Instagram User Analytics

Using SQL Fundamentals

PROJECT DESCRIPTION

The given Project requires a user analysis of Instagram users where insights are required for the Marketing Team with respect to Most Loyal Users ; Inactive Users ; Most liked picture ; Hashtag researching and for Launching an AD Campaign. Insights are also required on User Engagement and on Bots and Fake Accounts for the Investors.

The above information will be extracted from the given database with the help of SQL queries

Approch

An approach of extracting entire required information from the given database using SQL queries was adopted.

This approach was executed using MySQL software.

Above approach resulted in direct insights on the questions asked without discomfort.

Tech-Stack Used

MySQL was used to run SQL queries

The reason I chose this language is because I have prior experience from my college and my higher secondary education

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1. Rewarding Most Loyal Users
The following are the 5 oldest users
Of Instagram according to the given
database

```
SELECT
 *
FROM
 USERS
ORDER BY CREATED_AT
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"

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2.Remind Inactive Users to Start Posting
The following are the users who have not posted
A single photo on Instagram. Total 26 accounts
Who have not posted i.e 26% accounts

```
SELECT
U.ID, U.USERNAME
FROM  USERS U   LEFT JOIN
PHOTOS P
ON P.USER_ID = U.ID
WHERE P.ID IS NULL;
```

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
89	Jessyca_West
90	Esmeralda.Mraz57
91	Bethany20

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3. Declaring Contest Winners
The following ID had the most liked photo

USER_ID	username	PHOTO_ID	LIKES
52	Zack_Kemmer93	145	48

```
SELECT    P.USER_ID,    U.USERNAME,    A.*
FROM PHOTOS P INNER JOIN
(SELECT    PHOTO_ID,    COUNT(USER_ID) AS LIKES FROM    LIKES
GROUP BY PHOTO_ID
ORDER BY COUNT(USER_ID) DESC LIMIT 1) A ON P.ID=A.PHOTO_ID
INNER JOIN USERS U ON P.USER_ID=U.ID
```

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4. Hashtag Researching
The following are the
most used
Tags which can be
used by the Partner
brand to increase their reach.

TAG_NAME	NUMBER OF TIMES TAG USED
Smile	59
Beach	42
Party	39
Fun	38
Concert	24

```
SELECT
T.TAG_NAME AS TAG_NAME,    COUNT(P.PHOTO_ID) AS NUM_PHOTO_TAG_USED_IN
FROM    PHOTO_TAGS P        INNER JOIN    TAGS T ON T.ID = P.TAG_ID
GROUP BY P.TAG_ID
ORDER BY COUNT(P.PHOTO_ID) DESC
LIMIT 5;
```

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5. Best day to launch an AD Campaign
The following table shows the
count of users Registered on
each day and from this it can be
Derived that best days for
Launching an AD Campaign are
Thursday and Sunday.

```
SELECT
DAYNAME(CREATED_AT) AS DAY,
COUNT(DAYNAME(CREATED_AT)) AS NUM_USERS_REGISTERED_ON
FROM    USERS
GROUP BY DAYNAME(CREATED_AT)
ORDER BY COUNT(DAYNAME(CREATED_AT)) DESC;
```

DAY	NUM OF USERS REGISTERED
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

Insights-investor metrics

1.User Engagement
The user engagement is gauged
via Analysing average posts per user and Ratio of total photos to total users
Which are shown in the table.
The data shows that though Average user post more than 3 photos ,
 not all users are posting implying a need to address the inactivity of some users.

Average Number of posts per User	Ratio of Total Posts to Total Users
3.4730	2.5700

SELECT (SELECT COUNT(ID) FROM PHOTOS)/ (SELECT COUNT(DISTINCT USER_ID)
FROM PHOTOS) AS
 Average_Number_of posts_per_User,
(SELECT COUNT(ID) FROM PHOTOS)/ (SELECT COUNT(ID) FROM USERS) AS
Ratio_of_Total_Posts_to_Total_Users;

Insights-investor metrics

2. Bots and Fake Accounts
Bots are identified by finding those
Accounts which has liked every single
Photo, shown in the table
These accounts are 13% of the total
Accounts and all these accounts are those
Accounts who have not posted a single
Photo.

(query on next slide)

USER ID	USERNAME	NUM LIKED_PHOTOS	TOTAL_ PHOTOS
5	Aniya_Hackett	257	257
14	Jaclyn81	257	257
21	Rocio33	257	257
24	Maxwell.Halvorson	257	257
36	Ollie_Ledner37	257	257
41	Mckenna17	257	257
54	Duane60	257	257
57	Julien_Schmidt	257	257
66	Mike.Auer39	257	257
71	Nia_Haag	257	257
75	Leslie67	257	257
76	Janelle.Nikolaus81	257	257
91	Bethany20	257	257

Insights-investor metrics

```sql
SELECT
USER_ID,
USERNAME,
COUNT(PHOTO_ID) AS NUM_LIKED_PHOTOS,
P.TOTAL_PHOTOS AS TOTAL_PHOTOS
FROM    LIKES L        INNER JOIN    USERS U ON L.USER_ID = U.ID
CROSS JOIN
(SELECT         COUNT(DISTINCT id) AS TOTAL_PHOTOS    FROM        photos) p
GROUP BY USER_ID
HAVING COUNT(PHOTO_ID) = (SELECT         COUNT(ID)    FROM        PHOTOS);
```

Result

This project strengthened my SQL query syntax knowledge, showing the need for continuous learning. I developed my own approach to solve queries creatively, like finding the best AD launch day. Real-world scenarios provided valuable insights, empowering decision-making. It emphasized adaptability and skill application for data analysis. A concise, rewarding learning experience overall.