



INSTAGRAM USER ANALYTICS

UNVEILING THE INSTAGRAM MAZE: NAVIGATING USER ANALYTICS FOR MAXIMUM ENGAGEMENT

INTRODUCTION

Instagram is one of the most popular social media platforms in the world, with over a billion active users. As businesses continue to leverage Instagram as a marketing tool, it's important to understand how user analytics can be used to drive growth.

User analytics is the process of tracking user engagement and interactions with digital products, such as mobile applications like Instagram.

By understanding how users interact with the platform, the product team can gain valuable insights into user's behaviour, preferences, and needs and hence, can make informed decisions about marketing campaigns, product features, and overall user experience.

OBJECTIVE

1. The marketing team wants to launch some campaigns, and they had following queries :

- Identify Most Loyal Users in order to reward them suitably: People who have been using the platform for the longest time.
- Identify Inactive Users in order to remind them to Start Posting by sending them promotional emails to post their 1st photo.
- Identify the winner of the contest which was started by the team, where the user who gets the most likes on a single photo would be rewarded as they now wish to declare the winner.
- Identify the most trending Hashtags so as to use them in their post to reach the most people on the platform.
- Identify the best days to launch their ad campaign.

2. The 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:

- User Engagement: Are users still as active and post on Instagram or they are making fewer posts
- Bots & Fake Accounts: Are there any fake and dummy accounts across the platform

APPROACH

In order to answer the queries of the Marketing team and the Investors, my approach was to analyze the Instagram user data, which involved tracking various engagement metrics, such as likes, comments, and shares, as well as user retention rate and session length. By doing this, we can identify which types of content are resonating with the audience and adjust the marketing strategy accordingly. Additionally, user analytics help us identify areas for improvement in the user experience by detecting potential challenges encountered during the user journey.

In order to execute this, I employed **MYSQL Workbench 8.0 (Version 8.0.33)** , a powerful relational database management system. Firstly, from the data that was provided by the team, I created a well-structured database schema that could efficiently store various data points such as user profiles, posts, comments, likes, and engagement metrics. I then studied the data points which enabled me to design and implement SQL queries into the database to extract the required information.

Identify most loyal users in order to reward them suitably: People who have been using the platform for the longest time.

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

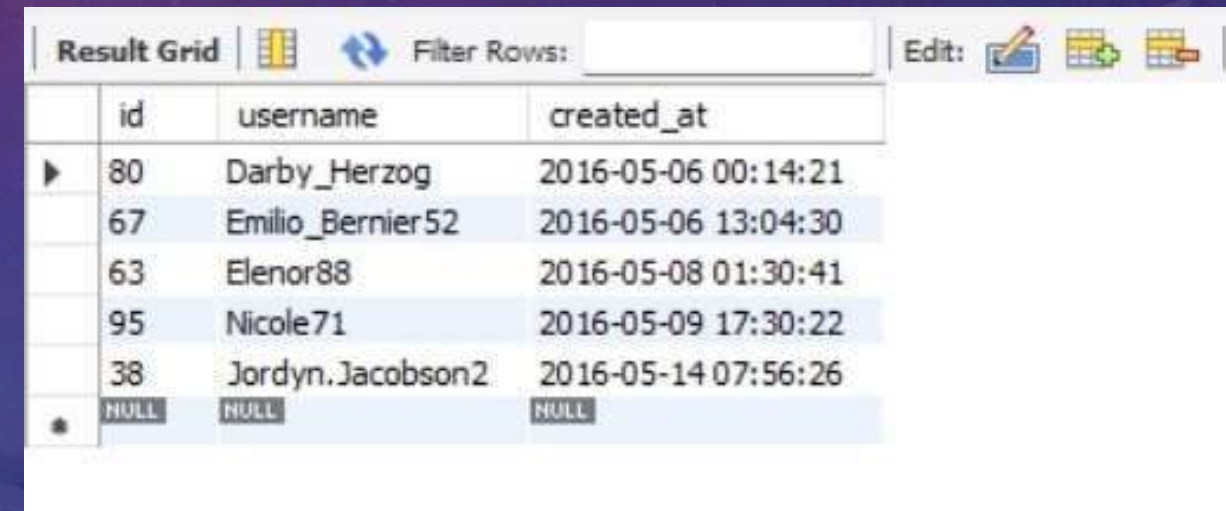
SQL Query :



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

The screenshot shows a SQL query editor with a toolbar at the top. The query is written in a monospaced font and is highlighted in blue. The query is: `SELECT id, username, created_at FROM users ORDER BY created_at ASC LIMIT 5;`

Solution :



	id	username	created_at
▶	80	Darby_Herzog	2016-05-06 00:14:21
	67	Emilio_Bernier52	2016-05-06 13:04:30
	63	Elenor88	2016-05-08 01:30:41
	95	Nicole71	2016-05-09 17:30:22
	38	Jordyn.Jacobson2	2016-05-14 07:56:26
•	NULL	NULL	NULL

The screenshot shows a database result grid with a toolbar at the top. The grid has four columns: 'id', 'username', and 'created_at'. The first five rows are highlighted in blue. The first row is: `80 Darby_Herzog 2016-05-06 00:14:21`. The second row is: `67 Emilio_Bernier52 2016-05-06 13:04:30`. The third row is: `63 Elenor88 2016-05-08 01:30:41`. The fourth row is: `95 Nicole71 2016-05-09 17:30:22`. The fifth row is: `38 Jordyn.Jacobson2 2016-05-14 07:56:26`. The sixth row is: `NULL NULL NULL`.

Identify Inactive Users in order to remind them to start posting by sending them promotional emails to post their 1st photo.

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

SQL Query :

```
1 • SELECT users.id, username FROM users
2 LEFT JOIN photos ON users.id=photos.user_id
3 WHERE photos.id IS NULL;
4
```

Solution :

Result Grid		Filter Rows:	Export:
	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	
	76	Janelle.Nikolaus81	
	80	Darby_Herzog	
	81	Esther.Zulauf61	
	83	Bartholome.Bernhard	
	89	Jessyca_West	
	90	Esmeralda.Mraz57	
	91	Bethany20	

Identify the winner of the contest which was started by the team, where the user who gets the most likes on a single photo would be rewarded as they now wish to declare the winner.

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

SQL Query :

```
1 SELECT likes.photo_id, users.username, photos.image_url,  
2 COUNT(*) AS likes_user  
3 FROM likes  
4 INNER JOIN photos ON likes.photo_id = photos.id  
5 INNER JOIN users ON photos.user_id = users.id  
6 GROUP BY likes.photo_id, users.username  
7 ORDER BY likes_user DESC LIMIT 1;  
8
```

Solution :

Result Grid				
		Filter Rows:	Export:	
		Wrap Cell Content:		
	photo_id	username	image_url	likes_user
▶	145	Zack_Kemmer93	https://jarret.name	48

Identify the most trending Hashtags so as to use them in their post to reach the most people on the platform.

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

SQL Query :

```
1 • SELECT tag_name, COUNT(tag_name) AS 'Total'
2 FROM tags
3 JOIN photo_tags ON tags.id = photo_tags.tag_id
4 GROUP BY tags.id
5 ORDER BY total DESC LIMIT 5;
6
```

Solution :

Result Grid			Filter Rows:	Export:	Wrap Cell Content:	Fetch r
	tag_name	Total				
►	smile	59				
	beach	42				
	party	39				
	fun	38				
	concert	24				

Identify the best days to launch their ad campaign

Our Task : What day of the week do most users register on? Provide insights on when to schedule an AD Campaign

SQL Query :

```
1 • SELECT DAYNAME(created_at) AS WeekDay, COUNT(*) AS 'Registrations'
2 FROM users
3 GROUP BY WeekDay ORDER BY 'Registrations' DESC;
4
```

Solution :

Result Grid			Filter Rows:	Export:	Wrap Cell Content:
	WeekDay	Registrations			
►	Thursday	16			
	Sunday	16			
	Tuesday	14			
	Saturday	12			
	Wednesday	13			
	Monday	14			
	Friday	15			

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

Our Task : Provide how many times does average user posts on Instagram.

SQL Query :



```
1 • SELECT ROUND((SELECT COUNT(*) FROM photos)/(SELECT COUNT(*) FROM users),2) as Avg_Posts;
```

Solution :



	Avg_Posts
▶	2.57

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

Our Task : Provide the total number of photos on Instagram/total number of users

SQL Query :

```
1 • SELECT sum(PhotoID) as Total_Photos, COUNT(UserID) as Total_Users,  
2      sum(photoid)/count(userid) as Photos_Per_Person  
3  from (SELECT users.id AS UserID, COUNT(photos.id) AS PhotoID  
4        FROM users LEFT JOIN photos ON users.id=photos.user_id  
5        group by (userid)) sub;  
6
```

Solution :

Result Grid			
Filter Rows:			
Export:			
	Total_Photos	Total_Users	Photos_Per_Person
▶	257	100	2.5700

Bots & Fake Accounts: Are there any fake and dummy accounts across the platform

Our 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).

SQL Query :

```
1 SELECT id, username, COUNT(users.id) AS Total_Likes
2 FROM users
3 INNER JOIN likes ON users.id = likes.user_id
4 GROUP BY users.id
5 HAVING Total_Likes = (SELECT COUNT(*) FROM photos);
6
```

Solution :

Result Grid			
Filter Rows:			
Export: Wrap Cell Content:			
	id	username	Total_Likes
▶	5	Aniya_Hackett	257
	14	Jadyn81	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

The following insights were derived from analyzing the user data on Instagram:

- The platform has a few users who hold the distinction of being the oldest subscribers, having maintained their subscriptions dating back to May 2016.
- There are 26 users who have not yet posted a single photo, and hence are considered as Inactive Users.
- A User with username "Zack_kemmer93" has a maximum likes of 48 for his photo with a photo id "145".
- The marketing team can leverage the popularity of hashtags like "#smile," "#beach," "#party," "#fun," and "#concert," which are currently trending on the platform, to maximize their reach and engage with a larger audience.
- The best days to launch their ad campaign would be Thursdays and Sundays.
- Based on the available data, the average number of pictures posted by a user is 2.57.
- A total of 13 users have been observed to have liked every single photo on the site. Given that this behaviour is not typical for regular users, these accounts could potentially be categorized as dummy accounts or bots.

CONCLUSION

In conclusion, Instagram user analytics is an essential tool for businesses looking to drive growth through social media marketing. By utilizing MySQL's capabilities, I was able to analyze user interactions, identify trends, and gain insights into user preferences. The flexibility and performance of MySQL enabled me to effectively process and analyze large volumes of data, helping me uncover valuable patterns which I could share with the Marketing Team and the Investors for them to make informed decisions about marketing campaigns and product features, and improve the overall user experience.

As social media continues to play a central role in modern marketing, it's more important than ever for businesses to leverage user analytics to stay ahead of the competition and drive business growth.

The background is a gradient of deep purple and blue, filled with numerous out-of-focus circular light spots (bokeh) in various shades. Overlaid on this are several faint, white geometric patterns: concentric circles, arcs, and a large circular scale with degree markings ranging from 140 to 260. The text 'THANK YOU!' is centered in a white, serif font.

THANK YOU!