

Instagram User Analytics

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Aims

This project is aimed at finding certain marketing metrics and investor metrics from Instagram database.

Approach

Firstly, we created an SQL database with provided data. We closely studied the requirements of the projects and metrics to be delivered for various teams.

Used MySQL workbench to query database and produce valuable insights into Instagram user base.

Tech Stack

We used MySQL and MySQL Workbench to create and extract useful insights from Instagram database.

Insights and Results

We present the each metrics with MySQL code as Follows:

A) Marketing Metrics

1. Most loyal users

List of 5 oldest users by joining date:

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

Oldest 5 users and their joining date and time are as follows

username	created_at
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
Darby_Herzog	2016-05-06 00:14:21

2. Inactive Users

Users who have never posted a phot in the platform:

```
SELECT id, username
FROM users
WHERE id NOT IN (SELECT user_id FROM photos);
```

There are total 26 users who never posted a photo on the platform

id	username
5	Aniya_Hackett
7	Kasandra_Homenick
14	Jaclyn81
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

id	username
89	Jessyca_West
90	Esmeralda.Mraz57
91	Bethany20

3. Contest Winner

User with most likes for a single photo:

```
SELECT tb1.user_id, users.username, tb1.nlikes
FROM (SELECT user_id, count(photo_id) as nlikes
FROM likes
GROUP BY photo_id
order by nlikes desc
LIMIT 1) as tb1
left join users
on tb1.user_id = users.id ;
```

User with ID: `Harley_Lind18` has won the contest with 48 likes for a single photo she had posted.

4. Popular Hashtags

Top five hashtags which is used most commonly:

```
SELECT tag_id, tags.tag_name, ntag
FROM
(SELECT tag_id, count(tag_id) as ntag
FROM photo_tags
group by tag_id
order by ntag desc
limit 7) as tb2
LEFT JOIN tags
ON tb2.tag_id = tags.id;
```

tag_id	tag_name	ntag
21	smile	59
20	beach	42
17	party	39
13	fun	38
5	food	24
11	lol	24
18	concert	24

smile, beach, party and fun are the four most used hashtags. On fifth place there are three more. It's very evident that users like partying and vacationing.

5. Best day of the Week

The day of the week with most user registration:

```
SELECT dweek, count(dweek) AS ndweek
FROM (SELECT dayname(created_at) as dweek
      FROM users) as tb1
group by dweek
order by ndweek desc;
```

dweek	ndweek
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

Thursdays and Sundays are two days with most user registration on Instagram.

B) Investor Metrics

We present investor metrics as requested by the team as follows

1. User Engagement

User engagement is calculated as the number of photos on an average is posted by a user. It's calculated as:

$$\text{Total Number of Photos} / \text{Total Number of Users}$$

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

On an average a user posted 2.57 photos on Instagram.

2. Bots & Fake Accounts

The users who happen to like each photo posted on the platform are considered as fakes or bots.

```

SELECT tb1.user_id, users.username, tb1.nlike
FROM(select user_id, count(user_id) as nlike
FROM likes
group by user_id
having nlike = (select count(*) from photos)) as tb1
left join users
on tb1.user_id = users.id;

```

It appears there are 13 users to be fake or bots who liked each photo on the instagram.
Details are given below:

user_id	username	nlike
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

Link to the Project files:

[github:](#)