Instagram User Analytics

Name : Leena shree Project Topic : Instagram User Analytics Project No. : 2

Project Description :
as a data analyst for Instagram, it occupies effective and efficient data analysis of user interactions and engagement reports. I will use SQL and MySQL Workbench to answer some of the questions the management team wants me to help them answer which will help the organization in its business progression.

SQL Tasks
A) Marketing Analysis

Loyal User Reward:

Task: List the five oldest users in the list below with the possibility to use Instagram.

Inactive User Engagement:

Task: Let me find users who, separately, never posted a single photo.

Contest Winner Declaration:

Task: Count the number of likes received by the user on the photo that he has set from all the photos.

Hashtag Research:

Task: Determine the key hashtag and the four additional hashtags most frequently used in the posts.

Ad Campaign Launch:

Task: Find out the day of the week that most users sign up to ensure that ads are scheduled during that particular day.

B) Investor Metrics

User Engagement:

Task: Evaluate the average number of posts that a user has and the rati of the total of photos to the number of users.

Bots & Fake Accounts:

Task: Select all users who liked all the photos to avoid fake fans/ possible bot.
These analyses will also assist in prompting accurate marketing tactics, user attraction and retention campaigns, and investor trust in the genuineness and usage of the platform.

Tech Stack Used

1. MySQL Workbench 8.0 CE (Command line client)
2. Google document

Methods:

I utilized MySQL Command line client to run SQL queries in order to finish the project and fulfill the necessary tasks. As stated in the guidelines for building the database, I entered the data into MySQL and ran the relevant queries to obtain the necessary insights for the associated tables.

Insights:

Having some prior experience with SQL from my Bachelor's degree, I was initially familiar only with the basic concepts. This Instagram user analytics project allowed me to delve much deeper into SQL, enhancing my understanding of complex queries and their practical applications. I learned how to extract meaningful business insights from data, enabling me to ask the right questions and devise effective solutions to the problems posed.

Results:

Here are the query statements which I executed and the corresponding results.

A) Marketing:

The marketing team wants to launch some campaigns, and they need your help with the following

1. Rewarding Most Loyal Users:

People who have been using the platform for the longest time.

Task: Find the 5 oldest users of the Instagram from the database provided

select * from users order by created_at asc limit 5;

```
mysql> select * from users order by created_at asc limit 5;
+----+------------------+---------------------+
| 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 |
+----+------------------+---------------------+
5 rows in set (0.00 sec)
```

2. Remind Inactive Users to Start Posting:

By sending them promotional emails to post their 1st photo.

Task: Find the users who have never posted a single photo on Instagram

select users.id,username from users
-> left join photos
-> on users.id = photos.user_id where photos.id is NULL
-> order by username asc;

```
mysql> select users.id,username from users
    -> left join photos
    -> on users.id = photos.user_id where photos.id is NULL
    -> order by username asc;
+----+--------------------+
| id | username           |
+----+--------------------+
|  5 | Aniya_Hackett      |
| 83 | Bartholome.Bernhard |
| 91 | Bethany20          |
| 80 | Darby_Herzog       |
| 45 | David.Osinski47    |
| 54 | Duane60            |
| 90 | Esmeralda.Mraz57   |
| 81 | Esther.Zulauf61    |
| 68 | Franco_Keebler64   |
| 74 | Hulda.Macejkovic   |
| 14 | Jaclyn81           |
| 76 | Janelle.Nikolaus81 |
| 89 | Jessyca_West       |
| 57 | Julien_Schmidt     |
|  7 | Kasandra_Homenick  |
| 75 | Leslie67           |
| 53 | Linnea59           |
| 24 | Maxwell.Halvorson  |
| 41 | Mckenna17          |
| 66 | Mike.Auer39        |
| 49 | Morgan.Kassulke    |
| 71 | Nia_Haag           |
| 36 | Ollie_Ledner37     |
| 34 | Pearl7             |
| 21 | Rocio33            |
| 25 | Tierra.Trantow     |
+----+--------------------+
26 rows in set (0.01 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.

Task: Identify the winner of the contest and provide their details to the team

select users.id,users.username ,photos.image_url,count(*) as `Total Likes` from likes
-> inner join photos on photos.id = likes.photo_id
-> inner join users on users.id = likes.photo_id
-> group by photos.id
-> order by `Total Likes` desc limit 1;

```
mysql> select users.id,users.username ,photos.image_url,count(*) as `Total Likes` from likes
    -> inner join photos on photos.id = likes.photo_id
    -> inner join users on users.id = likes.photo_id
    -> group by photos.id
    -> order by `Total Likes` desc limit 1;
+----+----------+-----------------+-------------+
| id | username | image_url       | Total Likes |
+----+----------+-----------------+-------------+
| 30 | Kaley9   | http://kenny.com |          41 |
+----+----------+-----------------+-------------+
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.

Task: Identify and suggest the top 5 most commonly used hashtags on the platform

select tag_name , count(*) as `Total occurrences` from tags
-> inner join photo_tags on tags.id = photo_tags.tag_id
-> group by tags.id
-> order by `Total occurrences' desc limit 5;

```
mysql> select tag_name , count(*) as `Total occurences` from tags
    -> inner join photo_tags on tags.id = photo_tags.tag_id
    -> group by tags.id
    -> order by `Total occurences` desc limit 5;
+----------+------------------+
| tag_name | Total occurences |
+----------+------------------+
| smile    |               59 |
| beach    |               42 |
| party    |               39 |
| fun      |               38 |
| concert  |               24 |
+----------+------------------+
5 rows in set (0.01 sec)
```

5. Launch AD Campaign:

The team wants to know which day would be the best day to launch ADs.

Task: What day of the week do most users register on? Provide insights on when to schedule an ad campaign.

select dayname(created_at) as day,count(*) as `Total registered users` from users
-> group by day
-> order by `Total registered users` desc;

```
mysql> select dayname(created_at) as day,count(*) as `Total registered users` from users
    -> group by day
    -> order by `Total registered users` desc;
+-----------+------------------------+
| day       | Total registered users |
+-----------+------------------------+
| Thursday  |                     16 |
| Sunday    |                     16 |
| Friday    |                     15 |
| Tuesday   |                     14 |
| Monday    |                     14 |
| Wednesday |                     13 |
| Saturday  |                     12 |
+-----------+------------------------+
7 rows in set (0.00 sec)
```

B) Investor Metrics:

Our investors want to know if Instagram is performing well and is not becoming redundant like Facebook, they want to assess the app on the following grounds

1. User Engagement:

Are users still as active and post on Instagram or they are making fewer posts

Task: Provide how many times an average user posts on Instagram. Also, provide the total number of photos on Instagram/total number of users

select (select count(*) from photos)/(select count(*) from users) as Avg_posts;

```
mysql> select (select count(*) from photos)/(select count(*) from users) as Avg_posts;
+-----------+
| Avg_posts |
+-----------+
|    2.5700 |
+-----------+
1 row in set (0.01 sec)
```

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

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).

select users.id,users.username,count(*) as `Total likes by user` from users
-> inner join likes on likes.user_id = users.id
-> group by likes.user_id
-> order by `Total likes by user` desc;

```
mysql> select users.id,users.username,count(*) as `Total likes by user` from users
    -> inner join likes on likes.user_id = users.id
    -> group by likes.user_id
    -> order by `Total likes by user` desc;
+-----+----------------------+---------------------+
| id  | username             | Total likes by user |
+-----+----------------------+---------------------+
|  21 | Rocio33              |                 257 |
|  71 | Nia_Haag             |                 257 |
|   5 | Aniya_Hackett        |                 257 |
|  66 | Mike.Auer39          |                 257 |
|  41 | Mckenna17            |                 257 |
|  14 | Jaclyn81             |                 257 |
|  57 | Julien_Schmidt       |                 257 |
|  24 | Maxwell.Halvorson    |                 257 |
|  76 | Janelle.Nikolaus81   |                 257 |
|  75 | Leslie67             |                 257 |
|  54 | Duane60              |                 257 |
|  91 | Bethany20            |                 257 |
|  36 | Ollie_Ledner37       |                 257 |
```

Results

- **All the questions posed were successfully addressed by executing the appropriate SQL queries.**

- **This Instagram user analytics project significantly enhanced my understanding of SQL, from basic to advanced concepts. It enabled me to derive valuable insights from the data, which can contribute to business growth and strategic decision-making.**