PROJECT 2

SUMMARY:

Generating valuable business insights that enable teams across the organization to make informed decisions, such as launching highly targeted marketing campaigns and selecting app features that resonate with users. By analysing user engagement data, teams can continuously monitor the app's performance and identify areas for improvement. These insights also support efforts to enhance the overall user experience, ensuring the app remains competitive and user-friendly. Ultimately, these data-driven strategies contribute to the growth and success of the business by aligning product development and marketing efforts with customer needs and market trends.

APPROACH:

Database Creation: The process began with setting up the database in MySQL Workbench, where DDL (Data Definition Language) and DML (Data Manipulation Language) SQL queries provided by the product manager were executed. These queries were designed to create the necessary database structure and populate it with relevant data as per the project's specifications. This step ensured that all required tables, fields, and relationships between data were accurately defined to support further analysis.

Insight Extraction: After successfully establishing the database, the next phase involved extracting meaningful insights. This was achieved by writing and running advanced SQL queries in MySQL Workbench to analyse the data stored in the database tables. These queries focused on identifying trends, patterns, and critical metrics that could drive business decisions. The insights gathered provided valuable information for teams, enabling them to make data-driven decisions to improve the project's outcomes.

TECHNOLOGY USED:

I used MySQL Community Server - GPL and Connector C++ for developing the project. MySQL Community Server is an open-source relational database management system that leverages SQL, providing a reliable and free platform for managing and manipulating structured data.

TASK1:

Rewarding Most Loyal Users: People who have been using the platform for the longest time.

QUERY USED:

```
SELECT id,

username, created _at

FROM   users

ORDER BY created _at LIMIT 5;
```

RESULTS:

The 5 oldest users of the Instagram from the database are-

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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

TASK2:

Remind Inactive Users to Start Posting: By sending them promotional Emails to post their first photo.

QUERY USED:

SELECT u.id, u. username, Count(p. user _id) AS 'no. _of _posts' FROM users u LEFT JOIN photos p ON u.id = p. user _id GROUP BY u.id HAVING Count(p. user _id) = 0;

The users who have never posted a single photo on Instagram

id	username	no._of_posts
5	Aniya_Hackett	0
7	Kasandra_Homenick	0
14	Jadyn81	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

TASK3-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.

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QUERY USED:

```
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));
```

Details of the winner of the contest are

	id	username
▶	52	Zack_Kemmer93

TASK4- Hashtag Researching: A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform**.**

OUERY USED:

```
SELECT t.tag_name,
Count(t.tag_name) AS "tags count" FROM        tags t
INNER JOIN photo_tags ph
ON t.id = ph.tag_id
GROUP       BY      t.tag_name
ORDER       BY      Count(t.tag_name)
LIMIT       5;
```

The top 5 most commonly used hashtags on the platform are.

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

TASK5- Launch AD Campaign: The team wants to know, which day would be the best day to launch ADs.

OUERY USED:

```
SELECT Dayname(created_at) "day of week",
Count(Dayname(created_at)) "count of users registered" FROM  users
GROUP BY Dayname(created_at)
ORDER BY Count(Dayname(created_at)) DESC
LIMIT 2;
```

Day of the week do most users register on –

	day of week	count of users registered
▶	Thursday	16
	Sunday	16

Insights: investor metrics

TASK1- User Engagement: Are users still as active and post on Instagram or they are making fewer posts.

OUERY USED:

```
SELECT (SELECT Count(id)
FROM   photos) / (SELECT          Count(DISTINCT user_id)
```

```
        FROM    photos) AS Average_posts_per_User,
(SELECT Count(id)
FROM    photos) / (SELECT
FROM    Count(id)
users) AS Ratio_of_Total_Posts_to_Total_Users;
```

Average user posts and ratio of total posts to total users in Instagram are.

	Average_posts_per_User	Ratio_of_Total_Posts_to_Total_Users
▶	3.4730	2.5700

TASK2- Bots & Fake Accounts: The investors want to know if the platform is filled with fake and dummy accounts.

OUERY USED :

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

Data of users (bots) who have liked every single photo on the site (since any normal user would not be able to do this) are :

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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

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