Instagram User Analytics

Project Description:

Objective – Analyse Instagram user behaviour using MYSQL workbench to provide a actionable insights for product development, marketing campaigns and investor relations. The aim is to answer the business questions using data driven actionable insights.

Approach:

1. Load the dataset in the mysql workbench and ensure it is well structured.
2. Start querying about the dataset (list of tables and its content) and familiar with the data.
3. Query the database to analysis the marketing and investor metrics.

Tech-Stack used:

Tools I used for this project is Mysql workbench. It is open source and easy to install and user-friendly tool. Another reason of opting mysql workbench is I learned SQL using this tool.

Insights:

The insights are,

1. In terms of loyalty and engagement, Identifying the oldest user and active users in platform can help the business target marketing campaigns.
2. By identifying the suspicious activity such as liking every single post which helps to maintain platform integrity.
3. Analysing the Contest performance by identifying the user engagement and contest performance.
4. To knowing the most liked content and popular hashtags on platform which helps the business or brands to use in their posts to cover more audience.

Result:

This project enhanced my SQL querying abilities and understanding of social media user behaviour analytics.

Drive link:

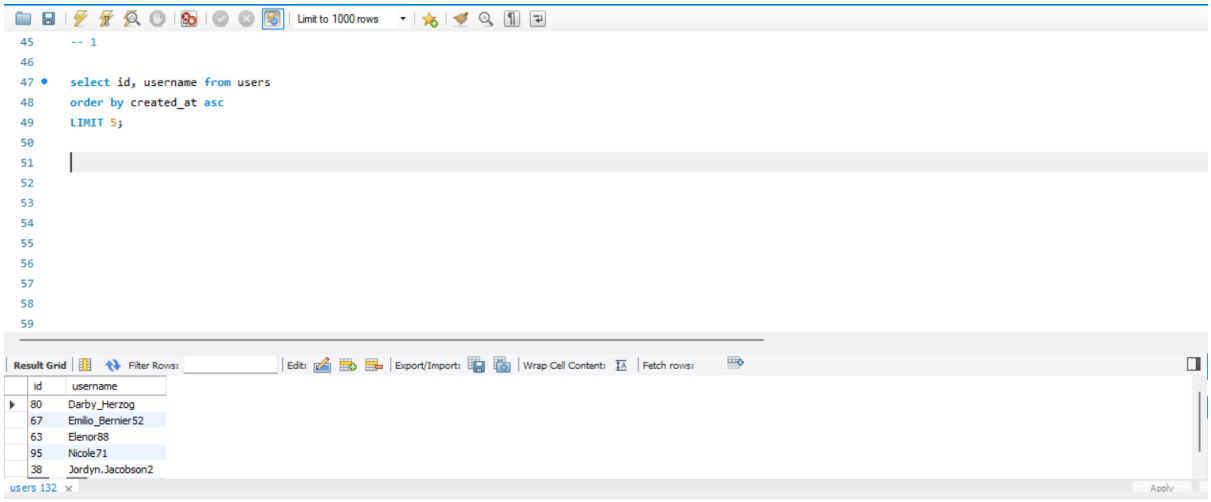
Upload the SQL scripts and document for reference.

https://drive.google.com/drive/u/1/folders/1kS9Z9ofajOr6XGei0Uo4TCe9tn1okKPd

Snap Shot of Analysis using MYSQL:

A) Marketing Analysis:

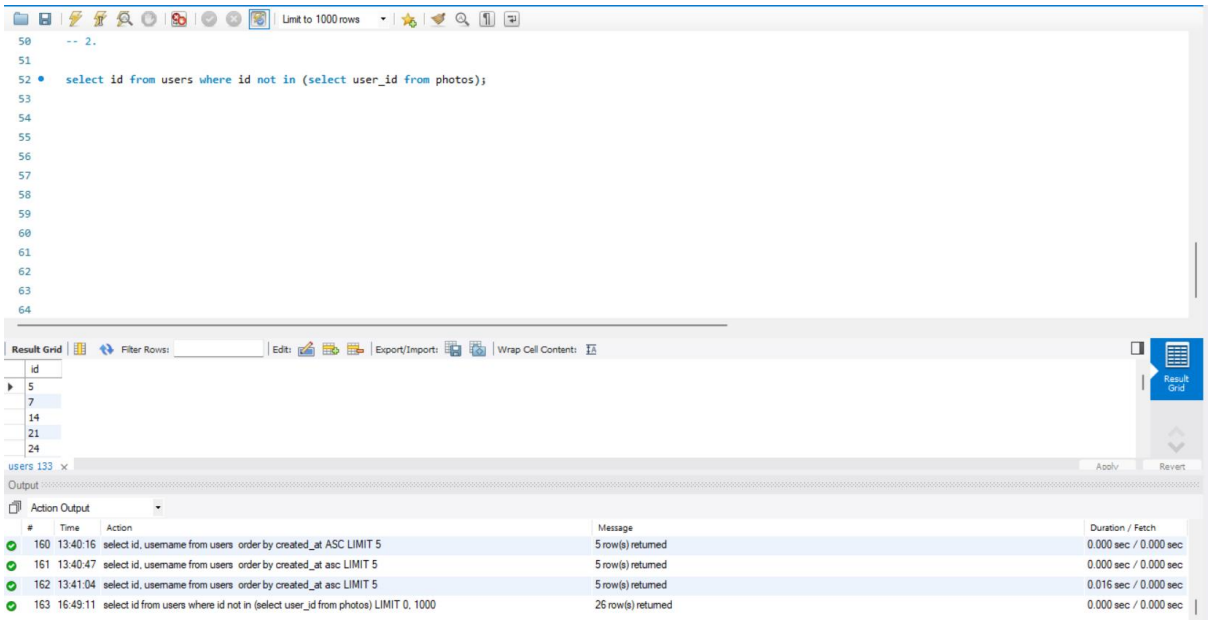
1. **Loyal User Reward:** The marketing team wants to reward the most loyal users, i.e., those who have been using the platform for the longest time.
   Your Task: Identify the five oldest users on Instagram from the provided database.



```
-- 1

select id, username from users
order by created_at asc
LIMIT 5;
```

id	username
80	Darby_Herzog
67	Emilio_Bernier52
63	Elenor88
95	Nicole71
38	Jordyn.Jacobson2

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.



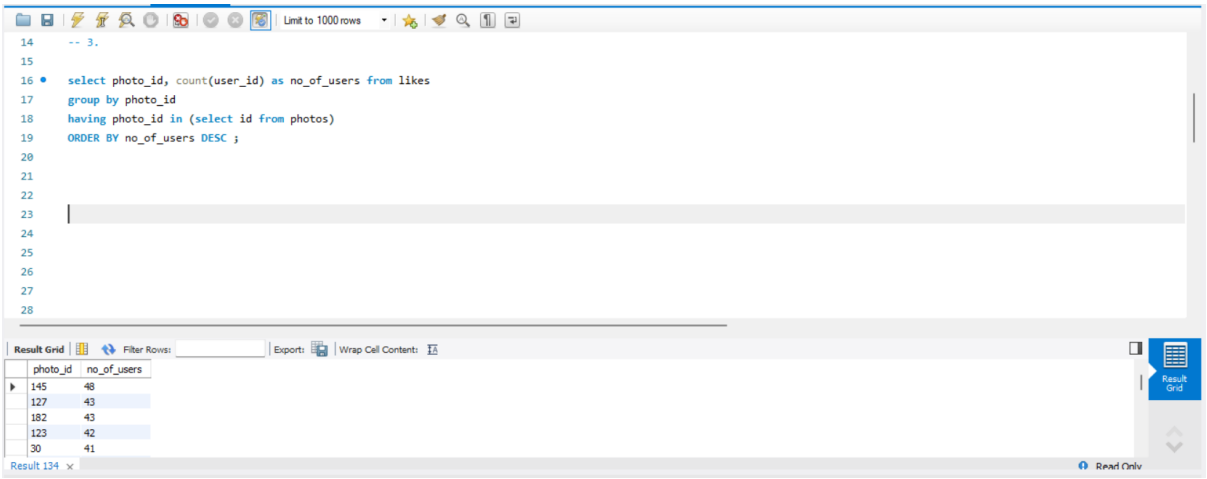
```
-- 2.

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

id
5
7
14
21
24

Output

#	Time	Action	Message	Duration / Fetch
160	13:40:16	select id, username from users order by created_at ASC LIMIT 5	5 row(s) returned	0.000 sec / 0.000 sec
161	13:40:47	select id, username from users order by created_at asc LIMIT 5	5 row(s) returned	0.000 sec / 0.000 sec
162	13:41:04	select id, username from users order by created_at asc LIMIT 5	5 row(s) returned	0.016 sec / 0.000 sec
163	16:49:11	select id from users where id not in (select user_id from photos) LIMIT 0, 1000	26 row(s) returned	0.000 sec / 0.000 sec

3. **Contest Winner Declaration**: The team has organized a contest where the user with the most likes on a single photo win.
   Your Task: Determine the winner of the contest and provide their details to the team.



```
-- 3.

select photo_id, count(user_id) as no_of_users from likes
group by photo_id
having photo_id in (select id from photos)
ORDER BY no_of_users DESC ;
```

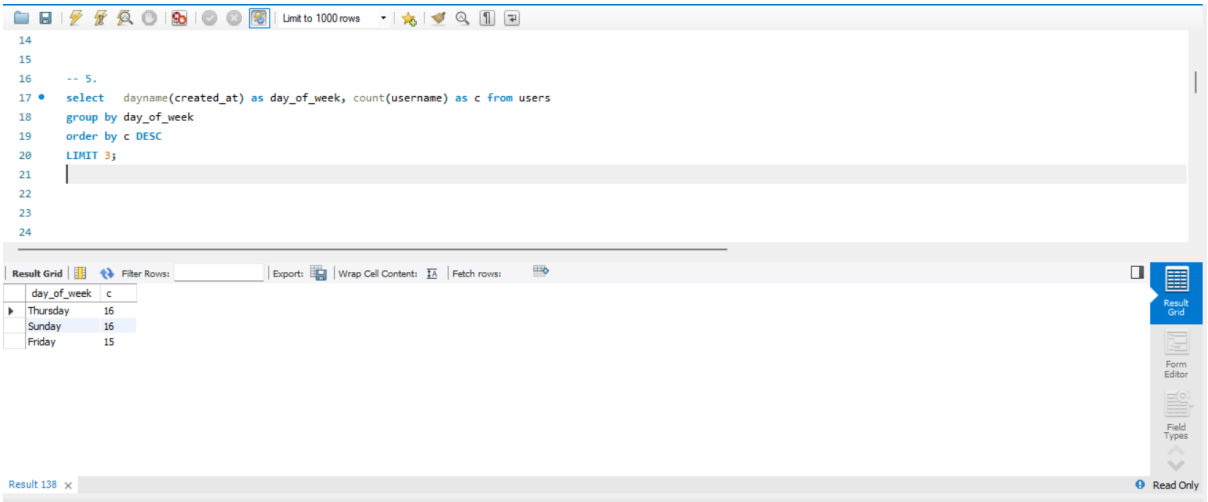
photo_id	no_of_users
145	48
127	43
182	43
123	42
30	41

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.

```
-- 4.
select t.id, t.tag_name, count(pt.photo_id) as no_of_photos from tags t join photo_tags pt on t.id = pt.tag_id
group by t.id, t.tag_name
order by no_of_photos DESC
LIMIT 5;
```

id	tag_name	no_of_photos
21	smile	59
20	beach	42
17	party	39
13	fun	38
18	concert	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.



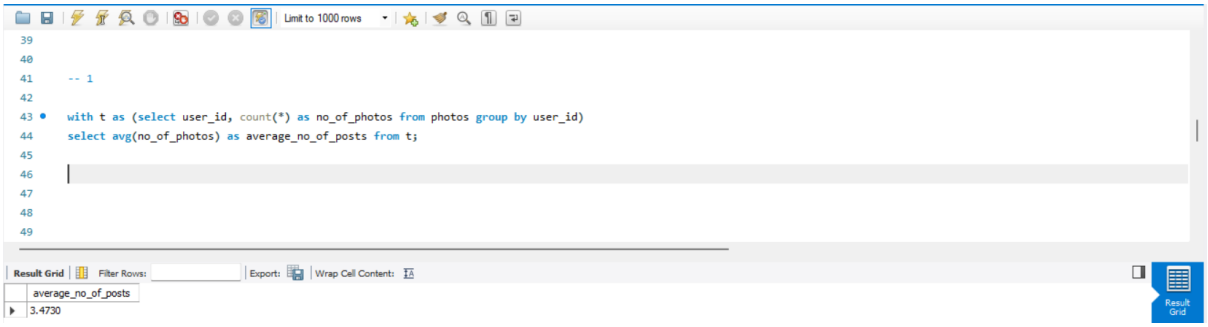
```
-- 5.
select   dayname(created_at) as day_of_week, count(username) as c from users
group by day_of_week
order by c DESC
LIMIT 3;
```

day_of_week	c
Thursday	16
Sunday	16
Friday	15

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.

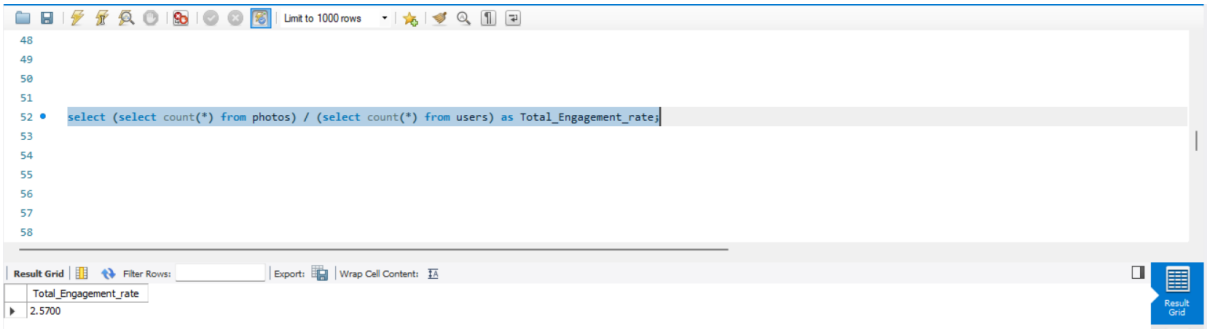
Calculate the average number of posts per user on Instagram.



```
-- 1

with t as (select user_id, count(*) as no_of_photos from photos group by user_id)
select avg(no_of_photos) as average_no_of_posts from t;
```

average_no_of_posts
3.4730

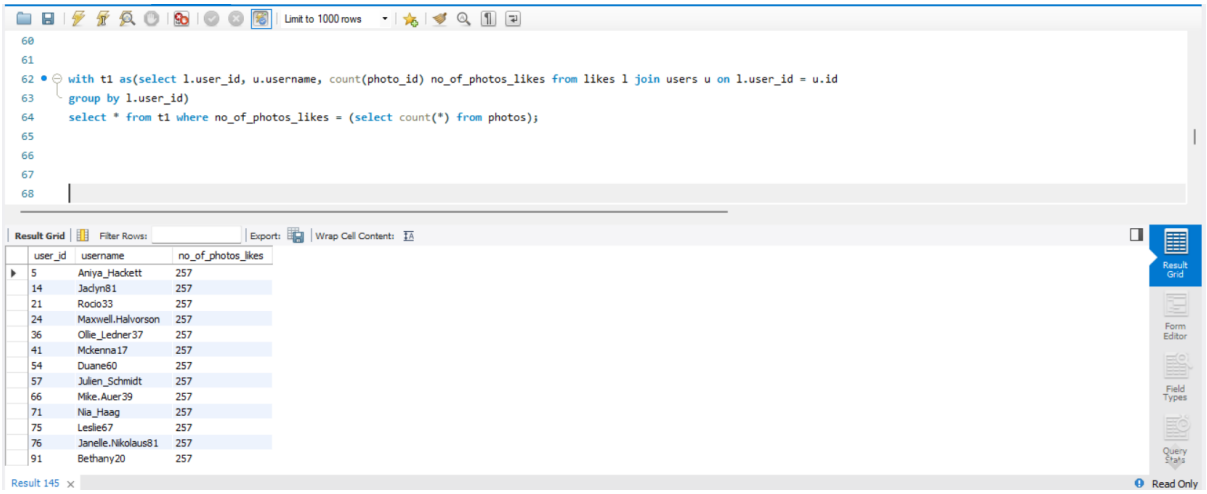
Provide the total number of photos on Instagram divided by the total number of users.



```
select (select count(*) from photos) / (select count(*) from users) as Total_Engagement_rate;
```

Total_Engagement_rate
2.5700

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.



```
with t1 as(select l.user_id, u.username, count(photo_id) no_of_photos_likes from likes l join users u on l.user_id = u.id
group by l.user_id)
select * from t1 where no_of_photos_likes = (select count(*) from photos);
```

user_id	username	no_of_photos_likes
5	Aniya_Hackett	257
14	Jaclyn81	257
21	Rocio33	257
24	Maxwell.Halvorson	257
36	Ollie_Ledner37	257
41	Mckenna17	257
54	Duane60	257
57	Julien_Schmidt	257
66	Mike.Auer39	257
71	Nia_Haag	257
75	Leslie67	257
76	Janelle.Nikolaus81	257
91	Bethany20	257