Instagram User Analytics

Project Description:- This project was all about making the use of data set that has been provided and incorporate the knowledge that I have gained from Mysql module , to test my sql skills and get the useful insights from the data to help different departments to make use of that useful data, I have somewhere got the idea of how data analysis in Instagram works.

Approach:- I tried to firstly understand the problem that is to be solved and to perform my task I made use of Mysql WorkBench, which gave me a great experience of running sql queries , and saving it for further analysis , while performing my task , I tried to the minimum optimal query to get the result , even if I got stuck getting desired result, I tried to debug and get the result .

Tech-Stack Used :- MySQL Workbench 8.0.36 and MySQL Community Server 8.4.0 LTS is being used , I chose workbench to efficiently run all the queries on the single page , and easily debug ,undo and save that.

Insights:- Studying something or actually implementing it are two different thing , so I learned a lot about actual syntax and actual use of big concepts of sql like JOIN, GROUP BY, ORDER BY etc.

Results:-

A) Marketing Analysis:

1. **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.

Output:-

```
93
94 •  use ig_clone;
95
96 •  Select username from users ORDER BY created_at LIMIT 5;
97
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

username
Darby_Herzog
Emilio_Bernier52
Elenor88
Nicole71
Jordyn.Jacobson2

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

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

Output:-

```
97 •  SELECT id, username
98    FROM users
99    WHERE id NOT IN (
100       SELECT DISTINCT user_id
101       FROM photos
102   );
```

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

id	username
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
NULL	NULL

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.

Output:-

```
98 •  SELECT
99        u.username,
100       p.image_url,
101       COUNT(l.user_id) AS total_likes
102   FROM
103       photos p
104   JOIN
105       users u ON p.user_id = u.id
106   JOIN
107       likes l ON p.id = l.photo_id
108   GROUP BY
109       p.id
110   ORDER BY
111       total_likes DESC
112   LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

username	image_url	total_likes
Zack_Kemmer93	https://jarret.name	48

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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.

Output:-

```
113
114 •   SELECT
115         tag_name,
116         COUNT(*) AS tag_count
117     FROM
118         tags
119     JOIN
120         photo_tags ON tags.id = photo_tags.tag_id
121     GROUP BY
122         tag_name
123     ORDER BY
124         tag_count DESC
125     LIMIT 5;
126
127
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

tag_name	tag_count
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

Output:--

```
128 •   SELECT
129         DAYNAME(created_at) AS registration_day,
130         COUNT(*) AS registrations_count
131     FROM
132         users
133     GROUP BY
134         registration_day
135     ORDER BY
136         registrations_count DESC;
137
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

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

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B) Investor Metrics:

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.

Output:-

```
144
145 •   SELECT
146         COUNT(*) AS total_photos,
147         COUNT(DISTINCT user_id) AS total_users,
148         COUNT(*) / COUNT(DISTINCT user_id) AS photos_per_user
149     FROM
150         photos;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_photos	total_users	photos_per_user
257	74	3.4730

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

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

Output:

```
152 •       SELECT
153         user_id,
154         COUNT(*) AS total_likes,
155         (SELECT COUNT(*) FROM photos) AS total_photos,
156         CASE
157             WHEN (SELECT COUNT(*) FROM photos) = COUNT(*) THEN 'Potential Bot'
158             ELSE 'Normal User'
159         END AS account_type
160     FROM
161         likes
162     GROUP BY
163         user_id
164     HAVING
165         total_likes = (SELECT COUNT(*) FROM photos);
166
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

user_id	total_likes	total_photos	account_type
5	257	257	Potential Bot
14	257	257	Potential Bot
21	257	257	Potential Bot
24	257	257	Potential Bot
36	257	257	Potential Bot
41	257	257	Potential Bot
54	257	257	Potential Bot
57	257	257	Potential Bot
66	257	257	Potential Bot
71	257	257	Potential Bot
75	257	257	Potential Bot
76	257	257	Potential Bot
91	257	257	Potential Bot

Result 11