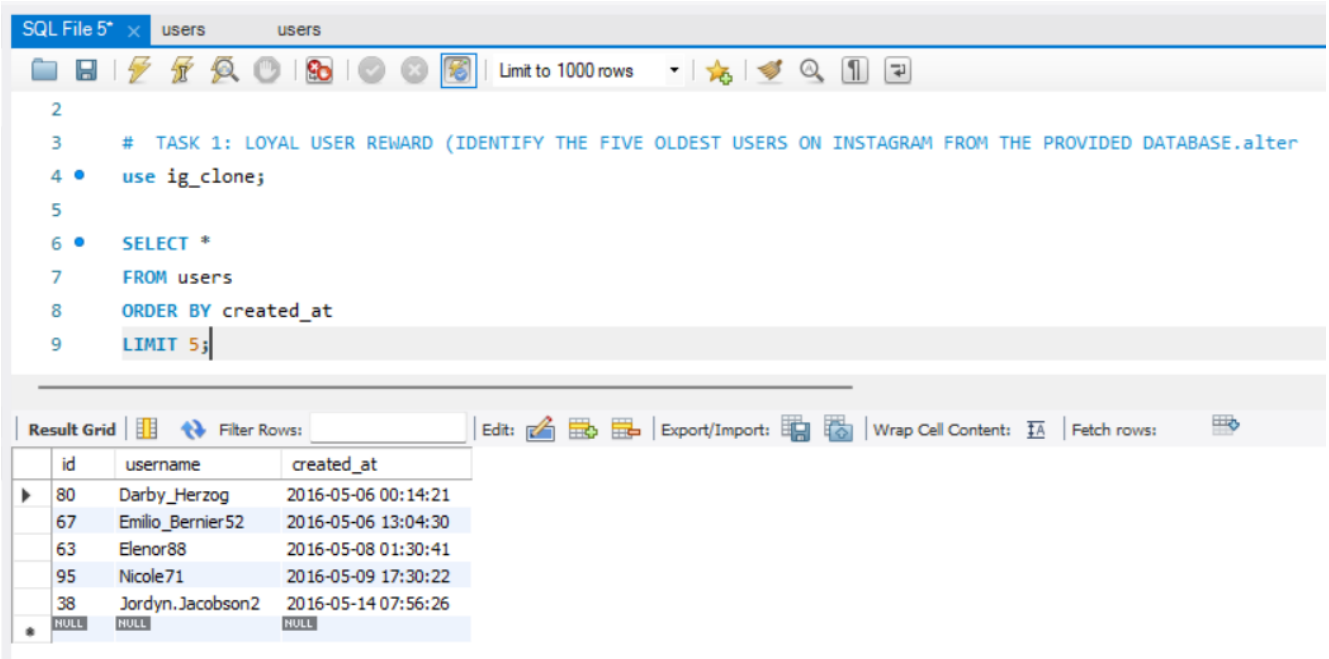
Task: Identify the five oldest users on Instagram from the provided data base.

Code:

```
SELECT *
FROM users
ORDER BY created_at
LIMIT 5;
```

Result: The five oldest users selected for loyal user Reward are follow;

Sl no	# id	username	created_at
1)	80	Darby_Herzog	2016-05-06 00:14:21
2)	67	Emilio_Bernier52	2016-05-06 13:04:30
3)	63	Elenor88	2016-05-08 01:30:41
4)	95	Nicole71	2016-05-09 17:30:22
5)	38	Jordyn.Jacobson2	2016-05-14 07:56:26



2. Inactive User Engagement:

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

Code:
```
SELECT *
FROM users
LEFT JOIN photos
ON users.id = photo.user_id
WHERE photos.user_id is null;
```

Result: There are 26 users who have never posted a single photo on Instagram.

slno	# id	username	created_at	image_url
1.	5	**Aniya_Hackett**	2016-12-07 01:04:39	Null
2.	7	**Kasandra_Homenick**	2016-12-12 06:50:08	Null
3.	14	**Jaclyn81**	2017-02-06 23:29:16	Null
4.	21	**Rocio33**	2017-01-23 11:51:15	Null
5.	24	**Maxwell.Halvorson**	2017-04-18 02:32:44	Null
6.	25	**Tierra.Trantow**	2016-10-03 12:49:21	Null
7.	34	**Pearl7**	2016-07-08 21:42:01	Null
8.	36	**Ollie_Ledner37**	2016-08-04 15:42:20	Null
9.	41	**Mckenna17**	2016-07-17 17:25:45	Null
10.	45	**David.Osinski47**	2017-02-05 21:23:37	Null
11.	49	**Morgan.Kassulke**	2016-10-30 12:42:31	Null
12.	53	**Linnea59**	2017-02-07 07:49:34	Null
13.	54	**Duane60**	2016-12-21 04:43:38	Null
14.	57	**Julien_Schmidt**	2017-02-02 23:12:48	Null
15.	66	**Mike.Auer39**	2016-07-01 17:36:15	Null
16.	68	**Franco_Keebler64**	2016-11-13 20:09:27	Null
17.	71	**Nia_Haag**	2016-05-14 15:38:50	Null
18.	74	**Hulda.Macejkovic**	2017-01-25 17:17:28	Null
19.	75	**Leslie67**	2016-09-21 05:14:01	Null
20.	76	**Janelle.Nikolaus81**	2016-07-21 09:26:09	Null
21.	80	**Darby_Herzog**	2016-05-06 00:14:21	Null
22.	81	**Esther.Zulauf61**	2017-01-14 17:02:34	Null
23.	83	**Bartholome.Bernhard**	2016-11-06 02:31:23	Null
24.	89	**Jessyca_West**	2016-09-14 23:47:05	Null
25.	90	**Esmeralda.Mraz57**	2017-03-03 11:52:27	Null
26.	91	**Bethany20**	2016-06-03 23:31:53	Null

SQL File 5* | users | comments | comments | photos

Limit to 1000 rows

```
10
11    # Task 2: Identify users who have never posted a single photo on Instagram.
12
13 •  select *
14    from users
15    left join  photos
16    on users.id = photos.user_id where photos.user_id is Null;
17
```

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	2016-12-12 06:50:08	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
25	Tierra.Trantow	2016-10-03 12:49:21	NULL	NULL	NULL	NULL
34	Pearl7	2016-07-08 21:42:01	NULL	NULL	NULL	NULL
36	Ollie_Ledner37	2016-08-04 15:42:20	NULL	NULL	NULL	NULL
41	Mckenna17	2016-07-17 17:25:45	NULL	NULL	NULL	NULL
45	David.Osinski47	2017-02-05 21:23:37	NULL	NULL	NULL	NULL
54	Duane60	2016-12-21 04:43:38	NULL	NULL	NULL	NULL
57	Julien_Schmidt	2017-02-02 23:12:48	NULL	NULL	NULL	NULL
66	Mike.Auer39	2016-07-01 17:36:15	NULL	NULL	NULL	NULL
68	Franco_Keebler64	2016-11-13 20:09:27	NULL	NULL	NULL	NULL
71	Nia_Haag	2016-05-14 15:38:50	NULL	NULL	NULL	NULL
74	Hulda.Macejkovic	2017-01-25 17:17:28	NULL	NULL	NULL	NULL
75	Leslie67	2016-09-21 05:14:01	NULL	NULL	NULL	NULL
76	Janelle.Nikolaus81	2016-07-21 09:26:09	NULL	NULL	NULL	NULL
80	Darby_Herzog	2016-05-06 00:14:21	NULL	NULL	NULL	NULL
81	Esther.Zulauf61	2017-01-14 17:02:34	NULL	NULL	NULL	NULL
83	Bartholome.Bernhard	2016-11-06 02:31:23	NULL	NULL	NULL	NULL
89	Jessyca_West	2016-09-14 23:47:05	NULL	NULL	NULL	NULL
90	Esmeralda.Mraz57	2017-03-03 11:52:27	NULL	NULL	NULL	NULL
91	Bethany20	2016-06-03 23:31:53	NULL	NULL	NULL	NULL

Result 18

Output

Action Output

#	Time	Action	Message
1	12:22:16	select * from users left join photos on users.id = photos.user_id where photos.user_id is Null LIMIT 0, 1000	26 row(s) returned

3 Contest Winner Declaration:

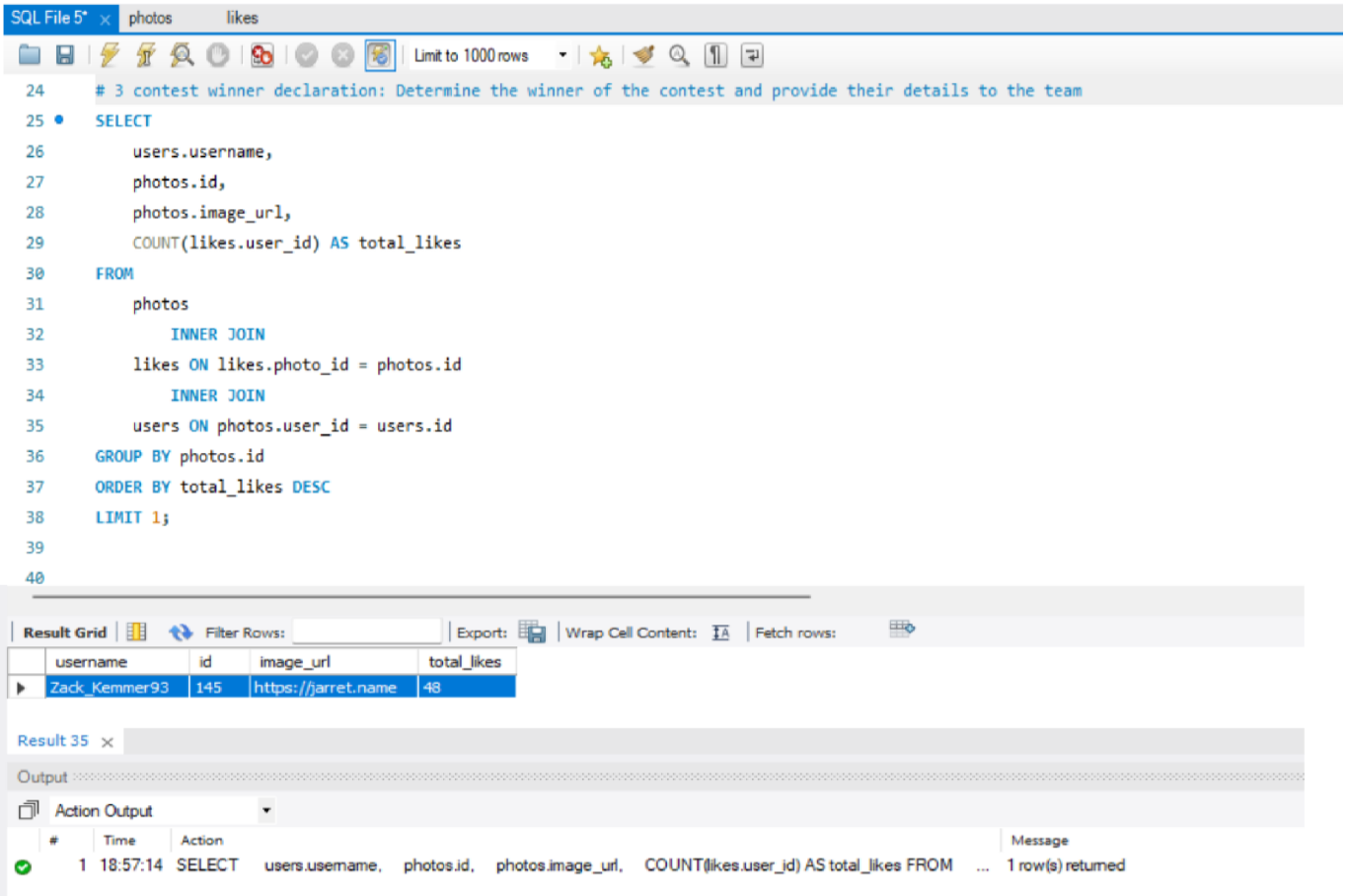
Task: Determine the winner of the contest and provide their details to the team.

Code:

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

Result: Details of the contest winner listed below,

username : Zack_Kemmer93
id :145
image_url : https://jarret.name
total_likes : 48



4 Hashtag Research

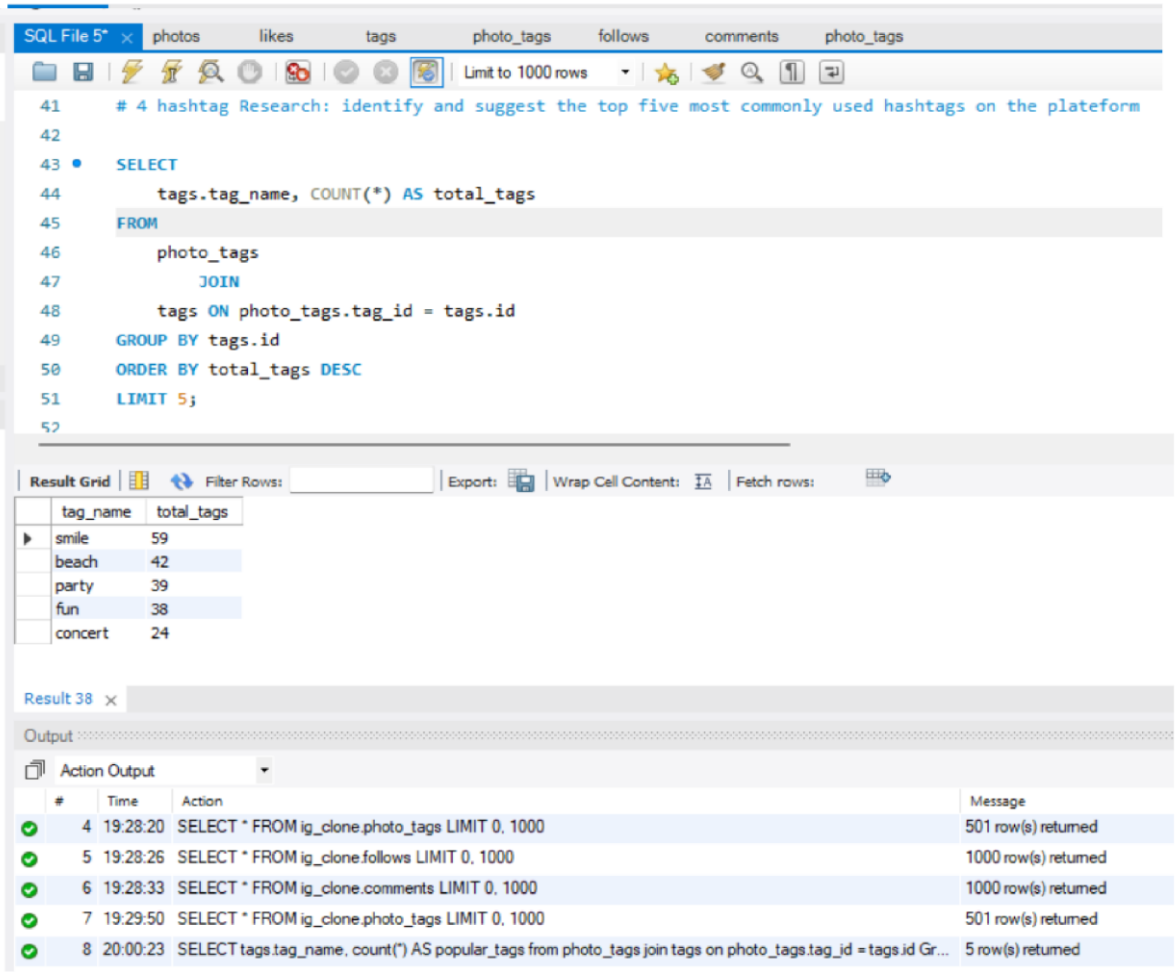
Task: Identify and suggest the top five most commonly used hashtags on the platform.

Code:

```
SELECT
    tags.tag_name, count(*) AS total_tags
FROM
    photo_tags
     JOIN
    tags
ON photo_tags.tag_id = tags.id
GROUP BY tags.id
ORDER BY total_tags DESC
LIMIT 5;
```

Result: the top five most commonly used hashtags on the platform as follows;

slno	tag_name	total_tags
1)	smile	59
2)	beach	42
3)	party	39
4)	fun	38
5)	concert	24



5 AD Campaign Launch

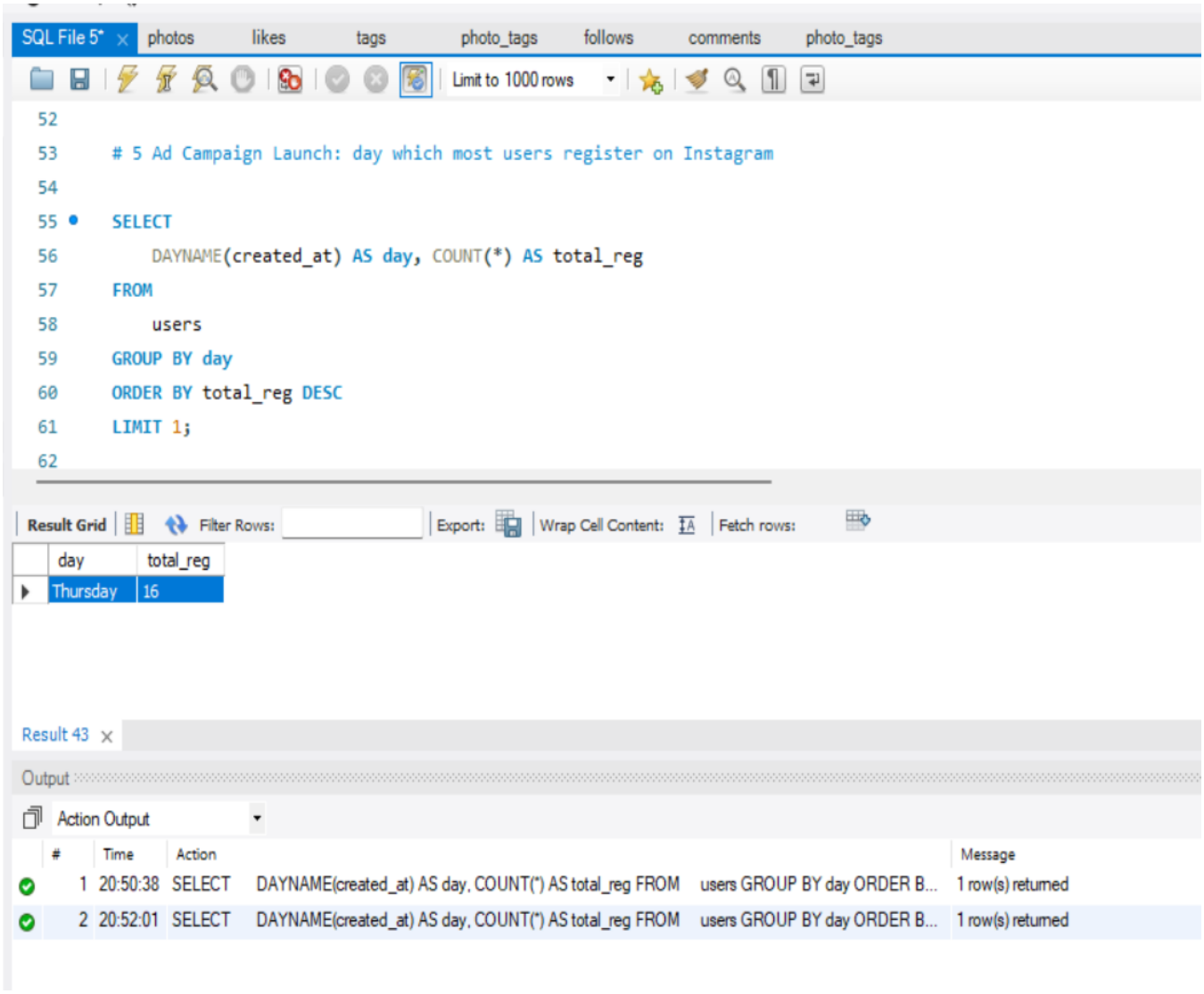
Task: Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.

Code:

```
SELECT
    dayname(created_at) AS day,
    count(*) AS total_reg
FROM
    users
GROUP BY day
ORDER BY total_reg DESC
LIMIT 1;
```

Result: the schedule day for launch an ad campaign on Instagram is Thrusday.

slno	day	total_reg
1	Thursday	16



B INVESTOR METRICS

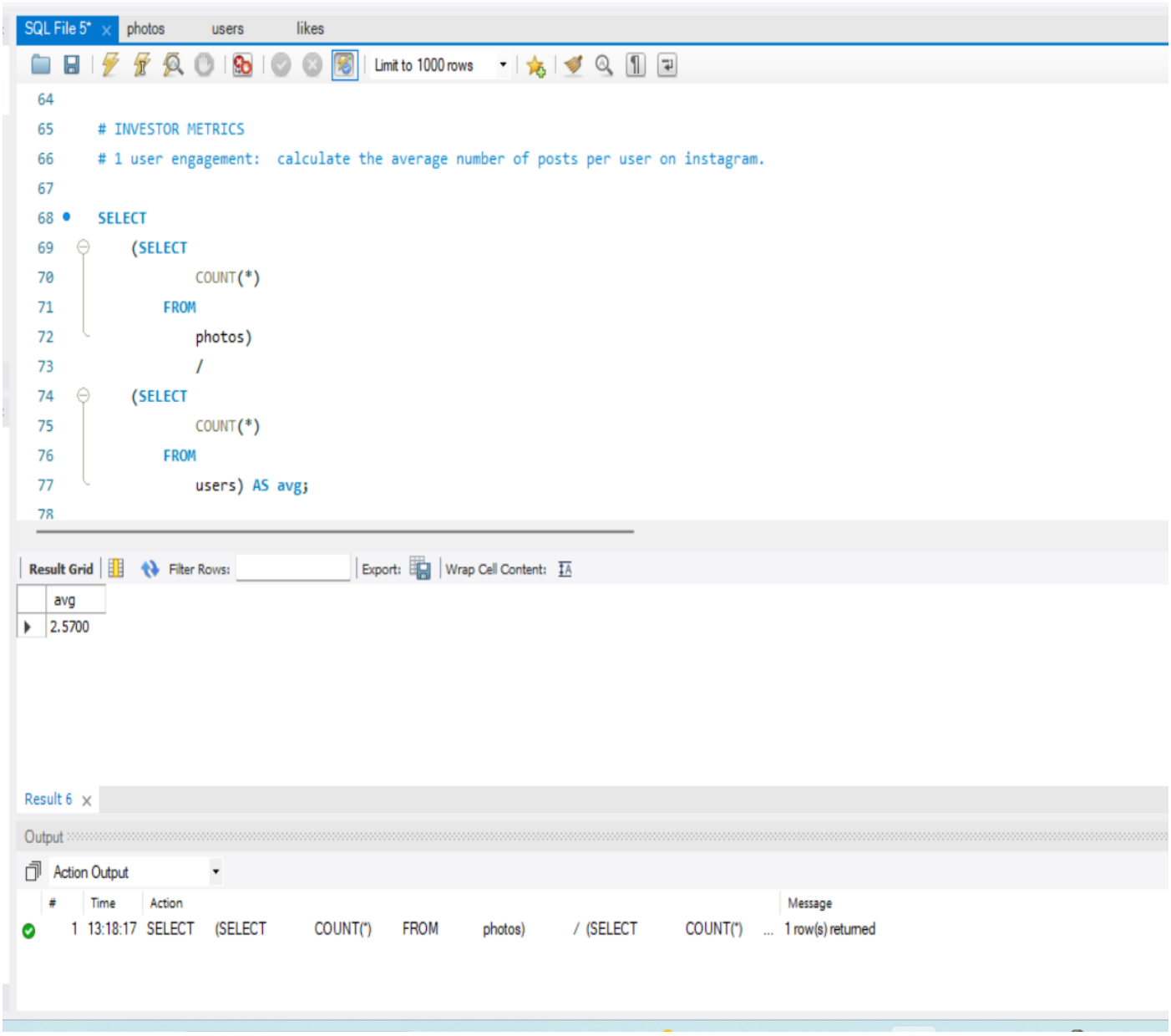
1 User Engagement:

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.

Code:

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

Result : Average number of posts per user on Instagram = 2.5700



2 Bots & Fake Accounts:

Task: Identify users(potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.

CODE: Query 1:

```
SELECT
        user_id, count(*) AS tot_num_likes
FROM
        likes
GROUP BY user_id
HAVING tot_num_likes
      =
(SELECT
         count(*)
  FROM
         photos);
```

Result: Fake ids or potential bots are follows:

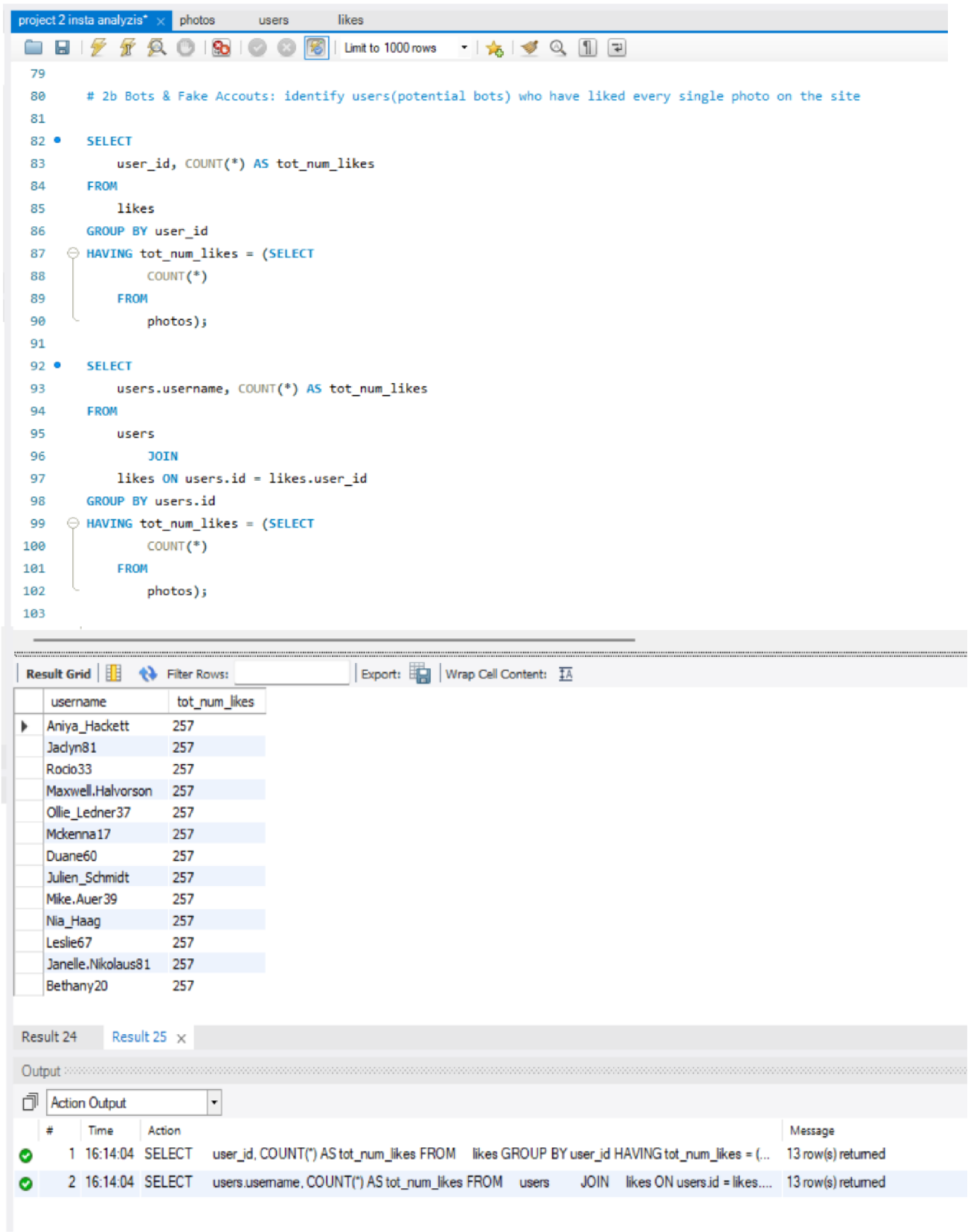
SLNO	user_id	tot_num_likes
1.	5	257
2.	14	257
3.	21	257
4.	24	257
5.	36	257
6.	41	257
7.	54	257
8.	57	257
9.	66	257
10.	71	257
11.	75	257
12.	76	257
13.	91	257

CODE: Query 2:

```
SELECT
    users.username, count(*) AS tot_num_likes
FROM
    users
  JOIN
    likes ON users.id = likes.user_id
GROUP BY users.id
HAVING tot_num_likes
            =
(SELECT
     count(*)
 FROM
     photos);
```

Result : Following are the fake users or potential bots in Instagram.

SLNO	username	tot_num_likes
1.	Aniya_Hackett	257
2.	Jaclyn81	257
3.	Rocio33	257
4.	Maxwell.Halvorson	257
5.	Ollie_Ledner37	257
6.	Mckenna17	257
7.	Duane60	257
8.	Julien_Schmidt	257
9.	Mike.Auer39	257
10.	Nia_Haag	257
11.	Leslie67	257
12.	Janelle.Nikolaus81	257
13.	Bethany20	257



Conclusion

This project successfully utilized SQL to uncover valuable insight about the platform. This project help to improve the experience with MYSQL, that will help me in future development of my career.