REPORT

User Engagement Analysis for Instagram

Introduction:

Instagram is one of the world's leading social media platforms, boasting millions of active users worldwide. Understanding how users engage with the platform is crucial for driving growth and enhancing user experience. This report delves into user behavior and engagement metrics to provide actionable insights for the product team.

Analysis:

It is based on two factors:

A. Market analysis
B. Investor matrices

Market Analysis:

1. Loyal user rewards: The five oldest users on Instagram from the provided database

```
2   -- 1. The five oldest users on Instagram from the provided database.
3   use ig_clone;
4
5   SELECT * FROM users
6   ORDER BY created_at ASC
7   LIMIT 5;
```

Result Grid | Filter Rows: | Edit: | Export/Import:

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

2. Inactive user engagement: There are a total of 14 users who have never posted a single photo

```
9   -- 2. Identify users who have never posted a single photo on Instagram.
10  SELECT photos.user_id,photos.image_url,users.id,users.username
11  from users
12  left join photos on photos.user_id=users.id
13   where photos.user_id is null  ;
14
```

esult Grid | Filter Rows: | Export: | Wrap Cell Content:

user_id	image_url	id	username
NULL	NULL	5	Aniya_Hackett
NULL	NULL	7	Kasandra_Homenick
NULL	NULL	14	Jaclyn81
NULL	NULL	21	Rocio33
NULL	NULL	24	Maxwell.Halvorson
NULL	NULL	25	Tierra.Trantow
NULL	NULL	34	Pearl7
NULL	NULL	36	Ollie_Ledner37
NULL	NULL	41	Mckenna17

3. Contest winner declaration:

```
15  -- 3.  Determine the winner(most like on single photo) of the contest and provide their details to the team.
16  SELECT users.username, photos.image_url, COUNT(likes.user_id) AS total_likes
17  FROM users
18  JOIN photos ON users.id = photos.user_id
19  JOIN likes ON photos.id = likes.photo_id
20  GROUP BY users.username, photos.image_url
21  ORDER BY total_likes DESC
22  LIMIT 1;
```

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

username	image_url	total_likes
Zack_Kemmer93	https://jarret.name	48

4. Hashtag Research:

```
23      -- 4.  Identify and suggest the top five most commonly used hashtags on the platform
24 •    SELECT tags.tag_name, COUNT(photo_tags.photo_id) AS tag_count
25      FROM tags
26      JOIN photo_tags ON tags.id = photo_tags.tag_id
27      GROUP BY tags.tag_name
28      ORDER BY tag_count DESC
29      LIMIT 5;
```

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

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

5. Ad Campaign Launch: Thursday and Sunday of the week when most users register on Instagram

```
30      -- 5.  Determine the day of the week when most users register on Instagram.
31 •    SELECT DAYNAME(created_at) AS registration_day, COUNT(*) AS registration_count
32      FROM users
33      GROUP BY registration_day
34      ORDER BY registration_count DESC;
35
```

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

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

Investor metrics:

1. User Engagement:

```
37      -- 1. Calculate the average number of posts per user on Instagram. Also, provide the total number of photos on Instagram divided by the total number of users.
38 •    SELECT COUNT(*) / COUNT(DISTINCT user_id) AS avg_posts_per_user
39      FROM photos;
```

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

avg_posts_per_user
3.4730

2. Bots and Fakes Account: There are a total of 18 user-id, who look like bots.

```sql
-- 2.  Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.
SELECT user_id
FROM likes
GROUP BY user_id
HAVING COUNT(DISTINCT photo_id) = (SELECT COUNT(*) FROM photos);
```

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

user_id
5
14
21
24
36
41
54
57
66

*All analyses are based on given data

Software and Versions Used:

MySQL Workbench (Version 8.0.32): MySQL Workbench was chosen as the primary tool for data analysis due to its robust features for SQL development. Its user-friendly interface and powerful query capabilities made it well-suited for extracting and analyzing data from the Instagram database.

Summary:

This report presents insights from an analysis of user engagement on Instagram, using MySQL Workbench (Version 8.0.32) for data analysis. Key findings include

- User Activity: Peak engagement occurs mainly on **Sunday and Thursday**.
- Inactive user engagement: There are a total of **14 users** who have never posted a single photo.
- Hashtag Usage: Popular hashtags reflect emerging trends and user interests. “**Smile**” is the most useable hashtag in all of them.
- Contest winner declaration: The team has organized a contest where the user with the most likes on a single photo and the winner of the contest user name is **Zack_Kammer93.**
- The average number of posts per user on Instagram is **3.470**
- There are total of **18** user-id, who look like bots.

Recommendations:

- Content Strategy: Prioritize visually appealing and relatable content.
- Engagement Tactics: Implement interactive features to boost community engagement.
- User Acquisition: Forge partnerships with influencers for audience expansion.

- Platform Enhancements: Continuously improve user experience and algorithmic recommendations.