Instagram User Analytics

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Date: 19/11/2023

Project Description: The objective of this project is to analyse Instagram user data to extract meaningful insights and answer the business questions raised by the management team.

Approach: The project was executed in SQL (Structured Query Language) by creating a database from the given dataset. Necessary data wrangling techniques were undertaken in order to understand and extract meaningful insights from the data.

Tech-Stack Used: All the SQL queries were executed in My SQL Workbench version 8.0.35.0. I prefer My SQL workbench due to its ease to use interface and powerful SQL editor.

Insights:

A) Marketing Analysis:

1. **Loyal User Reward**

   Task: To identify five oldest users on Instagram from the provided database.

   Conclusions: Following are the five oldest users on Instagram from the provided database.

id	username
80	Darby_Herzog
67	Emilio_Bernier52
63	Elenor88
95	Nicole71
38	Jordyn.Jacobson2

   Code:
```
SELECT id, username
    FROM users
    ORDER BY created_at asc
    LIMIT 5;
```

2. Inactive User Engagement

Task: To identify users who have never posted a single photo on Instagram

Conclusion: Following is the list of users who have never posted a single photo on Instagram.

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

Code: SELECT *

FROM users

WHERE NOT id IN (SELECT DISTINCT user_id FROM photos);

3. Contest Winner Declaration

Task: To identify the user with most likes on a single photo

Conclusion: Following is the details of the user and the photo having most likes on Instagram.

user_id	username	image_url	photo_id	total_likes
52	Zack_Kemmer93	https://jarret.name	145	48

Code: SELECT a.user_id, c.username, a.image_url, b.photo_id, count(b.user_id) total_likes

FROM photos a

INNER JOIN likes b

ON a.id = b.photo_id

INNER JOIN users c

ON a.user_id = c.id

GROUP BY b.photo_id

ORDER BY total_likes desc

LIMIT 1;

4. Hashtag Research

Task: To identify the top 5 most commonly used hashtags on Instagram.

Conclusion: Following is the list of 5 most commonly used hashtags on Instagram,

tag_id	tag_name	total
21	smile	59
20	beach	42
17	party	39
13	fun	38
18	concert	24

Code: SELECT a.tag_id, b.tag_name, count(b.tag_name) total

FROM photo_tags a

INNER JOIN tags b

ON a.tag_id = b.id

GROUP BY a.tag_id

ORDER BY total desc

LIMIT 5;

5. Ad Campaign Launch

Task: To identify the day of the week when most users register on Instagram.

Conclusion: Following is the day of the week in which most users registered on Instagram.

weekday	count
Thursday	16

Code: SELECT dayname(created_at) weekday, count(dayname(created_at)) count FROM users

GROUP BY weekday

ORDER BY count desc

LIMIT 1;

B) Investor Metrics:

1. User Engagement

Task: To calculate average number of posts per user on Instagram.

Conclusion: 2.57 is the average number of posts per user on Instagram.

user_count	photo_count	avg
100	257	2.57

Code: SELECT (SELECT count(*) FROM users) user_count, (SELECT count(*) FROM photos) photo_count, ((SELECT count(*) FROM photos)/(SELECT count(*) FROM users)) avg;

2. Bots & Fake Accounts

Task: To identify the users(potential bots) who have liked every single photo on the site.

Conclusion: Following is the list of users(potential bots) who have liked every single photo on the site.

id	username
5	Aniya_Hackett
14	Jaclyn81
21	Rocio33
24	Maxwell.Halvorson
36	Ollie_Ledner37
41	Mckenna17
54	Duane60
57	Julien_Schmidt
66	Mike.Auer39
71	Nia_Haag
75	Leslie67
76	Janelle.Nikolaus81
91	Bethany20

Code:
```
SELECT id, username
    FROM users
    WHERE id IN (
        SELECT user_id FROM likes
        GROUP BY user_id
        HAVING count(*) = (SELECT count(*) FROM photos)
        );
```

Result:

Insights derived from the above analysis helps the management team to better understand the users behaviours and interactions with the Instagram app, thus guiding in selecting the best suitable campaign and the targeted audience for the future upcoming campaigns.

Thank You