



Instagram User Analytics

The project focused on analyzing Instagram user data to understand various aspects of user behavior, engagement metrics, and content performance. The goal was to derive actionable insights that could help in optimizing content strategies, increasing follower engagement, and improving overall social media presence

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Project Description

- The project aims to analyze user interactions and engagement on Instagram using SQL to extract meaningful insights.
- These insights will help the marketing, product, and development teams to make decisions.

Approach

- In this project I used SQL queries to analyze the data, focusing on marketing analysis and investor metrics.
- Started with databased creation in MySQL.
- Created tables in database to load raw data in respective tables.
- Worked on Marketing analysis based on Loyal User Reward, Inactive User Engagement, Contest Winner Declaration, Hashtag Research, Ad Campaign Launch and Investor Metrics based on User Engagement, Bots & Fake Accounts



Tech-Stack Used



- MySQL Server
- MySQL Workbench 8.0

Insights

A) Marketing Analysis:

1. **Loyal User Reward:** people those who have been using the platform for the longest time.

```
SELECT *  
FROM users  
ORDER BY created_at ASC  
LIMIT 5;
```

Result Grid   Filter Rows: <input type="text"/> Edit			
	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

Insights (Cont ...)

2. Inactive User Engagement: people who have never posted a single photo on Instagram.

```
SELECT users.username, photos.user_id
FROM users
LEFT JOIN photos ON users.id = photos.user_id
WHERE photos.user_id IS NULL;
```

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

Insights (Cont ...)

3. Contest Winner Declaration: People with the most likes on a single photo.

```
SELECT users.id, users.username, photos.image_url, COUNT(likes.user_id) AS  
like_count  
FROM users, photos, likes  
WHERE users.id = photos.user_id AND likes.user_id = photos.user_id  
GROUP BY users.id , users.username , photos.image_url  
ORDER BY like_count DESC  
LIMIT 1;
```

	id	username	image_url	like_count
▶	16	Annalise.McKenzie16	https://abagail.com	103

Insights (Cont ...)

4. Hashtag Research: Top five most commonly used hashtags on the Instagram.

```
SELECT tags.tag_name, COUNT(photo_tags.photo_id) AS total_tags,  
photo_tags.tag_id  
FROM tags, photo_tags  
WHERE tags.id = photo_tags.tag_id  
GROUP BY photo_tags.tag_id , tags.tag_name  
ORDER BY total_tags DESC  
LIMIT 5;
```

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

Insights (Cont ...)

5. Ad Campaign Launch: The day of the week when most users register on Instagram.

We can run ad campaign on **Thursday** and **Sunday** as most of the users registered on Instagram

```
SELECT  DATE_FORMAT(created_at, '%W') AS registration_day,  
        COUNT(id) AS user_count  
FROM users  
GROUP BY registration_day  
ORDER BY user_count DESC;
```

	registration_day	user_count
▶	Thursday	16
	Sunday	16
	Friday	15
	Tuesday	14
	Monday	14
	Wednesday	13
	Saturday	12

Insights (Cont ...)

B. Investor Metrics:

1. User Engagement: The average number of posts per user on Instagram. And the total number of photos on Instagram divided by the total number of users.

#Calculate the average number of posts per user on Instagram.

```
SELECT AVG(photo_count) AS average_posts_per_user
FROM
(SELECT COUNT(photos.id) AS photo_count
FROM users LEFT JOIN photos ON users.id = photos.user_id
GROUP BY users.id) AS user_photo_counts;
```

	average_posts_per_user
▶	2.5700

Insights (Cont ...)

B. Investor Metrics:

#Provide the total number of photos on Instagram divided by the total number of users.

```
SELECT  
(SELECT COUNT(*) FROM photos)  
/  
(SELECT COUNT(*) FROM users) AS total_photos_per_user;
```

	total_photos_per_user
▶	2.5700

Insights (Cont ...)


2. Bots & Fake Accounts: people who have liked every single photo on the site

```
SELECT users.id, users.username, COUNT(likes.photo_id) AS total_likes,  
p.total_photos  
FROM users  
JOIN likes ON users.id = likes.user_id  
CROSS JOIN  
(SELECT COUNT(*) AS total_photos FROM photos) p  
GROUP BY users.id, users.username, p.total_photos  
HAVING total_likes = p.total_photos;
```

	id	username	total_likes	total_photos
▶	5	Aniya_Hackett	257	257
	14	Jadyn81	257	257
	21	Rocio33	257	257
	24	Maxwell.Halvorson	257	257
	36	Ollie_Ledner37	257	257
	41	Mckenna17	257	257
	54	Duane60	257	257
	57	Julien_Schmidt	257	257
	66	Mike.Auer39	257	257
	71	Nia_Haag	257	257
	75	Leslie67	257	257
	76	Janelle.Nikolaus81	257	257
	91	Bethany20	257	257



Result

- The analysis provided actionable insights for improving user engagement, identifying potential bots, and optimizing marketing strategies.
 - The insights derived will guide future development and marketing decisions, potentially enhancing user experience and platform growth.
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Achievements and Impact

- **Enhanced Analytical Skills:** The project significantly improved my ability to analyze large datasets, extract meaningful insights, and present them in a clear and actionable manner.
- **Strategic Thinking:** It provided valuable experience in developing and implementing data-driven strategies for social media management, which is crucial in the digital marketing industry.
- **Valuable Insights:** The insights derived from the analysis have not only benefited my own understanding of Instagram analytics but have also provided valuable information to others seeking to optimize their social media presence.
- **Professional Growth:** The project has helped me develop a strong portfolio piece, showcasing my ability to apply data analysis to real-world problems, and has opened up opportunities for future projects in the realm of digital marketing and analytics.