

**CHALLENGE 4**

**SQL CASE STUDY**

# **FINANCE ANALYSIS**



# INTRODUCTION

- Here as a Finance Analyst working for 'The Big Bank'
- I have been tasked with finding out about customers and their banking behaviour.
- Examine the accounts they hold and the type of transactions they make to develop greater insight into customers.
- The case study consist of 4 Tables :
  - Customers
  - Accounts
  - Transactions
  - Branches

# TABLE USED

**Customers**

CustomerID	FirstName	LastName	City	State
1	John	Doe	New York	NY
2	Jane	Doe	New York	NY
3	Bob	Smith	San Francisco	CA
4	Alice	Johnson	San Francisco	CA
5	Michael	Lee	Los Angeles	CA
6	Jennifer	Wang	Los Angeles	CA

**Accounts**

AccountID	CustomerID	BranchID	AccountType	Balance
1	1	5	Checking	1000
2	1	5	Savings	5000
3	2	1	Checking	2500
4	2	1	Savings	8000
5	3	2	Checking	7500
6	3	2	Savings	8000
7	4	8	Checking	5000
8	4	8	Savings	8000
9	5	14	Checking	8000
10	5	14	Savings	8000
11	6	2	Checking	5000
12	6	2	Savings	8000
13	1	5	Credit Card	-500
14	2	1	Credit Card	-1000
15	3	2	Credit Card	-2000

**Transactions**

TransactionID	AccountId	TransactionDate	Amount
1	1	2022-01-01	-500
2	1	2022-01-02	-250
3	2	2022-01-03	1000
4	3	2022-01-04	-1000
5	3	2022-01-05	500
6	4	2022-01-06	1000
7	4	2022-01-07	-500
8	5	2022-01-08	-2500
9	6	2022-01-09	500
10	6	2022-01-10	-1000
11	7	2022-01-11	-500
12	7	2022-01-12	-250
13	8	2022-01-13	1000
14	8	2022-01-14	-1000
15	9	2022-01-15	500

**Branches**

BranchID	BranchName	City	State
1	Main	New York	NY
2	Downtown	San Francisco	CA
3	West LA	Los Angeles	CA
4	East LA	Los Angeles	CA
5	Uptown	New York	NY
6	Financial District	San Francisco	CA
7	Midtown	New York	NY
8	South Bay	San Francisco	CA
9	Downtown	Los Angeles	CA
10	Chinatown	New York	NY
11	Marina	San Francisco	CA
12	Beverly Hills	Los Angeles	CA
13	Brooklyn	New York	NY
14	North Beach	San Francisco	CA
15	Pasadena	Los Angeles	CA

# Q1. What are the names of all the customers who live in New York?



```
select firstname from customers  
where city = 'New York'
```

output :

	firstname character varying (50) 
1	John
2	Jane

## Q2. What is the total number of accounts in the Accounts table?



```
select count(*) as No_of_account  
from accounts
```

output :

	no_of_account	bigint	🔒
1		15	

### Q3. What is the total balance of all checking accounts?



```
select sum(balance) as total_balance  
from accounts  
where accounttype = 'Checking'
```

output :

	total_balance	🔒
	numeric	
1		
	31000.00	

## Q4. What is the total balance of all accounts associated with customers who live in Los Angeles?



```
select sum(a.balance) as total_balance from
customers as c
join accounts as a on c.CUSTOMERID = a.CUSTOMERID
where city = 'Los Angeles'
```

output :

	total_balance numeric
1	75000.00

## Q5. Which branch has the highest average account balance?



```
select b.branchname,round(avg(a.balance),2)as avg_accountbalance  
from branches as b  
join accounts as a on b.branchid = accountid  
group by 1  
order by 2 desc  
limit 1
```

output :

	branchname character varying (50)	avg_accountbalance numeric
1	Chinatown	50000.00

## Q6. Which customer has the highest current balance in their accounts?



```
select c.firstname,c.lastname,sum(a.balance)as current_balance  
from customers as c  
join accounts as a on c.customerid = a.customerid  
group by 1,2  
order by 3 desc  
limit 1
```

output :

	firstname character varying (50) 	lastname character varying (50) 	current_balance numeric 
1	Michael	Lee	60000.00

## Q7. Which customer has made the most transactions in the Transactions table?



```
select c.customerid,c.firstname,c.lastname,count(t.*)as transaction_count
from customers as c
join accounts as a on c.customerid = a.customerid
join transactions as t on a.accountid = t.accountid
group by 1
order by 4 desc
limit 2
```

output :

	customerid [PK] integer	firstname character varying (50)	lastname character varying (50)	transaction_count bigint
1	4	Alice	Johnson	4
2	2	Jane	Doe	4

## Q8. Which branch has the highest total balance across all of its accounts?



```
select b.branchname,sum(a.balance) as total_balance  
from branches as b  
join accounts as a on b.branchid = a.branchid  
group by 1  
order by 2 desc  
limit 1
```

output :

	branchname character varying (50)	total_balance numeric
1	North Beach	60000.00

## Q9. Which customer has the highest total balance across all of their accounts, including savings and checking accounts?



```
select c.firstname,c.lastname,sum(a.balance)as total_balance  
from customers as c  
join accounts as a on c.customerid = a.customerid  
group by 1,2  
order by 3 desc  
limit 1
```

output :

	firstname character varying (50)	lastname character varying (50)	total_balance numeric
1	Michael	Lee	60000.00

## Q10. Which branch has the highest number of transactions in the Transactions table?



```
select
    b.branchname,
    (select count(*) from accounts a
     join transactions t on a.accountid = t.accountid
     where a.branchid = b.branchid) as no_of_trans
from branches b
order by no_of_trans desc
limit 2
```

output :

	branchname character varying (50)	no_of_trans bigint
1	Main	4
2	South Bay	4



THANK YOU



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