# INSTAGRAM USER ANALYTICS

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# PROJECT DESCRIPTION

The main goal of the Instagram User Analytics project is to analyze user activity, content performance, and user related informations (likes,post,follows,comments) on Instagram using SQL. This project provides actionable insights that can help individuals, influencers, and businesses make data-driven decisions to improve their Instagram strategy and optimize audience engagement.

# APPROACH

## Steps towards the approach

- My approach towards the project is creating the database with the help of provided commands in the database file by running it.
- At first I use the select* command to see what are the columns involved in each table.
- Thereby I get the clear overview for analyzing the data and to get the required insights.
- I used various DQL commands,aggregations,date functions to extract the relavant information required for better decision making for the business.

# TECH-STACK USED

**Software used for the Instagram user analytics project**

- Software : MySQL Workbench
- Version : version 8.0

**Reason for using MySQL Workbench**

- MySQL Workbench is a powerful and user-friendly tool for managing and analyzing relational databases.
- It supports for handling large datasets, it is well-suited for the project Instagram User Analytics.
- Supports complex queries and efficient optimization.
- Its cost-effectiveness, cross-platform compatibility(Works on Windows, macOS, and Linux, with no cost), and robust features make it a reliable choice for extracting meaningful insights while ensuring scalability and performance.

# INSIGHTS

- Working on Instagram User Analytics with SQL enhanced skills in database design and advanced query writing.
- Mastered the use of SQL functions, joins, aggregations, and subqueries for in-depth analysis.
- It provided insights into engagement factors, content performance, and audience behavior.
- The project developed expertise in query optimization, and translating analytics into actionable strategies for improving social media growth and engagement.

# RESULT

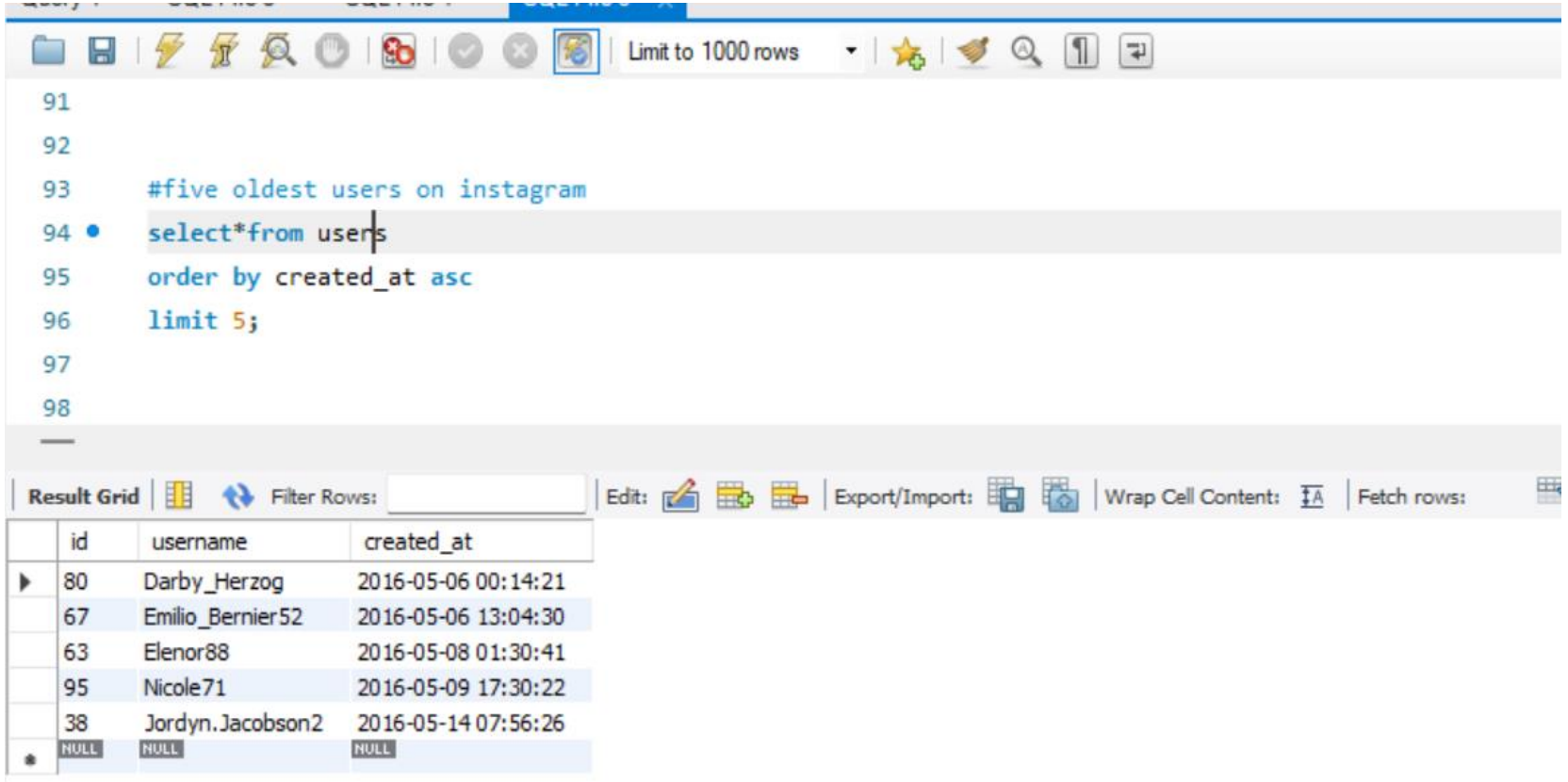
Through this project, I achieved proficiency in SQL, mastering complex queries, database management, and data visualization. I enhanced my analytical skills by deriving actionable insights from large datasets, identifying trends in user engagement, content performance, and audience behavior. Additionally, I improved problem-solving and project management capabilities, and query optimization challenges.

## Marketing Analysis

1.Loyal user reward:

To find five oldest user on Instagram.I extract using order by clause by ordering the date created column in ascending order therby,limit 5 usedto extract oldest five user.

SQL query and result for extracting five oldest users on instagram



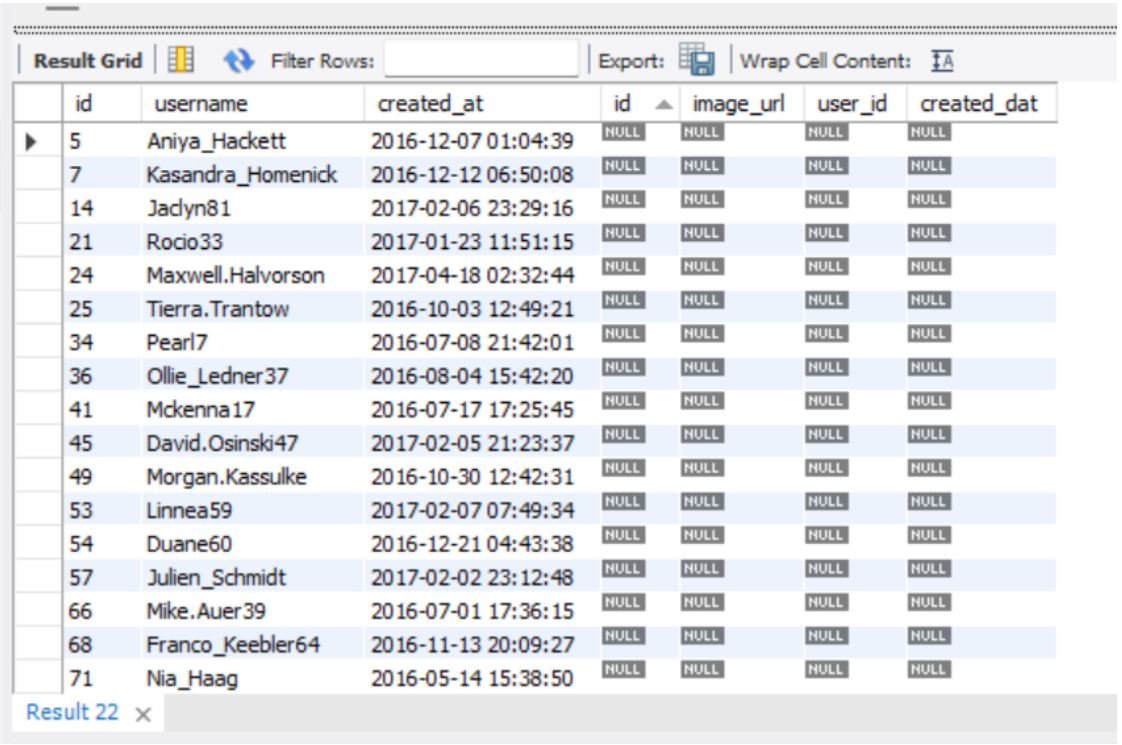
2.Inactive user engagement:

Identification of users who have never posted a single post on Instagram.

SQL query

```
#users who have never posted a single post on instagram
SELECT
    *
FROM
    users
        LEFT JOIN
    photos ON users.id = photos.user_id
WHERE
    photos.user_id IS NULL;
```

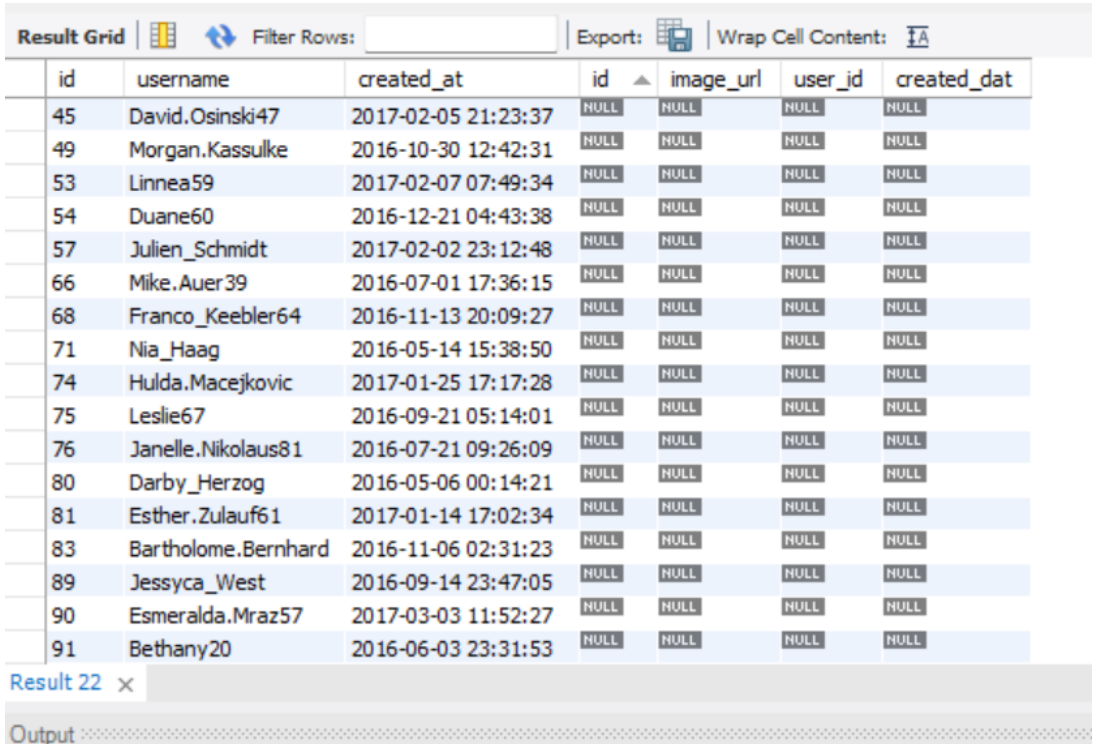
# Output



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 |
| 53 | Linnea59 | 2017-02-07 07:49:34 | NULL | NULL | NULL | NULL |
| 54 | Duane60 | 2016-12-21 04:43:38 | NULL | NULL | NULL | NULL |
| 57 | Julien_Schmidt | 2017-02-02 23:12:48 | NULL | NULL | NULL | NULL |
| 66 | Mike.Auer39 | 2016-07-01 17:36:15 | NULL | NULL | NULL | NULL |
| 68 | Franco_Keebler64 | 2016-11-13 20:09:27 | NULL | NULL | NULL | NULL |
| 71 | Nia_Haag | 2016-05-14 15:38:50 | NULL | NULL | NULL | NULL |

Result 22



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

| id | username | created_at | id | image_url | user_id | created_dat |
|---|---|---|---|---|---|---|
| 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 |
| 53 | Linnea59 | 2017-02-07 07:49:34 | NULL | NULL | NULL | NULL |
| 54 | Duane60 | 2016-12-21 04:43:38 | NULL | NULL | NULL | NULL |
| 57 | Julien_Schmidt | 2017-02-02 23:12:48 | NULL | NULL | NULL | NULL |
| 66 | Mike.Auer39 | 2016-07-01 17:36:15 | NULL | NULL | NULL | NULL |
| 68 | Franco_Keebler64 | 2016-11-13 20:09:27 | NULL | NULL | NULL | NULL |
| 71 | Nia_Haag | 2016-05-14 15:38:50 | NULL | NULL | NULL | NULL |
| 74 | Hulda.Macejkovic | 2017-01-25 17:17:28 | NULL | NULL | NULL | NULL |
| 75 | Leslie67 | 2016-09-21 05:14:01 | NULL | NULL | NULL | NULL |
| 76 | Janelle.Nikolaus81 | 2016-07-21 09:26:09 | NULL | NULL | NULL | NULL |
| 80 | Darby_Herzog | 2016-05-06 00:14:21 | NULL | NULL | NULL | NULL |
| 81 | Esther.Zulauf61 | 2017-01-14 17:02:34 | NULL | NULL | NULL | NULL |
| 83 | Bartholome.Bernhard | 2016-11-06 02:31:23 | NULL | NULL | NULL | NULL |
| 89 | Jessyca_West | 2016-09-14 23:47:05 | NULL | NULL | NULL | NULL |
| 90 | Esmeralda.Mraz57 | 2017-03-03 11:52:27 | NULL | NULL | NULL | NULL |
| 91 | Bethany20 | 2016-06-03 23:31:53 | NULL | NULL | NULL | NULL |

Result 22

Output

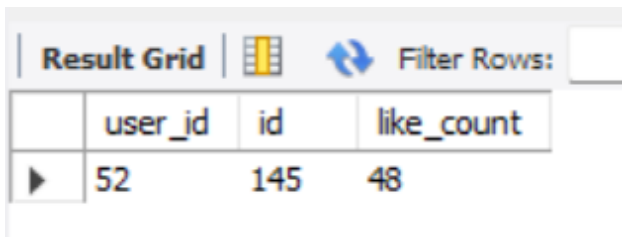
3.CONTEST WINNER DECLARATION:

Identification of the user with most likes on a single photo.

SQL query

```sql
#user with most likes on a single photo
SELECT
    photos.user_id,
    photos.id,
    COUNT(likes.photo_id) AS like_count
FROM
    photos
        LEFT JOIN
    likes ON photos.id = likes.photo_id
GROUP BY photos.id , photos.user_id
ORDER BY like_count DESC
LIMIT 1;
```

Output



4.Hashtag Research:

Identification of the top five most commonly used hashtags on the platform.

SQL query

```
#top 5 most commonly used hashtags
SELECT
    tag_name AS Popular_hashtags, COUNT(tag_name) AS occurance
FROM
    photo_tags
        INNER JOIN
    tags ON tags.id = photo_tags.tag_id
GROUP BY tag_name
ORDER BY occurance DESC
LIMIT 5;
```

Output

Result Grid | Filter Rows:

| Popular_hashtags | occurance |
|---|---|
| smile | 59 |
| beach | 42 |
| party | 39 |
| fun | 38 |
| concert | 24 |

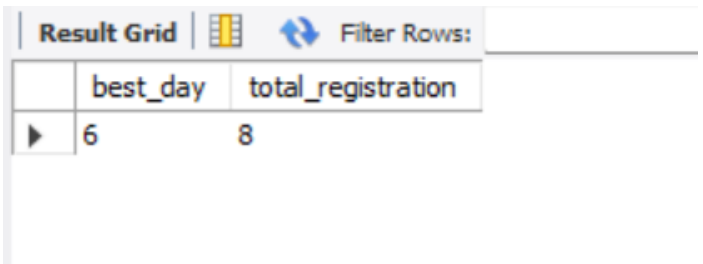
5.Ad compaign launch:

To find the best day of the week when most users register on instagram

SQL query

```
#day of the week when most users register on instagram
SELECT
    EXTRACT(DAY FROM created_at) AS best_day,
    COUNT(*) AS total_registration
FROM
    users
GROUP BY best_day
ORDER BY total_registration DESC
LIMIT 1;
```

Output



# INVESTOR METRICS

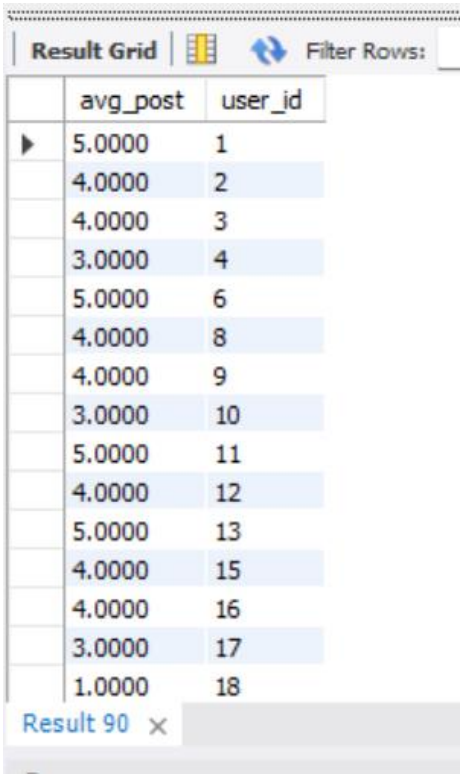
1.User Engagement:

A. Average number of posts per user user on instagram

SQL query

```
#avg number of posts per user
SELECT
    COUNT(id) / COUNT(DISTINCT user_id) AS avg_post, user_id
FROM
    photos
GROUP BY user_id;
```

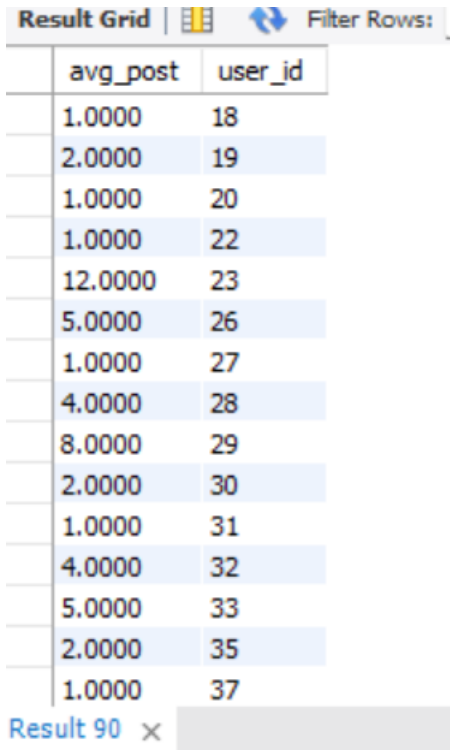
Output



Result Grid | Filter Rows:

| avg_post | user_id |
|---|---|
| 5.0000 | 1 |
| 4.0000 | 2 |
| 4.0000 | 3 |
| 3.0000 | 4 |
| 5.0000 | 6 |
| 4.0000 | 8 |
| 4.0000 | 9 |
| 3.0000 | 10 |
| 5.0000 | 11 |
| 4.0000 | 12 |
| 5.0000 | 13 |
| 4.0000 | 15 |
| 4.0000 | 16 |
| 3.0000 | 17 |
| 1.0000 | 18 |

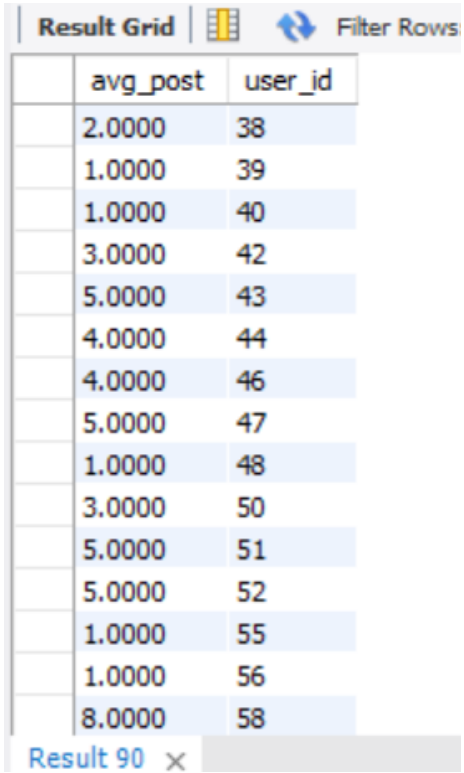
Result 90



Result Grid | Filter Rows:

| avg_post | user_id |
|---|---|
| 1.0000 | 18 |
| 2.0000 | 19 |
| 1.0000 | 20 |
| 1.0000 | 22 |
| 12.0000 | 23 |
| 5.0000 | 26 |
| 1.0000 | 27 |
| 4.0000 | 28 |
| 8.0000 | 29 |
| 2.0000 | 30 |
| 1.0000 | 31 |
| 4.0000 | 32 |
| 5.0000 | 33 |
| 2.0000 | 35 |
| 1.0000 | 37 |

Result 90



Result Grid | Filter Rows

| avg_post | user_id |
|---|---|
| 2.0000 | 38 |
| 1.0000 | 39 |
| 1.0000 | 40 |
| 3.0000 | 42 |
| 5.0000 | 43 |
| 4.0000 | 44 |
| 4.0000 | 46 |
| 5.0000 | 47 |
| 1.0000 | 48 |
| 3.0000 | 50 |
| 5.0000 | 51 |
| 5.0000 | 52 |
| 1.0000 | 55 |
| 1.0000 | 56 |
| 8.0000 | 58 |

Result 90

Result Grid | Filter Rows:

| avg_post | user_id |
|---|---|
| 10.0000 | 59 |
| 2.0000 | 60 |
| 1.0000 | 61 |
| 2.0000 | 62 |
| 4.0000 | 63 |
| 5.0000 | 64 |
| 5.0000 | 65 |
| 3.0000 | 67 |
| 1.0000 | 69 |
| 1.0000 | 70 |
| 5.0000 | 72 |
| 1.0000 | 73 |
| 6.0000 | 77 |
| 5.0000 | 78 |
| 1.0000 | 79 |

Result 90 ×

Output

Result Grid | Filter Rows:

| avg_post | user_id |
|---|---|
| 1.0000 | 79 |
| 2.0000 | 82 |
| 2.0000 | 84 |
| 2.0000 | 85 |
| 9.0000 | 86 |
| 4.0000 | 87 |
| 11.0000 | 88 |
| 3.0000 | 92 |
| 2.0000 | 93 |
| 1.0000 | 94 |
| 2.0000 | 95 |
| 3.0000 | 96 |
| 2.0000 | 97 |
| 1.0000 | 98 |
| 3.0000 | 99 |

Result 90 ×

Result Grid | Filter Rows:

| avg_post | user_id |
|---|---|
| 2.0000 | 82 |
| 2.0000 | 84 |
| 2.0000 | 85 |
| 9.0000 | 86 |
| 4.0000 | 87 |
| 11.0000 | 88 |
| 3.0000 | 92 |
| 2.0000 | 93 |
| 1.0000 | 94 |
| 2.0000 | 95 |
| 3.0000 | 96 |
| 2.0000 | 97 |
| 1.0000 | 98 |
| 3.0000 | 99 |
| 2.0000 | 100 |

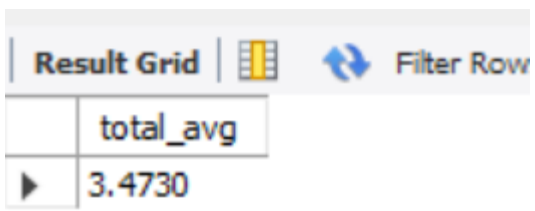
Result 90 ×

B.Total number of photos on Instagram divided by the total number of users.

SQL query

```
#Average post
SELECT
    COUNT(id) / COUNT(DISTINCT user_id) AS total_avg
FROM
    photos;
```

Output



2.Bots&fake accounts:

To identify fake accounts,I identified users who have liked every single photo on the site,as this is typically not possible for a normal user.

SQL query

```
#fake accounts
SELECT
    Likes.user_id
FROM
    likes
        INNER JOIN
    photos ON likes.photo_id = photos.id
GROUP BY likes.user_id
HAVING COUNT(DISTINCT likes.photo_id) = (SELECT
        COUNT(*)
    FROM
        photos);
```

Output

Result Grid | Filter Rows

| user_id |
|---|
| 5 |
| 14 |
| 21 |
| 24 |
| 36 |
| 41 |
| 54 |
| 57 |
| 66 |
| 71 |
| 75 |
| 76 |
| 91 |

Impact of the analysis

This experience benefitted me by strengthening my technical expertise and boosting my confidence in tackling real-world data projects. It provided practical knowledge in applying analytics to social media strategies, improved my ability to make data-driven decisions.

# THANK YOU