



DATA BANK ANALYSIS

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OBJECTIVE

Neo-banks represent a recent innovation in the financial sector, operating entirely online without physical branches.

Data Bank, one such neo-bank, offers customers cloud data storage allocations tied directly to their account balances. However, this unique business model presents some intriguing challenges. The Data Bank team seeks your expertise in addressing these issues by focusing on metrics calculations, business growth strategies, and smart data analysis. Your role is to help the company improve its forecasting and strategic planning for the future.

Q1. HOW MANY DIFFERENT NODES MAKE UP THE DATA BANK NETWORK

##Q1

```
SELECT count(DISTINCT node_id) AS unique_nodes  
FROM customer_nodes;
```

	unique_nodes
▶	5

Q2. HOW MANY NODES ARE THERE IN EACH REGION?

##Q2

```
SELECT region_id,  
       count(node_id) AS node_count  
FROM customer_nodes  
INNER JOIN regions USING(region_id)  
GROUP BY region_id;
```

	region_id	node_count
1	770	770
2	735	735
3	714	714
4	665	665
5	616	616

Q3. 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;
```

region_id	customer_count
1	110
2	105
3	102
4	95
5	88

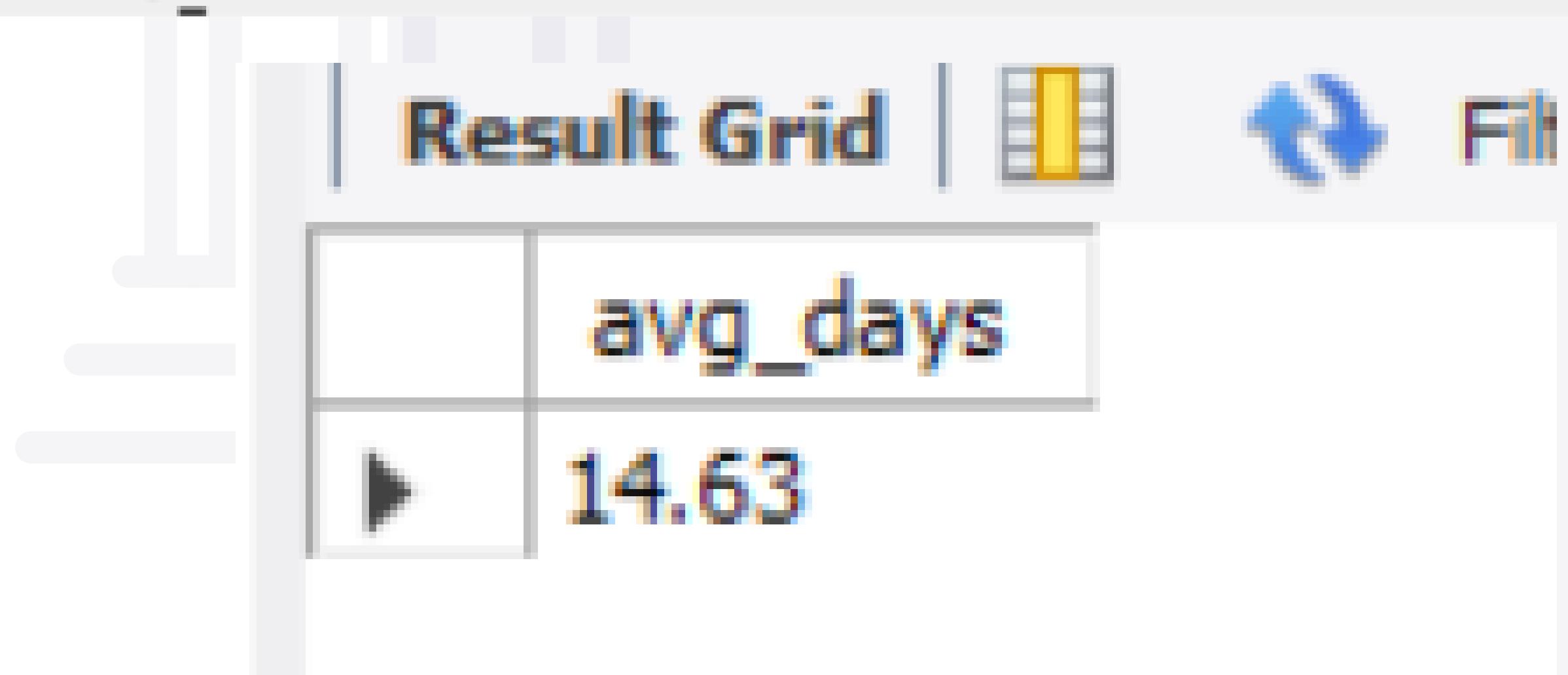
Q4. DETERMINE THE TOTAL AMOUNT OF TRANSACTIONS FOR EACH REGION NAME.

```
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;
```

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

Q.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) AS avg_days  
FROM customer_nodes  
WHERE end_date != '9999-12-31';
```



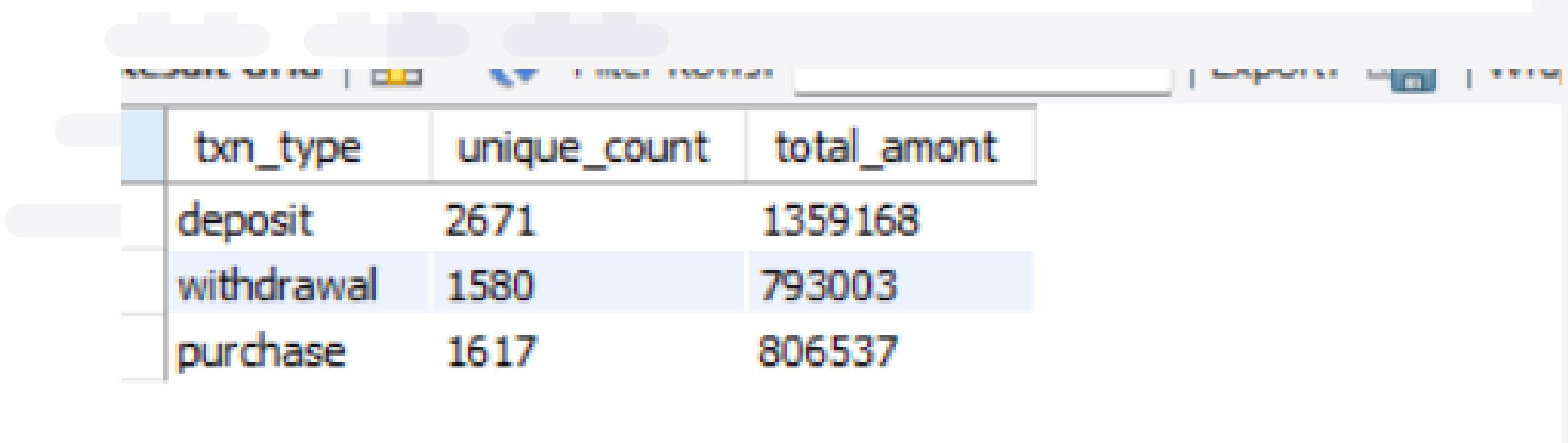
The screenshot shows a MySQL Workbench interface with the following details:

- Query Editor:** Displays the SQL query: `SELECT round(avg(datediff(end_date, start_date)), 2) AS avg_days FROM customer_nodes WHERE end_date != '9999-12-31';`
- Result Grid:** Shows the execution results:

avg_days
14.63
- Toolbar:** Includes icons for Refresh, Stop, Execute, and Filter.

Q.6 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;
```

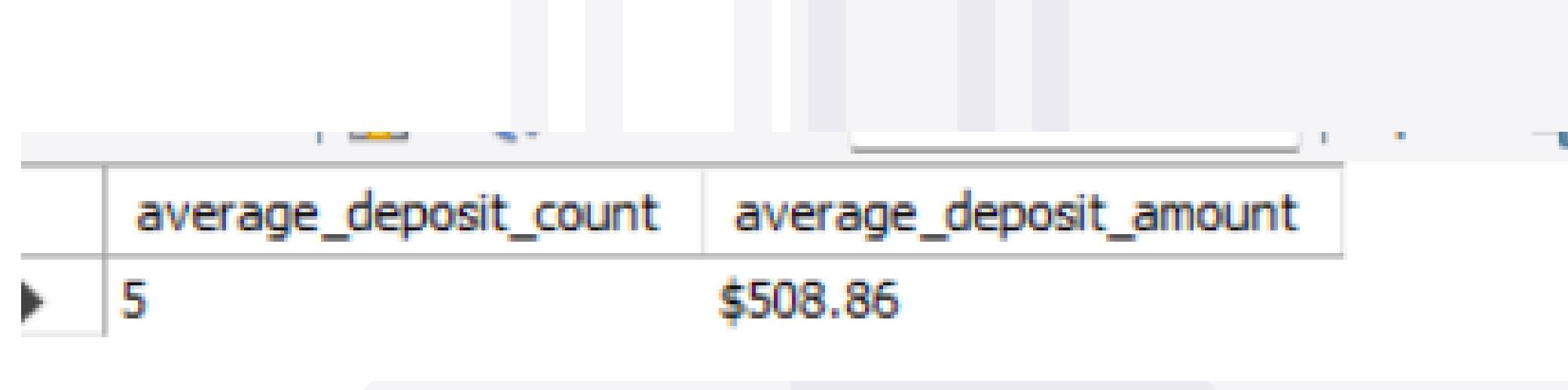


The screenshot shows a MySQL command-line interface with the following output:

	txn_type	unique_count	total_amont
	deposit	2671	1359168
	withdrawal	1580	793003
	purchase	1617	806537

Q7. 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";
```



	average_deposit_count	average_deposit_amount
▶	5	\$508.86

Q8. 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;
```

	txn_month	customer_count
▶	1	115
	2	108
	3	113
	4	50



THANK YOU