

Instagram User Analytics

Project Description:-

This project studied how people sign up for Instagram on different days of the week, and used that information to figure out the best day to run advertisements. We looked at both when people created accounts and the pictures they posted to understand when they were most active and receptive to ads.

Approach:-

1. Data Import:

- a. I used a software tool called MySQL Workbench to load the data that was given to me into a database system called MySQL.
- b. I checked the data to make sure it was accurate and consistent by looking at how it was organized.

2. Exploratory Data Analysis:

- a. I conducted exploratory analysis to understand the distribution of user registrations over time.
- b. I examined patterns in user registration timestamps to identify peak days.

3. SQL Queries:

- a. I used a programming language called SQL to ask questions to a database that stores data.
- b. I asked for information that was important or useful for some purpose, such as analysing user behaviour or improving a service.
- c. One of the types of information I asked for was which day of the week had the most users sign up for something, such as an account, a newsletter, or a subscription.

4. Tech-Stack Used:

- a. MySQL Workbench: I opted for MySQL Workbench because it has a user-friendly interface and powerful capabilities for running SQL queries.
- b. Being familiar with the tool made it easy to explore and manipulate data efficiently.

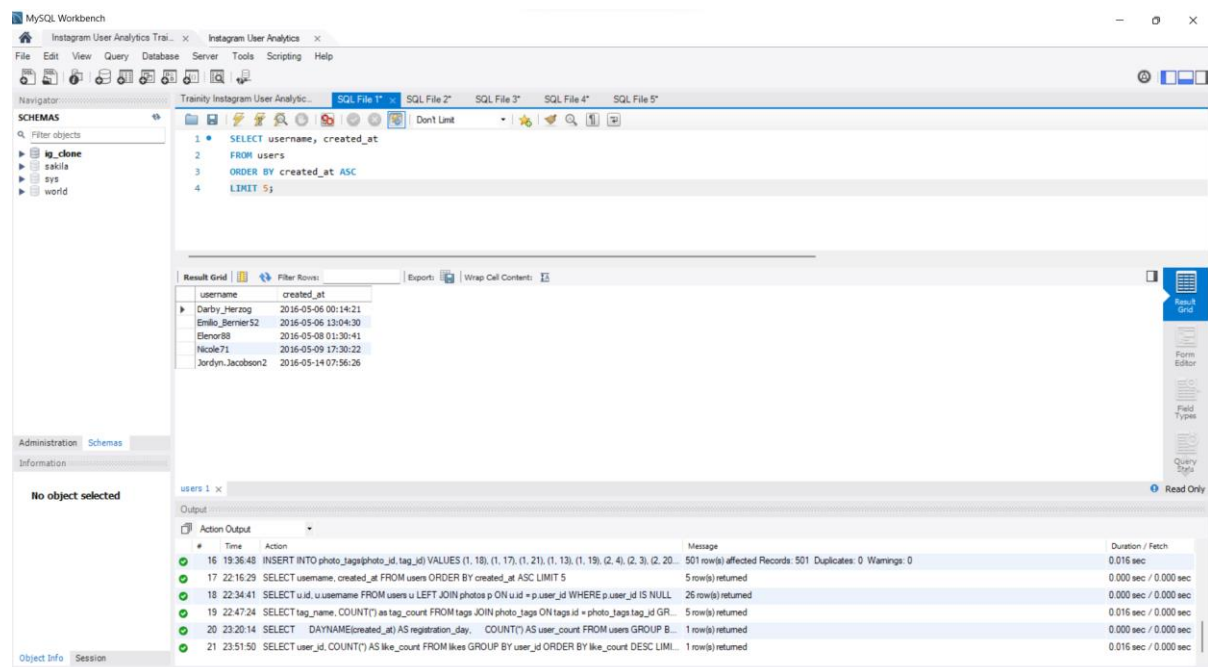
5. Insights:

- Peak Registration Day: - Identified that "**Thursday**" has the highest number of user registrations
- This insight can guide the scheduling of ad campaigns to maximize reach during peak user activity.

6. Result:

A) Marketing Analysis:-

1. **Loyal User Reward** – These are the five oldest users as per the provided Instagram Database.



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1. SELECT username, created_at
2. FROM users
3. ORDER BY created_at ASC
4. LIMIT 5;
```

The Results window displays the following data:

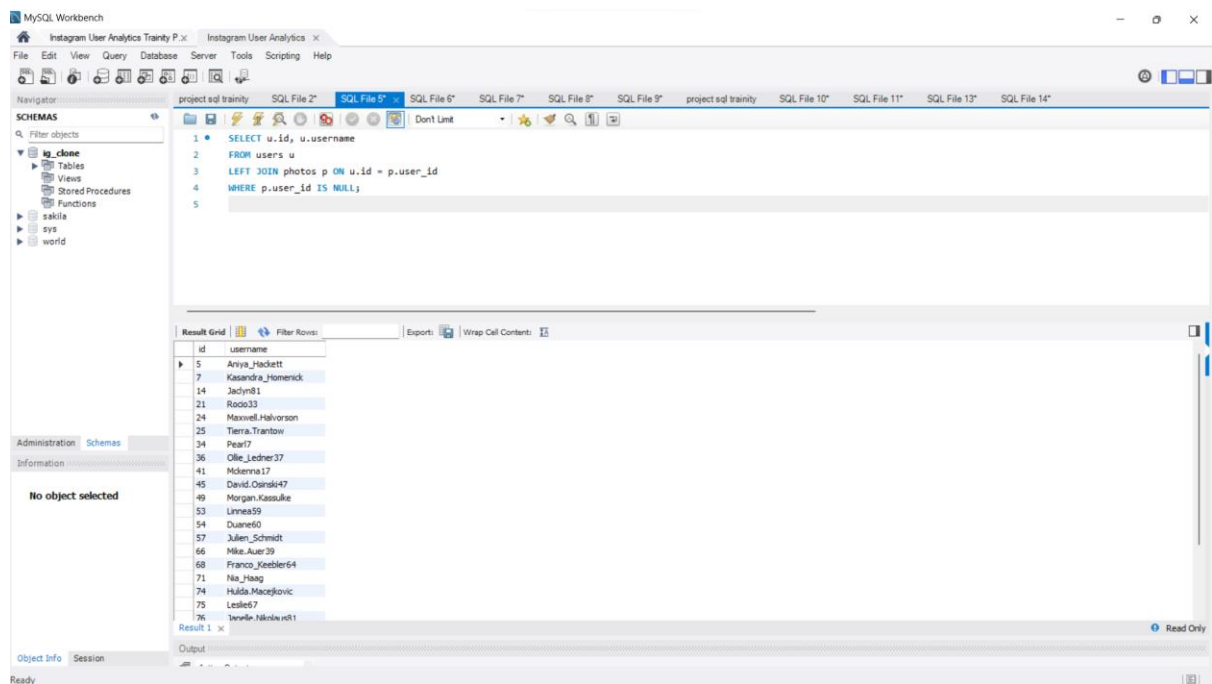
username	created_at
Darby_Herzog	2016-05-06 00:14:21
Emilio_Bernier52	2016-05-06 13:04:30
Elenor88	2016-05-08 01:30:41
Nicole71	2016-05-09 17:30:22
Jordyn.Jacobson2	2016-05-14 07:56:26

The bottom panel shows the Action Output with the following messages:

- 16 19:36:48 INSERT INTO photo_tags(photo_id, tag_id) VALUES (1, 18), (1, 17), (1, 21), (1, 13), (1, 19), (2, 4), (2, 3), (2, 20)... 501 row(s) affected Records: 501 Duplicates: 0 Warnings: 0 0.016 sec
- 17 22:16:29 SELECT username, created_at FROM users ORDER BY created_at ASC LIMIT 5 5 row(s) returned 0.000 sec / 0.000 sec
- 18 22:34:41 SELECT u.id, u.username FROM users u LEFT JOIN photos p ON u.id = p.user_id WHERE p.user_id IS NULL 26 row(s) returned 0.000 sec / 0.000 sec
- 19 22:47:24 SELECT tag_name, COUNT(*) as tag_count FROM tags JOIN photo_tags ON tags.id = photo_tags.tag_id GR... 5 row(s) returned 0.016 sec / 0.000 sec
- 20 23:20:14 SELECT DAYNAME(created_at) AS registration_day, COUNT(*) AS user_count FROM users GROUP B... 1 row(s) returned 0.000 sec / 0.000 sec
- 21 23:51:50 SELECT user_id, COUNT(*) AS like_count FROM likes GROUP BY user_id ORDER BY like_count DESC LIM... 1 row(s) returned 0.016 sec / 0.000 sec

username	created at
Darby_Herzog	06-05-2016 00:14
Emilio_Bernier52	06-05-2016 13:04
Elenor88	08-05-2016 01:30
Nicole71	09-05-2016 17:30
Jordyn.Jacobson2	14-05-2016 07:56

2. **Inactive User Engagement** – These are the users who have never posted a single photo on Instagram. These are the users where the team has to encourage users by sending them promotional emails.



user. id	username
5	Aniya_Hackett
7	Kassandra_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
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. Contest Winner Declaration- The winner of the contest is “user id – 5”and he has the most liked on a single photo that is 257 across all users.

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 SELECT user_id, COUNT(*) AS like_count
2 FROM likes
3 GROUP BY user_id
4 ORDER BY like_count DESC
5 LIMIT 1;
```

The Result Grid displays the following data:

user_id	like_count
5	257

4. Hashtag Research – Top Five Most Commonly Used Hashtag on the Instagram are as below and it will help the partner brand for marketing purpose.

The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 SELECT tag_name, COUNT(*) as tag_count
2 FROM tags
3 JOIN photo_tags ON tags.id = photo_tags.tag_id
4 GROUP BY tag_name
5 ORDER BY tag_count DESC
6 LIMIT 5;
```

The Result Grid displays the following data:

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

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

5. Ad Campaign Launch – “**Thursday**” is the best day of the week to launch ads. Team can schedule an ad campaign on Thursday because most users registered on Instagram on this date.

The screenshot shows the MySQL Workbench interface. The SQL Editor contains the following query:

```

1 SELECT
2     DAYNAME(created_at) AS registration_day,
3     COUNT(*) AS user_count
4 FROM users
5 GROUP BY registration_day
6 ORDER BY user_count DESC
7 LIMIT 1;

```

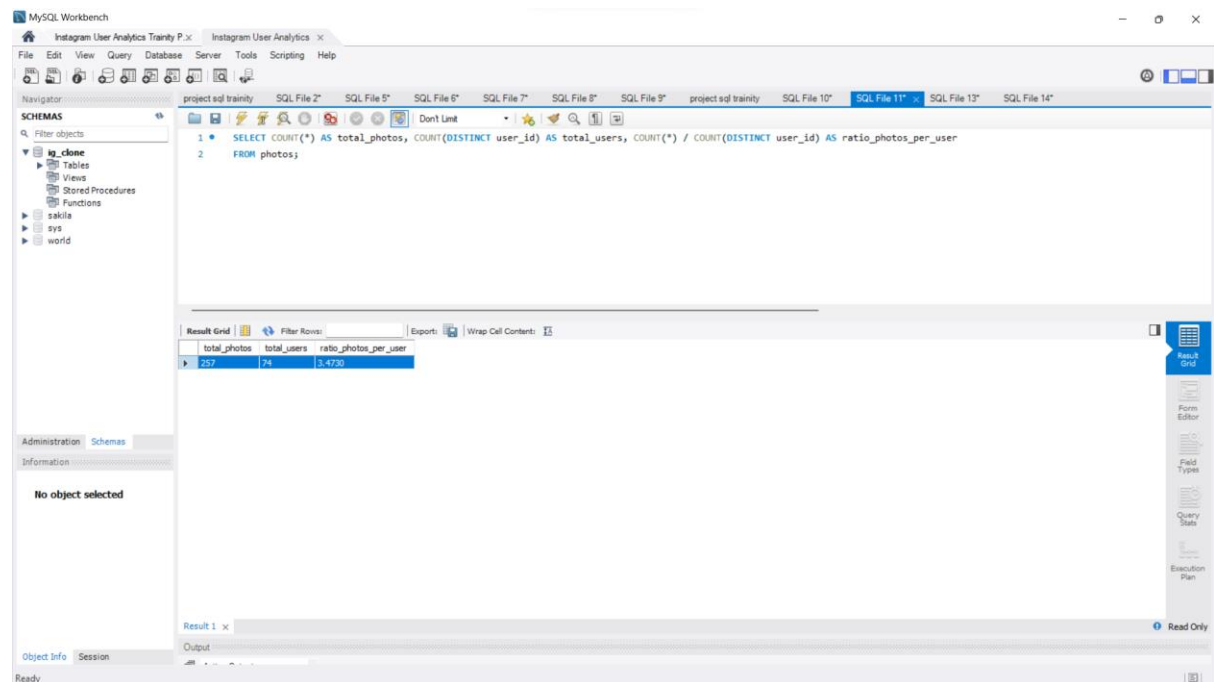
The Results panel at the bottom shows the output of the query:

registration_day	user_count
Thursday	16

The interface also includes a Schemas panel on the left, a top menu bar, and a right sidebar with various tool options like Result Grid, Form Editor, Field Types, Query Stats, and Execution Plan.

B). Investor Metrics –

1. **User Engagement** – Average number of posts per Instagram user is 3.4730 and The Total Number of Photos on Instagram are 257 and the total number of users are 74.



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

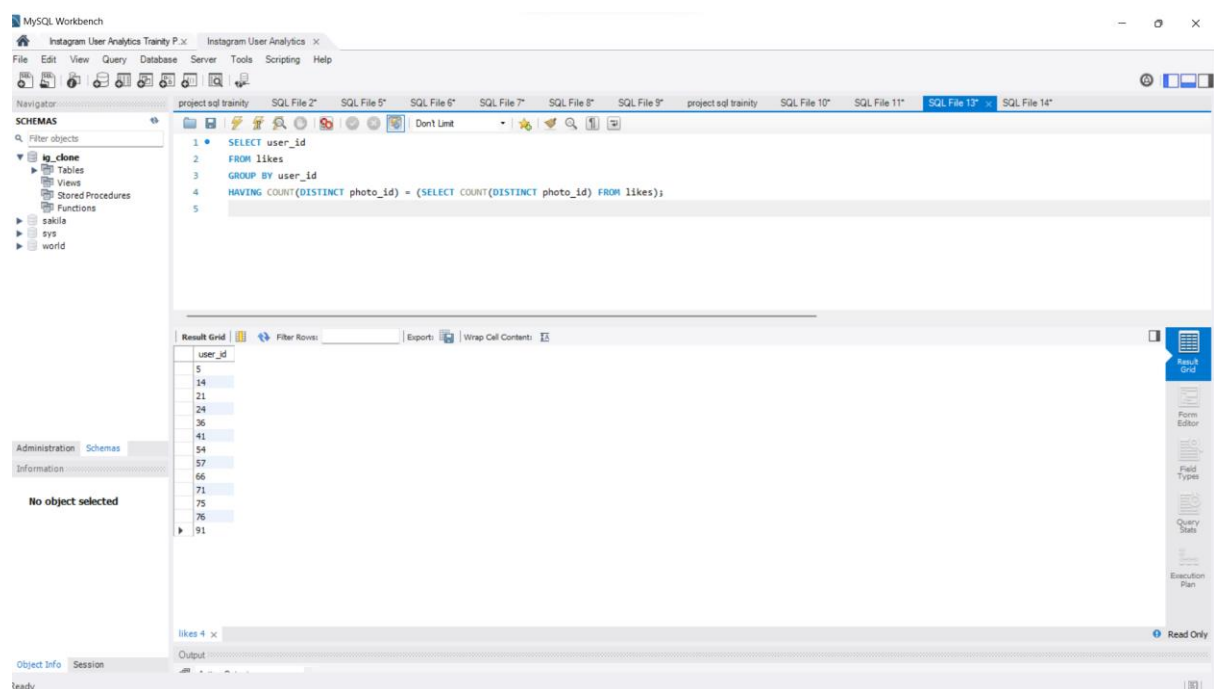
```
1 SELECT COUNT(*) AS total_photos, COUNT(DISTINCT user_id) AS total_users, COUNT(*) / COUNT(DISTINCT user_id) AS ratio_photos_per_user
2 FROM photos;
```

The Result Grid displays the following data:

total_photos	total_users	ratio_photos_per_user
257	74	3.4730

total_photos	total_users	ratio_photos_per_user
257	74	3.473

2. **Bots & Fake Accounts**- This user id must be spam and there are 13 unique users (Potential Bots) who has liked every single posts on Instagram.



The screenshot shows the MySQL Workbench interface. The SQL editor contains the following query:

```
1 SELECT user_id
2 FROM likes
3 GROUP BY user_id
4 HAVING COUNT(DISTINCT photo_id) = (SELECT COUNT(DISTINCT photo_id) FROM likes);
```

The Result Grid displays the following data:

user_id
5
14
21
24
36
41
54
57
66
71
75
76
91

user_id
5
14
21
24
36
41
54
57
66
71
75
76
91

Impact- The impact of the analysis was substantial, giving me a deeper understanding of how users interact and engage with the app. These insights not only boosted my analytical skills but also provided practical information for future decision-making. The project wasn't just a learning experience; it was a hands-on application of my skills, demonstrating the real-world impact of data analysis.

Summary- In summary, the insights from the analysis not only enhanced my abilities as a data analyst but also positioned me to make meaningful contributions to the team's broader objectives and the success of the Instagram platform.

6. Drive Link-

Achievements- The project brought about significant achievements and turned out to be incredibly valuable. By successfully completing the analysis, I gained valuable insights that greatly improved my understanding of how users behave on Instagram.