Instagram User Analytics

Project Description: This project aims to extract useful insight from raw data using various database managements tools to improve the platform efficiency.

Project Approach: The project executes using SQL, where queries utilized to create a database from the provided raw data. Sorting and data extracting queries were then implemented to obtain the required insights.

Tech Stack Used: The tech stack used include of MySQL Workbench which is an excellent tool for querying the database.

Project Insights:

A) Marketing Analysis:

Loyal User Reward: The marketing team wants to reward the most loyal users, i.e., those who have been using the platform for the longest time.

Your Task: Identify the five oldest users on Instagram from the provided database.

Code:

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

Result: The five oldest users on Instagram are as follows:

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: The team wants to encourage inactive users to start posting by sending them promotional emails.

Your Task: Identify users who have never posted a single photo on Instagram.

Code:

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

Result: Following are the users who never posted a single photo on Instagram:

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.

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

Code:

```
select username, photos.id, photos.image_url, count(likes.user_id)as most_likes
from photos
inner join likes
on likes.photo_id = photos.id
inner join users
on users.id = photos.user_id
group by photos.id
order by most_likes DESC limit 1;
```

Results: Following is the details of the winner of the contest:

Zack_Kemmer93 145 https://jarret.name 48

4. Hashtag Research: A partner brand wants to know the most popular hashtags to use in their posts to reach the most people.

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

Code:

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

Result: Followings are the top five most commonly used hashtags on the platform:

smile	59
beach	42
party	39
fun	38
concert	24

5. Ad Campaign Launch: The team wants to know the best day of the week to launch ads.

Your Task: Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.

Code:

```
select dayname(created_at) as day, count(*) as
most_users_register_on_day
from users
group by day
order by most_users_register_on_day desc;
```

Result: Following is the day of the week when most users register on Instagram:

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

The campaign can be schedule at Thursday or Sunday because on that day most users registered on Instagram.

B) Investor Metrics:

1. User Engagement: Investors want to know if users are still active and posting on Instagram or if they are making fewer posts.

Your Task: 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:

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

Result: The total number of photos on Instagram divided by the total number of users are :

2.5700

2. Bots & Fake Accounts: Investors want to know if the platform is crowded with fake and dummy accounts.

Task: Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.

Code:

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

Result: The users (potential bots) who have liked every single photo on the site are :

Aniya_Hackett	257
Jaclyn81	257
Rocio33	257
Maxwell.Halvorson	257
Ollie_Ledner37	257
Mckenna17	257
Duane60	257
Julien_Schmidt	257
Mike.Auer39	257
Nia_Haag	257
Leslie67	257
Janelle.Nikolaus81	257
Bethany20	257