Instagram

User Analytics

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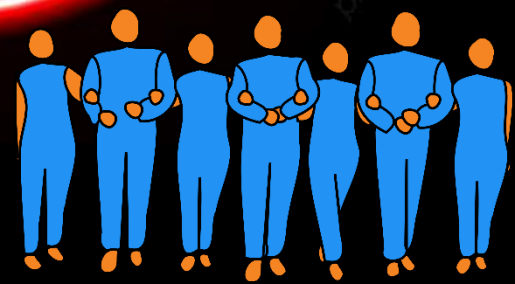
Introduction

This project involves analyzing user interactions on Instagram using SQL and MySQL Workbench. Tasks include identifying loyal users, encouraging inactive users to post, determining contest winners, researching popular hashtags, and optimizing ad campaign launch days. Additionally, investor metrics like user engagement and detecting fake accounts are assessed.



Marketing Analysis-

Identify the five oldest users on Instagram.

Identify users who have never posted a single photo

Determine the winner of a contest based on the most likes on a single photo.

Identify the top five most commonly used hashtags.

Determine the best day of the week to launch ads based on user registration pattern

Investor Metrics-

Calculate the average number of posts per user on Instagram.

Provide the total number of photos on Instagram divided by the total number of users.

Identify potential bots by finding users who have liked every single photo on the site.

Loyal User Reward-

```sql
-- A) Marketing Analysis:
-- Identify the five oldest users on Instagram from the provided database.
Select * from users
order by created_at
limit 5;

-- Identify users who have never posted a single photo on Instagram.
```

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

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
NULL	NULL	NULL

Inactive User Engagement-

```sql
-- Identify users who have never posted a single photo on Instagram.
select username from users
left join photos
on users.id = photos.user_id
where photos.id is null;
```

Username	
Aniya_Hackett	Julien_Schmidt
Kasandra_Homenick	Mike.Auer39
Jaclyn81	Franco_Keebler64
Rocio33	Nia_Haag
Maxwell.Halvorson	Hulda.Macejkovic
Tierra.Trantow	Leslie67
Pearl7	Janelle.Nikolaus81
Ollie_Ledner37	Darby_Herzog
Mckenna17	Esther.Zulauf61
David.Osinski47	Bartholome.Bernhard
Morgan.Kassulke	Jessyca_West
Linnea59	Esmeralda.Mraz57
Duane60	Bethany20

Contest Winner Declaration

```sql
-- Determine the winner of the contest and provide their details to the team.
select username, photos.id, photos.image_url, count(likes.user_id) as total
from photos
inner join likes
on likes.photo_id= photos.id
inner join users
on photos.user_id = users.id
group by photos.id
order by total desc
limit 1;
```

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

username	id	image_url	total
Zack_Kemmer93	145	https://jarret.name	48

Hashtag Research-

```
26    --  Identify and suggest the top five most commonly used hashtags on the platform.
27    select tags.tag_name,
28    count(*) as total
29    from photo_tags
30    join tags
31    on photo_tags.tag_id= tags.id
32    group by tags.id
33    order by total desc
34    limit 5;
```

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

tag_name	total
smile	59
beach	42
party	39
fun	38
concert	24

Ad Campaign Launch-

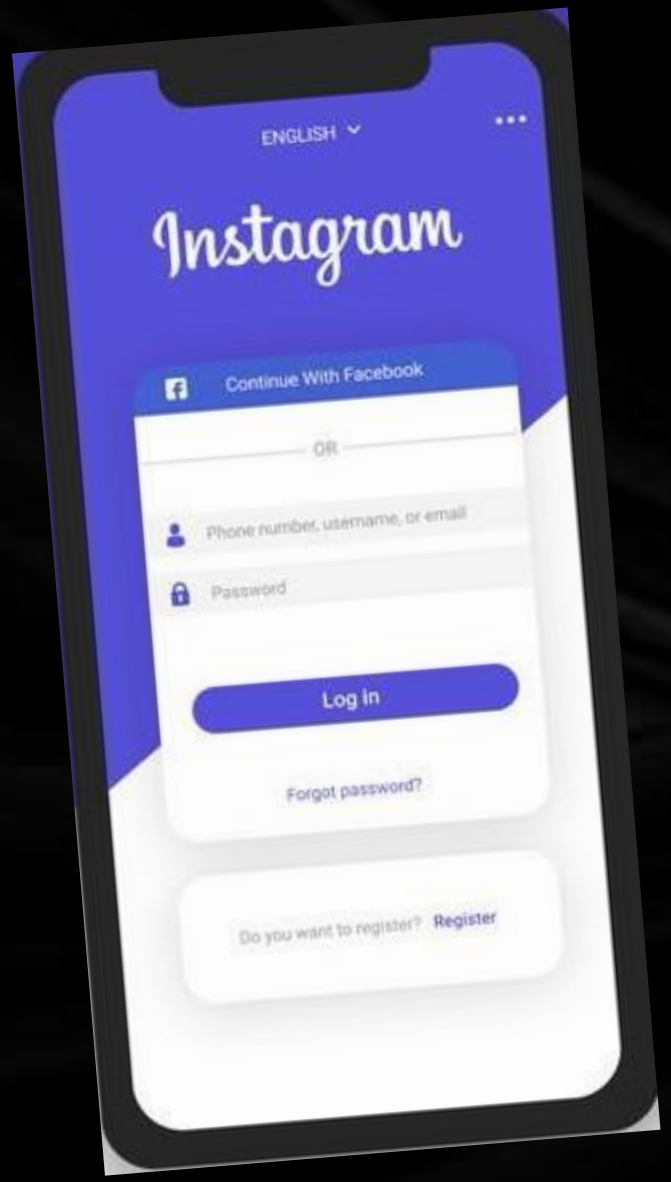
```sql
-- Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.
select dayname(created_at) as day, count(*) as total
from users
group by day
order by total desc
limit 7;

-- B) Investor Metrics:
```

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

day	total
Thursday	16
Sunday	16
Friday	15
Tuesday	14
Monday	14
Wednesday	13
Saturday	12

User Engagement-




```sql
-- B) Investor Metrics:
-- Compute the average posts per user by dividing total posts by total users, and find the average photos per user by dividing total photos by
select
(select count(*) from photos) / (select count(*) from users) as Avg;

select user_id, count(*) as num_likes
from likes
group by user_id
having num_likes = (select count(*) from photos);
```

- Out of the 100 total users, 74 are active and have made a collective 257 posts.
- This means, on average, each active user has posted around 3 to 4 times

Bots & Fake Accounts-

```sql
-- Identify users (potential bots) who have liked every single photo on the site, as this is not typically possible for a normal user.
select u.username, count(*) as num_likes
from users u
join likes on u.id = user_id
group by u.id
having num_likes = (select count(*) from photos);
```

Username	
Aniya_Hackett	Duane60
Jaclyn81	Julien_Schmidt
Rocio33	Mike.Auer39
Maxwell.Halvorson	Nia_Haag
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Bethany20	

Approach-

For this project, the data was imported into MySQL Workbench, and a database was created accordingly. Tables were designed to accommodate the dataset, and data insertion was performed. SQL functions like JOIN, subqueries, and aggregation were utilized for analysis, ensuring compliance with project requirements. The insights gained were then presented in a clear and concise report or presentation. Documentation of the methodology and validation of results were prioritized, followed by effective communication of findings to stakeholders for informed decision-making.

Insights & Results-

Through this project, I honed my SQL skills, mastering basics and JOIN operations, while also gaining proficiency in problem analysis and applying SQL functions. Additionally, I acquired valuable query skills to generate desired results efficiently. As a result, I learned data cleaning techniques using MySQL, gained hands-on experience in database interaction, and successfully customized queries to meet project requirements. Overall, this project provided an enriching learning experience and enhanced my ability to derive actionable insights from real-time data.