Instagram User Analytics

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Project Description: Analyzing user interactions and engagement with the Instagram app to provide valuable insights that can help the business grow, these insights will help the team with the future direction of the Instagram App.

Approach: First we create a database ig_clone in MYSQL workbench then after that we create particular tables according to the requirement in the database ig_clone then we insert the values in each of the table, after all this is done we use MySQL commands to extract valuable insights from database.

Tech-Stack Used:

We use MYSQL and MYSQL Workbench to create and extract insights from Instagram database.

A) Marketing:

Task 1: Loyal User Reward

Identify the five oldest Instagram users from the given database.

- (Select*from users): It is used to retrieve data from users table.
- (order by created_at): It is used to sort data either in ascending or descending order, in this we have not mentioned the order hence by default it is ascending.
- limit: It is used to restrict the number of rows.

Code:

```
select*from users
order by created_at
limit 5;
```

5 Loyal user reward
Output/Result:

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

Task 2: Inactive user engagement

Identify user who have never posted a single photo on Instagram.

- (select username): It is used to retrieve data from username column
- (from users): we are retrieving data from users table.
- (left join): It is used to return all records from table1 and the matching records from table2.
- (Where):It is used to filter condition.

Code:

```
select username
from users
left join photos on users.id=photos.user_id
where photos.id is null;
```

Inactive User Engagement, Output/Result:

Aniya_Hackett

Bartholome.Bernhard

Bethany20

Darby_Herzog

David.Osinski47

Duane60

Esmeralda.Mraz57

Esther.Zulauf61

Franco_Keebler64

Hulda.Macejkovic

Jaclyn81

Janelle.Nikolaus81

Jessyca_West

Julien_Schmidt

Kasandra_Homenick

Leslie67

Linnea59

Maxwell.Halvorson

Mckenna17

Mike.Auer39

Morgan.Kassulke

Nia_Haag

Ollie_Ledner37

Pearl7

Rocio33

Tierra.Trantow

Task 3: Contest Winner Declaration

Determine the winner of the contest and provide their details to the team.

- (inner join):Returns records that have matching values in both tables
- (group by):It is used to group rows that have the same values in the specified columns

Code:

```
select users.id as user_id, users.username, photos.id as photo_id, photos.image_url,
count(*) as total_likes
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_likes DESC
limit 1;
```

users_id	username	photo_id	image_url	total_likes
52	Zack_Kemmer93	145	https://jarret.name	48

Task 4: Hashtag Research

Identify and suggest the top five most commonly used hashtags on the platform.

- (join):It is used to allow us to pull data from more than one table.

Code:

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

Five most commonly used hashtags on the platform
Output/result:

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

Task 5: Ad Campaign Launch

Determine the day of the week when most users register on Instagram provide insights on when to schedule an ad campaign.

All queries used here are already explained in the previous slides.

Code:

```
select dayname(created_at) as day_of_week,
count(*) as users_registered
from users
group by day_of_week
order by users_registered DESC;
```

- Ad Campaign Launch
- Result: Best days for ad campaign launch will be Thursday and Sunday because on these days many users are registering

day_of_week	user_registered
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

- B) Investor Metrics:
- Task1 :User Engagement
- Calculate the average number of posts per user on Instagram. Also, provide the total number of photos on Instagram divided by the total number of users.
- Code: Calculate the average number of posts per user on Instagram

```
select user_id,count(*) as post_count
from photos
group by user_id
order by user_id;
```

user_id	post_count
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

Average number of posts per user on Instagram. Result:

user_id	post_count
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
84	2
85	2

user_id	post_count
86	9
87	4
88	11
92	3
93	2
94	1
95	2
96	3
97	2
98	1
99	3
100	2

- Code:Total number of photos on Instagram divided by the total number of users.

```
select(select count(*)
from photos)/(select count(*) from users) as division_result;
```

Output/Result:

division_result
2.5700

- Task 2:

Bots & Fake Accounts: Identify users who have liked every single photo on the site , as this is not typically possible for a normal user.

Code:

```
select user_id, username, count(*) as total_likes
from users
inner join likes
on users.id = likes.user_id
group by likes.user_id
having total_likes = (select count(*) from photos);
```

user_id	username	total_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

- Insights: One of our oldest and loyal user is in the Inactive user engagement list we need to send promotional emails to him.
- There are many people in the list of Inactive user engagement and also there are decent amount of bots and fake accounts.

- Result: With the help of MYSQL queries we were able to retrieve valuable insights from the database, with the help of these insights and information we will try to improve the future direction of the Instagram app.