INSTAGRAM USER ANALYTICS

SQL FUNDAMENTALS

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PROJECT DESCRIPTION

- 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.

- 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.

- I have worked and analyzed with the Instagram product team and have provided insights on the questions asked by the management team for the product manager of the company.

TASK

Here in this project, I am working on an analytics project for an Instagram clone. The project likely involves querying data from a database using SQL to gain insights into user behavior on the platform.

The database of Instagram contains several tables, like users, photos, comments, likes, and including one for hashtags.

The goal of this project is likely to gain insights into user behavior on the platform and use these insights to inform business decisions, such as scheduling ad campaigns or identifying users who may be abusing the platform by using bots to like every photo.

APPROACH:

First of all, I went through the given dataset and then created the tables for calculating various queries. Additionally, I joined the data bits and structured the tables to derive business insights, fetched the required results, and hence, created useful insights for the company to take calculated and planned decisions.

TECH STACK USED:

Used Software While Making The Project :

1. MySQL Work Bench 8.0 (For working, analyzing, and reporting insights)
2. Microsoft PowerPoint (For presenting the detailed analysis)

MARKETING

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

REWARDING MOST LOYAL USER

People who have been using the platform for the longest time.

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

-->Darby_Herzog has been the most loyal user of Instagram among the given five

```
1   SELECT * FROM USERS
2   ORDER BY CREATED_AT
3   LIMIT 5
```

Result Grid | Filter Rows: | Edit:

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

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

From this image, it is clear that there are 26 users who have not posted even a single picture of them on the app.

```
1   SELECT USERS.ID, USERNAME FROM USERS
2   LEFT JOIN PHOTOS
3   ON USERS.ID=PHOTOS.USER_ID
4   WHERE PHOTOS.ID IS NULL
5
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

ID	USERNAME
5	Aniya_Hackett
7	Kasandra_Homenick
14	Jadyn81
21	Rocio33
24	Maxwell.Halvorson
25	Tierra.Trantow
34	Pearl7
36	Ollie_Ledner37
41	Mckenna17
45	David.Osinski47
49	Morgan.Kassulke
53	Linnea59
54	Duane60
57	Julien_Schmidt
66	Mike.Auer39
68	Franco_Keebler64
71	Nia_Haag
74	Hulda.Macejkovic
75	Leslie67
76	Janelle.Nikolaus81
80	Darby_Herzog
81	Esther.Zulauf61
83	Bartholome.Bernhard

Declaring Contest Winner:

People who have been using the platform for the longest time. 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

'Zack_kemmer93' is the user who got the maximum likes on a photo So, He is clearly the winner of the contest

```sql
SELECT USERS.ID, USERNAME, PHOTOS.IMAGE_URL, LIKES.PHOTO_ID,
COUNT(LIKES.USER_ID) AS MOST_LIKES FROM USERS
INNER JOIN PHOTOS
ON PHOTOS.USER_ID = USERS.ID
INNER JOIN LIKES
ON LIKES.PHOTO_ID = PHOTOS.ID
GROUP BY PHOTO_ID
ORDER BY COUNT(USER_ID) DESC
LIMIT 5
```

esult Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

ID	USERNAME	IMAGE_URL	PHOTO_ID	MOST_LIKES
52	Zack_Kemmer93	https://jarret.name	145	48
46	Malinda_Streich	https://celestine.name	127	43
65	Adelle96	https://dorcas.biz	182	43
44	Seth46	http://shannon.org	123	42
20	Delpha.Kihn	https://dejon.name	61	41

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

The result shows that the top 5 most commonly used hashtags on the platform are #smile, #beach, #party, #fun and #concert.

```
16 •  SELECT TAGS.ID, TAGS.TAG_NAME, COUNT(TAG_ID)
17    FROM TAGS
18    JOIN PHOTO_TAGS
19    ON TAGS.ID=PHOTO_TAGS.TAG_ID
20    GROUP BY TAG_ID
21    ORDER BY COUNT(TAG_ID) DESC
22    LIMIT 5
23
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch

ID	TAG_NAME	COUNT(TAG_ID)
21	smile	59
20	beach	42
17	party	39
13	fun	38
18	concert	24

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

The days on which most users register on the platform are Thursday and Stnday with equal registration count i.e. 16.

```
31
32 •  SELECT DAYNAME(CREATED_AT), COUNT(*) AS MOST_USERS_REG
33    FROM USERS
34    GROUP BY DAYNAME(CREATED_AT)
35    ORDER BY MOST_USERS_REG DESC
36
37
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

DAYNAME(CREATED_AT)	MOST_USERS_REG
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

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 :

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

We can see in the next slide, the total number of photos is 257 whereas the total number of users are 100. According to the calculation, one person on average posts around 2 to 3 photos on Instagram.

```
40
41 •  SELECT COUNT(*) AS tOTAL_PHOTOS
42     FROM PHOTOS
43
44
45
```

Result Grid | Filter Rows: | Export: | Wrap C

tOTAL_PHOTOS
257

```
46 •  SELECT COUNT(*) AS TOTAL_USERS
47     FROM USERS
48
49
50
51
52
53
```

Result Grid | Filter Rows: | Export: | Wrap Cell

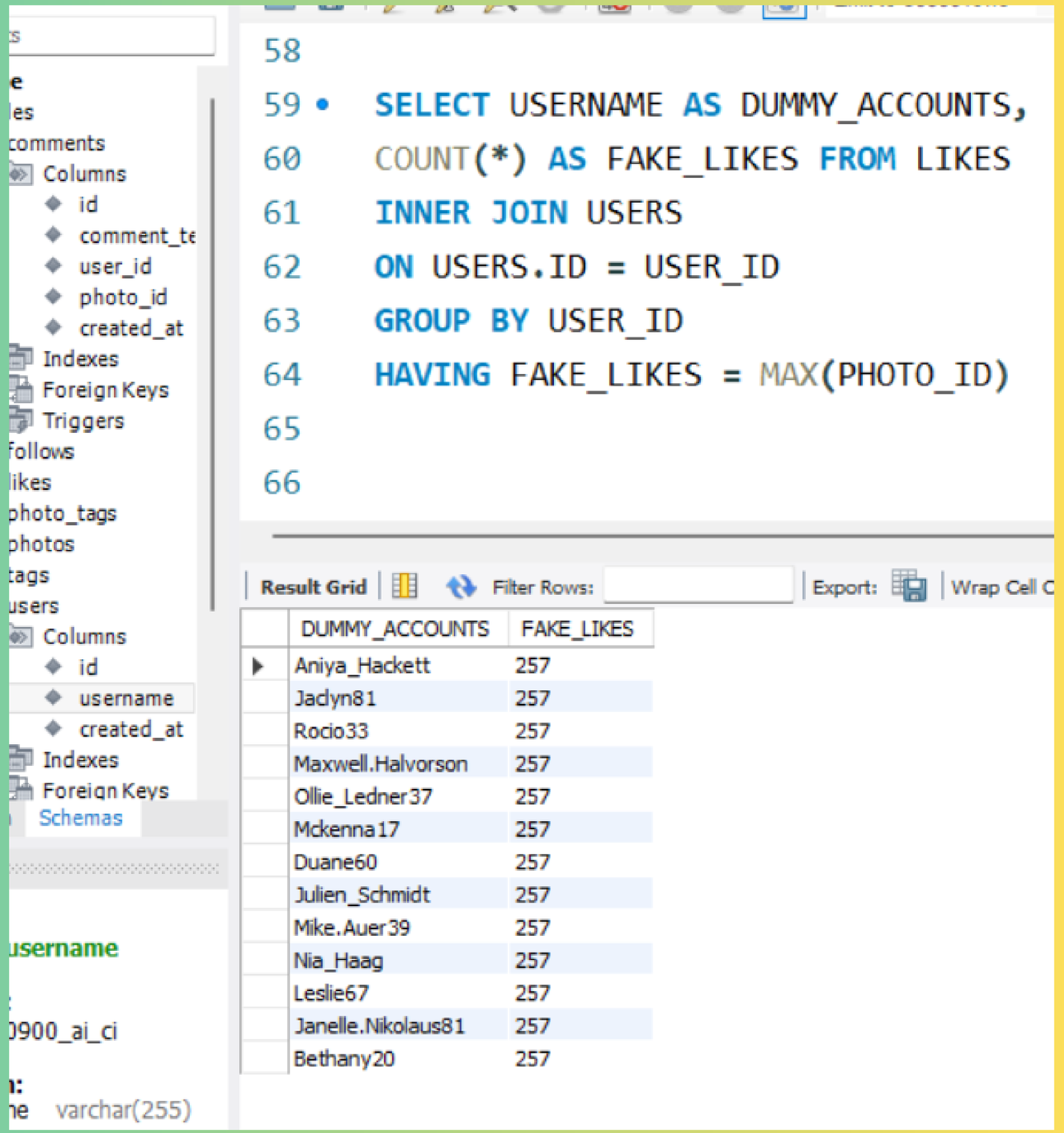
TOTAL_USERS
100

Bots & Fake Accounts:

By sending them promotional emails to post their 1st photo.

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

data provided on users has shown that dummy users or bots have liked every single photo which is exactly 257 times which is manually not possible. Hence, these 13 accounts



Thank You!