

**Project description :** This project is about Instagram user analytics which is to understand how users effectively use instagram and data collected from them based on their activities such as liking photos, following, comments under photos, usage of hastags while uploading photos etc and based on that data we can make users to spend more time on instagram app by personalized algorithm, ads based on their likes and improving our business

**Approach:** After going through requirements trying to understand what information i wanted to make report to marketing ,production and development teams. Going through each tables and column and linking common columns associated between tables which gave an outlook of what all the datas given and retrieve so many outcomes to understand about users and their activities

**Tech-Stack Used:** I have used my sql workbench version 6.3, my sql server version 5.7 to create database and run queries and db-fiddle.com

**Insights:** I have learned how to use join functions ,how and where to use sorting, aggregate functions ,so in declaring contest winner problem using problem solution video I have learnt how to use more than one joins in a query, learnt to use day function on query, group by function and sorting functions.

**Result:** After sql learning concepts and practice problems, I could able to apply all concepts asked to solve and able to implement the outcome required for various team which will be helpful in improving business

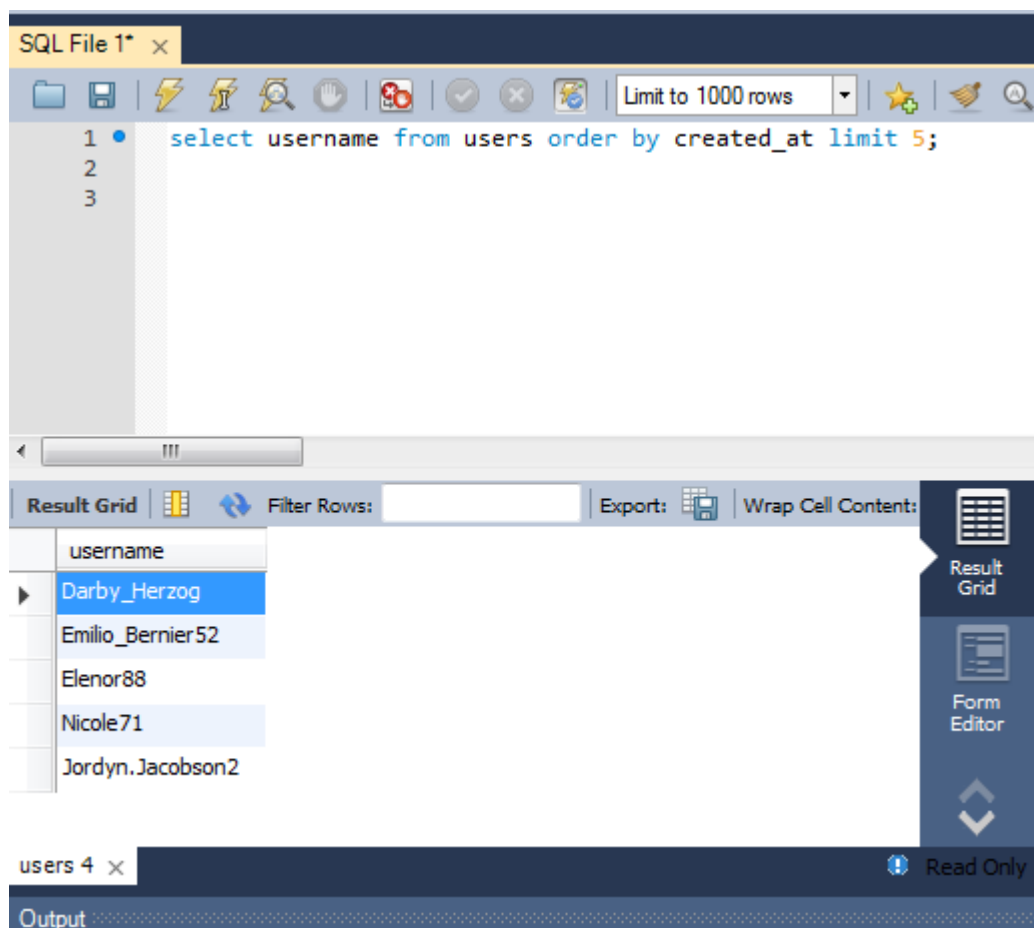
**A) Marketing:** The marketing team wants to launch some campaigns, and they need your help with the following

- After creating database for Ig\_clone and tables,can perform queries and give results

### 1.Rewarding Most Loyal Users

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

#### Query and Result:



The screenshot shows a SQL IDE interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the query: `select username from users order by created_at limit 5;`. Below the editor, the 'Result Grid' tab is active, displaying a table with the following data:

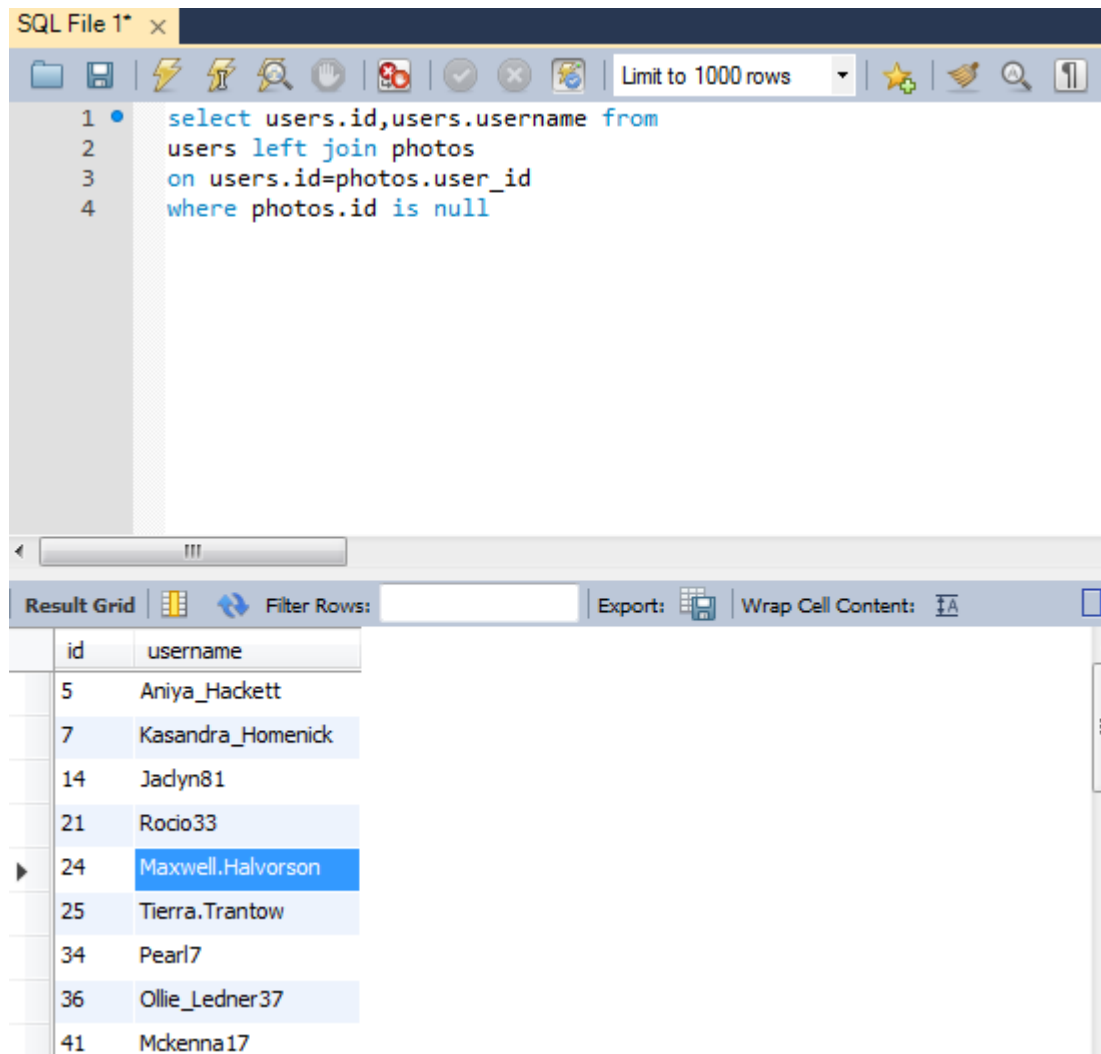
username
Darby_Herzog
Emilio_Bernier52
Elenor88
Nicole71
Jordyn.Jacobson2

At the bottom, a tab labeled 'users 4' is visible, and the 'Output' pane is at the very bottom.

## 2. Remind Inactive Users to Start Posting

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

### Query and Result:



The screenshot shows a SQL IDE window titled "SQL File 1\*" with a toolbar and a query editor. The query is as follows:

```
1 select users.id,users.username from
2 users left join photos
3 on users.id=photos.user_id
4 where photos.id is null
```

Below the query editor is the "Result Grid" tab, which displays the results of the query in a table format. The table has two columns: "id" and "username". The results are as follows:

id	username
5	Aniya_Hackett
7	Kassandra_Homenick
14	Jadyn81
21	Rocio33
24	Maxwell.Halvorson
25	Tierra.Trantow
34	Pearl7
36	Ollie_Ledner37
41	Mckenna17

### Output

5      Aniya\_Hackett

7      Kassandra\_Homenick

14     Jaclyn81

21     Rocio33

24     Maxwell.Halvorson

25     Tierra.Trantow

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34	Pearl17
36	Ollie_Ledner37
41	Mckenna17
45	David.Osinski47
49	Morgan.Kassulke
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

3. Declaring Contest Winner

Your Task: Identify the winner of the contest and provide their details to the team

Query:

select users.username,likes.userid,photos.image\_url,count(photo\_id) as total\_likes from  
ig\_clone.photos inner join ig\_clone.likes  
on likes.photo\_id=photos.id  
inner join ig\_clone.users  
on photos.user\_id=users.id  
group by photos.id  
order by total\_likes desc  
limit 1

Result:

Schema SQL

```
1 CREATE TABLE users(  
2   user_id INT NOT NULL,  
3   photo_id INT NOT NULL,  
4   created_at TIMESTAMP DEFAULT NOW(),  
5   FOREIGN KEY(user_id) REFERENCES users(id),  
6   FOREIGN KEY(photo_id) REFERENCES photos(id)  
7 );  
8  
9 /*Likes*/  
10 CREATE TABLE likes(  
11   user_id INT NOT NULL,  
12   photo_id INT NOT NULL,  
13   created_at TIMESTAMP DEFAULT NOW(),  
14   FOREIGN KEY(user_id) REFERENCES users(id),  
15   FOREIGN KEY(photo_id) REFERENCES photos(id)  
16 );
```

Text to DDL

Query SQL

```
1 select users.username,users.id,photos.image_url,count(photo_id) as  
2   total_likes from  
3   ig_clone.photos inner join ig_clone.likes  
4   on likes.photo_id=photos.id  
5   inner join ig_clone.users  
6   on photos.user_id=users.id  
7   group by photos.id  
8   order by total_likes desc  
9   limit 1
```

results

Copy as Markdown

Query #1

Execution time: 5ms

username	id	image_url	total_likes
Zack_Kemmer93	52	https://jarret.name	48

4. Hashtag Researching

Your Task: Identify and suggest the top 5 most commonly used hashtags on the platform

Query:

```
select tags.tag_name,count(tags.tag_name) as popular_tags
from ig_clone.photo_tags inner join ig_clone.tags
on tags.id=photo_tags.tag_id
group by(tags.id)
order by popular_tags desc
limit 5
```

Result:

SQL

```
15 user_id INT NOT NULL,
16 photo_id INT NOT NULL,
17 created_at TIMESTAMP DEFAULT NOW(),
18 FOREIGN KEY(user_id) REFERENCES users(id),
19 FOREIGN KEY(photo_id) REFERENCES photos(id)
20 );
21
22 /*Likes*/
23 CREATE TABLE likes(
24 user_id INT NOT NULL,
25 photo_id INT NOT NULL,
26 created_at TIMESTAMP DEFAULT NOW(),
27 FOREIGN KEY(user_id) REFERENCES users(id),
28 FOREIGN KEY(photo_id) REFERENCES photos(id)
```

Text to DDL

Query SQL

```
1 select tags.tag_name,count(tags.tag_name) as popular_tags
2 from ig_clone.photo_tags inner join ig_clone.tags
3 on tags.id=photo_tags.tag_id
4 group by(tags.id)
5 order by popular_tags desc
6 limit 5
7
```

results

Copy as Markdown

Query #1

Execution time: 1ms

tag_name	popular_tags
smile	59
beach	42
party	39
fun	38

## 5. Launch AD Campaign

**Your Task:** What day of the week do most users register on? Provide insights on when to schedule an ad campaign:Based on results Sunday can be scheduled for ad campaign

Schema SQL

```

25 user_id INT NOT NULL,
26 photo_id INT NOT NULL,
27 created_at TIMESTAMP DEFAULT NOW(),
28 FOREIGN KEY(user_id) REFERENCES users(id),
29 FOREIGN KEY(photo_id) REFERENCES photos(id)
30 );
31
32 /*Likes*/
33 CREATE TABLE likes(
34 user_id INT NOT NULL,
35 photo_id INT NOT NULL,
36 created_at TIMESTAMP DEFAULT NOW(),
37 FOREIGN KEY(user_id) REFERENCES users(id),
38 FOREIGN KEY(photo_id) REFERENCES photos(id)

```

Text to DDL

Query SQL

```

1 select count(users.created_at) as most_registered,
2 dayname(users.created_at) as day from
3 ig_clone.users
4 group by day
5 order by most_registered desc
6 limit 1
7

```

Results

Copy as Markdown

Query #1 Execution time: 1ms

most_registered	day
16	Sunday

**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:

**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

#### Query:

```

select users.id,sum(users.id)as total_users,sum(photos.id) as total_photos,
avg(photos.id)as posts from ig_clone.users join ig_clone.photos
on users.id=photos.user_id
group by(photos.id)
order by total_users

```

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### **Result:**

id	total_users	total_photos	posts
1	1	5	5.0000
1	1	2	2.0000
1	1	3	3.0000
1	1	4	4.0000
1	1	1	1.0000
2	2	9	9.0000
2	2	6	6.0000
2	2	7	7.0000
2	2	8	8.0000
3	3	12	12.0000

### **2.Bots & Fake 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).

### **Query and Result:**

```
select users.username,count(likes.photo_id) as bot
from ig_clone.photos join ig_clone.likes
on photos.id=likes.photo_id
join ig_clone.users
on users.id=likes.user_id
group by users.username
order by bot desc
```

username	bot
Nia_Haag	257
Leslie67	257
Jaclyn81	257
Janelle.Nikolaus81	257
Rocio33	257
Maxwell.Halvorson	257
Bethany20	257
Ollie_Ledner37	257
Mckenna17	257
Duane60	257



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