Instagram User Analytic

A) **Project Description:** This project revolves around utilizing MySQL Workbench to analyze user engagement within the Instagram app. The primary objective is to derive meaningful insights that empower the product team to make informed decisions, influencing the app's future development and strategic direction.

B) Approach:

1. **Data Exploration**: Reviewed various tables containing user information, photos, likes, comments, tags to gain a comprehensive understanding of the dataset and to pinpoint the primary challenges or opportunities within the business context.

2. **Data Cleaning**: Conducted an extensive examination to detect and rectify any irregularities such as white spaces, duplicates, or poorly formatted data, ensuring the dataset's integrity and reliability for subsequent analysis.

3. **Data Analysis**: Formulated SQL queries to compute essential user engagement metrics, identify prevalent hashtags, and spot inactive users, thereby extracting actionable insights crucial for strategic decision-making.

4. **Insight Extraction**: Analyzed the outcomes derived from the data analysis phase to unveil noteworthy patterns, including peak activity periods, trending hashtags, and average user posting behavior, facilitating a deeper understanding of user interactions and platform dynamics.

C) Tech-Stack Used:

MySQL Workbench: Selected for its robust SQL capabilities, seamless integration with Instagram's database structure, and ease of collaboration among team members.

D) Insights:

- **Loyal User Reward**: Identified those users who have been using Instagram for longest time so that the marketing team could reward them

```
14      -- 1. loyal user--
15 •    select *from users order by created_at limit 5;
```

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

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:** Identified those users who have never posted a single photo on Instagram and the team can encourage them by sending promotional videos to those inactive users .

```
17      -- 2. inactive users
18 •    select users.id, users.username from users left join photos on users.id=photos.user_id where photos.user_id is null;
```

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

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

- **Contest Winner Declaration:** The team started a contest such that the user with the most likes will be declared as a winner.

```
20  -- 3. most like--
21  with newtab as (select photo_id , count(user_id) as total_likes from likes group by photo_id order by total_likes desc limit 1)
22  select photos.user_id, users.username,photos.image_url,total_likes
23  from photos join newtab on photos.id=newtab.photo_id join users on users.id=photos.user_id;
```

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

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

- **Hashtag Research:** Identified most commonly used hashtags and then guiding the marketing team in creating campaigns aligned with popular trends.

```
25  -- 4. hashtag winner
26  select tags.tag_name, count(photo_tags.tag_id) from tags join photo_tags on tags.id=photo_tags.tag_id
27  group by photo_tags.tag_id order by count(photo_tags.tag_id) desc limit 5;
```

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

tag_name	count(photo_tags.tag_id)
smile	59
beach	42
party	39
fun	38
concert	24

- **Ad Campaign Launch:** Identified the day when most users have registered in this map, so that the marketing team can launch ads on that particular day

```
29  -- 5.ad campaign launch
30  with daytab as(select Dayname(created_at) as day, count(id) as totalreg from users group by day )
31  select day from daytab where totalreg= (select max(totalreg) from daytab);
```

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

day
Thursday
Sunday

- **User Engagement:** Calculated if the users are still active or they are making fewer posts.

```
38    -- 1.users engagement
39 •  select ((select count(*) from photos)/(select count(*) from users)) as avg;
```

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

avg
2.5700

- **Bots & Fake Accounts:** Identified those users having fake accounts or bot so that the team can banned those users and becomes user-friendly for all Instagram users.

```
41    -- --2.bot--
42 •  with temp as (select users.id, users.username, count(likes.photo_id) as ct from users join likes
43    on users.id=likes.user_id group by likes.user_id)
44    select * from temp where ct=(select count(id) from photos);
```

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

id	username	ct
5	Aniya_Hackett	257
14	Jadyn81	257
21	Rocio33	257
24	Maxwell.Halvorson	257
36	Ollie_Ledner37	257
41	Mckenna17	257
54	Duane60	257
57	Julien_Schmidt	257
66	Mike.Auer39	257
71	Nia_Haag	257
75	Leslie67	257
76	Janelle.Nikolaus81	257
91	Bethany20	257

E) Result:

The analysis yielded valuable insights for both the marketing and development teams. Armed with a deeper understanding of user behavior, these teams can now refine marketing strategies, focus on implementing features that resonate with users, and elevate the app's overall user experience.