PROJECT 2:

INSTAGRAM USER ANALYTICS

- ## Description:

The main role of this undertaking is to investigate client connections and commitment with the Instagram application to give noteworthy bits of knowledge. The product manager and the rest of the team will be able to make better decisions about the app's future based on these insights, which could have an impact on the creation of new features, marketing campaigns, and enhancements to the user experience.

- ## Approach

Approach that I followed while completing the assignment is as follows:

- DATA COLLECTION - Assembled information on client communications and commitment from Instagram's data sets. This included information for likes, remarks, shares, follows, posts, and client socioeconomics.
- DATA CLEANING- Made sure that the data is clean, free of duplicates, and formatted correctly so that it can be analysed. Handling missing values, correcting data types, and standardizing data are part of this step.
- DEFINING KEY METRICS- Recognized and characterized key measurements that are urgent for grasping client commitment. These could include:
  - Daily Active Users (DAU)
  - Monthly Active Users (MAU)
  - Average Session Duration
  - Engagement Rate (likes, comments, shares per post)
  - Retention Rate.
- ANALYSIS- Direct top to bottom examination on unambiguous parts of client commitment, for example, Time of day/week when engagement is highest ,Types of content that generate the most engagement, User demographics and their engagement patterns, Use SQL queries to join, filter, and aggregate data for detailed insights.

- ## Tech-stack used:

I used MySQL workbench to complete my assignment. MySQL workbench provides an interface where running queries and generating meaningful insights is efficient that is why I preferred to do my project using MySQL workbench.

SQL TASKS:

A.MARKETING ANALYSIS

1. Loyal User Reward: The marketing team wants to reward the most loyal users, i.e., those who have been using the platform for the longest time.

Your Task: Identify the five oldest users on Instagram from the provided database.

Firstly I created a database by using the dataset provided using CREATE database command.

Then by executing USE ig_clone command, I started working on the database.

Query:

```
SELECT * FROM users
Order by Created_at
limit 5;
```

Output:

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

2. Inactive User Engagement: The team wants to encourage inactive users to start posting by sending them promotional emails.
   Your Task: Identify users who have never posted a single photo on Instagram.

QUERY:

```
Select username

from users

left join photos

on users.id=photos.user_id

Where photos.id is null;
```

OUTPUT:

Aniya_Hackett
Kasandra_Homenick
Jaclyn81
Rocio33
Maxwell.Halvorson
Tierra.Trantow
Pearl7
Ollie_Ledner37
Mckenna17
David.Osinski47
Morgan.Kassulke
Linnea59
Duane60
Julien_Schmidt
Mike.Auer39
Franco_Keebler64
Nia_Haag
Hulda.Macejkovic
Leslie67
Janelle.Nikolaus81
Darby_Herzog
Esther.Zulauf61

Bartholome.Bernhard
Jessyca_West
Esmeralda.Mraz57
Bethany20

3. Contest Winner Declaration: The team has organized a contest where the user with the most likes on a single photo wins.
   Your Task: Determine the winner of the contest and provide their details to the team.

   QUERY:

```
select
username, photos.id, photos.image_url, count(likes.user_id) As total
from photos
inner join likes
on likes.photo_id= photos.id
inner join users
on photos.user_id = users.id
group by photos.id
order by total desc
limit 1;
```

   OUTPUT:

```
Zack_Kemmer93   145     https://jarret.name  48
```

4. Hashtag Research: A partner brand wants to know the most popular hashtags to use in their posts to reach the most people.

Your Task: Identify and suggest the top five most commonly used hashtags on the platform.

QUERY:

```
select
tags.tag_name,
count(*) as total
from photo_tags
join tags
on photo_tags.tag_id=tags.id
group by tags.id
order by total desc
limit 5;
```

OUTPUT:

smile	59
beach	42
party	39
fun	38
concert	24

5. Ad Campaign Launch: The team wants to know the best day of the week to launch ads.

Your Task: Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.

QUERY:

```
select
dayname(created_at) as day, count(*) as total
from users
group by day
order by total desc
limit 1;
```

OUTPUT:

Thursday 16

B. INVESTOR METRICS:

1. User Engagement: Investors want to know if users are still active and posting on Instagram or if they are making fewer posts.Your Task: 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.

   ## QUERY:

   ```
   Select
   (select count(*) from photos) / (Select count(*) from users) as avg;
   ```

   ## OUTPUT:

   2.5700

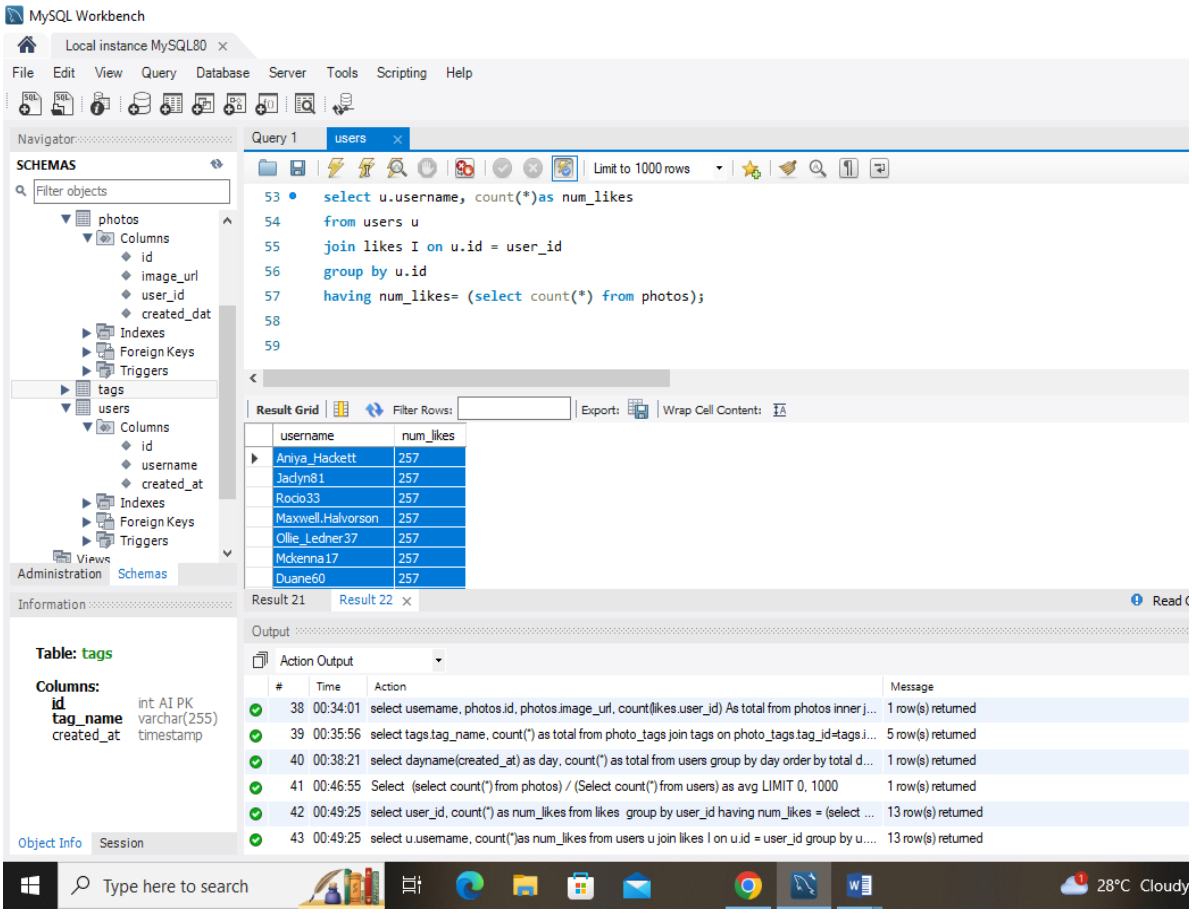
2. Bots & Fake Accounts: Investors want to know if the platform is crowded with fake and dummy accounts.Your Task: Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.

   ## QUERY:

   ```
   select user_id, count(*) as num_likes
   from likes
   group by user_id
   having num_likes = (select count(*) from photos);
   select u.username, count(*)as num_likes
   from users u
   join likes I on u.id = user_id
   group by u.id
   having num_likes= (select count(*) from photos);
   ```

OUTPUT:

Aniya_Hackett	257
Jaclyn81	257
Rocio33	257
Maxwell.Halvorson	257
Ollie_Ledner37	257
Mckenna17	257
Duane60	257
Julien_Schmidt	257
Mike.Auer39	257
Nia_Haag	257
Leslie67	257
Janelle.Nikolaus81	257
Bethany20	257



ACHIEVMENTS:

This project was quite helpful for me to understand and perform queries and understand the interface of MySQL workbench.
It covered all the important statements in SQL which is going to ghelp me further. The questions provided in the task helped me in my analytical skills.

Thank You.