Instagram User Analytics

SQL Fundamentals

Assignment-2

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Project Description:

This project aids in the analysis of the raw data and metadata to produce insightful findings. It is possible to visualize and extract important insights using a variety of database management technologies. This makes it possible to improve a platform's efficiency.

Project Approach:

SQL was employed to carry out the job. Using the provided raw data, a database was created using SQL queries. Several sorting and data extraction queries were used after the database was constructed to obtain the data and insights needed.

Tech Stack Used:

MySQL Workbench v8.0.30.0 was used during project execution in order toquery the database. The ease of access and setup, troubleshooting support aswell as the GUI made it a good tool for the project.

Project Insights:

RAW insights:

Github:

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.
   Your Task: Find the 5 oldest users of the Instagram from the database provided.
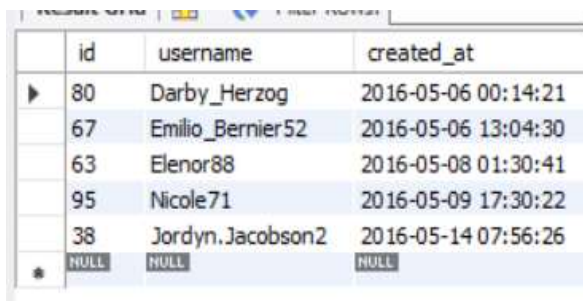
Query:

-- 1. Finding 5 oldest users

SELECT *

FROM users

ORDER BY created_at

LIMIT 5;

id	username	created_at
▶ 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
* NULL	NULL	NULL

2. **Remind Inactive Users to Start Posting:** By sending them promotional emails to post their 1st photo.
   Your Task: Find the users who have never posted a single photo on Instagram

   Query:

   -- 2. Identify Inactive Users (users with no photos)

   SELECT username

   FROM users

   LEFT JOIN photos

   ON users.id = photos.user_id

   WHERE photos.id IS NULL;

Result Grid | Filter Rows

username
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

Result 9 ×

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

Query-

-- 3. Identify most popular photo (and user who created it)

SELECT

   username,

   photos.id,

   photos.image_url,

   COUNT(*) AS total

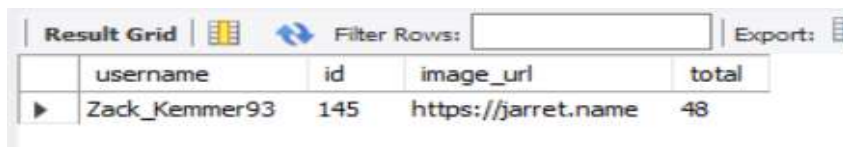*FROM photos*

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;

username	id	image_url	total
Zack_Kemmer93	145	https://jarret.name	48

4. **Hashtag Researching:** A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform.
   Your Task: Identify and suggest the top 5 most commonly used hashtags on the platform

Query:

-- 4. Find the five most popular hashtags

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

	tag_name	total
▶	smile	59
	beach	42
	party	39
	fun	38
	concert	24

;

5. **Launch AD Campaign:** The team wants to know, which day would be the best day to launch ADs.
   Your Task: What day of the week do most users register on? Provide insights on when to schedule an ad campaign

QUERY:

 -- 5. Most Popular Registration Date

SELECT

   DAYNAME(created_at) AS day,

   COUNT(*) AS total

FROM users

GROUP BY day

ORDER BY total DESC

LIMIT 2;

	day	total
▶	Thursday	16
	Sunday	16

B) 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
   Your 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:

-- 6. Calculate average number of photos per user

SELECT (SELECT Count(*)

    FROM   photos) / (SELECT Count(*)

        FROM   users) AS avg;

avg
2.5700

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

-- 7. Finding the bots - the users who have liked every single photo

SELECT username,

    Count(*) AS num_likes

FROM   users

    INNER JOIN likes

        ON users.id = likes.user_id

GROUP BY likes.user_id

HAVING num_likes = (SELECT Count(*)

        FROM   photos);

username	num_likes
Aniya_Hackett	257
Jadyn81	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