

# INSTAGRAM USER ANALYTICS



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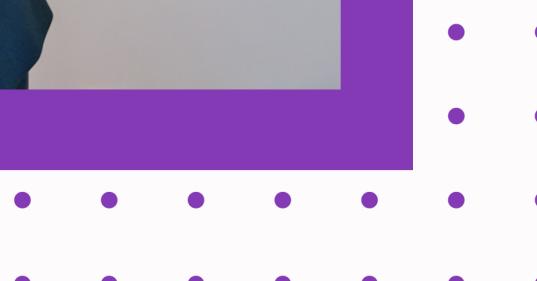
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# Overview

01



In this project, we analyze user interactions and engagement on Instagram using SQL. The goal is to generate insights for Instagram's product, marketing, and investor teams, helping them make data-driven decisions to improve user engagement, drive growth, and identify potential areas of development.

Our tasks include analyzing user activity, identifying popular hashtags, pinpointing loyal users, and uncovering bot-like behavior. Using MySQL Workbench, we have executed queries to answer specific questions posed by the management team.



02

# Approach

The project approach was divided into two main sections:

- 01** Marketing Analysis and
- 02** Investor Metrics.

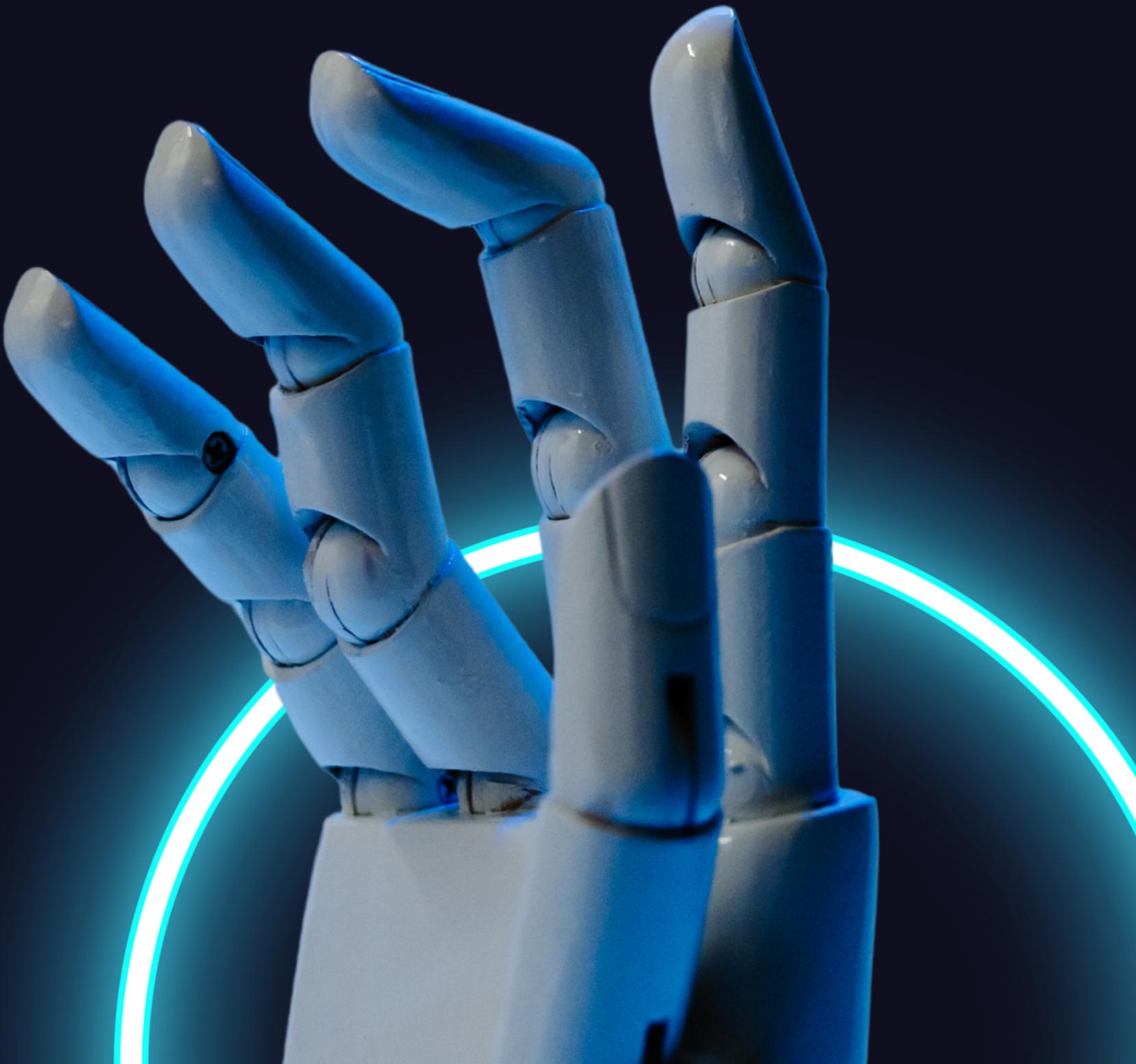
Each section targets specific user insights.

- Marketing Analysis: Aims to support the marketing team with data on user loyalty, inactivity, popular hashtags, and optimal ad timings.
- Investor Metrics: Focuses on metrics that provide investor-relevant insights on user engagement levels and potential fake accounts.



# TECH STACK USED

- MySQL Workbench (version): Chosen for its intuitive interface and compatibility with SQL queries required for data manipulation.
- SQL: Used to extract, manipulate, and analyze data from the Instagram user database. SQL's powerful query capabilities allow us to generate insights quickly and accurately.



# Analysis and SQL Queries

## A) Marketing Analysis

1.) Loyal User Reward : Identify the five longest-standing users on Instagram.

Findings :

```
1 • select * from users
2      order by created_at
3      Limit 5;
```

SqlQuery

	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

Result

2.) Inactive User Engagement : Identify users who have not posted a single photo.

## Findings :

```
1 • select username from users  
2 WHERE id NOT IN (SELECT DISTINCT user_id FROM photos);
```

## Sql Query

## Result

username
Aniya_Hackett
Kassandra_Homenick
Jadyn81
Rocio33
Maxwell.Halvorson
Tierra.Trantow
Pearl7
Ollie_Ledner37
Mckenna17
David.Osinski47
Morgan.Kassulke
Linnea59
Duane60
Julien_Schmidt
Mike.Auer39
Franco_Keebler64
Nia_Haag
Hulda.Macejkovic
Leslie67
Janelle.Nikolaus81
Darby_Herzog
Esther.Zulauf61
Bartholome.Bernhard
Jessyca_West
Esmeralda.Mraz57
Bethany20

3.) Contest Winner Declaration : Determine the user with the most likes on a single photo.

## Findings :

```
1 • select username, photos.id,photos.image_url, count(likes.user_id) as Count  
2   from photos  
3   Inner Join likes  
4   ON likes.photo_id=photos.id  
5   Inner Join users  
6   on photos.user_id = users.id  
7   Group By photos.id  
8   Order by Count Desc  
9   Limit 1;
```

## SqlQuery

## Result

	username	id	image_url	Count
▶	Zack_Kemmer93	145	https://jarret.name	48

4.) Hashtag Research : Find the top five most commonly used hashtags on Instagram.

### Findings :

```
1 • Select tags.tag_name, Count(*) as Count
2   from photo_tags
3   Join tags on photo_tags.tag_id=tags.id
4   Group by tags.id
5   Order by Count Desc
6   Limit 5;
```

	tag_name	Count
▶	smile	59
	beach	42
	party	39
	fun	38
	concert	24

### Sql Query

### Result

## 5.) Ad Campaign Launch : Determine the best day of the week to launch ads based on user registration patterns.

### Findings:

```
1 • Select dayname(created_at) as Day , count(*) as Count  
2   from users  
3   Group by Day  
4   Order by Count Desc  
5   Limit 1;
```

SqlQuery

### Result

	Day	Count
▶	Thursday	16

## B) Investor Analysis

1.) User Engagement : Calculate the average number of posts per user and the total number of photos divided by total users.

Findings:

Sql Query

- `Select ( Select count(*) from photos )/ (Select count(*) from users ) as Average`

Result

Average	
▶	2.5700

## 2.) Bots & Fake Accounts : Identify users who liked every photo, which might indicate bot-like behavior.

### Findings: Sql Query

```
1 •  Select user_id, Count(*) as Count
2    from likes
3    Group By user_id
4    Having Count = (Select Count(*) from photos);
5
6 •  Select u.username, count(*) as Count
7    from users u
8    Join likes l on u.id=l.user_id
9    Group by u.id
10   Having Count = (Select count(*) from photos);
```

	user_id	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

### Result

	username	Count
▶	Aniya_Hackett	257
	Jaclyn81	257
	Rocio33	257
	Maxwell.Halvorson	257
	Ollie_Ledner37	257
	Mckenna17	257
	Duane60	257
	Julien_Schmidt	257
	Mike.Auer39	257
	Nia_Haag	257
	Leslie67	257
	Janelle.Nikolaus81	257
	Bethany20	257

A photograph of a wooden shelf filled with various decorative objects. On the top shelf, there's a typewriter, a glass bottle with a light bulb inside, and some small potted plants. Below that, a vintage-style radio is prominently displayed. There are also books, a small potted plant, and a few other knick-knacks. The lighting is warm and focused on the shelf, creating a cozy atmosphere.

# Insights

- **Loyal Users:** Identified long-standing users who could be engaged for special loyalty campaigns.
- **Inactive Users:** Recognized users who could be targeted with re-engagement strategies.
- **Popular Hashtags:** Top-performing hashtags were found, guiding brand collaborations and content reach.
- **Optimal Ad Day:** Identified a peak registration day to guide ad scheduling, which could maximize new user engagement.
- **User Engagement:** Calculated an engagement metric useful for understanding overall user interaction.
- **Bots & Fake Accounts:** Detected potential bot accounts, helping to maintain Instagram's authenticity and reliability.

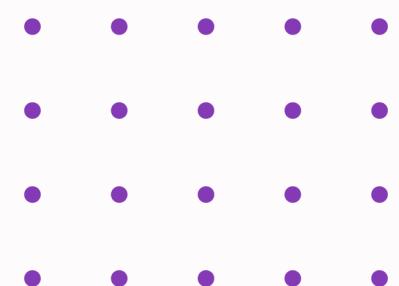


# Results and Impact

Through SQL analysis, we provided actionable insights to improve user retention, engagement, and growth. By identifying key user segments and behavioral patterns, this project aids Instagram's teams in enhancing platform value and optimizing user experiences.

## Drive Link

[https://drive.google.com/drive/folders/1d2-obfsXCimH4SZc5IDPV\\_2xIB9h-IQ5?usp=sharing](https://drive.google.com/drive/folders/1d2-obfsXCimH4SZc5IDPV_2xIB9h-IQ5?usp=sharing)



# THANK YOU

