Instagram User Analytics

Project Description

This project focuses on user metrics for Instagram. The practise of tracking how users engage and interact with a digital product in order to gain business insights for marketing, product, and development teams is known as user analysis. These insights are then used by teams across the organisation to start a new marketing campaign, decide on app features to construct, track app success by evaluating user engagement, and improve the overall experience while assisting the firm to grow.

I'm going to gather the following information for the marketing team's campaigning purposes:

1. Identifying the five most devoted/oldest Instagram users.
2. Finding inactive Instagram users who have never posted a single photo.
3. Finding the user's information who received the most likes on a single photo so that the team can proclaim the contest winner.
4. Discovering the top 5 most popular Instagram hashtags.
5. Identifying the day of the week when the most Instagram users join up so that the team can plan an ad campaign.

And for investors, I'll gather the following information so they can see if Instagram is performing well and not becoming obsolete like Facebook:

1. Determining how frequently an average user posts on Instagram and figuring the total amount of photos on Instagram/total number of users.
2. Finding the details of Instagram fake/bot accounts that liked every single photo on Instagram.

Approach

First, I examined the data set, including all of the tables and columns, to gain a sense of the information accessible to me. Then I examined and comprehended all of the case studies and summarised my method to solving these case studies. Then I compose the query.

Tech-Stack Used

I selected MySQL workbench 8.0 v8.0.31 software for my project because it is quite user friendly and I had previously used it so I was comfortable with the interface.

Insights

I learned about Instagram's business analysis and how they are attempting to enhance their business. How the Instagram management team gathers numerous insights about Instagram users in order to strengthen their marketing efforts and create a better version of their product by updating it based on the insights.

Result

By completing this project, I was able to solidify my understanding of numerous SQL clauses and statements such as GROUP BY, ORDER BY, JOINS, COUNT, and AVG. It assists me in honing my SQL skills.

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

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

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

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

```
select username
from users as u
        left join photos as p
        on u.id = p.user_id
where p.user_id IS NULL;
```

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

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

user_id	username	photo_id	likes	image_url
52	Zack_Kemmer93	145	48	https://jarret.name

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

```
select tag_id,
        tag_name,
        count(*) AS used_by
from photo_tags as p
        Left join tags as t
        ON p.tag_id = t.id
group by tag_id
order by used_by DESC
LIMIT 5;
```

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

```
select dayname(created_at) as day,
        count(*) as users_registered
from users
        group by day
order by users_registered DESC
limit 1;
```

day	users_registered
Thursday	16

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

```
select (select avg(count)
        from
        (select count(*) as count
        from photos
        group by user_id) as avg) as avg_post_by_users,
              (select round((select count(*)
              from photos) / (select count(*)
              from users),2)) as total_photos_per_total_users;
```

avg_post_by_users	total_photos_per_total_users
3.4730	2.57

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).

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

liked_photos	user_id	username
257	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