


## SQL Tasks




### 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.

```
select * from users
order by created_at
limit 5;
```

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.

```
SELECT *
FROM users
where id not in (select distinct user_id from photos )
order by id;
```

	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

Result Grid		Filter Rows:	Edit:	Export/Import:
	id	username	created_at	
	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	Leslie_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	
•	NULL	NULL	NULL	

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.

```
select distinct(user_id),max(photo_id)as max_likes,created_at from likes
group by user_id,created_at
order by max_likes desc
limit 1;
```

Result Grid			
Filter Rows:			
Export:			
Wrap Cell C			
	user_id	max_likes	created_at
▶	3	257	2023-11-07 15:54:09

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.

```
select tag_id ,count(*) as counts from photo_tags
group by tag_id
order by counts desc
limit 5;
```

Result Grid		
Filter Rows:		
Export:		
	tag_id	counts
▶	21	59
	20	42
	17	39
	13	38
	18	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.

```
select dayname(created_at) as days, count(*) as counts from users
group by days
order by counts desc
limit 1;
```

Result Grid	Filter Rows:	Export:	Wi
days	counts		
Thursday	16		

## 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.

```
-- Calculate the total number of photos on Instagram divided by the total number of users
• SELECT COUNT(*) AS total_photos, COUNT(DISTINCT user_id) AS total_users,
      COUNT(*) / COUNT(DISTINCT user_id) AS photos_per_user_average
FROM photos;
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
total_photos	total_users	photos_per_user_average	
257	74	3.4730	

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.

```
• SELECT user_id
  FROM (
    SELECT l.user_id, COUNT(*) AS total_likes
    FROM likes l
    JOIN photos p ON l.photo_id = p.id
    GROUP BY l.user_id
  ) AS user_likes
 WHERE total_likes = (SELECT COUNT(*) FROM photos);
```

Result Grid		Filter Rows:	Export:	Wrap Cell Content
	user_id			
▶	5			
	14			
	21			
	24			
	36			
	41			
	54			
	57			
	66			
	71			
	75			
	76			
	91			