

# Instagram User Analytics

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**Project By**

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# Agenda

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# Project Description

Finding business insights for marketing, product & development teams which are then used by team across the business to launch new marketing campaign, decide on new features to build for an app, track the success of the app by measuring uses engagement and improve the user experience while helping the business grow.



# Approach

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**Database creation:** Database is created in MySQL workbench using SQL queries provided in dataset.

**Insights extraction:** After creating database, required insights are generated from database tables by running queries in MySQL workbench.

## Tech-Stack used

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To perform the analysis MySQL workbench version 8.0.33 is used as it is free and open source relational database management system that used SQL.

# Insights for Marketing :

1. Rewarding most loyal users: People who have been using Instagram for longest time.

```
# Task 1 - Find the 5 oldest users of the Instagram #
SELECT
    id, username, created_at
FROM
    users
ORDER BY created_at ASC
LIMIT 5;
```

Output:

Result Grid   Filter Rows: <input type="text"/>			
	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

2. Remind Inactive Users to Start Posting: By sending them promotional emails to post their 1st photo.

# Task 2 - Find the users who have never posted a single photo on Instagram #

```
SELECT
    u.id, u.username, COUNT(p.user_id) AS posts
FROM
    users u
    LEFT JOIN
    photos p ON u.id = p.user_id
GROUP BY u.id
HAVING COUNT(p.user_id) = 0;
```

Output :

	id	username	posts
▶	5	Aniya_Hackett	0
	7	Kasandra_Homenick	0
	14	Jaclyn81	0
	21	Rocio33	0
	24	Maxwell.Halvorson	0
	25	Tierra.Trantow	0
	34	Pearl7	0
	36	Ollie_Ledner37	0
	41	Mckenna17	0
	45	David.Osinski47	0
	49	Morgan.Kassulke	0
	53	Linnea59	0
	54	Duane60	0
	57	Julien_Schmidt	0
	66	Mike.Auer39	0
	68	Franco_Keebler64	0
	71	Nia_Haag	0
	74	Hulda.Macejkovic	0
	75	Leslie67	0
	76	Janelle.Nikolaus81	0
	80	Darby_Herzog	0
	81	Esther.Zulauf61	0
	83	Bartholome.Bernhard	0
	89	Jessyca_West	0
	90	Esmeralda.Mraz57	0
	91	Bethany20	0

**3. Declaring Contest Winner:** The team started a contest and the user who gets the most likes on a single photo will win the contest now they wish to declare the winner.

```
# Task 3 - Contest winner - user who gets the most likes on a single photo #
SELECT
    id, username
FROM
    users
WHERE
    id = (SELECT
        user_id
    FROM
        photos
    WHERE
        id = (SELECT
            photo_id
        FROM
            likes
        GROUP BY photo_id
        ORDER BY COUNT(photo_id) DESC
        LIMIT 1));
```

Output :

	id	username
▶	52	Zack_Kemmer93
•	NULL	NULL

4. **Hashtag Researching:** A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform

```
# Task 4 - top 5 most commonly used hashtags on the Instagram #
SELECT
    t.tag_name, COUNT(t.tag_name) AS 'tag_count'
FROM
    tags t
    INNER JOIN
    photo_tags pt ON t.id = pt.tag_id
GROUP BY t.tag_name
ORDER BY COUNT(t.tag_name) DESC
LIMIT 5;
```

Output :

	tag_name	tag_count
▶	smile	59
	beach	42
	party	39
	fun	38
	concert	24



## 5. Launch AD Campaign: The team wants to know, which day would be the best day to launch ADs

```
# Task 5 - Schedule an ad campaign based on What day of the week do most users register #
```

```
SELECT  
    DAYNAME(created_at) AS 'day_of_week',  
    COUNT(DAYNAME(created_at)) AS 'New_users_count'  
FROM  
    users  
GROUP BY DAYNAME(created_at)  
ORDER BY COUNT(DAYNAME(created_at)) DESC  
LIMIT 1;
```

Output :

	day_of_week	New_users_count
►	Thursday	16

# Insights for Investor metrics:

1. **User Engagement:** Are users still as active and post on Instagram or they are making fewer posts

# Task 6 - how many times does average user posts on Instagram, Also total no of photos/total number of users #

```
SELECT
  (SELECT
    COUNT(id)
  FROM
    photos) / (SELECT
    COUNT(DISTINCT user_id)
  FROM
    photos) AS avg_post_per_user,
  (SELECT
    COUNT(id)
  FROM
    photos) / (SELECT
    COUNT(id)
  FROM
    users) AS Ratio_of_Total_posts_to_Total_users;
```

Output :

	avg_post_per_user	Ratio_of_Total_posts_to_Total_users
▶	3.4730	2.5700

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

# Task 7 - Find details of users (Bots) who liked every photo #

```
SELECT
    id, username
FROM
    users
WHERE
    id IN (SELECT
            user_id
        FROM
            likes
        GROUP BY user_id
        HAVING COUNT(user_id) = (SELECT
                                COUNT(id)
                                FROM
                                    photos));
```

Output :

	id	username
▶	5	Aniya_Hackett
	14	Jadyn81
	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
●	NULL	NULL

# Insights :



1. Marketing team of Instagram can reward the platform's oldest users to increase loyalty
2. Identifying inactive users who have not posted a photo allows us to remind them and encourages engagement.
3. The winner of a contest based on the most likes can be declared to show Instagram's engagement and popularity.
4. Hashtag research provides valuable insights for partner brands to maximize reach and audience engagement.
5. Analyzing user registration patterns helps to find the best day to launch ad campaigns.
6. Removing bots & Fake accounts from Instagram can increase overall experience of users

# Result :

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- Learnt fundamentals of data analysis using MySQL workbench and SQL queries to extract insights from database by which we can track how users engage and interact with our platform to generate insights for marketing, product and development teams