INSTAGRAM USER ANALYTICS

SQL

PROJECT DESCRIPTION

- In the era of social media domination, it is essential for both individuals and organizations to comprehend user behavior and engagement. The goal of this Instagram User Analytics project is to offer in-depth knowledge about user behavior, interests, and trends on the social media network.
- My primary objective is to analyze Instagram user data for insightful information that will ultimately help to improve the platform's functionality. The objective is to supply the Instagram team with useful information that they can utilize to enhance user experience, optimize content algorithms, and promote platform-wide efficiency gains.
- The intention is to provide the product manager and the team as a whole with useful information that will influence the app's future development and user experience.

APPROACH

- This project is approached in a fairly straightforward manner. SQL is utilized to carry out the job. With the given raw data, a database is created using SQL queries. After the database was constructed, different sorting and data extraction queries were utilized to obtain the necessary information.

TECH-STACK USED

- My SQL Workbench(8.0.34): The main interactive development environment for SQL queries is MySQL Workbench. It makes creating, running, and debugging queries for data analysis more efficient. It provides a visual tool for designing, creating, and modifying databases.
- It includes a SQL Editor with syntax highlighting, code completion, and SQL execution capabilities, making it easier for developers to write and test SQL queries.
- It offers tools for query optimization and performance tuning, helping users to identify and resolve performance issues in their SQL queries.
- It supports collaboration features, allowing multiple users to work on a database model simultaneously. It also integrates with version control systems such as Git.

INSIGHTS

A) MARKETING ANALYSIS

1. Loyal User Rewards : Identify the five oldest users on Instagram from the provided database.

```
89      -- TASK 01 LOYAL USERS REWARD
90
91  •   SELECT
92          *
93      FROM
94          users
95      ORDER BY created_at
96      LIMIT 5;
97
```

Result Grid | Filter Rows: | 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

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

```
98   -- TASK 02 INTERACTIVE USER ENGAGEMENT
99
100  SELECT
101      *
102  FROM
103      users u
104         LEFT JOIN
105      photos p ON u.id = p.user_id
106  WHERE
107      p.image_url is NULL;
```

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

id	username	created_at	id	image_url	user_id	created_dat
5	Aniya_Hackett	2016-12-07 01:04:39	NULL	NULL	NULL	NULL
7	Kasandra_Homenick	2016-12-12 06:50:08	NULL	NULL	NULL	NULL
14	Jaclyn81	2017-02-06 23:29:16	NULL	NULL	NULL	NULL
21	Rocio33	2017-01-23 11:51:15	NULL	NULL	NULL	NULL
24	Maxwell.Halvorson	2017-04-18 02:32:44	NULL	NULL	NULL	NULL
25	Tierra.Trantow	2016-10-03 12:49:21	NULL	NULL	NULL	NULL
34	Pearl7	2016-07-08 21:42:01	NULL	NULL	NULL	NULL
36	Ollie_Ledner37	2016-08-04 15:42:20	NULL	NULL	NULL	NULL
41	Mckenna17	2016-07-17 17:25:45	NULL	NULL	NULL	NULL
45	David.Osinski47	2017-02-05 21:23:37	NULL	NULL	NULL	NULL
49	Morgan.Kassulke	2016-10-30 12:42:31	NULL	NULL	NULL	NULL

3. Contest Winner Declaration: Determine the winner of the contest and provide their details to the team.

```sql
-- TASK 03 CONTEST WINNER DECLARATION

SELECT
    *
FROM
    (SELECT
        photo_id, COUNT(photo_id) AS like_count
    FROM
        likes
    GROUP BY photo_id
    ORDER BY COUNT(photo_id) DESC
    LIMIT 1) AS sub1
        JOIN
    photos p ON sub1.photo_id = p.id
        JOIN
    users u ON p.user_id = u.id;
```

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

photo_id	like_count	id	image_url	user_id	created_dat	id	username	created_at
145	48	145	https://jarret.name	52	2023-11-24 16:18:59	52	Zack_Kemmer93	2017-01-01 05:58:22

4. Hashtag Research: Identify and suggest the top five most commonly used hashtags on the platform.

```sql
-- TASK 04 HASHTAG RESEARCH

SELECT
    id, tag_name, COUNT(tag_name) AS tag_count
FROM
    tags t
        JOIN
    photo_tags p ON t.id = p.tag_id
GROUP BY tag_name
ORDER BY tag_count DESC
LIMIT 5;
```

Result Grid | Filter Rows: | Export: | Wrap Ce

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

5. Ad Campaign Launch: Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.

```sql
-- TASK 05 AD CAMPAIGN LAUNCH
SELECT
    days,count(days)
FROM
    (SELECT
        CASE WEEKDAY(created_at)
                WHEN 0 THEN 'MONDAY'
                WHEN 1 THEN 'TUESDAY'
                WHEN 2 THEN 'WEDNESDAY'
                WHEN 3 THEN 'THURSDAY'
                WHEN 4 THEN 'FRIDAY'
                WHEN 5 THEN 'SATURDAY'
                WHEN 6 THEN 'SUNDAY'
            END AS days
    FROM
        users) AS sub2
GROUP BY days;
```

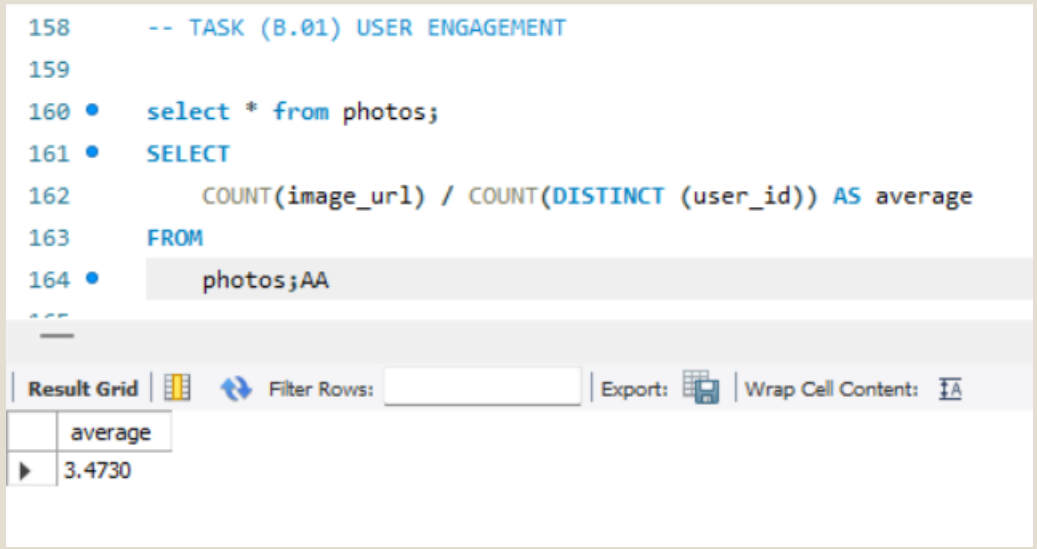
Result Grid | Filter Rows: | Export: | Wrap Cell Content

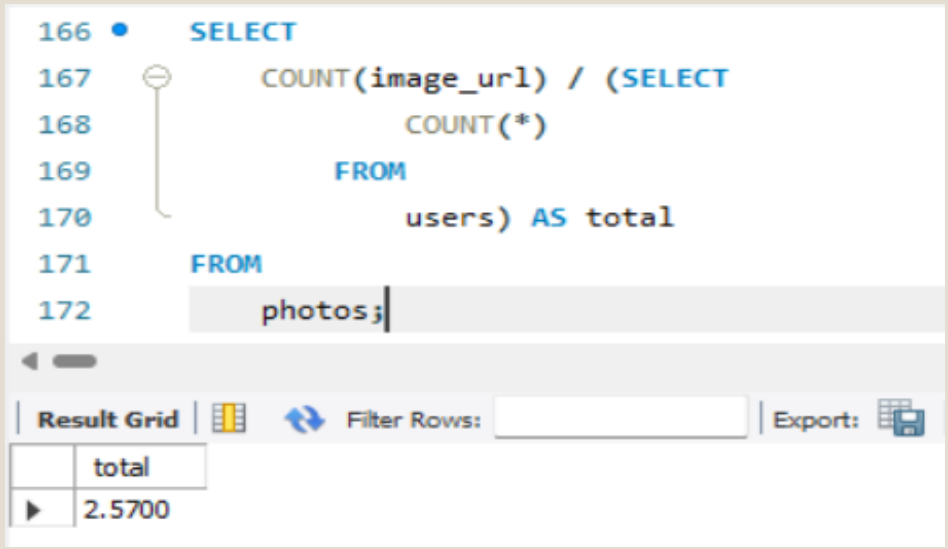
days	count(days)
THURSDAY	16
SUNDAY	16
TUESDAY	14
SATURDAY	12
WEDNESDAY	13

- The best day to schedule an ad campaign for the registration of Instagram users will be both Thursday and Sunday due to a large count in the registration of new users.

B) INVESTER MATRICS

1. User Engagement: 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.





2. Bots & Fake Accounts: Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.

```
175     -- TASK (B.02) BOTS AND FAKE ACCOUNT
176
177 •   SELECT
178         username as bots, COUNT(l.user_id) AS tx
179     FROM
180         likes l
181             JOIN
182         users u ON l.user_id = u.id
183     GROUP BY l.user_id
184     HAVING tx = (SELECT
185             COUNT(*)
186         FROM
187             photos);
188
```

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

bots	tx
Aniya_Hackett	257
Jadyn81	257
Rocio33	257
Maxwell.Halvorson	257
Ollie_Ledner37	257
Mckenna17	257
Duane60	257
Julien_Schmidt	257
Mike.Auer39	257

RESULTS

- This project helped me to sharpen my SQL skills.
- This project integrated my knowledge of SQL by learning about the SQL clauses such as the join clauses and sub-queries, understood the concepts of order by , group by , understood the difference between where and having clause and many more.
- Also learned how to engage with a database and customize the query for obtaining the specific desired results.

THANK YOU