

SQL Case Study

FINANCIAL ANALYSIS

The Big Bank



ABOUT US

"The Big Bank" refers to a prominent financial institution known for its significant size, extensive operations, and influence in the banking industry, often commanding a large market share and offering a wide range of financial services.

OBJECTIVE

- A** As **financial analysts**, we have been tasked to find out about our customers and their banking behavior.
- B** Examine the accounts they hold and the type of transactions they make to develop greater insight into your customers.
- C** The challenge is organized by **Steel Data** and the datasets can be accessed through the following link:
<https://steeldata.org.uk/sql4.html>

DATASETS

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	####
5	3	2	Checking	7500
6	3	2	Savings	####
7	4	8	Checking	5000
8	4	8	Savings	####
9	5	14	Checking	####
10	5	14	Savings	####
11	6	2	Checking	5000
12	6	2	Savings	####
13	1	5	Credit Card	-500
14	2	1	Credit Card	-1000
15	3	2	Credit Card	-2000

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

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

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



FINDING INSIGHTS

by using MySQL Database Server

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

```
select concat(firstname, " ", lastname) as name  
from customers  
where city = "New York";
```

name
John Doe
Jane Doe



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

```
select count(*) as total_accounts  
from accounts;
```

total_accounts
15



3. What is the total balance of all checking accounts?

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

total_balance
31000 . 00



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

```
select sum(balance) as total_balance  
from accounts a  
inner join customers c using(customerid)  
where c.city = "Los Angeles";
```



total_balance
75000.00

5. Which branch has the highest average account balance?

```
select branchname, round(avg(balance), 2) as average_balance  
from accounts a  
inner join branches b using(branchid)  
group by 1 order by 2 limit 1;
```



branchname	average_balance
Uptown	1833.33

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

```
select concat(firstname, " ", lastname) as fullname,  
       max(balance) as highest_current_balance  
  from accounts a  
inner join customers c using(customerid)  
 where a.accounttype = "Checking"  
group by 1 order by 2 desc limit 1;
```



fullname	highest_current_balance
Michael Lee	10000.00

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

```
select concat(firstname, " ", lastname) as fullname  
from customers  
where customerid in (  
    with cte as (  
        select a.customerid, count(*) as no_of_transactions  
        from transactions t  
        inner join accounts a using(accountid)  
        group by 1  
    select customerid  
    from cte  
    where no_of_transactions = (select max(no_of_transactions) from cte)  
);
```



fullname
Jane Doe
Alice Johnson

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

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

branchname	total_balance
North Beach	60000.00



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

```
select concat(firstname, " ", lastname) as fullname,  
sum(balance) as total_balance  
from accounts a  
inner join customers c using(customerid)  
where a.accounttype in ("Savings", "Checking")  
group by 1 order by 2 desc limit 1;
```



fullname	total_balance
Michael Lee	60000.00

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

```
select branchname  
from branches  
where branchid in (with cte as (  
    select branchid, count(distinct transactionid) as no_of_transaction  
    from transactions t  
    left join accounts a using(accountid)  
    group by 1)  
select branchid  
from cte  
where no_of_transaction = (select max(no_of_transaction) from cte));
```



branchname
Main
South Bay

IMPORTANT INSIGHTS

- **John Doe** and **Jane Doe** are customers who lived in **New York**.
- There are a total of **15 customer** accounts in the accounts table.
- The total balance of all **Checking** accounts is **\$ 31000**.
- The total balance of all accounts associated with customers who live in **Los Angeles** is **\$ 75000**.
- The **Uptown** branch has the *highest* average account balance.
- **Micheal Lee** has the *highest* current balance in his account.
- **North Beach** branch has the *highest* total balance account across all of its accounts.
- The **Main** and **South Bay** branches have the *highest* number of transactions.





THANK YOU!