Instagram User Analytics

Description:

- Project Environment:
- As a data analyst working with the product team at Instagram.
- My role involves analysing user interactions and engagement with the Instagram app to provide valuable insights that can help the business grow.
- Here, the Project Analysis involves:
 - a] Tracking how users engage with a digital product, such as a software application or a mobile app.
 - ▶ b] The insights derived from this analysis can be used by various teams within the business.
 For example,
 - a. The marketing team might use these insights to launch a new campaign,
 - b. The product team might use them to decide on new features to build, and
 - c. The development team might use them to improve the overall user experience.
- The <u>Final insights</u> are then used by teams across the business to launch a new marketing campaign, decide or discover new updated features to build / add into an App. Also, to track the success of the app by measuring user engagement and improve the experience altogether, by helping the business to grow.

Approach:

- In this project, I am using SQL and MySQL Workbench as tool to analyse Instagram user data and answer questions posed by the management team.
- Use SQL queries to extract the required information from the database, ensuring the accuracy and
 efficiency of the queries.
- The Final insights will help the product manager and the rest of the team to make informed decisions about the future direction of the Instagram app.
- Approach used to complete this Project:
 - a. here, we create a "Database" & "table's" as per dataset given to us, for this Project [Instagram User Analytics].
 - b. Also, Utilise SQL to analyse data from created tables & find Result / Solution's for the given problem statements / tasks
- Project Solution: [writing a query to find solution for given problem statement.]
 [A]. Marketing Analysis:
 - Identify the five oldest users on Instagram from the provided database.
 [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."]

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

identify users who have never posted single photo on Instagram.
 [Inactive User Engagement: The team wants to encourage inactive users to start posting by sending them promotional emails.]

```
select *
from users u
left join photos p
on u.id = p.user_id
where p.image_url is null
order by u.id;
```

3) determine the winner of the contest and provide their details to the team.
[Contest Winner Declaration: The team has organized a contest where the user with the most likes on a single photo win.]

```
-- first we calculate total likes count from database:

select users.id, users.username, count(likes.user_id) as Total_likes from likes
inner join photos on likes.photo_id = photos.id
inner join users on photos.user_id = users.id
group by likes.photo_id, users.username, users.id
order by Total_likes desc;

-- now, we find winner with respect to total likes counts:

select users.id, users.username, count(likes.user_id) as Total_likes from likes
inner join photos on likes.photo_id = photos.id
inner join users on photos.user_id = users.id
group by likes.photo_id, users.username, users.id
order by Total_likes desc limit 3;
```

4) identify and suggest top five most commonly used hashtags to use in their posts to reach the most people.

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

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

- 5) determine the day of the week when most users register on Instagram. provide insights on when to schedule an ad campaign.
 - [Ad Campaign Launch: The team wants to know the best day of the week to launch ads.]

```
select date_format((created_at), '%W') as days, count(username) as total_user_register
from users
group by days
order by total_user_register desc;
```

[B]. Investor Metrics:

1. 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.

[User Engagement: Investors want to know if users are still active and posting on Instagram or if they are making fewer posts.]

```
967
       -- first we calculate post per user, on instagram:
968
969 • select u.id as user_ID, count(p.id) as post_per_user
970
      from users u
971
     left join photos p on u.id = p.user_id
972
      group by u.id;
973
974
975
     -- Now, to calculate average number of post per user,
                 we first calculate, "total number of photos on Instagram", & "the total number of users".
976
                                      [ select * from users, photos; ]
977
978
979
980 • ⊖ with base as(
981
                  select u.id as user_ID, count(p.id) as Totalpost_per_user
982
                  from users u
983
                  left join photos p on u.id = p.user_id
984
                  group by u.id
985
986
     select sum(Totalpost_per_user) as total_photos, count(user_ID) as total_users, round((sum(Totalpost_per_user) / count(user_ID)), 1) as Photo_per_user
987
       from base;
988
```

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

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

```
997
        -- calculate likes per user on instagam:
998
999 • select u.username, count(1.photo_id) as likes_per_user
1000
        from users u
        left join likes l on u.id = l.user_id
      group by u.username
      order by likes_per_user;
1005
1006
        -- Now, Identify (potential bots) users, who have liked every single photo on the site. [which normally not the case.]
1007
1008 • ⊖ with base as(
1009
            select u.username, count(l.photo_id) as likes_per_user
1010
            from likes 1
1011
            left join users u on u.id = l.user_id
1012
           group by u.username
            order by likes_per_user
1014
            )
1015
       select username, likes_per_user
1016
        from base
                                               -- Using where clause: to compare likes_per_person with total like_photo count.
1017
        where likes_per_user = (select(max(likes.photo_id)) from likes)
      order by username;
1018
```

Tech-Stack Used:

```
Administration – Server Status:
```

MySQL [Sever] Workbench – local community version.

version – 8.0.41 (MySQL Community Server GPL)

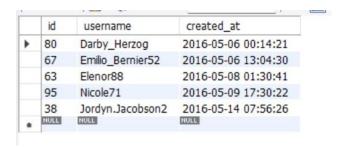
<u>Insights:</u>

- After analysing database, our insightful findings help market team: To find loyal User & inactive users on Instagram to use separate strategies to promote and enlarge userbase.
- Also, the insights on most used and popular hashtags, help in ad-campaigns and brand promotions to promote & reach the most people.
- Insights help us to find out "Bots & Fake Accounts", if the Instagram platform is crowded with fake and dummy accounts.

Insights & Result-Solution for given problem Statements:

[A]. Marketing Analysis:

Identify the five oldest users on Instagram from the provided database.
 [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."]



identify users who have never posted single photo on Instagram.
 [Inactive User Engagement: The team wants to encourage inactive users to start posting by sending them promotional emails.]



3) determine the winner of the contest and provide their details to the team.
[Contest Winner Declaration: The team has organized a contest where the user with the most likes on a single photo win.]

id	username	Total_likes
52	Zack Kemmer93	48
46	Malinda Streich	43
65	Adelle96	43

4) identify and suggest top five most commonly used hashtags to use in their posts to reach the most people.

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

tag_name	hashtags
smile	59
beach	42
party	39
fun	38
concert	24

5) determine the day of the week when most users register on Instagram. provide insights on when to schedule an ad campaign.

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

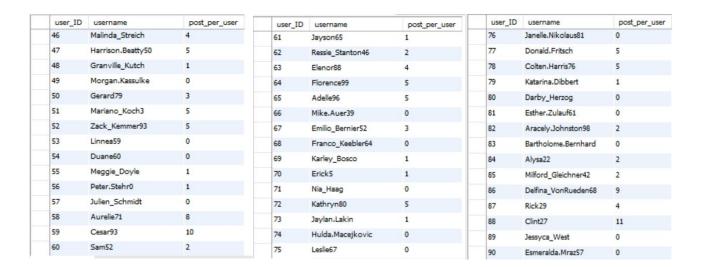


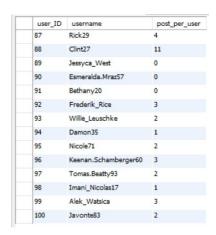
[B]. Investor Metrics:

1.1) Calculate the average number of posts per user on Instagram.

[User Engagement: Investors want to know if users are still active and posting on Instagram or if they are making fewer posts.]

user_ID	username	post_per_user	user_ID	username	post_per_user	user_ID	username	post_per_user
1	Kenton_Kirlin	5	16	Annalise.McKenzie16	4	31	Aiyana_Hoeger	1
2	Andre_Purdy85	4	17	Norbert_Carroll35	3	32	Irwin.Larson	4
3	Harley_Lind18	4	18	Odessa2	1	33	Yvette.Gottlieb91	5
4	Arely_Bogan63	3	19	Hailee26	2	34	Pearl7	0
5	Aniya_Hackett	0	20	Delpha.Kihn	1	35	Lennie_Hartmann40	2
6	Travon.Waters	5	21	Rocio33	0	36	Ollie_Ledner37	0
7	Kasandra_Homenick	0	22	Kenneth64	1	37	Yazmin_Mills95	1
8	Tabitha_Schamberger11	4	23	Eveline95	12	38	Jordyn Jacobson 2	2
9	Gus93	4	24	Maxwell.Halvorson	0	39	Kelsi26	1
10	Presley_McClure	3	25	Tierra, Trantow	0	40	Rafael, Hickle2	1
11	Justina.Gaylord27	5	26	Josianne.Friesen	5	41	Mckenna17	0
12	Dereck65	4	27	Darwin29	1	42	Maya.Farrell	3
13	Alexandro35	5	28	Dario77	4	43	Janet.Armstrong	5
14	Jaclyn81	0	29	Jaime53	8	44	Seth46	4
15	Billy52	4	30	Kaley9	2	45	David Osinski 47	0





1.2) provide the total number of photos on Instagram divided by the total number of users.

total_photos	total_users	Photo_per_user
256	100	2.6

2) Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user. [**Bots & Fake Accounts**: Investors want to know if the platform is crowded with fake and dummy accounts.]

username	likes_per_user	
Aniya Hackett	257	
Bethany20	257	
Duane60	257	
Jaclyn81	257	
Janelle.Nikolaus81	257	
Julien Schmidt	257	
Leslie67	257	
Maxwell.Halvorson	257	
Mckenna17	257	
Mike.Auer39	257	
Nia Haaq	257	
Ollie Ledner37	257	
Rocio33	257	

Results:

Results we achieve:

- After analysing database, our insightful findings help market team: To find loyal User & inactive users on Instagram to use separate strategies to promote and enlarge userbase.
- Also, the insights on most used and popular hashtags, help in ad-campaigns and brand promotions to promote & reach the most people.
- Insights help us to find out "Bots & Fake Accounts", if the Instagram platform is crowded with fake and dummy accounts.

Drive Link:

This Project help me to achieve expertise in MySQL data analytics.

Also, give me hand-on Expertise & Experience in industry standard project-dataset handling, with different business problem statements/ requirements.