INSTAGRAM USER ANALYITCS

➢ DESCRIPTION ABOUT THE PROJECT:

❖ User analysis is the process by which we track how users engage and interact with our digital product (software or mobile application) in an attempt to derive business insights for marketing, product & development teams.

❖ I am working with the product team of Instagram and the product manager has asked me to provide insights on the questions asked by the management team.

❖ These insights are then used by teams across the business to launch a new marketing campaign, decide on features to build for an app, track the success of the app by measuring user engagement and improve the experience altogether while helping the business grow.

BY – Niten Kadel

➢ APPROACH:

Analyzing the tables and its columns from the dataset. Connecting all dots of information available with logical
structure data as per query requirement. After joining the tables with optimised functions, results were fetched
and converted into business insights.

➢ TECH-STACK USED:

- ❖ MYSQL (DB Fiddle): For manipulation of data and performing query to reach business insights.
- ❖ Microsoft Power presentation: For preparing the presentation.

- INSIGHTS:

This report consist data cleaning in order to derive business insights for marketing, product & development teams.
As a part of product team analyst, I need to provide a detailed report answering the questions below :

- **Marketing**: The marketing team wants to launch some campaigns, and they need your help with the following:

1. Rewarding Most Loyal Users: People who have been using the platform for the longest time.

TASK: Find the 5 oldest users of the Instagram from the database provided.

The most loyal and oldest 5 users of Instagram created their account in the month of May, 2016.

Schema SQL

```sql
CREATE DATABASE ig_clone;

USE ig_clone;

/*Users*/
CREATE TABLE users(
    id INT AUTO_INCREMENT UNIQUE PRIMARY KEY,
    username VARCHAR(255) NOT NULL,
    created_at TIMESTAMP DEFAULT NOW()
);

/*Photos*/
CREATE TABLE photos(
    id INT AUTO_INCREMENT PRIMARY KEY,
    image_url VARCHAR(355) NOT NULL,
    user_id INT NOT NULL,
    created_dat TIMESTAMP DEFAULT NOW(),
    FOREIGN KEY(user_id) REFERENCES users(id)
);

/*Comments*/
CREATE TABLE comments(
```

Text to DDL

Query SQL

```sql
Select
    username,
    created_at
From
    ig_clone.users
Order by created_at
Limit 5
```

Results

Copy as Markdown

Query #1 Execution time: 1ms

username	created_at
Darby_Herzog	2016-05-06 00:14:21
Emilio_Bernier52	2016-05-06 13:04:30
Elenor88	2016-05-08 01:30:41
Nicole71	2016-05-09 17:30:22
Jordyn.Jacobson2	2016-05-14 07:56:26

2. Remind Inactive Users to Start Posting: By sending them promotional emails to post their 1st photo.

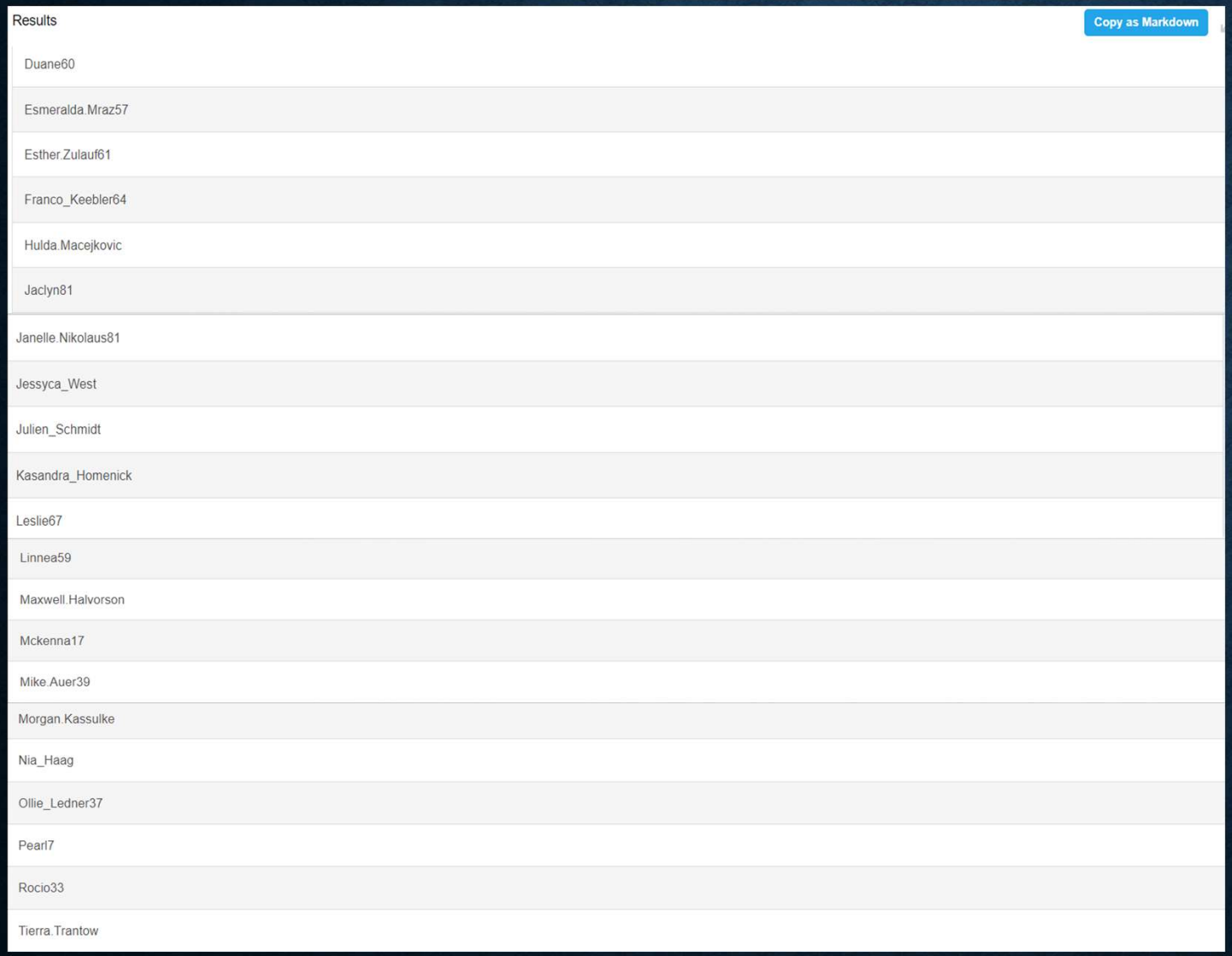
TASK: Find the users who have never posted a single photo on Instagram

Schema SQL

```sql
CREATE DATABASE ig_clone;

USE ig_clone;

/*Users*/
CREATE TABLE users(
    id INT AUTO_INCREMENT UNIQUE PRIMARY KEY,
    username VARCHAR(255) NOT NULL,
    created_at TIMESTAMP DEFAULT NOW()
);

/*Photos*/
CREATE TABLE photos(
    id INT AUTO_INCREMENT PRIMARY KEY,
    image_url VARCHAR(355) NOT NULL,
    user_id INT NOT NULL,
    created_dat TIMESTAMP DEFAULT NOW(),
    FOREIGN KEY(user_id) REFERENCES users(id)
);

/*Comments*/
CREATE TABLE comments(
```

Query SQL

```sql
Select
    u.username
From
    ig_clone.users u
Left Join
    ig_clone.photos p
On u.id = p.user_id
Where
    p.user_id is null
Order By
u.username
;
```



In order to maintain the retention rate & user engagement, promotional mails and reminders need to be send to 26 inactive users who never posted a single photo on instagram.

3. **Declaring Contest Winner**: The team started a contest and the user who gets the most likes on a single photo will win the contest now they wish to declare the winner.

Task: Identify the winner of the contest and provide their details to the team

Schema SQL

```sql
CREATE DATABASE ig_clone;

USE ig_clone;

/*Users*/
CREATE TABLE users(
    id INT AUTO_INCREMENT UNIQUE PRIMARY KEY,
    username VARCHAR(255) NOT NULL,
    created_at TIMESTAMP DEFAULT NOW()
);

/*Photos*/
CREATE TABLE photos(
    id INT AUTO_INCREMENT PRIMARY KEY,
    image_url VARCHAR(355) NOT NULL,
    user_id INT NOT NULL,
    created_dat TIMESTAMP DEFAULT NOW(),
    FOREIGN KEY(user_id) REFERENCES users(id)
);

/*Comments*/
CREATE TABLE comments(
```

Text to DDL

Query SQL

```sql
Select
    likes.photo_id ,
    users.username ,
    count(likes.user_id) as like_user
From
    ig_clone.likes likes
inner join
    ig_clone.photos photos
on  likes.photo_id = photos.id
inner join
    ig_clone.users users
on photos.user_id = users.id
group by likes.photo_id , users.username
order by like_user desc
limit 1
```

Results

Copy as Markdown

Query #1 Execution time: 34ms

photo_id	username	like_user
145	Zack_Kemmer93	48

Zack_Kemmer93 won the contest by getting 48 likes on single photo

4. **Hashtag Researching**: A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform.

TASK: Identify and suggest the top 5 most commonly used hashtags on the platform

Schema SQL

```sql
CREATE DATABASE ig_clone;

USE ig_clone;

/*Users*/
CREATE TABLE users(
    id INT AUTO_INCREMENT UNIQUE PRIMARY KEY,
    username VARCHAR(255) NOT NULL,
    created_at TIMESTAMP DEFAULT NOW()
);

/*Photos*/
CREATE TABLE photos(
    id INT AUTO_INCREMENT PRIMARY KEY,
```

Text to DDL

Query SQL

```sql
Select
    t.tag_name,
    Count(p.photo_id) As Num_tags
From
    ig_clone.photo_tags p
Inner Join
    ig_clone.tags t
on p.tag_id = t.id
Group By
    tag_name
Order By
    num_tags desc
Limit 5
;
```

Results

Query #1 Execution time: 3ms

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

In order to maximize the reach and impact to most people in Instagram, Partner brand can use #smile, #beach, #party, #fun, #concert

5. **Launch AD Campaign**: The team wants to know, which day would be the best day to launch ADs.

TASK: What day of the week do most users register on? Provide insights on when to schedule an ad campaign

Schema SQL

```sql
CREATE DATABASE ig_clone;

USE ig_clone;

/*Users*/
CREATE TABLE users(
    id INT AUTO_INCREMENT UNIQUE PRIMARY KEY,
    username VARCHAR(255) NOT NULL,
    created_at TIMESTAMP DEFAULT NOW()
);

/*Photos*/
CREATE TABLE photos(
    id INT AUTO_INCREMENT PRIMARY KEY,
```

Text to DDL

Query SQL

```sql
Select
    Weekday(created_at) As weekday,
    Count(username) As num_users
From ig_clone.users
Group By
    1
Order By
    2 desc
;
```

Database: MySQL v8.0 ▼ | Run | Save | Load Example | Collaborate | Sig

Results

Query #1 **Execution time: 1ms**

weekday	num_users
3	16
4	15
1	14
0	14
2	13
5	12

As most users registered on Thursdays(3) and Sundays(6). It is advisable to schedule and launch advertisement campaign on these days.

❖ **Investor Metrics**: Our investors want to know if Instagram is performing well and is not becoming redundant like Facebook, they want to assess the app on the following grounds

1. **User Engagement**: Are users still as active and post on Instagram or they are making fewer posts

TASK: Provide how many times does average user posts on Instagram. Also, provide the total number of photos on Instagram/total number of users

Query SQL

```
WITH CTE As (
  SELECT
      u.id AS userid,
      COUNT(p.id) AS photoid
  FROM
      ig_clone.users u
  LEFT JOIN
      ig_clone.photos p
  ON u.id = p.user_id
  GROUP BY
      u.id
)
Select
    SUM(photoid) As total_photos,
    Count(userid) As total_user,
    Sum(photoid) / Count(userid) As photo_per_user
From CTE

```

Results

Query #1 Execution time: 1ms

total_photos	total_user
257	100

On an average user posts 2.57 photos on instagram. Total number of users are only 100, total number of photos are 257 on instagram.

2. **Bots & Fake Accounts**: The investors want to know if the platform is crowded with fake and dummy accounts

TASK: Provide data on users (bots) who have liked every single photo on the site (since any normal user would not be able to do this).

Query SQL

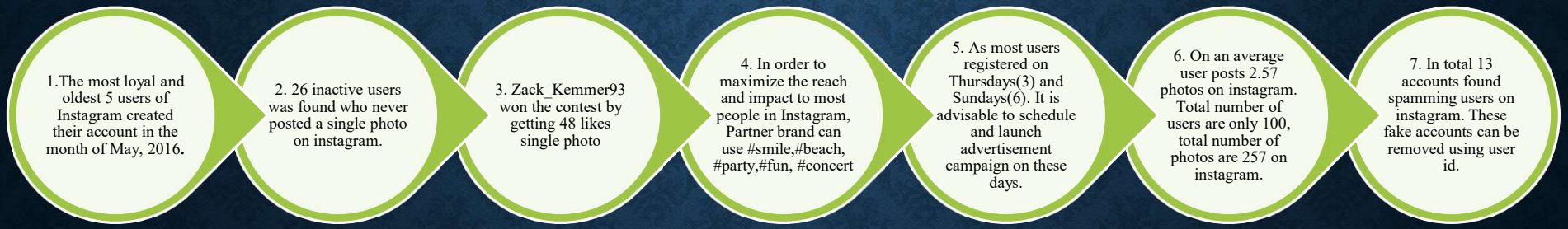
```
With photo_count As (
  Select
      user_id,
      Count(photo_id) As num_like
  From
      ig_clone.likes
  Group By
      user_id
  Order By
      num_like desc
)
Select *
From photo_count
Where
    num_like = (Select count(*) from ig_clone.photos)
```

Results

user_id	
75	
21	
24	
91	
36	257
41	257
14	257
76	257
54	257
57	257
66	257
5	257
71	257

In total 13 accounts found spamming users on instagram. These fake accounts can be removed using user id.

RESULT :


1.The most loyal and oldest 5 users of Instagram created their account in the month of May, 2016.
2. 26 inactive users was found who never posted a single photo on instagram.
3. Zack_Kemmer93 won the contest by getting 48 likes single photo
4. In order to maximize the reach and impact to most people in Instagram, Partner brand can use #smile,#beach, #party,#fun, #concert
5. As most users registered on Thursdays(3) and Sundays(6). It is advisable to schedule and launch advertisement campaign on these days.
6. On an average user posts 2.57 photos on instagram. Total number of users are only 100, total number of photos are 257 on instagram.
7. In total 13 accounts found spamming users on instagram. These fake accounts can be removed using user id.

THANK YOU