Project - 02

Instagram User Analytics

Project Description:-

Instagram User Analytics refers to the process of gathering and analyzing data about an Instagram user's account, including their followers, engagement rates, posting habits, and many more. This kind of informations can be used to understand the user's overall impact on the platform and to develop strategies for improving their social media presence.

Instagram User Analytics can be obtained through various tools and services. These tools can track metrics such as:

- Follower count: The number of people who are following the user's account
- Engagement rate: The percentage of the user's followers who are actively interacting with their posts
- Posting frequency: How often the user is posting to their account
- Most popular posts: The posts that received the most engagement from the user's followers
- Top hashtags: The hashtags that the user has used most often and received the most engagement from

By analyzing these metrics, businesses and individuals can gain valuable insights into their audience and identify the types of content that resonates with them. This information can then be used to make informed decisions about future content and engagement strategies on Instagram.

Likewise in this project we have both marketing team and product & development team who are need to get their insights for their respective needs which I further mentioned below.

Project Approach: -

The first step should be to define the goals and objectives of the project and determine what metrics are most relevant to the analysis for which I further mentioned. Once the metrics have been defined, a tool or service for collecting the data will be selected, and that would be MySQL. Next, the data will be collected from the given dataset which is in the coding (SQL) format. So, I copy and paste the code in MySQL file to get all the data tables from the dataset and analyzed over a defined period of time. And after that the insights are then used by teams across the business to launch a new marketing campaign, decide on features to build for an app, track the success of the app by measuring user engagement and improve the experience altogether while helping the business grow.

Tech-Stack Used:-

I used MySQL Workbench. MySQL Workbench is a visual editor that unifies data modeling, SQL development, and database administration in one interface. It allows you to visually design, generate and manage databases.

It is widely used to handle structured data. It is an open-source Relational Database Management System (RDBMS) developed by Oracle Corporation, Sun Microsystems that uses Structured Query Language (SQL) to interact with databases. And MySQL Workbench offers database migration options, making it easier to move data to and from the Microsoft SQL Server, Microsoft Access, and other RDBMS tables.

Insights:-

A) Marketing:

(a) Find the 5 oldest users of the Instagram from the database provided.

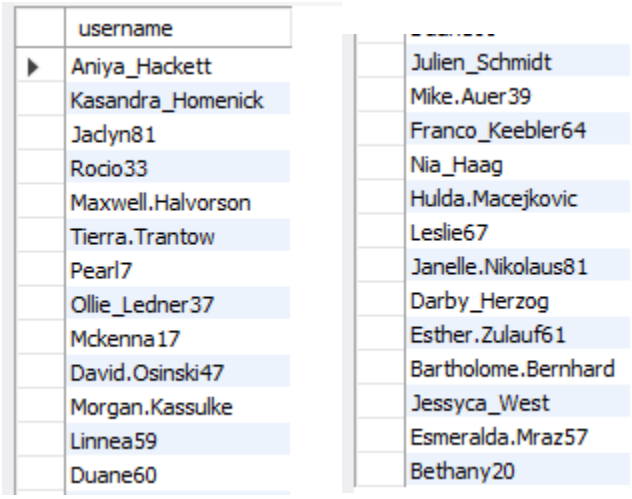
```
SELECT username FROM users
ORDER BY created_at
LIMIT 5;
```

username
Darby_Herzog
Emilio_Bernier52
Elenor88
Nicole71
Jordyn.Jacobson2

(b) Find the users who have never posted a single photo on Instagram

```
SELECT username
FROM (
SELECT u.id,username,COUNT(image_url) AS no_of_photos
FROM users u
LEFT JOIN photos p
ON u.id = p.user_id
GROUP BY username) AS PT
WHERE no_of_photos = 0;
```

So, there is a total of 26 users who have never posted a single photo on Instagram since they created the account.



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

(c) Identify the winner of the contest and provide their details to the team.

```
SELECT p.id,u.username,p.image_url,COUNT(*) AS total_likes
FROM likes l
JOIN photos p ON p.id = l.photo_id
JOIN users u ON u.id = l.photo_id
GROUP BY p.id
ORDER BY total_likes DESC
LIMIT 1;
```

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. And the winner of the contest is **Kaley9** with a total of 41 likes in his photo.

	id	username	image_url	total_likes
▶	30	Kaley9	http://kenny.com	41

(d) Identify and suggest the top 5 most commonly used hashtags on the platform.

```
SELECT tag_name,COUNT(photo_id) AS no_of_tags
FROM photo_tags p
INNER JOIN tags t
ON p.tag_id = t.id
GROUP BY tag_name
ORDER BY no_of_tags DESC
LIMIT 5;
```

A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform. The top 5 most commonly used hashtags on the platform are given below in the list: -

	tag_name	no_of_tags
▶	smile	59
	beach	42
	party	39
	fun	38
	concert	24

(e) 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_of_week,COUNT(username)
FROM users
GROUP BY day_of_week;
```

You can see on both Thursday and Sunday are the most users registered on Instagram with number of 16. So, these days would be best for launch ADs.

	day_of_week	COUNT(username)
▶	Thursday	16
	Sunday	16
	Tuesday	14
	Saturday	12
	Wednesday	13
	Monday	14
	Friday	15

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:

(a) Provide how many times does average user posts on Instagram. Also, provide the total number of photos on Instagram/total number of users.

```
SELECT AVG(no_of_photos)
FROM (
SELECT username,COUNT(image_url) AS no_of_photos
FROM users u
INNER JOIN photos p
ON u.id = p.user_id
GROUP BY username) AS insta_photo;
```

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

Basically, there are 3 times does average user posts on Instagram.

AVG(no_of_photos)
3.4730

```
SELECT (ROUND((SELECT COUNT(*)FROM photos)/
(SELECT COUNT(*) FROM users),2)) Ratio;
```

Also, the total number of photos on Instagram/total number of users

= 257 / 100 = 2.57 ~ 3

Ratio
2.57

(b) Bots & Fake Accounts:

The investors want to know if the platform is crowded with fake and dummy accounts.

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

The users (bots) who have liked every single photo on the site are given below in list (since any normal user would not be able to do this): -

id	username	total_likes_by_user
5	Aniya_Hackett	257
14	Jadyn81	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

Results: -

After completion of the analysis, we got all the insights that were asked in this project like most loyal users, most liked the photo of a user, most used tag names, and many more. In all of these insights to get from the above database I used different types of SQL queries and subqueries which helped me enhanced my SQL skills, analytical thinking, and problem-solving skills. Also, it boosts my confidence in solving data analysis projects using SQL in the future.

Thank You

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