

# Instagram User Analytics

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SQL PROJECT

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## Project Description

- The project will help in analyzing user interactions and engagement with the *Instagram app* to provide valuable insights that can help the business grow.
- *User analysis* involves tracking how users engage with a digital product, such as a software application or a mobile app. The insights derived from this analysis can be used by various teams within the business.
- For example, the *marketing team* might use these insights to launch a new campaign, the *product team* might use them to improve the overall user experience, and the *development team* might use them to decide on new features to build.
- The findings could potentially influence the future development of one of the world's most popular social media platforms.

The `ig_clone` database provided to me consists of 6 tables named as `users`, `likes`, `photos`, `photos_tags`, `tags`, `comments` and `follows`.

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## Project 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.

*My approach- Identify the five oldest users on Instagram from the provided dataset.*

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

*My Approach- Identify the users who have never posted a single photo on Instagram*

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

*My Approach- Determine the winner of the contest with the most likes on a single photo.*

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

*My Approach- Identify and suggest the top five most commonly used hashtags on the platform.*

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

*My Approach- Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an 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.

*My approach- Calculate the average number of posts per user on Instagram.*

**2.Bots & Fake Accounts:** Investors want to know if the platform is crowded with fake and dummy accounts.

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

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## SQL queries for completing the tasks of marketing domain and Investor metrics

### #1 Identify the five oldest users on the app

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

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

```
select * from users where id not in (select user_id from photos);
```

### #3 Determine the winner of the contest with the most likes on a single photo.

```
select username, p.id, p.image_url, count(l.user_id) as Total_likes from photos p  
join likes l on l.photo_id = p.id  
join users u on p.user_id = u.id  
group by p.id  
order by Total_likes desc  
limit 1;
```

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

```
select t.id, t.tag_name, t.created_at  
from tags t  
join photo_tags pt on t.id = pt.tag_id  
group by t.id  
order by count(pt.photo_id) desc limit 5;
```

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**#5 Determine the day of the week when most users register on Instagram.**

```
SELECT dayname(created_at) as week_day, count(*) as total
from users
group by week_day
order by total desc;
```

**#6. Calculate the average number of posts per user on Instagram.**

-- Average no. of posts per user = (total no. of posts)/(total no. of users)

```
select count(id)/(select count(distinct(user_id)) from photos) as
avg_no_of_posts_per_user
from photos;
```

**#7. Identify users (potential bots) who have liked every single photo on the site**

```
select username, count(photo_id)
from users u join likes l on u.id = l.user_id
group by username
having count(photo_id) = (select count(id) from photos);
```

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## Tech-stack used

MySQL Workbench 8.0 CE workbench

## Project Insights

- The oldest user on Instagram is “Darby\_Herzog”. His account was created on 6/05/2016.
- Till date, there are a total of 100 users present on Instagram.
- Till date, there are a total of 26 users on Instagram who have not posted a single photo.
- We can say that most popular person, whose photo got the most likes on Instagram is “Zack\_Kemmer93” (User\_id- 145).
- The total numbers of photos on Instagram are 257.
- The total numbers of potential bots or fake accounts or dummy accounts on site is 13.
- The commonly used Hashtag on Instagram site is “Smile”.
- The days of the week when most users register on Instagram is “Sunday” and “Thursday”.

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## Project result

- Identifying Active and Engaged Users: Users who have liked every single photo on the site can be seen as highly active and engaged users.
- Highly engaged users are more likely to be retained over time and may serve as brand advocates, helping to attract and retain new users.
- The insights derived from this query can be used to design targeted engagement strategies. Site administrators could focus on building stronger relationships with these highly engaged users encouraging them to participate more actively as content creators.
- The SQL query can be a powerful tool in understanding user behavior, content quality, and community dynamics on the site.
- The insights derived can be used to optimize content, user engagement, and overall user experience, leading to improved retention and growth of the site's user base.