**SQL Case Study 3: Data Bank**



**INTRODUCTION:**

Neo-Banks are a recent development in the financial sector; they are new banks that solely operate online.

I believed that there should be some kind of connection between the digital world, these new age institutions, and cryptocurrencies.

So I made the decision to start a new project called Data Bank!

Customers of Data Bank receive cloud data storage allotments that are directly related to the balances in their accounts. The Data Bank team needs your assistance since this business model comes with some intriguing drawbacks.

This case study focuses on metrics calculations, business growth, and smart data analysis to assist the company more accurately estimate and plan for the future.

**SCHEMA USED**

|  |  |
| --- | --- |
| regions | |
| region\_id | int |
| region\_name | varchar |

|  |  |  |
| --- | --- | --- |
| customer\_transactions | | |
| customer\_id | int |
| txn\_date | | date |
| txn\_type | | varchar |
| txn\_amount | | int |

|  |  |
| --- | --- |
| customer\_nodes | |
| customer\_id | int |
| region\_id | int |
| node\_id | int |
| start\_date | date |
| end\_date | date |

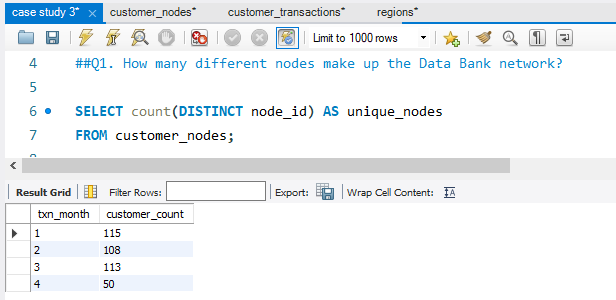
**CASE STUDY QUESTIONS**

1. How many different nodes make up the Data Bank network?



SELECT count(DISTINCT node\_id) AS unique\_nodes

FROM customer\_nodes;



1. How many nodes are there in each region?



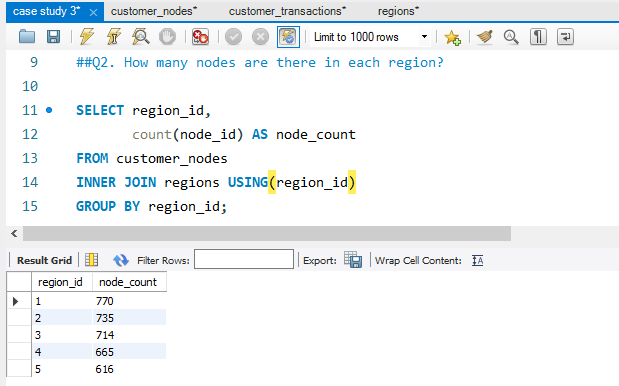
SELECT region\_id,

count(node\_id) AS node\_count

FROM customer\_nodes

INNER JOIN regions USING(region\_id)

GROUP BY region\_id;



1. How many customers are divided among the regions?

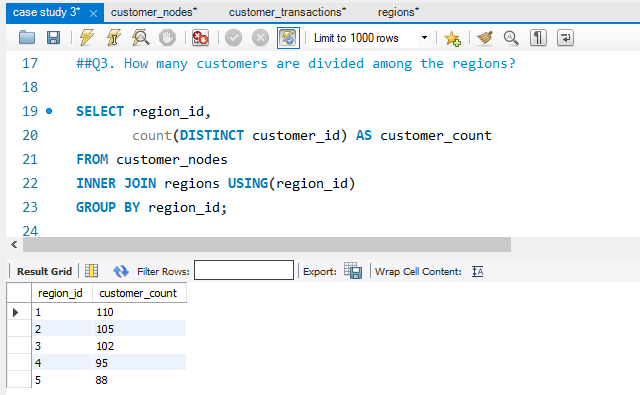
SELECT region\_id,

count(DISTINCT customer\_id) AS customer\_count

FROM customer\_nodes

INNER JOIN regions USING(region\_id)

GROUP BY region\_id;



1. Determine the total amount of transactions for each region name.



SELECT

region\_name, SUM(txn\_amount) AS 'total transaction amount'

FROM

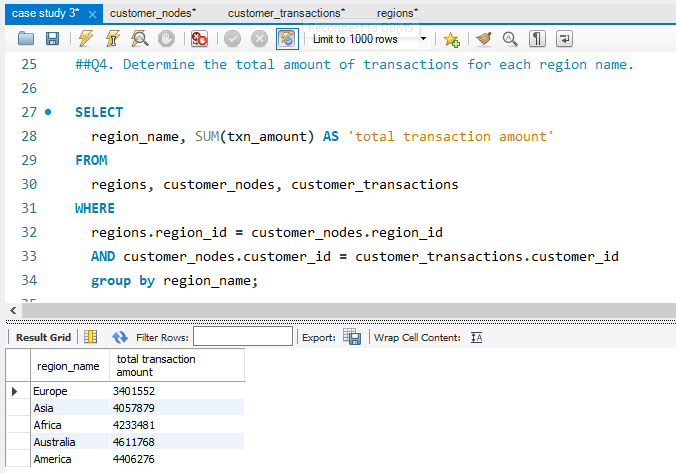
regions, customer\_nodes, customer\_transactions

WHERE

regions.region\_id = customer\_nodes.region\_id

AND customer\_nodes.customer\_id = customer\_transactions.customer\_id

group by region\_name;group by region\_name;



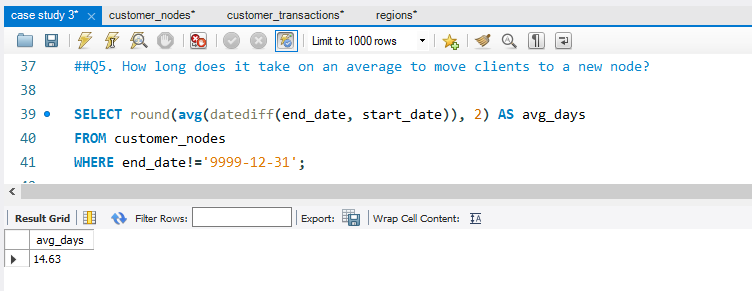
1. How long does it take on an average to move clients to a new node?



SELECT round(avg(datediff(end\_date, start\_date)), 2) AS avg\_days

FROM customer\_nodes

WHERE end\_date!='9999-12-31';



1. What is the unique count and total amount for each transaction type?

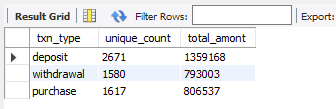


SELECT txn\_type,

count(\*) AS unique\_count, sum(txn\_amount) AS total\_amont

FROM customer\_transactions

GROUP BY txn\_type;



1. What is the average number and size of past deposits across all customers?



SELECT round(count(customer\_id)/

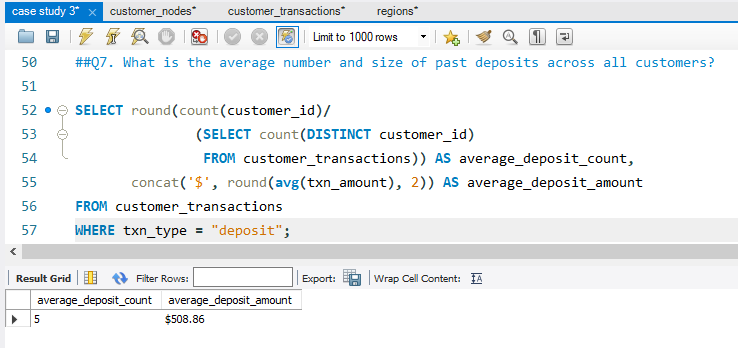
(SELECT count(DISTINCT customer\_id)

FROM customer\_transactions)) AS average\_deposit\_count,

concat('$', round(avg(txn\_amount), 2)) AS average\_deposit\_amount

FROM customer\_transactions

WHERE txn\_type = "deposit";



1. For each month - how many Data Bank customers make more than 1 deposit and at least either 1 purchase or 1 withdrawal in a single month?



WITH transaction\_count\_per\_month\_cte AS

(SELECT customer\_id,

month(txn\_date) AS txn\_month,

SUM(IF(txn\_type="deposit", 1, 0)) AS deposit\_count,

SUM(IF(txn\_type="withdrawal", 1, 0)) AS withdrawal\_count,

SUM(IF(txn\_type="purchase", 1, 0)) AS purchase\_count

FROM customer\_transactions

GROUP BY customer\_id,

month(txn\_date))

SELECT txn\_month,

count(DISTINCT customer\_id) as customer\_count

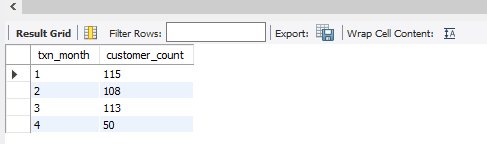
FROM transaction\_count\_per\_month\_cte

WHERE deposit\_count>1

AND (purchase\_count = 1

OR withdrawal\_count = 1)

GROUP BY txn\_month;



Hi,

Thank you for providing the instructions and guidance throughout the project. I learned a lot from this real-world scenario case study.

I'd love to connect with you on

LinkedIn: ( <https://www.linkedin.com/in/nikhil-kumar-roy/> ) and share my GitHub profile: ( <https://github.com/NikhilRoyDA> ), where you can find my work on this and different case study.

Thanks again for your support and guidance. I appreciate your help in my learning journey.

Best regards,

Nikhil Kumar Roy

