



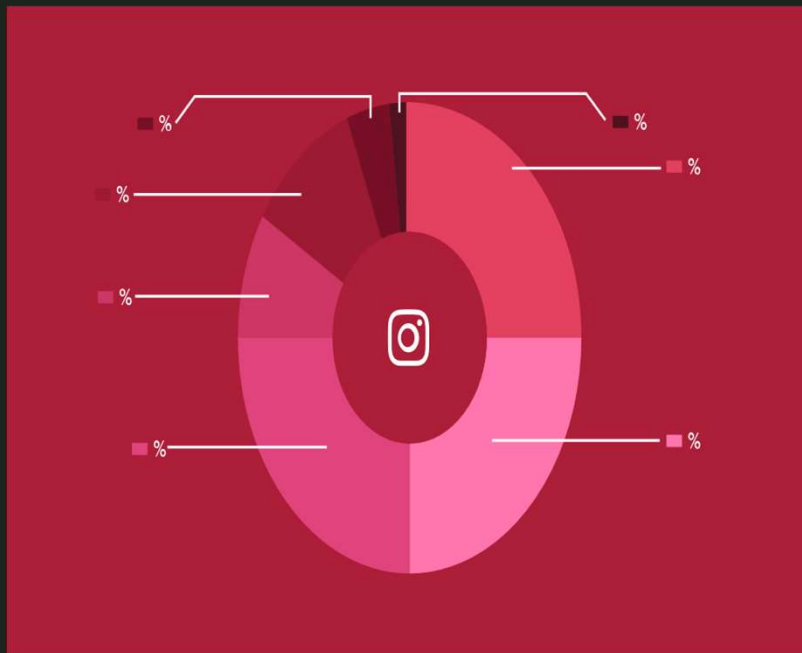
Instagram User Analytics

Sourav Pattanayak

Contents

- Project description
- Objectives
- Approach
- Methodology and software used
- Insights
- Key findings
- Achievements





Project description

A data analyst plays a huge role in business optimization of any organization, in this project I have answered some important queries related to user engagement, marketing and investor metrics with the help of a given dataset that was used to dig deep into the factors that can have help improving the business and give insights to build further modification.



Approach

I have used relational database software to inspect and answer queries I was asked , gathered the information and loopholes and jotted them down.

Methodology and software used

- **My SQL version 8.0 was used in this project.**
- **The MySQL workbench is used to write and execute queries.**
- **The entire data analysis was done on the given Instagram database.**
- **A number of SQL functions and queries are used in this project.**
- **After jotting down the required insights , Microsoft Powerpoint was used to present the project.**



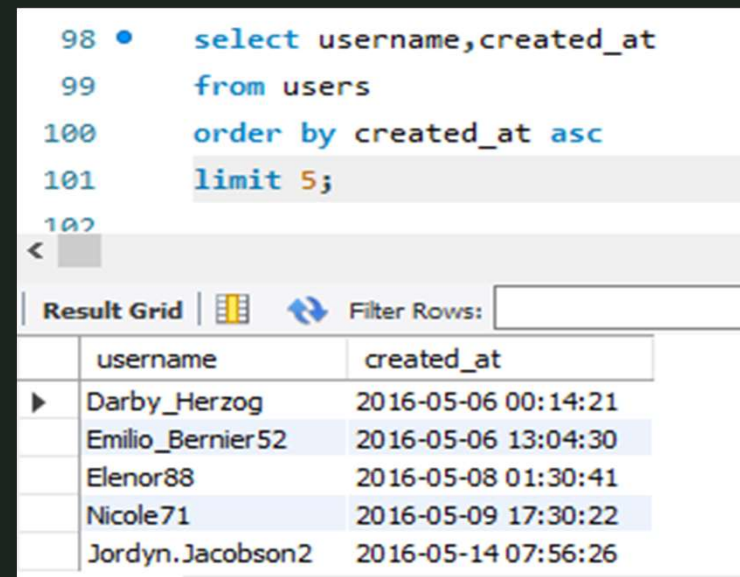
Insights: Marketing

Answer

Query 1: Rewarding Most Loyal Users.

TASK: Find the 5 oldest users of the Instagram from the database provided.

CODE USED : `select username , created_at
from users
order by created_at asc
limit 5;`



```
98 • select username,created_at
99 from users
100 order by created_at asc
101 limit 5;
102
```

username	created_at
Darby_Herzog	2016-05-06 00:14:21
Emilio_Bernier52	2016-05-06 13:04:30
Elenor88	2016-05-08 01:30:41
Nicole71	2016-05-09 17:30:22
Jordyn.Jacobson2	2016-05-14 07:56:26

Insights: Marketing

Query 2: Remind Inactive Users to Start Posting.

TASK: Find the users who have never posted a single photo on Instagram.

CODE USED : `select users.id, username
from users left join photos
on users.id= photos.user_id
where image_url is null;`

Answer

```
108 • select users.id, username
109     From users
110     Left join photos
111     ON users.id= photos.user_id
112     where image_url is null;
113
114
```

id	username
81	Esther.Zulauf61
83	Bartholome.Bernhard
89	Jessyca_West
90	Esmeralda.Mraz57
91	Bethany20

Result 29 ×

Insights: Marketing

Answer

Query 3: Declaring Contest Winner.

TASK: Identify the winner of the contest and provide their details to the team.

CODE USED : `select username, p.id, p.image_url, count(*) as total_count
from photos as p inner join likes as l
on l.photo_id=p.id
inner join users as u on p.user_id=u.id
group by p.id
order by total_count desc
limit 1;`

```
119 • select username, p.id, p.image_url, count(*) as total_count
120 from photos as p inner join likes as l
121 on l.photo_id=p.id
122 inner join users as u on p.user_id=u.id
123 group by p.id
124 order by total_count desc
125 limit 1;
```

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

Insights: Marketing

Query 4: Hashtag Researching.

TASK: Identify and suggest the top 5 most commonly used hashtags on the platform.

CODE USED : `select t.id,t.tag_name,count(tag_name) as total_count
from tags as t inner join photo_tags as pt
on t.id=pt.tag_id
group by t.id
order by total_count desc
limit 5;`

Answer

```
132 • select t.id,t.tag_name,count(tag_name) as total_count
133 from tags as t inner join photo_tags as pt
134 on t.id=pt.tag_id
135 group by t.id
136 order by total_count desc
137 limit 5;
```

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

	id	tag_name	total_count
▶	21	smile	59
	20	beach	42
	17	party	39
	13	fun	38
	18	concert	24

Insights: Marketing

Query 5: Launch AD Campaign.

TASK: What day of the week do most users register on?
Provide insights on when to schedule an ad campaign

CODE USED: `select dayname(created_at) day_created,
count(*) as total_days
from users
group by day_created
order by total_days desc
limit 1;`

Answer

```
142 • select dayname(created_at) day_created,count(*) as total_days
143 from users
144 group by day_created
145 order by total_days desc
146 limit 1;
147
```

Result Grid	Filter Rows:	Export:	Wrap Cell Content:
day_created	total_days		
Thursday	16		

Insights: Investor Metrics

Answer

Query 1: User Engagement.

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

CODE USED: 1. `select (select count(*) from photos) / (select count(*) from users) as avg;`

2. `select count(*) as total_photos from photos;`
`select count(*) as total_users from users;`

```
154  /*Average user posts*/
155
156 •  select (select count(*) from photos)
157      /(select count(*) from users) as avg;
158
159  /*Total number of photos and users*/
160
161 •  select count(*) as total_photos from photos;
162 •  select count(*) as total_users from users;
163
```

Result Grid | Filter Rows: | Export: | Wra

	total_photos
▶	257

Insights: Investor Metrics

Query 2: Bots and Fake Accounts.

TASK: Provide data on users (bots) who have liked every single photo on the site (since any normal user would not be able to do this).

CODE USED: `select user_id,username,count(*) as number_of_likes
from likes as l inner join users as u
on l.user_id=u.id
group by user_id
having number_of_likes= (select count(*) from photos);`

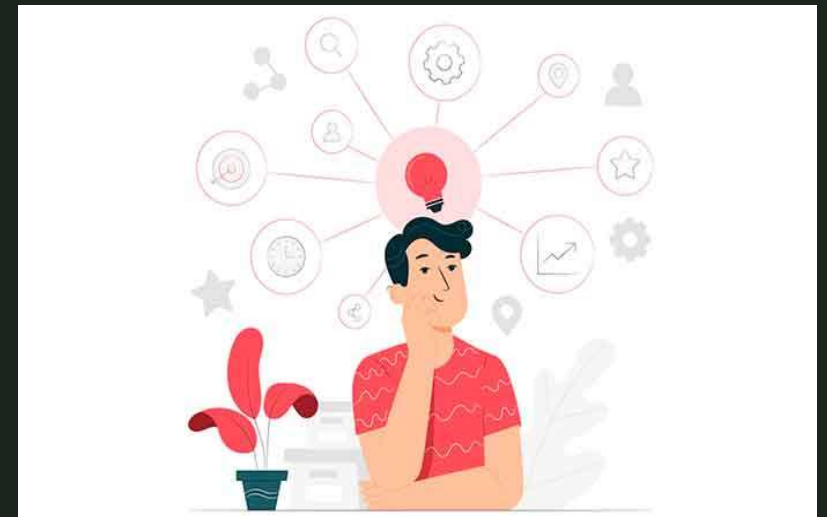
Answer

```
170 • select user_id,username,count(*) as number_of_likes  
171 from likes as l inner join users as u  
172 on l.user_id=u.id  
173 group by user_id  
174 having number_of_likes= (select count(*) from photos);
```

	user_id	username	number_of_likes
	24	Maxwell.Halvorson	257
▶	36	Ollie_Ledner37	257
	41	Mckenna17	257
	54	Duane60	257
	57	Julien_Schmidt	257

Key Findings

1. Darby_Herzog, Emilio_Bernier52, Elenor88, Nicole71, Jordyn.Jacobson2 are the top 5 oldest users.
2. There are total 26 users who has never posted a single photo.
3. Zack_Kemmer93 is the winner of the contest with the highest likes, 48.
4. smile, beach, party, fun and concert are the top five most commonly used hashtags.
5. In a week, most users register on Thursday.
6. An average user posts on instagram with 2.5700 times and the total number of users and photos in instagram are 100 and 257.
7. There are total number of 13 fake/bot accounts that like on every single picture in instagram.



Achievements

1. **Data cleaning:** This entire project has helped me learning the approaches to convert raw data into clean data.
2. **Practical knowledge:** Experienced a practical exposure with different SQL commands and their uses in real life industries.
3. **Business optimization methods:** Gained an idea on how the industries and organizations optimize their business problems and queries and learned the strategic approaches that helps in the growth of an industry.



Thank you

