

Challenge 4 – Finance Analysis



You are a Finance Analyst working for 'The Big Bank'. You have been tasked with finding out about your customers and their banking behaviour. Examine the accounts they hold and the type of transactions they make to develop greater insight into your customers.

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	####
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

Transactions			
TransactionID	AccoutID	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

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

Output:

```
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?

Output:

```
SELECT COUNT(DISTINCT AccountID) AS no_of_accounts
FROM accounts;
```

no_of_accounts
15

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

```
SELECT SUM(Balance) AS total_balance  
FROM accounts  
WHERE AccountType='Checking';
```

Output:

total_balance
31000.00

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

```
SELECT SUM(a.Balance) AS total_balance  
FROM accounts AS a  
INNER JOIN customers AS c  
ON a.CustomerID = c.customerID  
WHERE c.City='Los Angeles';
```

Output:

total_balance
75000.00

5. Which branch has the highest average account balance?

```
SELECT b.BranchName, AVG(a.Balance) AS average_account_balance
FROM accounts AS a
INNER JOIN branches AS b
ON b.BranchID = a.BranchID
GROUP BY b.BranchName
ORDER BY average_account_balance DESC LIMIT 1;
```

Output:

BranchName	average_account_balance
North Beach	30000.000000

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

```
SELECT c.CustomerID, CONCAT(c.FirstName," ",c.LastName) AS name, MAX(a.Balance) AS highest_balance
FROM customers AS c
INNER JOIN accounts AS a
ON c.CustomerID = a.CustomerID
GROUP BY c.CustomerID, name
ORDER BY highest_balance DESC LIMIT 1;
```

Output:

CustomerID	name	highest_balance
5	Michael Lee	50000.00

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

```
SELECT c.CustomerID, CONCAT(c.FirstName," ",c.LastName) AS name, COUNT(t.TransactionID) AS highest_transactions
FROM customers AS c
INNER JOIN accounts AS a
ON c.CustomerID = a.CustomerID
INNER JOIN transactions AS t
ON a.AccountID = t.AccountID
GROUP BY c.CustomerID
ORDER BY highest_transactions DESC LIMIT 1;
```

Output:

CustomerID	name	highest_transactions
2	Jane Doe	4

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

```
SELECT b.BranchName, SUM(a.Balance) AS highest_total_balance
FROM accounts AS a
INNER JOIN branches AS b
ON a.BranchID = b.BranchID
GROUP BY b.BranchName
ORDER BY highest_total_balance DESC LIMIT 1;
```

Output:

BranchName	highest_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 c.CustomerID, CONCAT(c.FirstName," ",c.LastName) AS name, MAX(a.Balance) AS highest_balance
FROM customers AS c
INNER JOIN accounts AS a
ON c.CustomerID = a.CustomerID
GROUP BY c.CustomerID, name
ORDER BY highest_balance DESC LIMIT 1;
```

Output:

CustomerID	name	highest_balance
5	Michael Lee	50000.00

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

```
SELECT b.BranchID, b.BranchName, COUNT(t.TransactionID) AS highest_transactions
FROM branches AS b
INNER JOIN accounts AS a
ON b.BranchID = a.BranchID
INNER JOIN transactions AS t
ON a.AccountID = t.AccountID
GROUP BY b.BranchID, b.BranchName
ORDER BY highest_transactions DESC LIMIT 1;
```

Output:

	BranchID	BranchName	highest_transactions
	1	Main	4