

Instagram User Analytics

- Project Overview

- The purpose of this project is to analyse the data from an Instagram clone database to derive insights for marketing strategies and investor metrics. The database contains tables for users, photos, comments, likes, follows, tags, and their relationships. Through SQL queries, we aim to address various tasks such as identifying loyal users, engaging inactive users, declaring contest winners, researching hashtags, and determining the best time for ad campaigns.

- Approach

- Database Setup: The provided SQL commands were executed to create the necessary tables and relationships in MySQL Workbench.
- Data Analysis: SQL queries were formulated to address each task mentioned in the project description.
- Results Interpretation: The outputs of the SQL queries were analysed to derive meaningful insights.
- Report Preparation: A report was compiled in PDF format, documenting the project overview, approach, tech-stack used, insights gained, and results.

- Tech-Stack Used

- Software: MySQL Workbench
- Version: 8.0
- Reason for Choice: MySQL Workbench is a robust tool for managing MySQL databases, offering features for query development, database design, and administration. It provides a user-friendly interface for writing SQL queries and visualizing data, making it suitable for this project.

- Marketing Analysis

- Loyal User Reward

The screenshot displays the MySQL Workbench interface. The left sidebar contains navigation panels for 'MANAGEMENT', 'INSTANCE', and 'PERFORMANCE'. The main workspace shows a SQL query in 'SQL File 4' and its results in the 'Result Grid'.

SQL Query:

```
1 • USE ig_clone;
2
3 • SELECT username, created_at
4 FROM users
5 ORDER BY created_at ASC
6 LIMIT 5
7
```

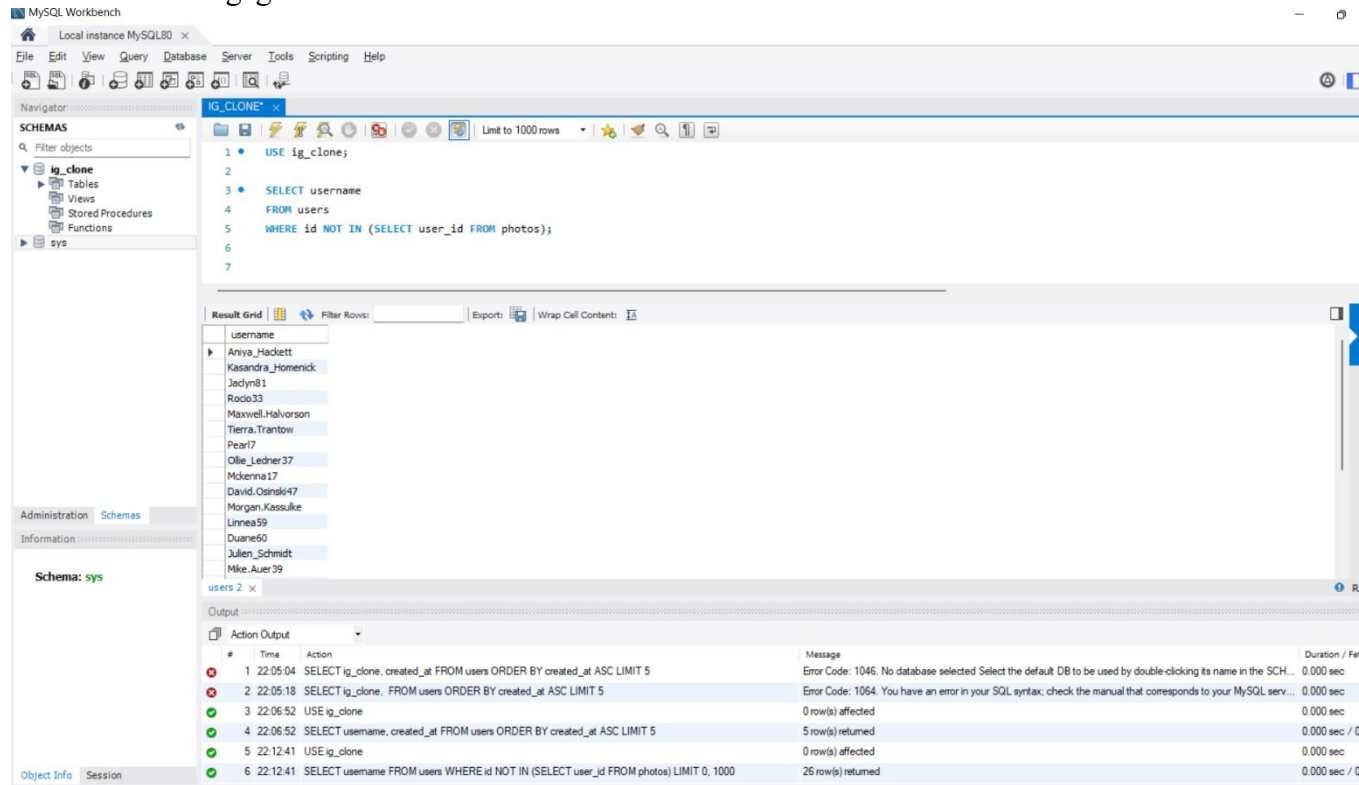
Result Grid:

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

Output Log:

#	Time	Action	Message	Duration / Fetch
1	22:05:04	SELECT ig_clone, created_at FROM users ORDER...	Error Code: 1046. No database selected Select the ...	0.000 sec
2	22:05:18	SELECT ig_clone, FROM users ORDER BY create...	Error Code: 1064. You have an error in your SQL sy...	0.000 sec
3	22:06:52	USE ig_clone	0 row(s) affected	0.000 sec
4	22:06:52	SELECT username, created_at FROM users ORDE...	5 row(s) returned	0.000 sec / 0.000 sec

- Inactive User Engagement

[illegible]

○ Contest Winner Declaration

The screenshot shows MySQL Workbench with a query in the 'Query' tab. The query is as follows:

```
1 • USE ig_clone;
2 • SELECT u.id, u.username, p.id AS photo_id, COUNT(1.user_id) AS like_count
3 FROM users u
4 JOIN photos p ON u.id = p.user_id
5 JOIN likes l ON p.id = l.photo_id
6 GROUP BY u.id, u.username, p.id
7 ORDER BY like_count DESC
8 LIMIT 1;
```

The 'Result Grid' shows the following data:

id	username	photo_id	like_count
52	Zack_Kemmer93	145	48

The 'Output' tab shows the execution log for 'Result 17':

#	Time	Action	Message	Duration / Fetch
54	23:20:53	USE ig_clone	0 row(s) affected	0.000 sec
55	23:20:53	SELECT t.tag_name, COUNT(pt.photo_id) AS tag_count FROM tags t JOIN photo_tags pt ON t.id = pt.tag_id ...	5 row(s) returned	0.000 sec / 0.000 sec
56	23:22:01	USE ig_clone	0 row(s) affected	0.000 sec
57	23:22:01	SELECT id, username FROM users WHERE id NOT IN (SELECT DISTINCT user_id FROM photos) LIMIT 0, 1...	25 row(s) returned	0.000 sec / 0.000 sec
58	23:28:41	USE ig_clone	0 row(s) affected	0.000 sec
59	23:28:41	SELECT u.id, u.username, p.id AS photo_id, COUNT(l.user_id) AS like_count FROM users u JOIN photos p O...	1 row(s) returned	0.032 sec / 0.000 sec

○ Hashtag Research:

The screenshot shows MySQL Workbench with a query in the 'Query' tab. The query is as follows:

```
1 • USE ig_clone;
2 • SELECT t.tag_name, COUNT(pt.photo_id) AS tag_count
3 FROM tags t
4 JOIN photo_tags pt ON t.id = pt.tag_id
5 GROUP BY t.tag_name
6 ORDER BY tag_count DESC
7 LIMIT 5;
```

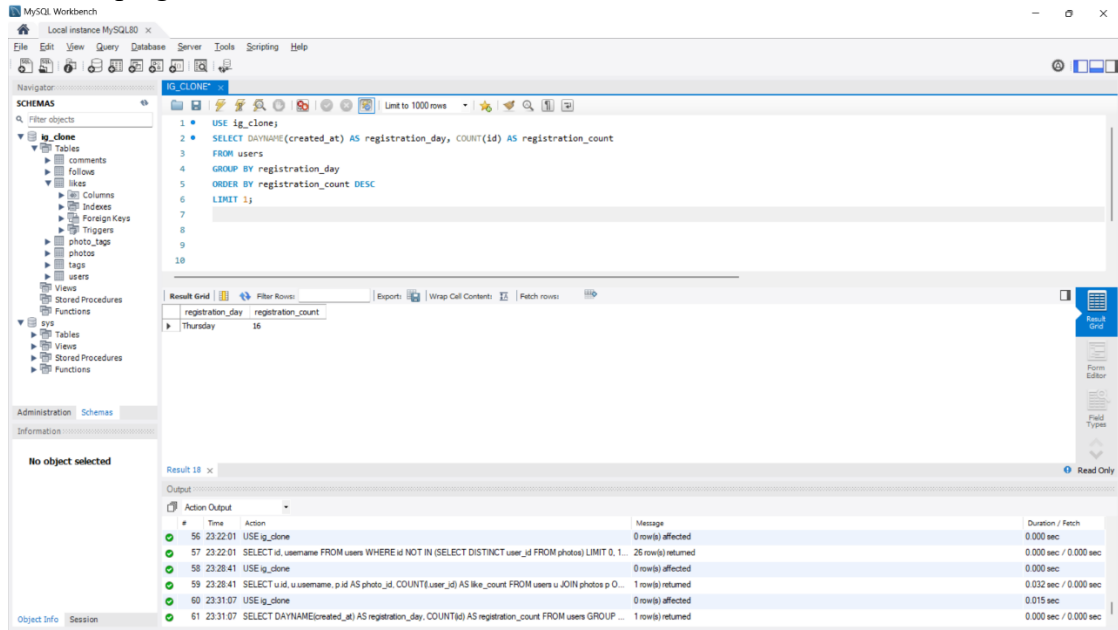
The 'Result Grid' shows the following data:

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

The 'Output' tab shows the execution log for 'Result 15':

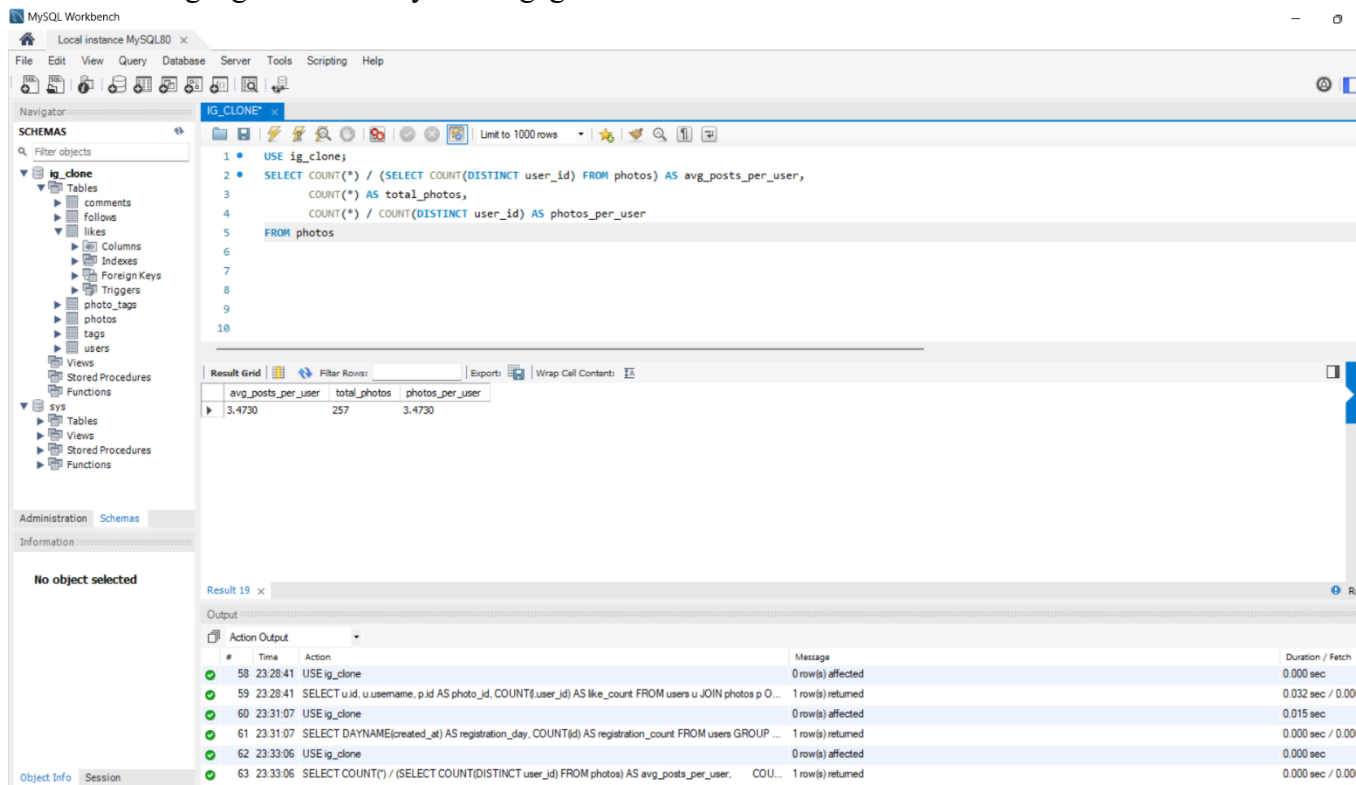
#	Time	Action	Message	Duration / Fetch
50	23:11:25	USE ig_clone	0 row(s) affected	0.000 sec
51	23:11:25	SELECT AVG(photo_count) AS avg_posts_per_user, SUM(photo_count) AS total_photos FROM (SELECT ...	1 row(s) returned	0.000 sec / 0.000 sec
52	23:11:57	USE ig_clone	0 row(s) affected	0.000 sec
53	23:11:57	SELECT u.id, u.username FROM users u JOIN photos p ON u.id = p.user_id WHERE NOT EXISTS (SELE...	257 row(s) returned	0.016 sec / 0.000 sec
54	23:20:53	USE ig_clone	0 row(s) affected	0.000 sec
55	23:20:53	SELECT t.tag_name, COUNT(pt.photo_id) AS tag_count FROM tags t JOIN photo_tags pt ON t.id = pt.tag_id ...	5 row(s) returned	0.000 sec / 0.000 sec

- Ad Campaign Launch



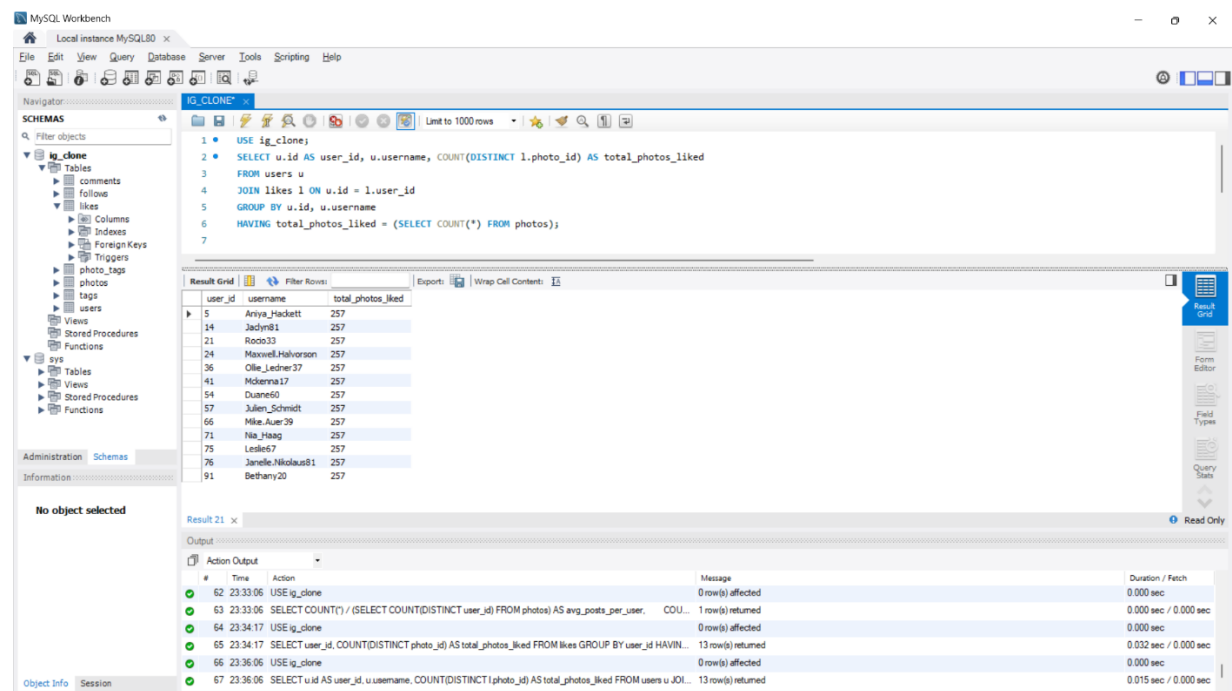
- Investor Metrics

- User Engagement:
- Calculated the average number of posts per user on Instagram.
- Provided the total number of photos on Instagram divided by the total number of users.
- Investors can gauge user activity and engagement.



- Bots & Fake Accounts:

- Identified users (potential bots) who have liked every single photo on the site.
- This behaviour is not typical for a normal user and may indicate fake accounts.



- Insights

- Loyal User Reward: Identified the five oldest users on Instagram based on their registration dates. This insight can help in rewarding loyal users who have been using the platform for a long time.
- Inactive User Engagement: Identified users who have never posted a single photo on Instagram, allowing targeted efforts to encourage them to start posting.
- Contest Winner Declaration: Determined the winner of a contest based on the most likes on a single photo. This information can be used to declare contest winners and award prizes.
- Hashtag Research: Identified the top five most commonly used hashtags on the platform, providing insights for effective hashtag usage in posts and campaigns.
- Ad Campaign Launch: Determined the best day of the week to launch ad campaigns based on user registration trends. This insight can optimize ad campaign scheduling for maximum reach and engagement.

- Results

- Successfully analysed the Instagram clone database to derive insights for marketing strategies and investor metrics.
- Identified key patterns and trends in user behaviour, engagement, and content consumption.
- The analysis provided valuable information for decision-making and strategy formulation, potentially leading to improved user engagement, content relevance, and ad campaign effectiveness.