1) **PROJECT DESCRIPTION:** This project involves analyzing user analytics and engagement to give beneficial insights for business growth.
2) **APPROACH:** The project was executed using SQL and MySQL workbench. Insights were derived from the data using queries.
3) **TECH-STACK USED:** My SQL Workbench 8.0 CE was used in analyzing this data. I chose to use it because it has a simple interface which makes it easy to use and manage.
4) **INSIGHTS:**

(A) MARKETING ANALYSIS

1) Identify the five oldest users on Instagram from the provided database.

```
88
89      # 5 OLDEST INSTAGRAM USERS
90 •    SELECT * FROM users
91      ORDER BY created_at
92      LIMIT 5;
```

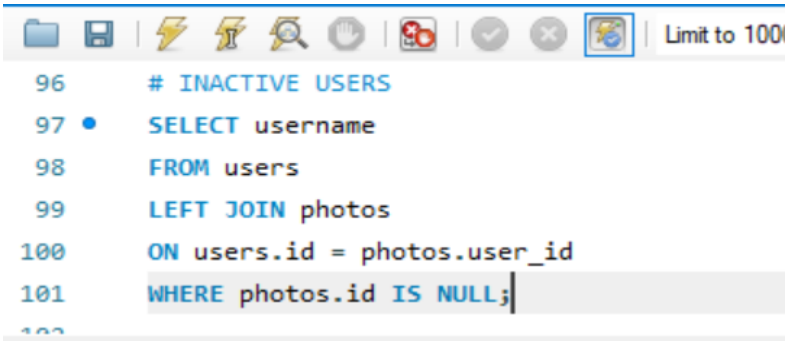
Result Grid | Filter Rows: | Edit: | Export/Import:

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

The Marketing Team's winners for the Loyal User Rewards are:

1) **Darby_Herzog**
2) **Emilio_Bernier52**
3) **Elenor88**
4) **Nicole71**
5) **Jordyn.Jacobson2**

2) Identify users who have never posted a single photo on Instagram.



```
Limit to 100

 96    # INACTIVE USERS
 97 •  SELECT username
 98    FROM users
 99    LEFT JOIN photos
100    ON users.id = photos.user_id
101    WHERE photos.id IS NULL;
```

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

26 users have never posted a single photo on Instagram.

3) Determine the winner of the contest and provide their details to the team.

```
98    # CONTEST WINNER
99    SELECT username, photos.id, photos.image_url, count(likes.user_id) AS total_likes
100   FROM users
101   JOIN photos
102   ON users.id = photos.user_id
103   JOIN likes
104   ON users.id = likes.user_id
105   GROUP BY photos.id
106   ORDER BY total_likes DESC
107   LIMIT 1;
```

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

username	id	image_url	total_likes
Annalise.McKenzie16	51	https://abagail.com	103

The user with the most likes on their photo is Annalise.McKenzie16. They are the winner of the Contest!

4) Identify and suggest the top five most commonly used hashtags on the platform.

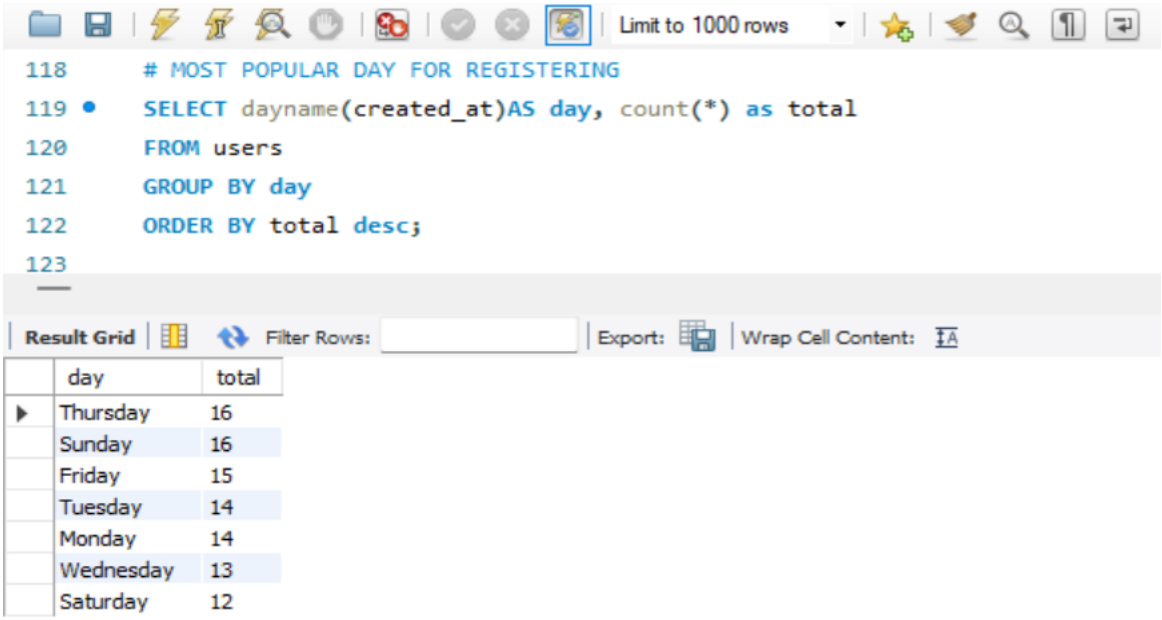
```
109   #MOST USED TAGS
110   SELECT tag_name, count(photo_tags.tag_id) as total
111   FROM tags
112   JOIN photo_tags
113   ON photo_tags.tag_id = tags.id
114   GROUP BY tags.id
115   ORDER BY total DESC
116   LIMIT 5;
```

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

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

The most popular hashtag to increase our partner brand's visibility on the platform will be #smile.

5) Determine the day of the week when most users register on Instagram. Provide insights on when to schedule an ad campaign.



```
118    # MOST POPULAR DAY FOR REGISTERING
119 •  SELECT dayname(created_at)AS day, count(*) as total
120    FROM users
121    GROUP BY day
122    ORDER BY total desc;
123
```

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

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

The most suitable days to start an Ad Campaign would be Thursday and Sunday because the maximum number of users register on that day. Friday would also be suitable. The most unsuitable day for an Ad Campaign would be Saturday as reach would be to its minimum potential.

(B) INVESTOR METRICS

1) *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.*

```
124
125     #AVERAGE POSTS PER USER
126 •   SELECT
127     (SELECT count(*) FROM photos) / (SELECT count(*)from users) as avg;
128
```

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

avg
2.5700

An average user has 2.5 posts on the platform.

2) *Identify users (potential bots) who have liked every single photo on the website, as this is not typically possible for a normal user.*

```
129     # POTENTIAL BOTS
130 •   SELECT users.username, count(*) as num_likes
131     FROM users
132     JOIN likes ON users.id = user_id
133     GROUP BY users.id
134     HAVING num_likes = (SELECT count(*) FROM photos);
135
```

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

username	num_likes
Aniya_Hackett	257
Jadyn81	257
Rocio33	257
Maxwell.Halvorson	257
Ollie_Ledner37	257
Mckenna17	257
Duane60	257
Julien_Schmidt	257
Mike.Auer39	257
Nia_Haag	257
Leslie67	257
Janelle.Nikolaus81	257
Bethany20	257

13 out of 100 users are potential bots who have liked every single post on the application.

5) **RESULT:** The analysis and the insights from this project were a valuable learning experience for me. I got first-hand experience working with the industry standard software MySQL. I learned how to write queries and fetch necessary and relevant data from a database.