Project – II

INSTAGRAM USER ANALYTICS – SQL FUNDAMENTALS

TASK – II

Make a report (pdf/ppt) to be presented to the leadership team. The report should/ can contain the following details: project description, approach, tech stack used, insights, results, and drive link.

PROJECT DESCRIPTION: This project- '**Instagram user analytics**' helps to analyze the raw data to create useful insights**.** 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 app's success by measuring user engagement and improve the experience while helping the business grow.

APPROACH: In order to execute the project, MYSQL, and GitHub was used. SQL queries were used to create a database using the raw data provided. Once the database was created various sorting and data-extracting queries were used to get the insights or the data required. I also used Excel to display the results of the questions.

TECH-STACK USED: **MySQL workbench** and **GitHub** were used for the completion of the project, in order to query the database and display of the commands used for creating the database. The ease of access and setup made it a good tool for the project. I also created a relational schema and executed some SQL queries on the software to find insights.

PROJECT INSIGHTS: While working on this project, I gained a lot of knowledge regarding how to go about writing queries and running them, their output, and whether the results show any errors or are correct. We were required to provide the solutions to the questions asked by the product manager and the insights are as follows:

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

1. **Rewarding the most loyal users**;

Task – to find the 5 oldest users of Instagram from the database provided.

QUERY: Select* from users order by created_at asc limit 5;

2. **Remind inactive users to start posting**;

Task – to find 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;
```

Result:

3. **Declaring contest winner**;

Task – to identify 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;
```

4. **Hashtag researching**;

Task – to identify and suggest the top 5 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;
```

5. **Launch AD campaign**;

Task – what day of the week do most users register on? 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 2;
```

B. **INVESTOR METRICS**: our investors want to know if Instagram is performing well and is not becoming redundant like Facebook, they want to asses the app on the following grounds: -

1. **User engagement**;

Task – to provide how many times an average user posts on Instagram. Also, provide the total number of photos on Instagram/ total number of users.

QUERY:

```
select (select count(*) from photos) / (select count(*) from users) as average, count(*) as total_photos from photos;
```

2. **Bots and fake accounts**;

Task – to provide data on users (bots) who have liked every single picture on the site (since any normal user would not be able to do this)

QUERY:

```
select username, user_id, count(*) as total_likes from users
Inner join likes
On users.id = likes.user_id
Group by likes.user_id
Having total_likes = (select count(*) from photos);
```

RESULTS

While making this project, I learned the basics of SQL, how to write SQL queries, and how these queries help in finding the solution to the database provided. I was

able to learn how to create a database using the commands provided.

SQL is one of the **most crucial skills** for anyone in a **data-driven position**. It allows us to draw information, and build analysis metrics efficiently.

These insights help us to find the most loyal customers, inactive users, commonly used hashtags, and bots on the site. I learned that a lot of metrics other than monetary ones could have a huge impact on the business decision-making process.

LINK FOR THE DISPLAY OF SQL QUERIES AND RESULTS - results of SQL queries