Project Report: Analysing Instagram Database using SQL Queries

Project Description:

The project aimed to analyse and optimize the performance of a fictional e-commerce website's database using SQL queries. The main objectives were to identify and resolve performance bottlenecks, improve data retrieval speed, and enhance overall efficiency. Through this project, we aimed to gain insights into the database's structure and usage patterns.

My Approach:

To achieve the project's goals, I utilized SQL queries to extract relevant data from the Instagram database. We focused on various aspects, such as identifying the oldest users, finding inactive users, determining the winner of a contest, researching popular hashtags, and analysing user registration patterns. The queries were executed on the database to retrieve meaningful information.

Tech-Stack Used:

For this project, I utilized the MySQL database management system to handle the provided Instagram database. SQL queries were executed using a MySQL SERVER to interact with the database efficiently.

Insights:

Rewarding Most Loyal Users (Q_1):

The five oldest users on Instagram are as follows:

" ***Jordyn.Jacobson2 , Elenor88, Emilio_Bernier52, Darby_Herzog, Nicole71***"

These users have been active on the platform since the earliest times.

Remind Inactive Users to Start Posting (Q_2):

Several users have never posted a single photo on Instagram. Some of these users include **"Aniya_Hackett", "Kasandra_Homenick", "Jaclyn81"** and others. It might be useful to encourage them to start posting to increase user engagement.

Declaring Contest Winner (Q_3):

The winner of the contest is **"Zack_Kemmer93,"** with the photo having the most likes (48 likes). The team should reach out to Zack_Kemmer93 to declare them as the contest winner.

Hashtag Researching (Q4):

The top 5 most commonly used hashtags on the platform are as follows:

id	hashtag	number of times
21	smile	59
20	beach	42
17	party	39
13	fun	38
18	concert	24

These hashtags are frequently used and can be leveraged for marketing campaigns or content categorization.

Launch AD Campaign (Q5):

The days of the week with the highest user registrations are Thursday and Sunday. Scheduling ad campaigns on these days might yield better results in terms of attracting new users to the platform.

Additional Insight: Investor Metrics

- The average user on Instagram posts approximately 3 times. This indicates a healthy level of user engagement as users are actively sharing content on the platform.
- We found two users, "Imani_Nicolas17" and "Alek_Watsica," who have liked every single photo on the site. These accounts could potentially be bots or fake accounts, warranting further investigation to maintain the integrity of user engagement metrics.

Result:

Through this project, I achieved the following:

- ✓ Identified the five oldest users on Instagram, rewarding their loyalty to the platform.
- ✓ Identified inactive users who have never posted photos and suggested strategies to engage them.
- ✓ Declared the contest winner based on the number of likes their photo received.
- ✓ Suggested the top 5 most commonly used hashtags, useful for content categorization and marketing campaigns.
- ✓ Provided insights on the days with the highest user registrations, aiding in scheduling ad campaigns effectively.
- ✓ Found bots who liked every single photo on site as well as the average posts by user on Instagram

Overall, this project has provided valuable insights into the database and offered actionable recommendations for improving user engagement and platform performance. The findings can be utilized by the Instagram team to optimize their operations and enhance user experiences.