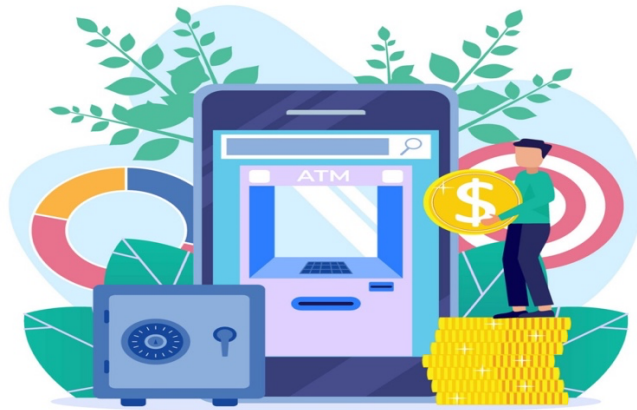


# SQL Case Study 2: Data Bank



## 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.

**Done By : L. ANUSH BHARATHWAJ**

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## 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;
```

Unique_Nodes
5

2. **How many nodes are there in each region?**

```
select r.region_name, count(cn.node_id) as count_no from customer_nodes cn  
inner join regions r on cn.region_id = r.region_id group by r.region_name order  
by r.region_name ;
```

region_name	count_no
Africa	714
America	735
Asia	665
Australia	770
Europe	616

3. **How many customers are divided among the regions?**

```
select r.region_name , count(cn.customer_id ) as count_no from  
customer_nodes cn inner join regions r on cn.region_id = r.region_id group  
by r.region_name order by count_no desc;
```

region_name	count_no	
Australia	770	
America	735	
Africa	714	
Asia	665	
Europe	616	

4. **Determine the total amount of transactions for each region name ?**

```
select r.region_name , sum(txn_amount) as amount from regions r  
inner join customer_nodes cn on r.region_id = cn.region_id inner join  
customer_transactions ct on ct.customer_id = cn.customer_id group  
by r.region_name order by r.region_name ;
```

region_name	amount	
Africa	4233481	
America	4406276	
Asia	4057879	
Australia	4611768	
Europe	3401552	

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

```
select round(avg(datediff(end_date,start_date)),2) from  
customer_nodes where end_date != '9999-12-31';
```

round(avg(datediff(end_date,start_date)),2)
14.63

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

```
select txn_type , count(txn_type) as No ,sum(txn_amount) as  
Total_Transaction from customer_transactions group by  
txn_type;
```

txn_type	No	Total_Transaction
deposit	2671	1359168
withdrawal	1580	793003
purchase	1617	806537

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

```
select round(count(customer_id) /  
count(distinct(customer_id)),2)as AVG_COUNT,  
concat('$',round(avg(txn_amount),2)) as AVG_DEPOSIT from  
customer_transactions where txn_type = 'deposit';
```

AVG_COUNT	AVG_DEPOSIT	
5.34	\$508.86	

8. **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 trans_cte as ( select monthname(txn_date) as Months, customer_id ,  
sum(if(txn_type = 'deposit',1,0)) as 'Deposit', sum(if(txn_type =  
'withdrawal',1,0)) as 'Withdrawal', sum(if(txn_type = 'purchase',1,0)) as  
'Purchase' from customer_transactions group by Months,customer_id)  
select Months, count(customer_id) as NO from trans_cte where Deposit > 1  
and (Withdrawal=1 or Purchase =1) group by Months order by Months;
```

Months	NO	
April	50	
February	108	
January	115	
March	113	