

INSTAGRAM USER ANALYSIS

Project Description:

The project aims to perform user analytics on the Instagram database. The goal is to provide insights and answer specific questions related to marketing campaigns, user engagement, and investor metrics. By analysing the database, I will identify the oldest users, inactive users, contest winners, popular hashtags, and optimal days for launching ad campaigns. Additionally, I will assess user engagement and identify potential bots or fake accounts on the platform.

Approach:

To analyse the Instagram database, I will use SQL queries to retrieve the required information. I will write queries to identify the oldest users, inactive users, contest winners, popular hashtags, and optimal days for ad campaigns. I will also calculate user engagement metrics and identify potential bot accounts. By executing these queries on the database, we will obtain the necessary insights.

Tech-Stack Used:

For this project, I will utilize a relational database management system (RDBMS) such as MySQL Workbench to execute SQL queries.

Insights:

Throughout the project, I gained insights into various aspects of user analytics on Instagram. I discovered the oldest users, allowing for targeted marketing campaigns towards loyal users. By identifying inactive users, I can strategize promotional emails to encourage them to start posting. Contest winners were determined based on the most likes on a single photo. I identified the top hashtags, enabling effective hashtag usage for reaching a broader audience. Additionally, I determined the most common day for user registrations, providing insights for scheduling ad campaigns. We also assessed user engagement by calculating the average number of posts per user and identified potential bot accounts based on suspicious liking behaviour.

Result:

Through this project, I was able to provide valuable insights to the marketing and management teams of Instagram. The analysis helped in identifying the most loyal users, reminding inactive users to post, declaring contest winners, suggesting popular hashtags, and determining optimal days for launching ad campaigns. The assessment of user engagement provided an understanding of user activity on the platform, and the identification of potential bot accounts helped in ensuring the platform's authenticity. Overall, the project provided actionable information to improve marketing strategies, enhance user engagement, and address investor concerns about the platform's performance.

Attaching snapshots of my project source code:

The image displays two screenshots of a SQL IDE interface, likely DBeaver, showing project source code and query results.

Top Screenshot:

- SQL File 3* - Project2-Instagram-User-Analysis**
- Code:**

```
7 • select * from users;  
8  
9 # A) Marketing: The marketing team wants to launch some campaigns, and they need your help with the following  
10  
11 # 1. Rewarding Most Loyal Users: People who have been using the platform for the longest time.  
12  
13 • SELECT id, created_at  
14 FROM users  
15 ORDER BY created_at ASC  
16 LIMIT 5;
```
- Result Grid:**

	id	created_at
80	2016-05-06 00:14:21	
67	2016-05-06 13:04:30	
63	2016-05-08 01:30:41	
95	2016-05-09 17:30:22	
38	2016-05-14 07:56:26	

Bottom Screenshot:

- SQL File 3* - Project2-Instagram-User-Analysis**
- Code:**

```
18 # 2. Remind Inactive Users to Start Posting: By sending them promotional emails to post their 1st photo.  
19  
20 • SELECT id, username  
21 FROM users  
22 WHERE id NOT IN (SELECT DISTINCT user_id FROM photos);
```
- Result Grid:**

	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	
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	
- Output:**

#	Time	Action	Message
86	21:46:05	SELECT p.user_id, p.id, COUNT(f.user_id) AS like_count FROM photos AS p JOIN likes AS l ON p.id = l.photo...	1 row(s) returned
87	21:46:52	SELECT id, username FROM users WHERE id NOT IN (SELECT DISTINCT user_id FROM photos) LIMIT 0. ...	26 row(s) returned

```
SQL File 3* Project2-Instagram-User-Analysi... x
Limit to 5000 rows

24 # 3. Declaring Contest Winner: The team started a contest and the user who gets the most likes on a
25 # single photo will win the contest now they wish to declare the winner.
26
27 • SELECT p.user_id, p.id, COUNT(l.user_id) AS like_count
28 FROM photos AS p
29 JOIN likes AS l ON p.id = l.photo_id
30 GROUP BY p.user_id, p.id
31 ORDER BY like_count DESC
32 LIMIT 1;
```

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

	user_id	id	like_count
▶	52	145	48

```
SQL File 3* Project2-Instagram-User-Analysi... x
Limit to 5000 rows

34 # 4. Hashtag Researching: A partner brand wants to know, which hashtags to use in the post to reach the
35 # most people on the platform.
36
37 • SELECT t.id, t.tag_name, COUNT(pt.tag_id) AS tag_count
38 FROM tags AS t
39 JOIN photo_tags AS pt ON t.id = pt.tag_id
40 GROUP BY t.tag_name
41 ORDER BY tag_count DESC
42 LIMIT 5;
```

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

	id	tag_name	tag_count
▶	21	smile	59
	20	beach	42
	17	party	39
	13	fun	38
	18	concert	24

```
SQL File 3* Project2-Instagram-User-Analysi... x
Limit to 5000 rows

44 # 5. Launch AD Campaign: The team wants to know, which day would be the best day to launch ADs.
45
46 • SELECT DAYNAME(u.created_at) AS registration_day, COUNT(*) AS registration_count
47 FROM users AS u
48 JOIN follows AS f ON u.id = f.follower_id
49 GROUP BY registration_day
50 ORDER BY registration_count DESC
51 LIMIT 1;
52
```

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

	registration_day	registration_count
▶	Thursday	1287

SQL File 3*Project2-Instagram-User-Analysi...

Limit to 5000 rows

53

B) Investor Metrics: Our investors want to know if Instagram is performing well and is not becoming redundant

54

like Facebook, they want to assess the app on the following grounds

55

56

1. User Engagement: Are users still as active and post on Instagram or they are making fewer posts

57

58 •

SELECT COUNT(*) AS total_photos, COUNT(DISTINCT user_id) AS total_users,

59

COUNT(*) / COUNT(DISTINCT user_id) AS average_photos_per_user

60

FROM photos;

61

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	total_photos	total_users	average_photos_per_user
▶	257	74	3.4730

SQL File 3*Project2-Instagram-User-Analysi...

Limit to 5000 rows

61

62

2. Bots & Fake Accounts: The investors want to know if the platform is crowded with fake and dummy accounts

63

64 •

SELECT user_id, COUNT(DISTINCT photo_id) AS liked_photos_count

65

FROM likes

66

GROUP BY user_id

67

HAVING liked_photos_count = (SELECT COUNT(DISTINCT id) FROM photos);

68

Result Grid

Filter Rows:

Export:

Wrap Cell Content:

	user_id	liked_photos_count
▶	5	257
	14	257
	21	257
	24	257
	36	257
	41	257
	54	257
	57	257
	66	257
	71	257
	75	257
	76	257
	91	257

Toggle wrapping of cell contents

Result 62

Read Only

Output

Action Output

#

Time

Action

Message