

Instagram User Analytics

SQL Tasks :

A) Marketing Analysis:

1. Identify the five oldest users on Instagram from the provided database.

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

	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

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

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

	id	username	created_at
▶	5	Aniya_Hackett	2016-12-07 01:04:39
	7	Kassandra_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 21:42:01
	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. Determine the winner of the contest and provide their details to the team.

```

SELECT u.id, u.username, u.created_at, COALESCE(SUM(l.count), 0) AS total_likes
FROM users u
LEFT JOIN (
    SELECT p.user_id, COUNT(l.user_id) AS count
    FROM photos p
    LEFT JOIN likes l ON p.id = l.photo_id
    GROUP BY p.user_id
) l ON u.id = l.user_id
GROUP BY u.id, u.username, u.created_at
ORDER BY total_likes DESC
LIMIT 1;

```

	id	username	created_at	total_likes
▶	23	Eveline95	2017-01-23 23:14:19	420

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

```
SELECT t.tag_name, COUNT(pt.photo_id) AS usage_count
FROM tags t
JOIN photo_tags pt ON t.id = pt.tag_id
GROUP BY t.id, t.tag_name
ORDER BY usage_count DESC
LIMIT 5;
```

	tag_name	usage_count
▶	smile	59
	beach	42
	party	39
	fun	38
	concert	24

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

```
SELECT DAYNAME(created_at) AS registration_day, COUNT(*) AS registrations
FROM users
GROUP BY registration_day
ORDER BY registrations DESC
LIMIT 1;
```

	registration_day	registrations
▶	Thursday	16

B) Investor Metrics:

1. 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.

```
SELECT COUNT(*) AS total_photos
FROM photos;
```

```
SELECT COUNT(*) AS total_users
FROM users;
```

```
SELECT
    (SELECT COUNT(*) FROM photos) / (SELECT COUNT(*) FROM users) AS avg_posts_per_user,
    (SELECT COUNT(*) FROM photos) AS total_photos,
    (SELECT COUNT(*) FROM users) AS total_users;
```

	avg_posts_per_user	total_photos	total_users
▶	2.5700	257	100

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

```
SELECT @total_photos := COUNT(*) as total_photos FROM photos;
```

```
-- Then, find users who have liked every single photo
```

```
SELECT user_id, COUNT(*) AS liked_photos_count
FROM likes
GROUP BY user_id
HAVING liked_photos_count = @total_photos;
```

	user_id	liked_photos_count
▶	5	257
	14	257
	21	257
	24	257
	36	257
	41	257
	54	257
	57	257
	66	257
	71	257
	75	257
	76	257
	91	257