Instagram User Analytics

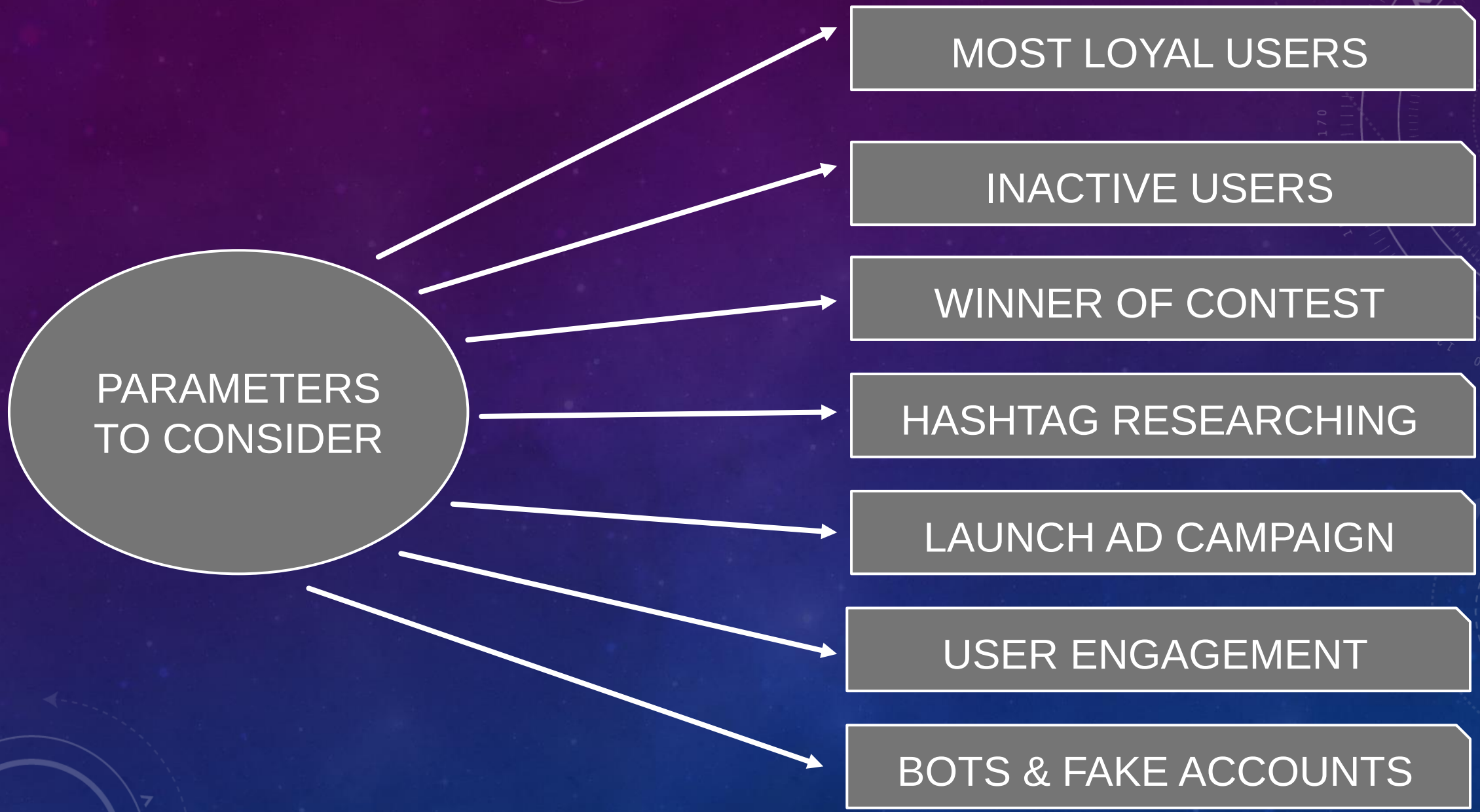
PROJECT DESCRIPTION

The “ PRODUCT TEAM OF INSTAGRAM ” wants :

- To know about the performance of the product in the market.
- To help the business grow.
- To improve the user experience.

There is a need to gather information about the user engagement and interaction with the product so that the team could come up with some solutions :

- To launch a new marketing campaign.
- To decide new features to build for an app,
- To track the success of the app by measuring user engagement.


PARAMETERS TO CONSIDER
MOST LOYAL USERS
INACTIVE USERS
WINNER OF CONTEST
HASHTAG RESEARCHING
LAUNCH AD CAMPAIGN
USER ENGAGEMENT
BOTS & FAKE ACCOUNTS

APPROACH

1. Downloaded the dataset, executed the queries to create database.

2. Gone through all the tasks given , wrote/executed queries in MySQL Workbench.

3. Considered the following while writing queries:
   1. Highest/Lowest: Used order by
   2. To fetch records : Used SELECT
   3. To count records: Used aggregate function : COUNT() with group by
   4. If data required present in more than 1 table : Used JOINS
   5. IN operator
   6. To filter the records: Used WHERE clause.

4. Took screenshot of the queries and their results.

5. After observing the O/P of SQL queries, jotted down the observations for each task and suggested some ideas to make the product better.

6. Finally , compiled all the observations/findings/suggestions and displayed in the form of PowerPoint presentation.

TECH STACK USED

Software Used

- MySQL Workbench

Version

- 8.0.28 (MySQL Community Server – GPL)

Purpose

- For writing SQL queries and its execution.

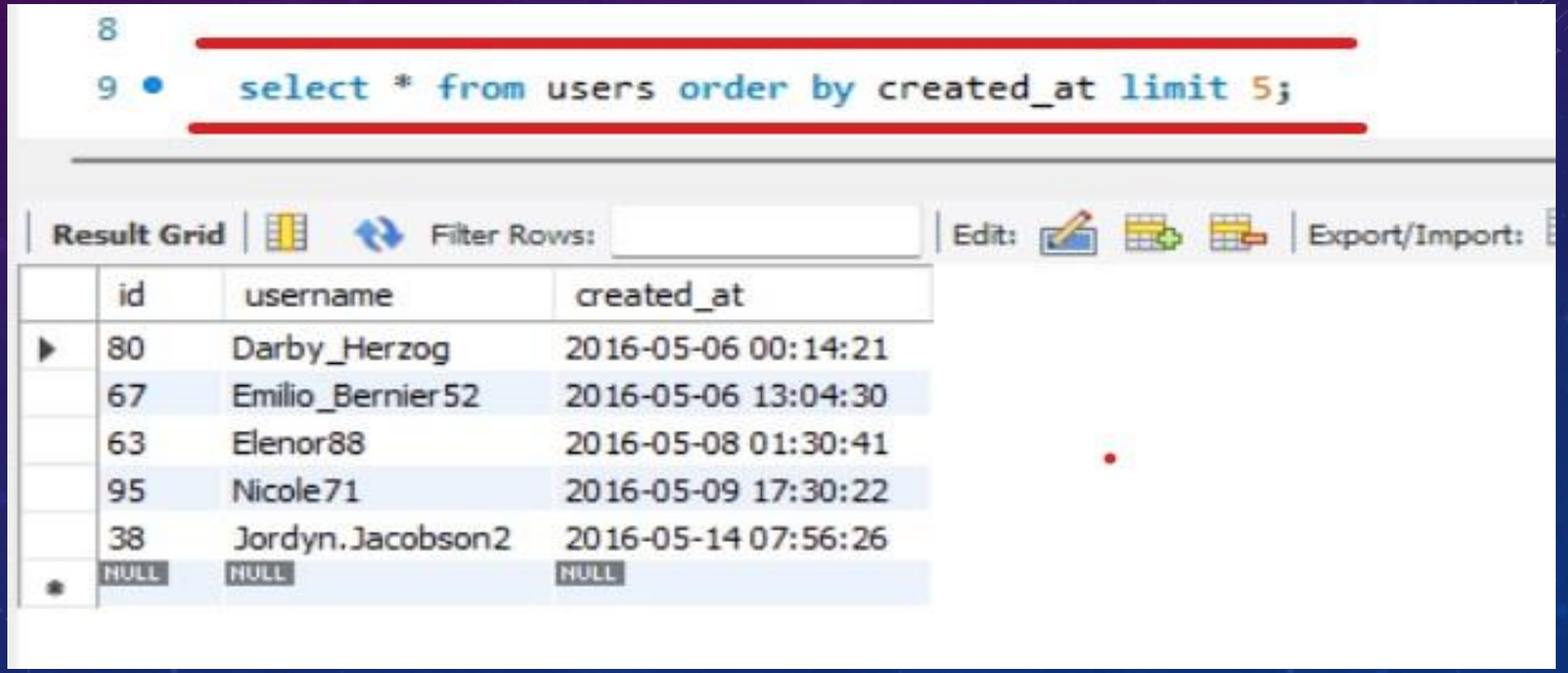
SOLUTIONS

TASK 1 : Find the 5 oldest users of the Instagram from the database provided.

RESULT : The 5 oldest users of Instagram are presented as follows:

1	**Darby_Herzog**
2	**Emilio_Bernier52**
3	**Elenor88**
4	**Nicole71**
5	**Jordyn.Jacobson2**

QUERY : SELECT * FROM USERS ORDER BY CREATED_AT LIMIT 5;



INSIGHTS

1. Rewarding the oldest users would be an excellent idea to get more audience.
2. 5 users have been chosen for the rewards.

3. They can be awarded with cash prizes, goodies/bags/gift hampers/free coupons.

4. Tell those 5 users to make a video showcasing their rewards and post on social media platforms such as FACEBOOK,TWITTER, WHATSAPP STATUS,LINKEDIN, YOUTUBE.

5.Use hashtags such as #loyaltyRewarded#ThanksInsta

6 . Tag 10 more users/friends in the same post.

TASK 2 : Find the users who have never posted a single photo on Instagram.

RESULT : Total 26 users have not posted a single photo on Instagram.

1	**Aniya_Hackett**	**10**	**David.Osinski47**	**19**	**Leslie67**
2	Kasandra_Homenick	11	Morgan.Kassulke	20	Janelle.Nikolaus81
3	Jaclyn81	12	Linnea59	21	Darby_Herzog
4	Rocio33	13	Duane60	22	Esther.Zulauf61
5	Maxwell.Halvorson	14	Julien_Schmidt	23	Bartholome.Bernhard
6	Tierra.Trantow	15	Mike.Auer39	24	Jessyca_West
7	Pearl7	16	Franco_Keebler64	25	Esmeralda.Mraz57
8	Ollie_Ledner37	17	Nia_Haag	26	Bethany20
9	Mckenna17	18	Hulda.Macejkovic		

QUERY USED : SELECT ID,USERNAME FROM USERS WHERE ID NOT IN (SELECT USER_ID FROM PHOTOS);

```
9 •  select id,username from users where id not in (select user_id from photos);
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Conte

id	username
5	Aniya_Hackett
7	Kasandra_Homenick
14	Jaclyn81
21	Rocio33
24	Maxwell.Halvorson
25	Tierra.Trantow
34	Pearl7
36	Ollie_Ledner37
41	Mckenna17
45	David.Osinski47
49	Morgan.Kassulke
53	Linnea59
54	Duane60
57	Julien_Schmidt
66	Mike.Auer39
68	Franco_Keebler64

Result Grid | Filter Rows:

id	username
53	Linnea59
54	Duane60
57	Julien_Schmidt
66	Mike.Auer39
68	Franco_Keebler64
71	Nia_Haag
74	Hulda.Macejkovic
75	Leslie67
76	Janelle.Nikolaus81
80	Darby_Herzog
81	Esther.Zulauf61
83	Bartholome.Bernhard
89	Jessyca_West
90	Esmeralda.Mraz57
91	Bethany20
NULL	NULL

26 % of the users have not posted even a single photo on Instagram.

Need to remind inactive users to post on Instagram.

INSIGHTS

Can be done in 2 ways:

1. Expressing the benefits:

- Opportunity to become financially independent : People are earning money via paid promotions ,selling products ,expanding their business ,brand endorsements.

- Good way of connecting with the school/college/childhood friends worldwide.
- Raise funds for the underprivileged.
- Be a social media influencer: Choose your passion , post about it and inspire others .
  Content can be any:
  motivation/health fitness/food/comedy , education etc.

2. Send emails for survey (Online Questionnaire) : Reasons for not using Instagram/How can we improve their experience ?

TASK 3 : Identify the winner of the contest and provide their details to the team.

RESULT : The winner of the contest is “ Zack_Kemmer93 ”.

Image URL : https://jarret.name

User ID : 52

Photo ID : 145

QUERY USED :

```
SELECT  TABLE2.PHOTO_ID,
TABLE2.NO_OF_USERS_WHO_LIKED_THE_PHOTO,    TABLE2.IMAGE_URL,
USERS.ID AS USER_ID,    USERS.USERNAME,    USERS.CREATED_ATFROM
(SELECT        TABLE1.PHOTO_ID,
    TABLE1.NO_OF_USERS_WHO_LIKED_THE_PHOTO,          P.USER_ID,
P.IMAGE_URL    FROM        (SELECT        PHOTO_ID,          COUNT(USER_ID)
AS 'NO_OF_USERS_WHO_LIKED_THE_PHOTO'    FROM        LIKES    GROUP
  BY PHOTO_ID    ORDER BY COUNT(USER_ID) DESC) AS TABLE1    INNER
    JOIN PHOTOS P ON P.ID = TABLE1.PHOTO_ID    ORDER BY
NO_OF_USERS_WHO_LIKED_THE_PHOTO DESC) AS TABLE2        INNER
    JOIN    USERS ON TABLE2.USER_ID = USERS.IDORDER BY
NO_OF_USERS_WHO_LIKED_THE_PHOTO DESC;
```

RESULT

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

photo_id	no_of_users_who_liked_the_photo	image_url	user_id	username	created_at
145	48	https://jarret.name	52	Zack_Kemmer93	2017-01-01 05:58:22
127	43	https://celestine.name	46	Malinda_Streich	2016-07-09 21:37:08
182	43	https://dorcas.biz	65	Adelle96	2016-10-01 00:37:57
123	42	http://shannon.org	44	Seth46	2016-07-07 11:40:27
30	41	http://kenny.com	10	Presley_McClure	2016-08-07 16:25:49

As per the results of the contest, only 48% of the users liked the photo of the winner.

Approximately 50% of the audience wasn't engaged.

There is a possibility that not everyone was aware of the contest.

INSIGHTS

To engage more audience / To promote the contest

- More advertisements need to be created.
- Such as YouTube ads/newspapers/tv ads.
- Highlight lucrative offers :

Stand a chance to meet famous "XYZ" celebrity on winning the contest.
Win gift hampers/cash prize.
Photoshoot with a famous personality.

- Tags used on winner's photo:
  Fun, Party, Concert, Smile, Drunk
- Collaborate/Hire the following to promote the future contests & encourage people to participate :

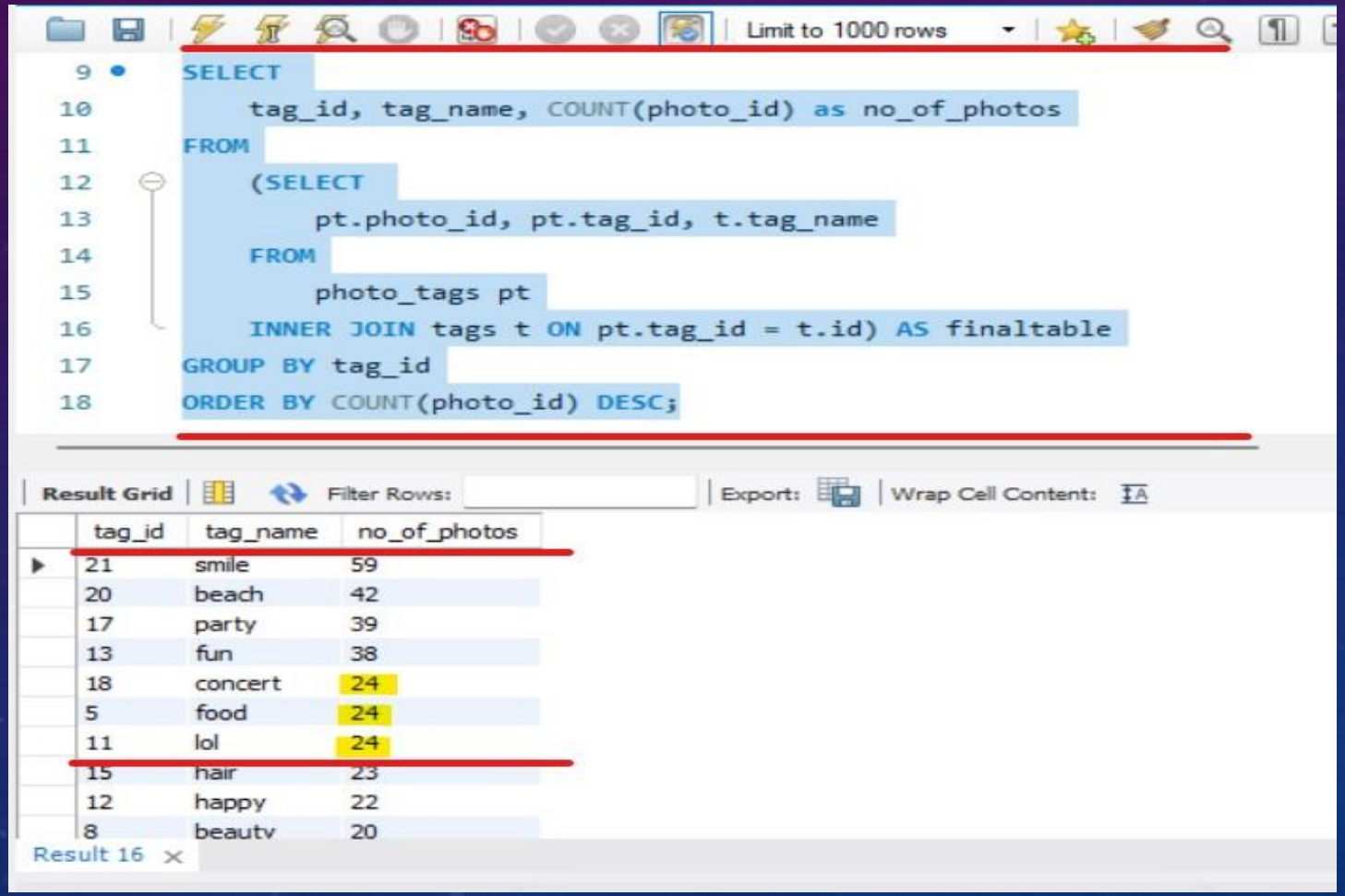
Social Media influencers
Reality Shows - judges/contestants/winner.
Pop Singers / Actors
Comedians

TASK 4 : Identify and suggest the top 5 most commonly used hashtags on the platform.

RESULT : The top 5 most commonly used hashtags on Instagram are:

1	**smile**
2	beach
3	party
4	fun
5	Concert, Food, lol

QUERY USED: SELECT TAG_ID, TAG_NAME, COUNT(PHOTO_ID) AS NO_OF_PHOTOS FROM (SELECT PT.PHOTO_ID, PT.TAG_ID, T.TAG_NAME FROM PHOTO_TAGS PT INNER JOIN TAGS T ON PT.TAG_ID = T.ID) AS FINALTABLE GROUP BY TAG_ID ORDER BY COUNT(PHOTO_ID) DESC;



INSIGHTS

Most Commonly Used Hashtags were: smile, beach, party, fun, concert, food, lol. Collaborating with the popular personalities associated with these attributes and asking them to post on Instagram can attract more people.

SMILE

- Smile Train-The world's biggest cleft charity.
- Pregnant Women.
- New born babies.
- Motivational speakers E.g.
- Wayne Dyer, Vivek Bindra, Nick Wayne

BEACH

- Weddings on beach.
- Reality Shows conducted on beaches.

PARTY/FUN

- Success in competitive exam.
- Birthday celebration.
- Travelling Videos.
- Trekking/Mountaineering/rafting.

CONCERT

- Pop singers.
- Actors.

FOOD

- Famous Chefs to post their recipes.
- Famous youtubers with millions of subscribers.

LOL

- Comedy Talk shows
- Comedians/ Standup Comedians.
- Britain's Got Talent.

TASK 5 : What day of the week do most users register on?.

RESULT : Most of the users have registered on

“Thursday” & “Sunday”.

QUERY USED: SELECT DAY, COUNT(ID) AS 'NO_OF_USERS' FROM (SELECT *, DAYNAME(CREATED_AT) AS 'DAY' FROM USERS ORDER BY DAY DESC) AS TABLE1 GROUP BY DAY ORDER BY COUNT(DAY) DESC;

```
13  SELECT
14      day, COUNT(id) AS 'no_of_users'
15  FROM
16      (SELECT
17          *, DAYNAME(created_at) AS 'day'
18      FROM
19          users
20      ORDER BY day DESC) AS table1
21  GROUP BY day
22  ORDER BY COUNT(day) DESC;
```

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

day	no_of_users
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

Sunday
16 users

Thursday
16 users

Friday
15 users

Saturday
12 users

Monday1
4 users

Tuesday14
users

Wed
13 users

INSIGHTS

1. Maximum users have registered on **Thursday** & **Sunday**.
2. But there is no major difference in the registrations on other weekdays.

3. It is suggested to launch the campaign on Saturday & Sunday as most of the people irrespective of the age(child/adult/old) and profession are free on weekdays.

4. Weekends would give enough time to the public to view the AD campaign.

TASK 6 : 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).

RESULT : There are 13 users who have liked every single photo.

1	**Aniya_Hackett**	**8**	**Julien_Schmidt**
2	Jaclyn81	9	Mike.Auer39
3	Rocio33	10	Nia_Haag
4	Maxwell.Halvorson	11	Leslie67
5	Ollie_Ledner37	12	Janelle.Nikolaus81
6	Mckenna17	13	Bethany20
7	Duane60		

QUERY USED :

SELECT USERS.ID, USERS.USERNAME,TABLE1.TOTAL_NO_OF_PHOTOS_LIKEDFROM USERS INNER JOIN (SELECT USER_ID, COUNT(PHOTO_ID) AS TOTAL_NO_OF_PHOTOS_LIKED FROM LIKES GROUP BY USER_ID HAVING COUNT(PHOTO_ID) = (SELECT COUNT(ID) FROM PHOTOS)) TABLE1 ON USERS.ID = TABLE1.USER_ID;

```
SELECT
    users.id, users.username, table1.total_no_of_photos_liked
FROM
    users
        INNER JOIN
    (SELECT
        user_id, COUNT(photo_id) AS total_no_of_photos_liked
    FROM
        likes
    GROUP BY user_id
    HAVING COUNT(photo_id) = (SELECT
            COUNT(id)
        FROM
            photos)) table1 ON users.id = table1.user_id;
```

Result Grid | Filter Rows: | Export:

id	username	total_no_of_photos_liked
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

INSIGHTS

It has been observed :

- There are 13 users who have liked every single photo on the site.
- It appears to be suspicious since a normal user won’t be able to do it.
- In order to verify, these 13 users should be notified to submit an identification proof within 7 days otherwise their accounts will be deleted post 7 days.

TASK 7 : a. Also, provide the total number of photos on Instagram/total number of users.

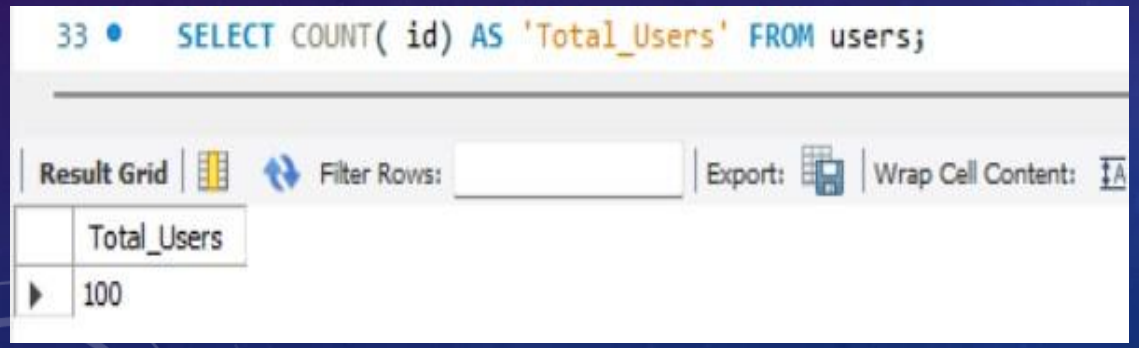
RESULT :

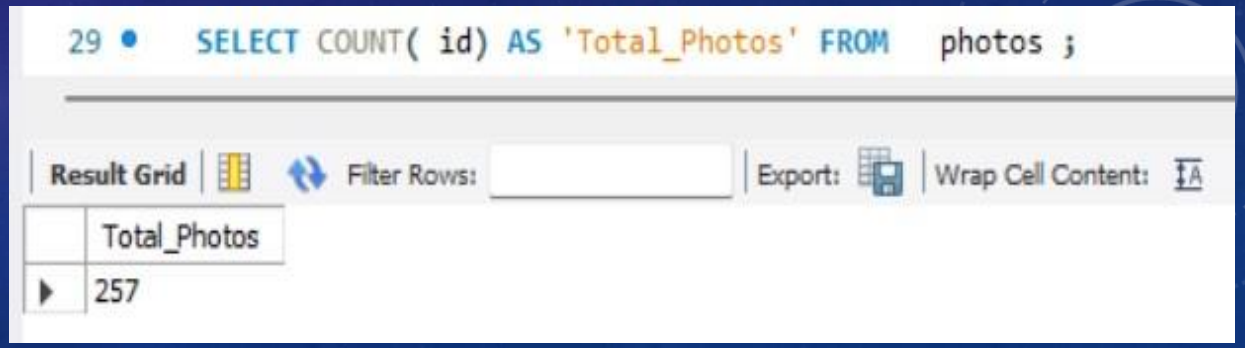
a. Total no. of users : 100
b. Total no. of photos : 257

QUERY USED:

a. SELECT COUNT(id) AS 'Total_Users' FROM users;

b. SELECT COUNT(id) AS 'Total_Photos' FROM photos ;





TASK 7 : b. Provide how many times does average user posts on Instagram.

```
10
11 •  select user_id,count(id) 'no_of_times_posted_on_instagram' from photos
12    group by user_id
13    order by count(id) desc;
14
```

Result Grid | Filter Rows:

user_id	no_of_times_posted_on_instagram
23	12
88	11
59	10
86	9
58	8
29	8
77	6
33	5
52	5
47	5
6	5
13	5
51	5
78	5
11	5
1	5
72	5
65	5
43	5
64	5
26	5
2	4
3	4
9	4
8	4

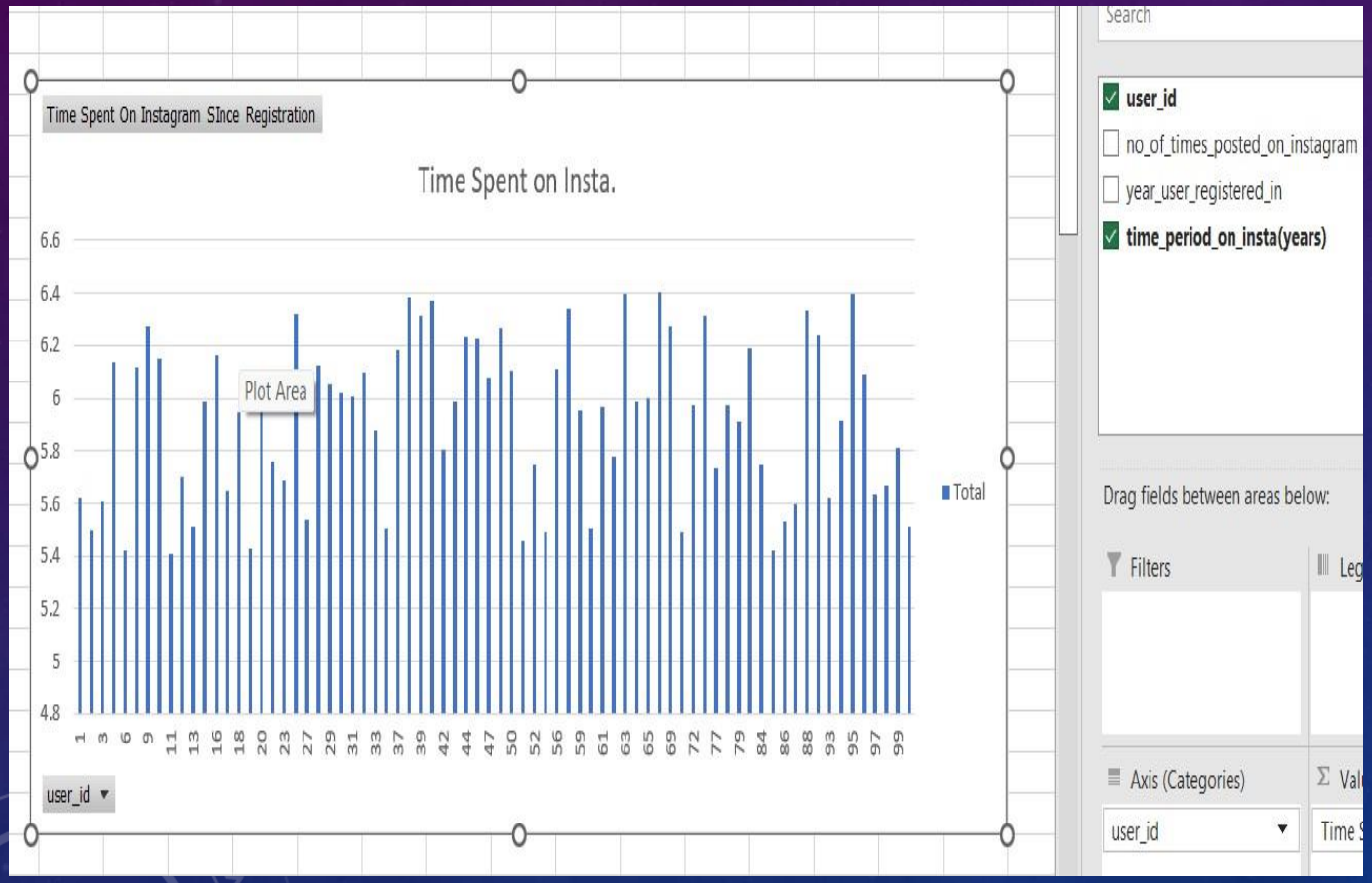
Result Grid | Filter Rows:

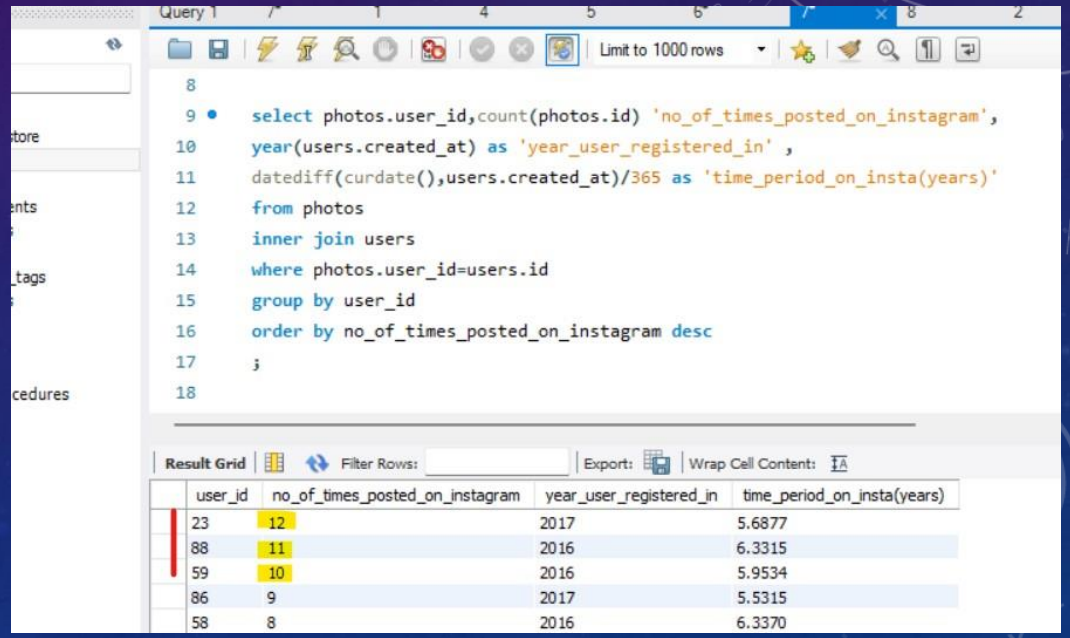
user_id	no_of_times_posted_on_instagram
46	4
12	4
44	4
63	4
32	4
28	4
16	4
15	4
87	4
4	3
10	3
50	3
67	3
17	3
42	3
92	3
96	3
99	3
38	2
100	2
82	2
84	2
85	2
60	2
62	2

Result Grid | Filter Rows:

user_id	no_of_times_posted_on_instagram
62	2
19	2
93	2
95	2
30	2
97	2
35	2
31	1
27	1
79	1
40	1
61	1
39	1
22	1
20	1
48	1
18	1
37	1
94	1
69	1
70	1
55	1
98	1
56	1
73	1

IT HAS BEEN OBSERVED THAT ONLY 3 USERS(3/100) HAVE POSTED >=10 PHOTOS IN THE SPAN OF 5-6 YEARS SINCE THE TIME THEY REGISTERED.





- NOT POSTING ON INSTAGRAM CAN HAVE THE FOLLOWING REASONS:

1. No access to internet.
2. Users don’t find it interesting : Can conduct an online survey to know about the reasons/experience on insta.

3. Some users may be school going children , parents’ restrictions may prevent them from using social media.

4. Lack of awareness:
   * Need to send daily reminders to post.
   * Create ties amongst celebrities to make Insta popular.
   * Bring exciting challenges along with same cash prize/goodies as a gift.

INSIGHTS