Instagram User Analytics

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Project Description:

The project involves performing data analysis on a dataset of Instagram users. The dataset contains user details, we will utilize database management tools and SQL queries to measure user engagement, improve the user experience, and support business growth. The findings will be used to run effective marketing campaigns and generate a detailed report for investors, ensuring Instagram's success in the digital space.

Approach:

This project focuses on analysing user engagement and interactions with the digital platform using a provided dataset. We will perform the analysis using SQL software to derive insights and address specific questions. With the help of SQL, we aim to conduct a comprehensive analysis of the dataset to gain valuable insights into user behavior and platform performance.

Tech-Stack Used:

MySQL workbench(version 8.0): A powerful database management tool that provides a user-friendly interface for designing, developing, and administering MySQL databases efficiently. It offers a range of features and functionalities to enhance productivity and streamline database operations.

Project:

A) Marketing:

The marketing team wants to launch some campaigns, and they need your help with the following:

1. Rewarding Most Loyal Users: People who have been using the platform for the longest time.

Your Task: Find the 5 oldest users of the Instagram from the database provided.

```
1   /* 5 oldest users of the Instagram from the database provided */
2   SELECT username, created_at
3   FROM users
4   ORDER BY created_at ASC
5   LIMIT 5;
6
7
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

username	created_at
Darby_Herzog	2016-05-06 00:14:21
Emilio_Bernier52	2016-05-06 13:04:30
Elenor88	2016-05-08 01:30:41
Nicole71	2016-05-09 17:30:22
Jordyn.Jacobson2	2016-05-14 07:56:26

2. Remind Inactive Users to Start Posting: By sending them promotional emails to post their 1st photo.

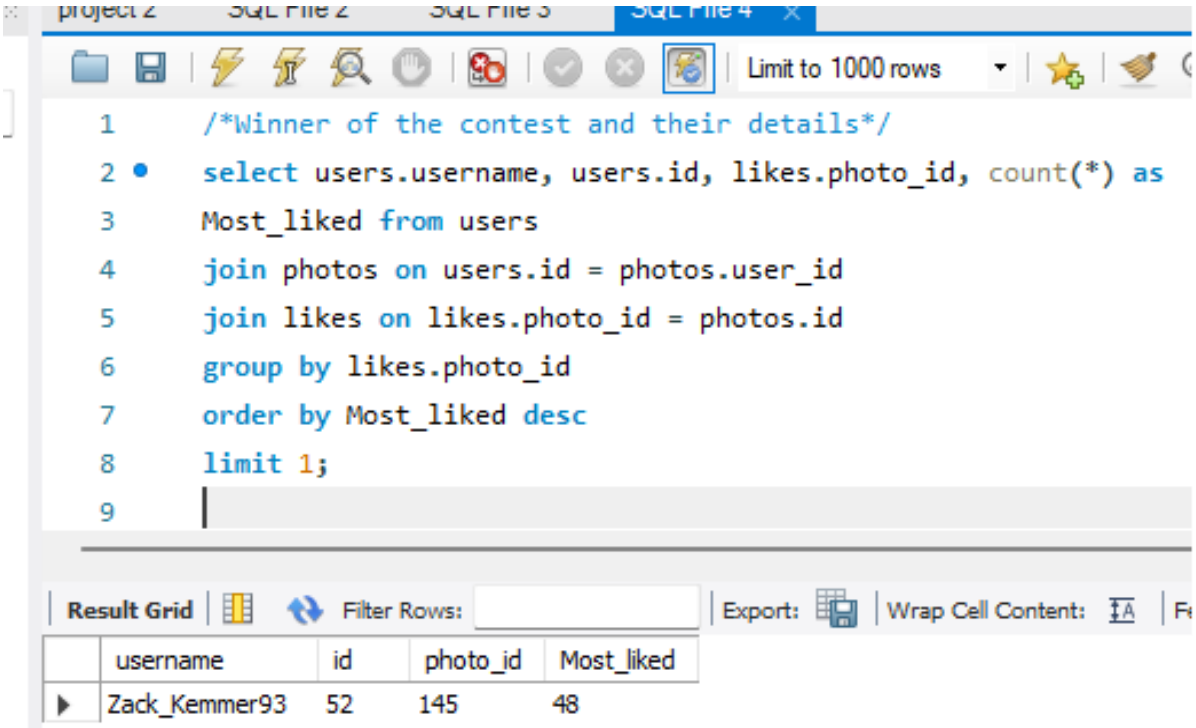
Your Task: Find the users who have never posted a single photo on Instagram.

```sql
/*The users who have never posted a single photo on Instagram*/
SELECT username
FROM users
WHERE id NOT IN (SELECT DISTINCT user_id FROM photos);
```

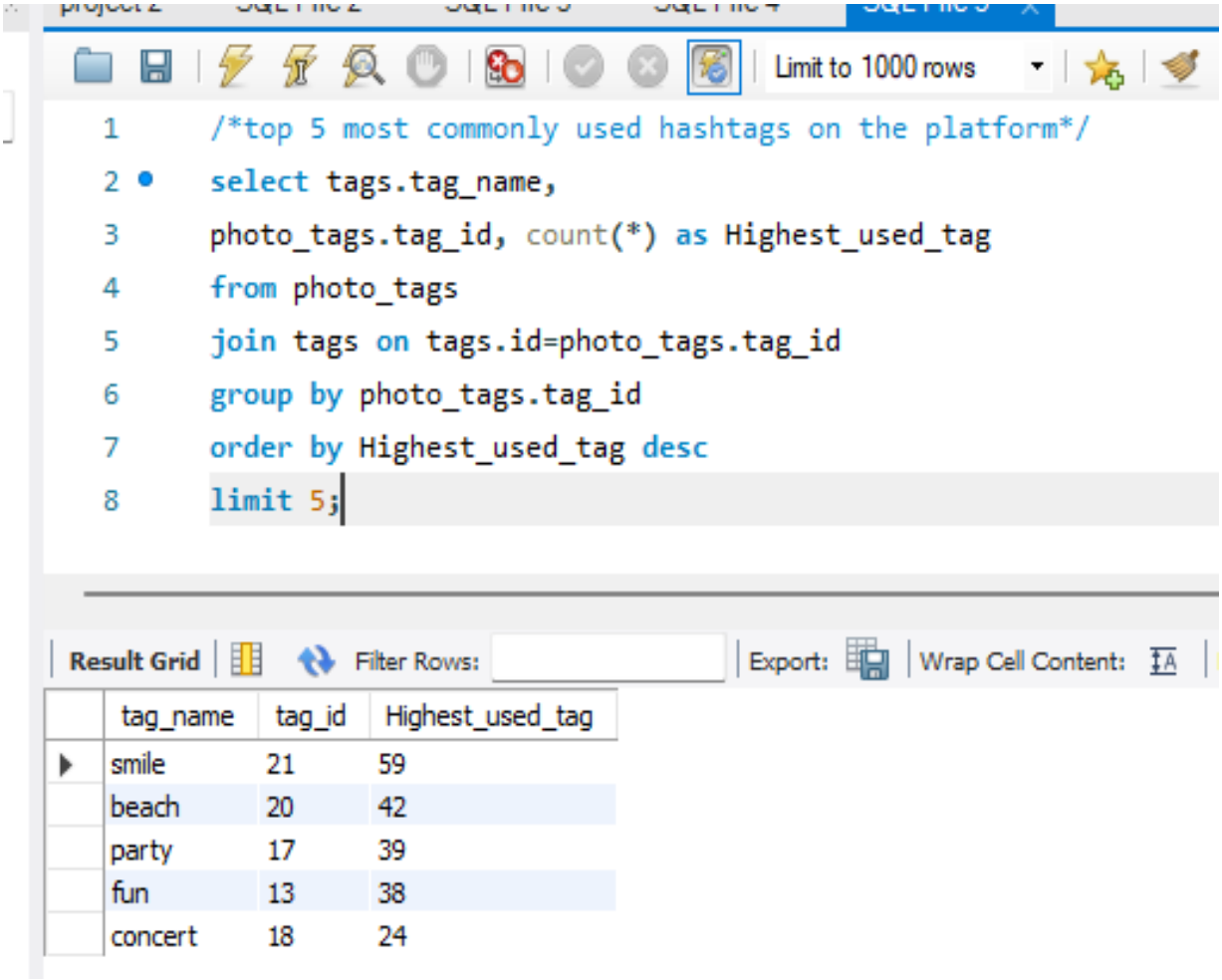
Result Grid | Filter Rows: | Export: | Wrap Cell Content:

username
Aniya_Hackett
Kasandra_Homenick
Jaclyn81
Rocio33
Maxwell.Halvorson
Tierra.Trantow
Pearl7
Ollie_Ledner37
Mckenna17
David.Osinski47
Morgan.Kassulke
Linnea59
Duane60
Julien_Schmidt
Mike.Auer39
Franco_Keebler64
Nia_Haag
Hulda.Macejkovic
Leslie67
Janelle.Nikolaus81
Darby_Herzog
Esther.Zulauf61
Bartholome.Bernhard
Jessyca_West
Esmeralda.Mraz57
Bethany20

3. Declaring Contest Winner: The team started a contest and the user who gets the most likes on a single photo will win the contest now they wish to declare the winner.
Your Task: Identify the winner of the contest and provide their details to the team.



4. Hashtag Researching: A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform.
Your Task: Identify and suggest the top 5 most commonly used hashtags on the platform.



```sql
/*top 5 most commonly used hashtags on the platform*/
select tags.tag_name,
photo_tags.tag_id, count(*) as Highest_used_tag
from photo_tags
join tags on tags.id=photo_tags.tag_id
group by photo_tags.tag_id
order by Highest_used_tag desc
limit 5;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

tag_name	tag_id	Highest_used_tag
smile	21	59
beach	20	42
party	17	39
fun	13	38
concert	18	24

5. Launch AD Campaign: The team wants to know, which day would be the best day to launch ADs.
Your Task: What day of the week do most users register on? Provide insights on when to schedule an ad campaign.

```sql
/*What day of the week do most users register on? Provide insights on when to schedule an ad campaign*/
select dayname(created_at) as week,
count(*) as total from users group by week
order by total desc;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

week	total
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

B) Investor Metrics:

Our investors want to know if Instagram is performing well and is not becoming redundant like Facebook, they want to assess the app on the following grounds.

1. User Engagement: Are users still as active and post on Instagram or they are making fewer posts.

Your Task: Provide how many times does average user posts on Instagram. Also, provide the total number of photos on Instagram/total number of users.

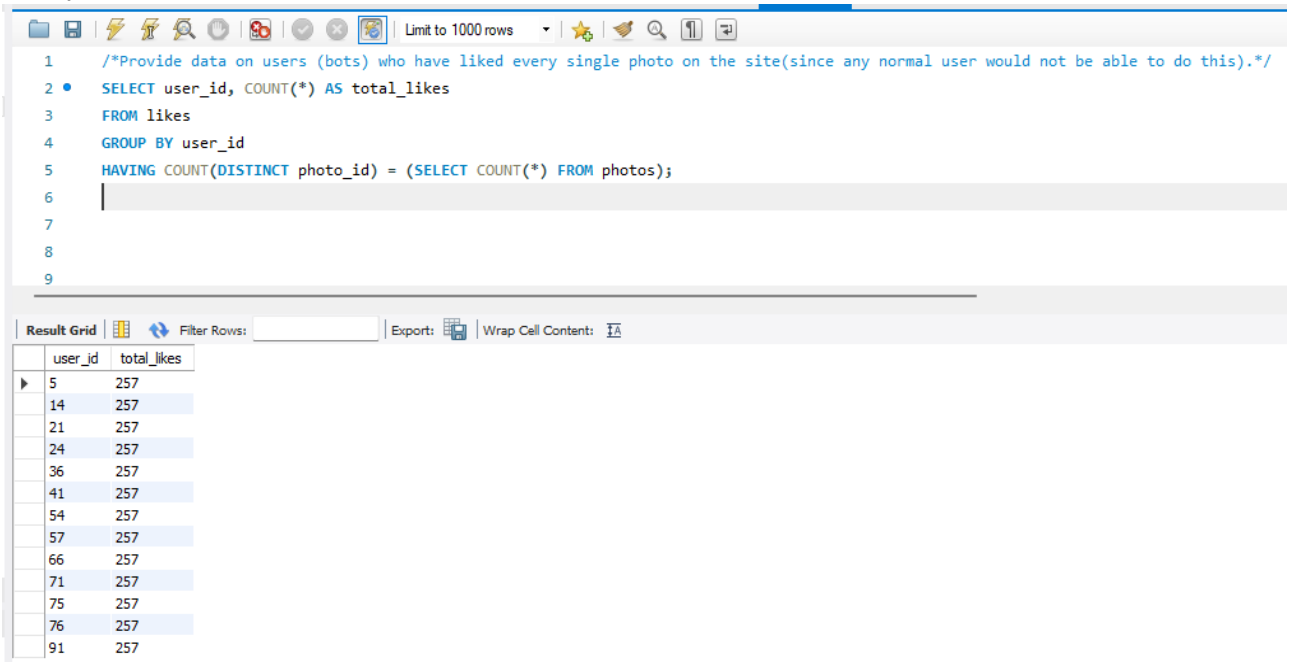
```sql
/*Provide how many times does average user posts on Instagram. Also, provide the total number of photos on Instagram/total number of users*/
select round(( select count(*) from photos)/(select count(*) from users),2) as average_user_posts,
round(( select count(*) from users)) as number_of_users,
round(( select count(*) from photos)) as number_of_photos;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

average_user_posts	number_of_users	number_of_photos
2.57	100	257

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

Your Task: Provide data on users (bots) who have liked every single photo on the site(since any normal user would not be able to do this).



```
/*Provide data on users (bots) who have liked every single photo on the site(since any normal user would not be able to do this).*/
SELECT user_id, COUNT(*) AS total_likes
FROM likes
GROUP BY user_id
HAVING COUNT(DISTINCT photo_id) = (SELECT COUNT(*) FROM photos);
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

user_id	total_likes
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

Insights:

During the project, I gained several insights and knowledge while analysing the Instagram user data.

- By identifying the oldest users, we can appreciate the loyalty and long-term engagement of these individuals.
- Analysing inactive users who have never posted provides an opportunity to encourage their participation and increase their time on the app.
- The contest winner based on likes highlights the importance of engagement and popularity within the user community.
- Hashtag research allows for targeted marketing campaigns to reach a wider audience.

- Determining the day with the highest user registrations helps optimize the timing of the ad campaigns.
- Assessing the average number of posts per user gives an indication of user activity and engagement.
- Identifying potential bot accounts helps ensure data accuracy and integrity.

Overall, these insights contribute to informed decision-making, improved user experience, and success of Instagram. Also, I learnt how we can use this data to improve the experience altogether while helping the business grow.

Results:

During this project, I had a really good opportunity to learn more about SQL and data analysis. It was super interesting to work with the Instagram user data and see what insights I could uncover. This project not only helped me develop my skills in SQL and data analysis, but it also gave me a better understanding of how data can provide valuable insights. It was a fun and enlightening experience.