

SQL CHALLENGE

FINANCE ANALYSIS



INTRODUCTION

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.

TABLES

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

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

```
SELECT FirstName, LastName  
FROM Customers  
WHERE State = 'NY';
```

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

```
SELECT COUNT(*) AS TotalAccounts  
FROM Accounts;
```

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

```
SELECT SUM(Balance) AS TotalBalance  
FROM Accounts  
WHERE AccountType = 'Checking';
```

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

```
SELECT SUM(Balance) AS TotalBalance  
FROM Accounts  
WHERE CustomerID IN(  
  SELECT CustomerID  
  FROM Customers  
  WHERE City = 'Los Angeles'  
);
```

Q5. Which branch has the highest average account balance?

```
SELECT TOP 1 BranchID, AVG(Balance) AS AverageBalance  
FROM Accounts  
GROUP BY BranchID  
ORDER BY AverageBalance DESC;
```

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

```
SELECT TOP 1 c.FirstName, c.LastName, MAX(a.Balance) AS HighestBalance  
FROM Customers c  
JOIN Accounts a ON c.CustomerID = a.CustomerID  
GROUP BY c.FirstName, c.LastName  
ORDER BY HighestBalance DESC;
```

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

```
SELECT TOP 1 c.FirstName, c.LastName, COUNT(*) AS NoTransaction
FROM Customers c
JOIN Accounts a ON c.CustomerID = a.CustomerID
JOIN Transactions t ON a.AccountID = t.AccountID
GROUP BY c.FirstName, c.LastName
ORDER BY NoTransaction DESC;
```

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

```
SELECT TOP 1 b.BranchID, b.BranchName, SUM(a.Balance) AS TotalBalance  
FROM Branches b  
JOIN Accounts a ON b.BranchID = a.BranchID  
GROUP BY b.BranchID, b.BranchName  
ORDER BY TotalBalance DESC;
```


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

```
SELECT TOP 1 c.FirstName, c.LastName, SUM(a.Balance) AS TotalBalance
FROM Customers c
JOIN Accounts a ON c.CustomerID = a.CustomerID
GROUP BY c.FirstName, c.LastName
ORDER BY TotalBalance DESC;
```

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

```
SELECT TOP 1 b.BranchID, b.BranchName, COUNT(*) AS NoTransaction  
FROM Branches b  
JOIN Accounts a ON b.BranchID = a.BranchID  
JOIN Transactions t ON a.AccountID = t.AccountID  
GROUP BY b.BranchID, b.BranchName  
ORDER BY NoTransaction DESC;
```