Instagram User Analytics – Vikram Rajpurohit

SQL Fundamentals

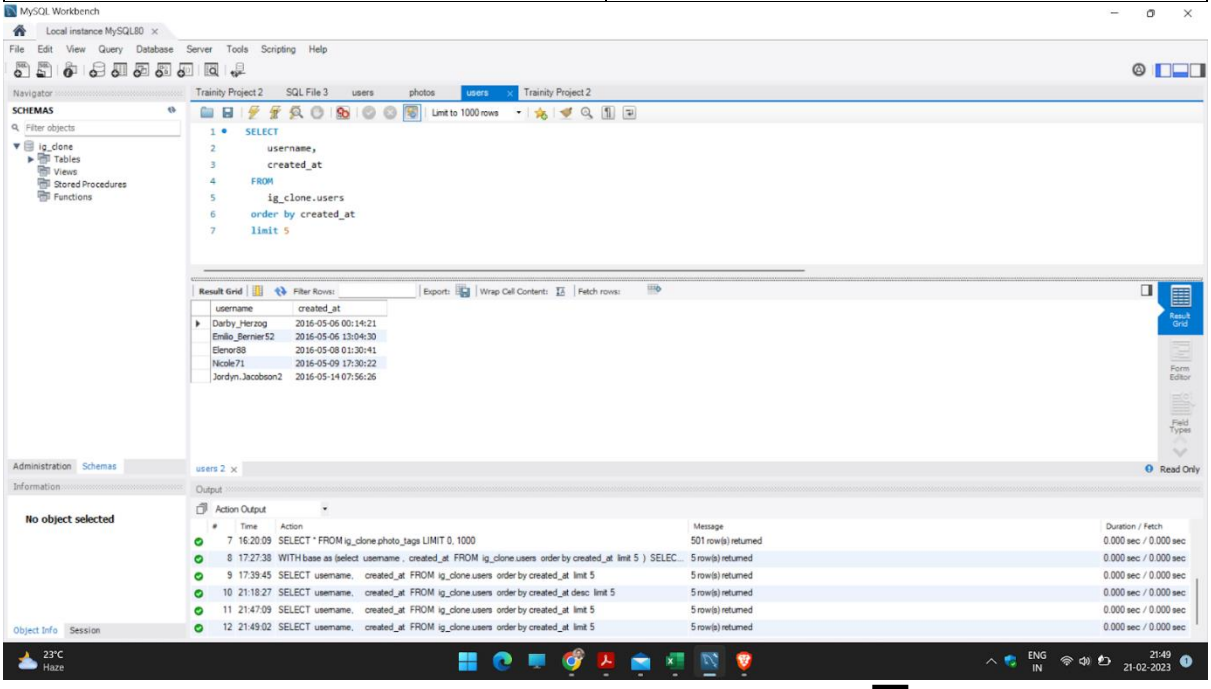
Description:

User analysis is the process by which we track how users engage and interact with our digital product (software or mobile application) in an attempt to derive business insights for marketing, product & development teams.
These insights are then used by teams across the business to launch a new marketing campaign, decide on features to build for an app, track the success of the app by measuring user engagement and improve the experience altogether while helping the business grow.

A) Marketing: The marketing team wants to launch some campaigns, and they need your help with the following

1. **Rewarding Most Loyal Users:** People who have been using the platform for the longest time.
   Solution:
   Solution: Run following query:

Query	Result
SELECT username, created_at FROM ig_clone.users order by created_at limit 5	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

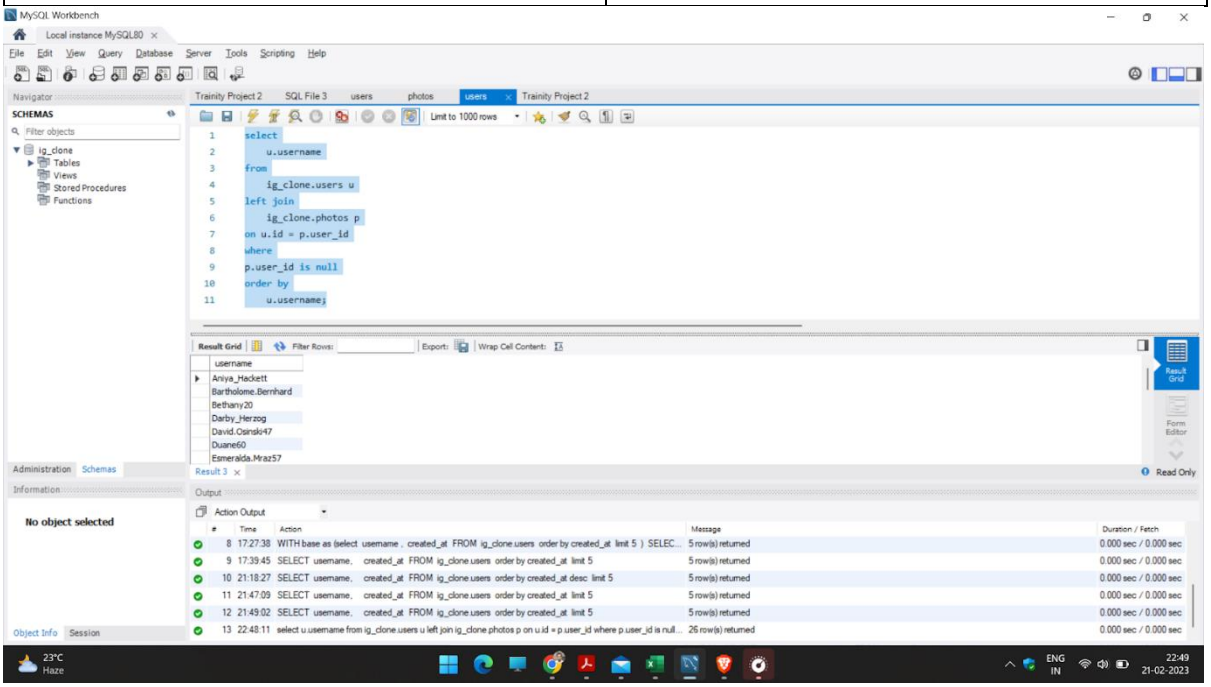


Above 5 oldest users of the Instagram from the database provided ☑

2. **Remind Inactive Users to Start Posting:** By sending them promotional emails to post their 1st photo.
   Your Task: Find the users who have never posted a single photo on Instagram
   Solution:

Query	Result
select u.username from ig_clone.users u left join ig_clone.photos p on u.id = p.user_id where p.user_id is null order by u.username;	Aniya_Hackett Bartholome.Bernhard Bethany20 Darby_Herzog David.Osinski47 Duane60 Esmeralda.Mraz57 Esther.Zulauf61 Franco_Keebler64 Hulda.Macejkovic Jaclyn81

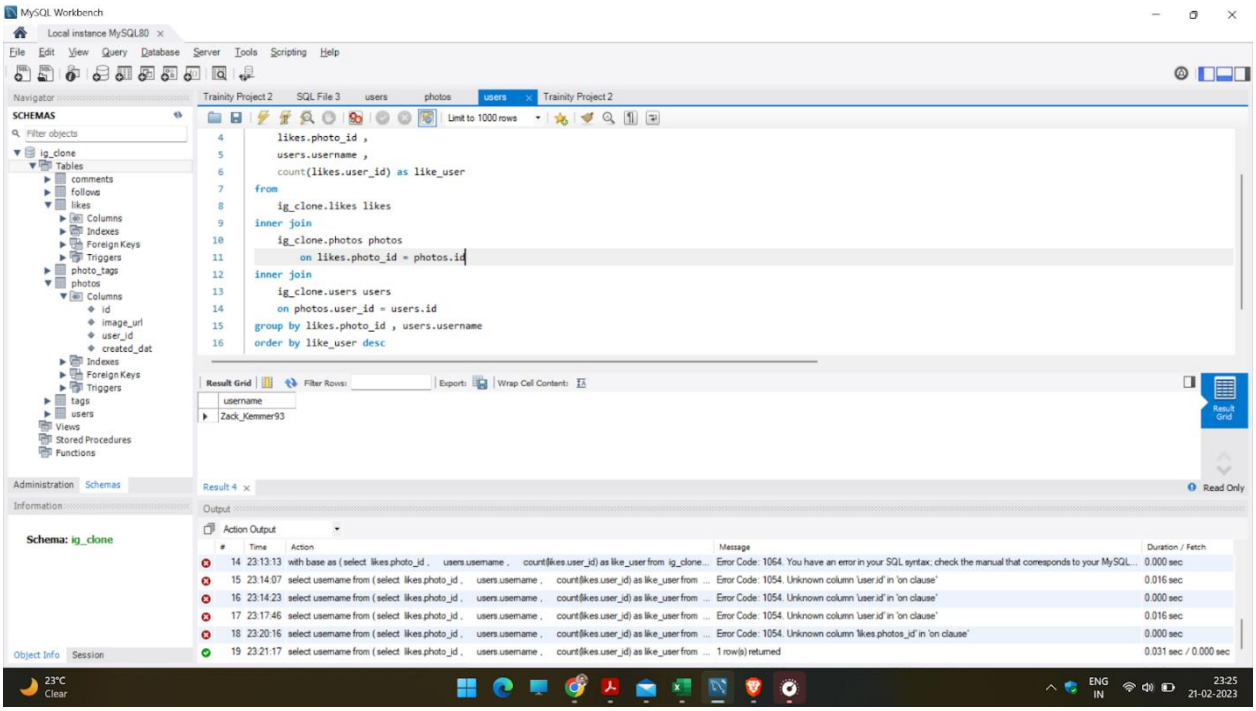
	Janelle.Nikolaus81 Jessyca_West Julien_Schmidt Kasandra_Homenick Leslie67 Linnea59 Maxwell.Halvorson Mckenna17 Mike.Auer39 Morgan.Kassulke Nia_Haag Ollie_Ledner37 Pearl7 Rocio33 Tierra.Trantow



Above users who have never posted a single photo on Instagram ☑

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.
Your Task: Identify the winner of the contest and provide their details to the team
Solution:

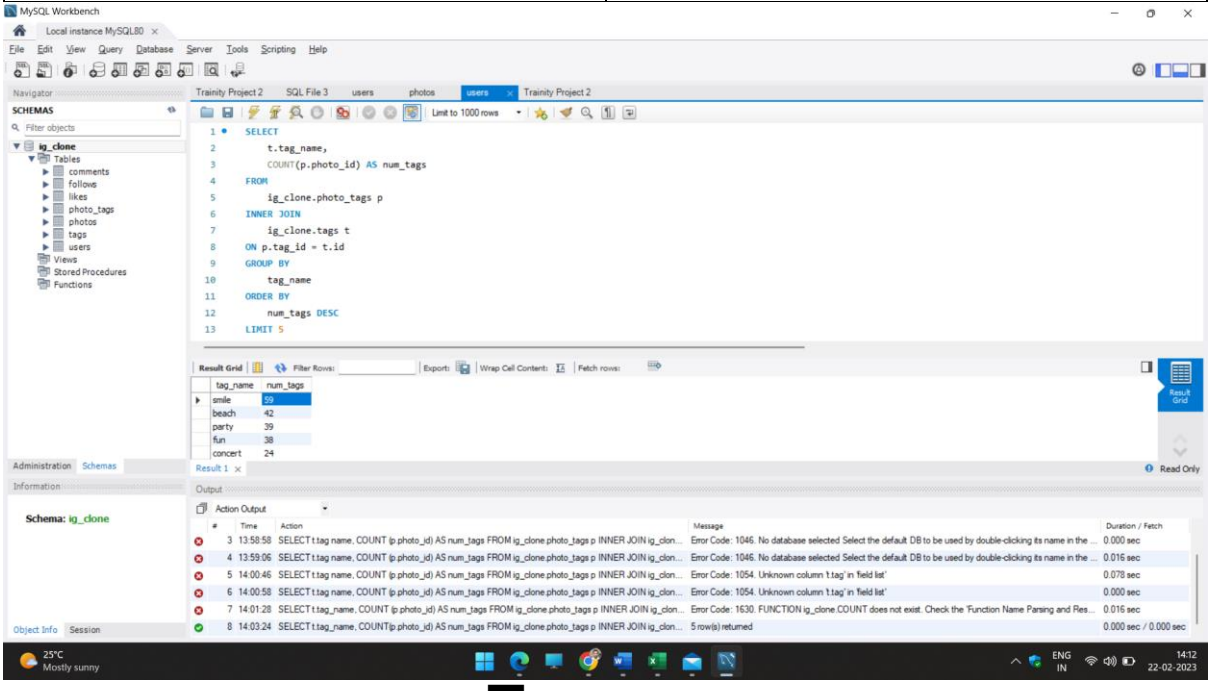
Query	Result
select username from (select likes.photo_id , users.username , count(likes.user_id) as like_user from ig_clone.likes likes inner join ig_clone.photos photos on likes.photo_id = photos.id inner join ig_clone.users users on photos.user_id = users.id group by likes.photo_id , users.username order by like_user desc limit 1) base	Zack_Kemmer93



Above is the winner of the contest ✅

4. **Hashtag Researching:** A partner brand wants to know, which hashtags to use in the post to reach the most people on the platform.
Your Task: Identify and suggest the top 5 most commonly used hashtags on the platform
Solution

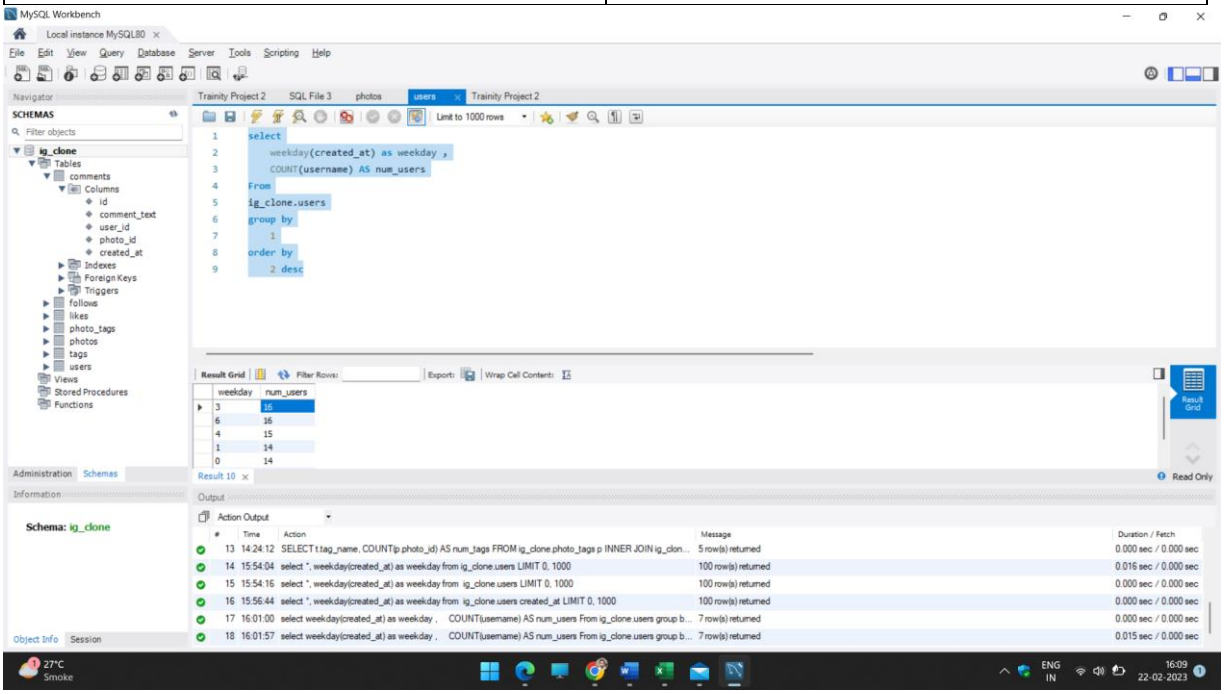
Query	Result
SELECT t.tag_name, COUNT(p.photo_id) AS num_tags FROM ig_clone.photo_tags p INNER JOIN ig_clone.tags t ON p.tag_id = t.id GROUP BY tag_name ORDER BY num_tags DESC LIMIT 5	smile 59 beach 42 party 39 fun 38 concert 24



Above is the winner of the contest ✅

5. **Launch AD Campaign:** The team wants to know, which day would be the best day to launch ADs.
   Your Task: What day of the week do most users register on? Provide insights on when to schedule an ad campaign
   Solution: Here week is as follows:
   0) Monday
   1) Tuesday
   2) Wednesday
   3) Thursday
   4) Friday
   5) Saturday
   6) Sunday

Query	Result
select weekday(created_at) as weekday , COUNT(username) AS num_users From ig_clone.users group by 1 order by 2 desc	3 16 6 16 4 15 1 14 0 14 2 13 5 12



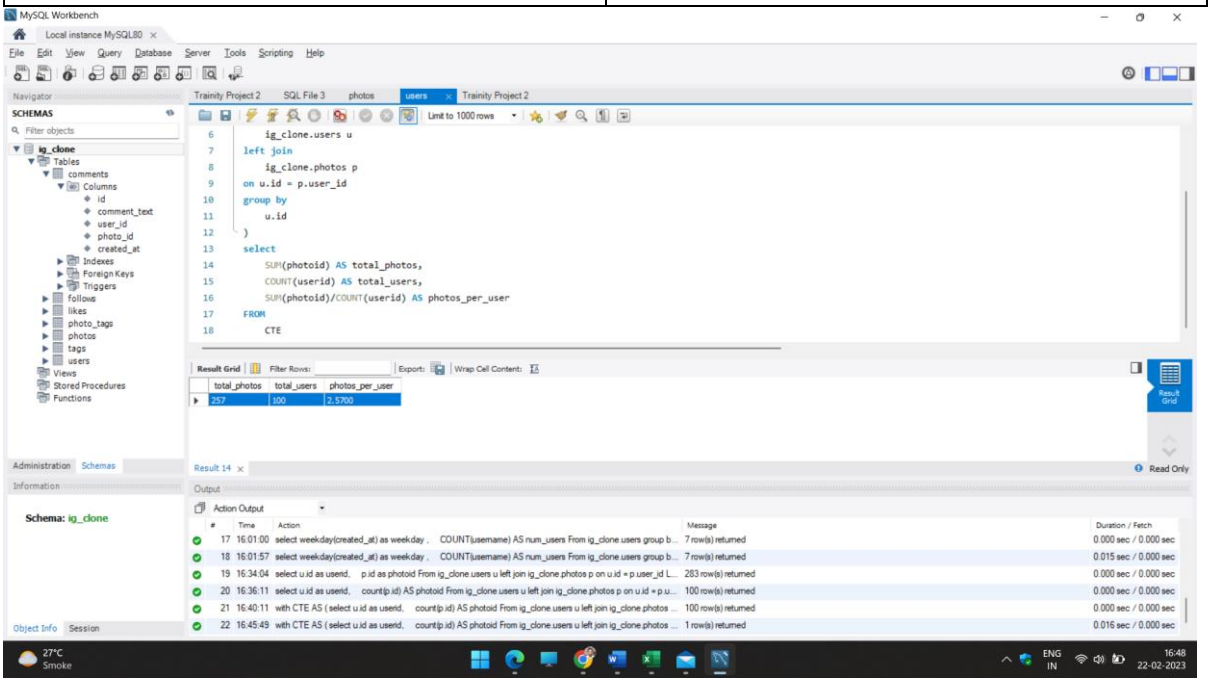
Above is the winner of the contest ✅

B) Investor Metrics: Our investors want to know if Instagram is performing well and is not becoming redundant like Facebook, they want to assess the app on the following grounds

1. **User Engagement:** Are users still as active and post on Instagram or they are making fewer posts
   Your Task: Provide how many times does average user posts on Instagram. Also, provide the total number of photos on Instagram/total number of users
   Solution:

Query	Result
with CTE AS (select u.id as userid, count(p.id) AS photoid From ig_clone.users u left join ig_clone.photos p on u.id = p.user_id group by	257 100 2.5700

u.id) select SUM(photoid) AS total_photos, COUNT(userid) AS total_users, SUM(photoid)/COUNT(userid) AS photos_per_user FROM CTE	



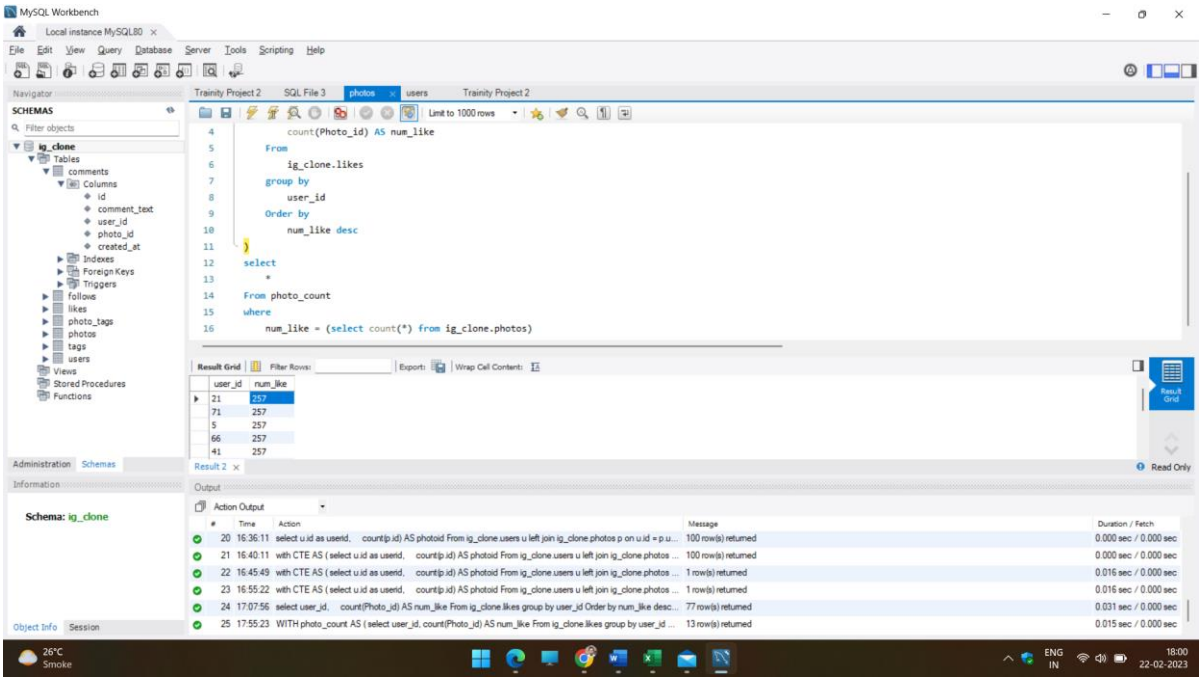
Above is the solution ☑

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

Your 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).

Solution:

Query	Result
WITH photo_count AS (select user_id, count(Photo_id) AS num_like From ig_clone.likes group by user_id Order by num_like desc) select * From photo_count where num_like = (select count(*) from ig_clone.photos)	21 257 71 257 5 257 66 257 41 257 14 257 57 257 24 257 76 257 75 257 54 257 91 257 36 257



Above is the solution ☑

Project Description

Give a brief about your project description i.e. what is this project about, how are you going to handle the things and what are the things that you are going to find out through the project.

It was great user analysis project for Instagram. User analysis is the process by which we track how users engage and interact with our digital product (software or mobile application) in an attempt to derive business insights for marketing, product & development teams.

Approach

The objective of the project is to track user engagement and interactions with the Instagram platform in order to derive insights for the marketing, product development, and management teams. These insights may be helpful to make decisions about new marketing campaigns, features to build for the app, and to measure the success of the app by measuring user engagement. Overall, the project is focused on using data analysis to improve the user experience and drive business growth for Instagram.

As part of this project, I worked with data from Instagram's SQL database to perform analysis and generate reports that answer questions posed by the management team. I perform all the task in MySql Workbench. While running SQL queries I got error many times which got resolved after understanding the various issues so it was great learning experience for me. After completing this project I feel much more confident to do more projects in future.

Tech-Stack Used

I downloaded and installed following RDMS Tool for performing all the queries:
MySQL Workbench 8.0, Version 8.0.31 build 2235049 CE (64 bits)

Insights

If I get a graph then I can understand about the data presented in that particular graph easily and observe the pattern. I will be able to analyse useful insights from the graph data.

Result

While working on SQL projects, I've been able to achieve several milestones. Firstly, I have gained a solid understanding of SQL fundamentals such as database design, data modeling, and writing SQL queries to retrieve and manipulate data. Additionally, I have learned how to work with more advanced features of SQL, such as stored procedures, triggers, and views, to enhance the functionality and performance of my projects.

Moreover, I have learned how to use SQL to extract insights from large datasets, which has helped me to identify trends, patterns, and anomalies in the data. This has been invaluable for making data-driven decisions and helping me to improve my analytical and problem-solving skills.

Overall, working on SQL projects has been a great learning experience, and it has helped me to develop a solid foundation in SQL programming. It has also given me the confidence to tackle more complex SQL challenges and provided me with valuable hands-on experience that I can leverage in future projects and job opportunities.

Drive Link

https://drive.google.com/file/d/1u4QmGeaFxjcG4gcVwuq5CbDRhTuMVq1Z/view?usp=share_link