INSTAGRAM USER ANALYTICS

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Project Description: This project mainly focuses on extracting important insights based on our team's requirements and converting them into usable insights to influence the future development of one of the world's most popular social media platforms.

Approach: I use the raw data for this project and convert queries into a new database. I am sorting and extracting the data as per requirement by using My SQL.

Tech_Stack Used: I am using My SQL Workbench 8.0 for extracting the insights. My SQL is one of the most popular and easy-to-use platform.

PROJECT INSIGHTS

Marketing Analysis

1) **Loyal User Reward:**

   Identify five oldest user from the dataset.

   a) **Methodology:** To find the top five user from the dataset ,
      - Select " users " from the dataset
      - Order them by using " created at " table
      - Limit the list by top 5

b) **Code:**

```
SELECT * FROM users
ORDER BY created_at LIMIT 5;
```

c) **Output:**

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

2) **Inactive user engagement:**

Identifying users who have never posted a single photo on Instagram.

a) **Methodology:** we have to find null values from photos to get the users who have never posed a photo on Instagram.

- First we have to select " username " column from the " user ".
- Then we need to left join photos on user table as both of them have common content in them .
- Then we need to find the users where " photos.id " is NULL.

b) Code:

```
SELECT username
FROM users
LEFT JOIN photos
ON users.id=photos.user_id
WHERE photos.id IS NULL;
```

c) Output:

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

3) **Contest Winner Declaration:**

The Team has organized a contest where the user with the most likes on a single photo wins.

a) **Methodology:** To get the most likes on a single photo ,

- First, we have to select " users.username " , "photos.id" , " photos.image_url " and finally count them together.
- Then, inner join three tables photos , likes and user.
- Then, using " group by" function, group them on basis of photos.id.
- Then, using " order by " function sort the data in descending order.
- Then limit the count by 1 to get the top result.

b) Code:

```
SELECT users.id AS user_id, users.username, photos.id AS photo_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;
```

c) **Output:**

user_id	photo_id	username	image_url	total
52	145	Zack_Kemmer93	https://jarret.name	48

4) **Hashtag Research:**

Identify the top five most used hashtags on Instagram for our partner brand.

a) **Methodology:** To find the top 5 most popular hashtags,

- First, select the " tag_name " and count the total number of tags used individually as " total_no_of_tags ".
- Then, we need to join " tags " table and " photo tags " table.
- Then, using " group by " function group the output on behalf of tags.tag_name.

- Then using " order by " function we need to sort the function in descending order based on the total no of tags.
- Finally, limit the order to get the top five.

b) Code:

```
SELECT tags.tag_name, count(*) AS total_number_of_tags
FROM tags
JOIN photo_tags
ON tags.id = photo_tags.tag_id
GROUP BY tags.tag_name
ORDER BY total_number_of_tags DESC
LIMIT 5;
```

c) Output:

tag_name	total_number_of_tags
smile	59
beach	42
party	39
fun	38
concert	24

5) Ad Campaign Launch:

Determine the day of the week when most users register on Instagram.

a) **Methodology:**

To find the day,

- Firstly, We have to select DAYNAME (created_at) as " day " and count it as" total".
- Then, using group by function group the table according to "day"
- Then, using order by function order them according to " total " in descending order (DESC).

b) Code:

```
SELECT
DAYNAME(created_at) AS day,count(*) as total
FROM users
GROUP BY day
ORDER BY total DESC;
```

c) Output:

day	total
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

Investors Metrics

1) **User Engagement:**

   Investors want to know about users' activity reports on Instagram. Calculate the Average no of posts per user and the total no of photos / the total no of users.

   a) Methodology:

      To get the activity report

      - First, Select " user_id " and count it as " no_of_posts "
      - Then, from " photos " group and order them according to " user_id".
      - Finally, Divide the " no_of_posts" with total no of users.

   b) Code:

```
SELECT user_id,count(*) as no_of_posts
FROM photos
GROUP BY user_id
ORDER BY user_id
```

   c) Output:

user_id	no_of_posts
1	5
2	4
3	4
4	3
6	5
8	4
9	4
10	3
11	5
12	4
13	5
15	4
16	4
17	3
18	1
19	2
20	1
22	1
23	12
26	5
27	1
28	4
29	8
30	2
31	1
32	4
33	5
35	2
37	1

38	2
39	1
40	1
42	3
43	5
44	4
46	4
47	5
48	1
50	3
51	5
52	5
55	1
56	1
58	8
59	10
60	2
61	1
62	2
63	4
64	5
65	5
67	3
69	1
70	1
72	5
73	1
77	6
78	5
79	1
82	2

Total no of Photos / Total no of users = 257/100 = 2.57

2) Bots and fake accounts:

Investors want to know the number of bot users. We need to find those users who liked every single post on the site. They are potential bots.

a) Methodology:

To find those users

- First, user_id , username and count them as no_of_likes
- Then, from user inner join likes on user_id = likes.user_id
- Then, group by likes.user_id
- Lastly, no_of_likes count from photos.

b) Code:

```
SELECT user_id , username, count(*) AS user_likes
FROM users
INNER JOIN likes
ON users.id = likes.user_id
GROUP BY likes.user_id
HAVING user_likes = (SELECT count(*) FROM photos);
```

c) Output:

user_id	username	user_likes
5	Aniya_Hackett	257
14	Jaclyn81	257
21	Rocio33	257
24	Maxwell.Halvorson	257
36	Ollie_Ledner37	257
41	Mckenna17	257
54	Duane60	257
57	Julien_Schmidt	257
66	Mike.Auer39	257
71	Nia_Haag	257
75	Leslie67	257
76	Janelle.Nikolaus81	257
91	Bethany20	257