



INSTAGRAM USER ANALYTICS

SQL FUNDAMENTALS

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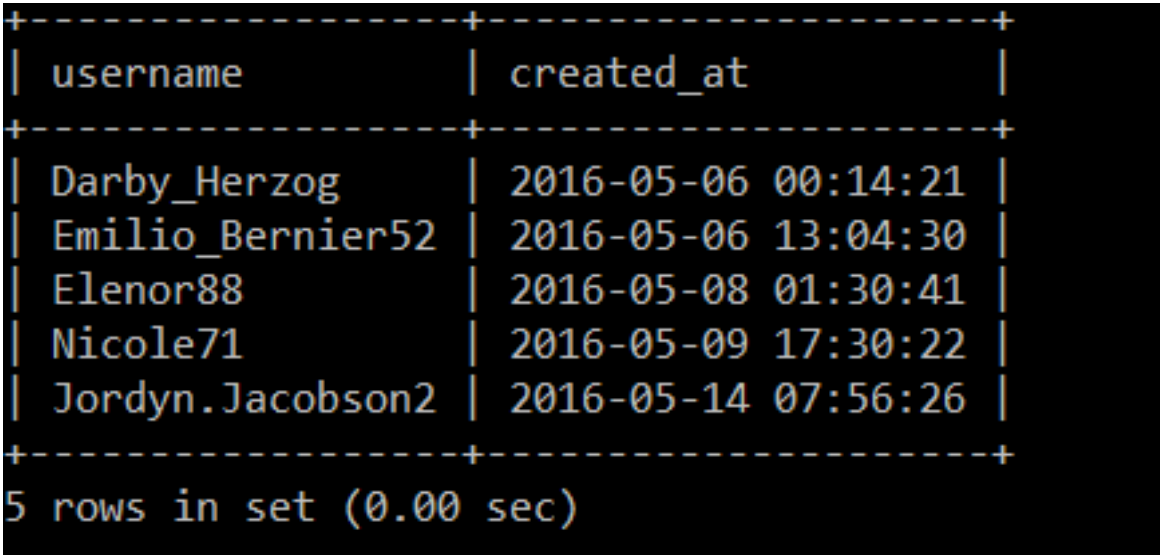
A) Marketing

- 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

`SELECT username, created_at FROM users ORDER BY created_at limit 5;`



```
+-----+-----+
| username          | created_at          |
+-----+-----+
| Darby_Herzog      | 2016-05-06 00:14:21 |
| Emilio_Bernier52  | 2016-05-06 13:04:30 |
| Elenor88          | 2016-05-08 01:30:41 |
| Nicole71          | 2016-05-09 17:30:22 |
| Jordyn.Jacobson2  | 2016-05-14 07:56:26 |
+-----+-----+
5 rows in set (0.00 sec)
```

username	created_at
Darby_Herzog	2016-05-06 00:14:21
Emilio_Bernier52	2016-05-06 13:04:30
Elenor88	2016-05-08 01:30:41
Nicole71	2016-05-09 17:30:22
Jordyn.Jacobson2	2016-05-14 07:56:26

- 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

SELECT u.username from users u LEFT JOIN photos p on u.id=p.user_id where p.id IS NULL;

```
+-----+
| 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 |
+-----+
26 rows in set (0.00 sec)
```

- 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

```
select users.username, photos.user_id, likes.photo_id, count(likes.user_id)
NumberOfLikes from likes JOIN photos JOIN users on users.id=photos.user_id
and photos.id=likes.photo_id group by likes.photo_id order by NumberOfLikes
desc limit 1;
```

```
+-----+-----+-----+-----+
| username      | user_id | photo_id | NumberOfLikes |
+-----+-----+-----+-----+
| Zack_Kemmer93 |      52 |      145 |           48 |
+-----+-----+-----+-----+
1 row in set (0.02 sec)
```

- 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

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

```
+-----+-----+-----+
| id | tag_name | CommonHashtags |
+-----+-----+-----+
| 21 | smile    | 59              |
| 20 | beach    | 42              |
| 17 | party    | 39              |
| 13 | fun       | 38              |
| 18 | concert  | 24              |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

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

```
select dayname(created_at) DayOfTheWeek, count(users.id) NumberOfUsers  
from users group by dayoftheweek order by numberofusers desc limit 2;
```

```
+-----+-----+  
| DayOfTheWeek | NumberOfUsers |  
+-----+-----+  
| Thursday     | 16            |  
| Sunday       | 16            |  
+-----+-----+  
2 rows in set (0.00 sec)
```

B) Investor Metrics

- 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

```
select      count(users.id)      NumberofUsers,      count(photos.image_url)
NumberofPhotos, count(photos.image_url)/count(users.id) AveragePosts from
photos right join users on users.id=photos.user_id;
```

NumberofUsers	NumberofPhotos	AveragePosts
283	257	0.9081

1 row in set (0.00 sec)

- 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

```
select user_id as "ID", users.username as "FAKE ACCOUNTS" from likes join
users on likes.user_id=users.id group by user_id having count(photo_id)=(select
count(image_url) from photos);
```

```
+-----+-----+
|  ID  | FAKE ACCOUNTS |
+-----+-----+
|  5   | Aniya_Hackett |
| 14   | Jaclyn81      |
| 21   | Rocio33       |
| 24   | Maxwell.Halvorson |
| 36   | Ollie_Ledner37 |
| 41   | Mckenna17     |
| 54   | Duane60       |
| 57   | Julien_Schmidt |
| 66   | Mike.Auer39   |
| 71   | Nia_Haag      |
| 75   | Leslie67      |
| 76   | Janelle.Nikolaus81 |
| 91   | Bethany20     |
+-----+-----+
13 rows in set (0.01 sec)
```