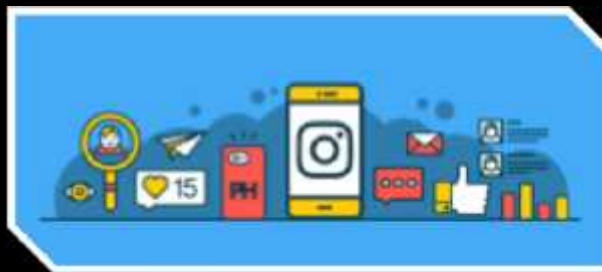


# Instagram User Analytics



*Created by Shivam Singh*

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# Project Description

We are expected to submit a comprehensive report for the Marketing and Investor Metrics department as part of this project. Using a variety of measurements and insights, this analysis will assist them in reaching a choice.



# Approach

**Database creation:** Used MySQL Workbench to create and put the values into the database using the DDL and DML SQL queries that we have already supplied (as per project).

**Extraction of insights:** Following database creation, SQL queries are executed in MySQL Workbench to get the necessary insights from the database tables.



## Tech- Stack Used

Since MySQL Community Server-GPL is a free and open-source relational database management system that employs SQL, I used MySQL Community Server-GPL Version 8.0.41 and Connector Version C++ 8.0.41 to create my project. Using the DDL and DML SQL queries that we had previously provided (as per project), MySQL Workbench was used to generate and insert the values into the database.

# Insights: Marketing Analysis

❑ **Loyal Users Reward:** People who have been using the platform for the longest time.

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



TOP 5 Oldest Users , using Instagram from longtime:

	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



## ❑Inactive User Engagement: People who haven't share single photos on Instagram

```
Select * from users  
Left Join  
photos on users.id = photos.user_id  
where photos.user_id is null;
```

There are 26 people who have never posted a single photo on Instagram. They'll be receiving promotional emails to post their 1st photo.



id	username	created_at	id	image_url	user_id	created_da
5	Aniya_Hackett	2016-12-07 01:04:39	NULL	NULL	NULL	NULL
7	Kassandra_Homenick	2016-12-12 06:50:08	NULL	NULL	NULL	NULL
14	Jadyn81	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
49	Morgan.Kassulke	2016-10-30 12:42:31	NULL	NULL	NULL	NULL
53	Linnea59	2017-02-07 07:49:34	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

## ❑Contest Winner Declaration: Winner of the Contest

```
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;
```



Details of the winner of the contest are:

	username	id	image_url	total_likes
►	Zack_Kemmer93	145	<a href="https://jarret.name">https://jarret.name</a>	48

## □ Hashtag Research: Most frequently used Hashtag

```
Select H.tag_name, count(pt.tag_id) AS tag_count
from photo_tags pt
join tags H on pt.tag_id = H.id
group by H.tag_name
order by tag_count DESC
limit 5;
```



Top 5 hashtags that are most frequently used on Instagram

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



## ❑ Ad Campaign Launch: Best Day to schedule Advertisement Campaign

```
Select dayname(created_at) as registration_day,  
count(*) AS user_count  
from users  
group by registration_day  
order by user_count DESC  
limit 2;
```



Below are the days, users are most active on Instagram

	registration_day	user_count
▶	Thursday	16
	Sunday	16

# Insights: Investor Metrics

## ❑ User Engagement:

Average Users who post Photos on Instagram

```
Select avg(photo_count) AS avg_posts_per_user
from (
  Select user_id, count(*) AS photo_count
  from photos
  group by user_id
) AS user_photo_counts;
```

Average Users post on Instagram are:

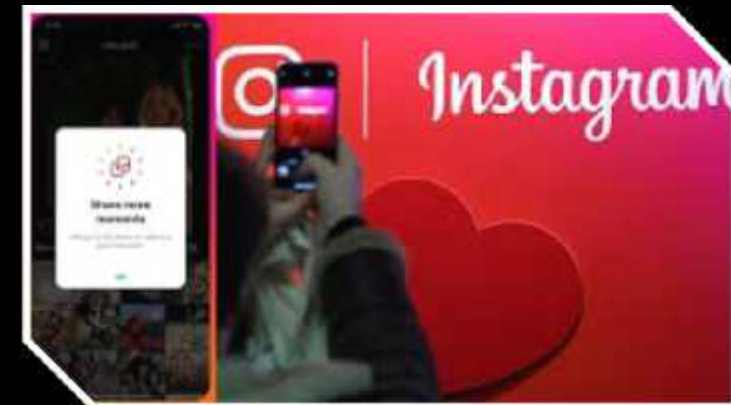
avg_posts_per_user
3.4730

Total number of Photos on Instagram divided by the total number of users

```
Select
  (Select count(*) from photos) / (Select count(*) from users) AS photos_per_user_ratio;
```

- ✓100 Total users (as per the data)
- ✓257 Total posts made.
- ✓Total Photos/Total users =  $257/100 = 2.57$

photos_per_user_ratio
2.5700



❑ **Bots and Fake Accounts:** Users who have liked every single posts will be considered as Bots

```
Select A.user_id  
from likes A  
group by A.user_id  
Having count(*) = (Select count(*) from photos);
```

There are 13 users who have liked every posts or called as Bots:



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

# Results

From this Project, I learned basic data analysis techniques utilizing SQL queries to extract insights from database by which we analyze user engagement and interaction with our digital product (software or mobile application) in an attempt to generate business insights for marketing, product & development teams.

Conclusion from the whole Analysis of the Project:

- ✓ The most devoted consumers can be rewarded by the marketing team; they can also send promotional letters to inactive users, apply most popular hashtags and most active day for brand promotions.
- ✓ For the business, user involvement can be really helpful as a growth success indicator.
- ✓ The company can remove bots and fraudulent accounts from the site to improve the user experience.



***Thank You***