Challenge 4 - Finance Analysis

STEEL DATA

SQL

SQL Case Study
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INTRODUCTION

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.

STEEL DATA

TABLES

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

QUESTIONS

1. What are the names of all the customers who live in New York?
2. What is the total number of accounts in the Accounts table?
3. What is the total balance of all checking accounts?
4. What is the total balance of all accounts associated with customers who live in Los Angeles?
5. Which branch has the highest average account balance?
6. Which customer has the highest current balance in their accounts?
7. Which customer has made the most transactions in the Transactions table?
8. Which branch has the highest total balance across all of its accounts?
9. Which customer has the highest total balance across all of their accounts, including savings and checking accounts?
10. Which branch has the highest number of transactions in the Transactions table?

QUESTIONS:1

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

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

```sql
# 1 What are the names of all the customers who live in New York?

SELECT
  CustomerID, concat(FirstName," ",LastName) as customer_name
FROM customers
WHERE city="New York";
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

CustomerID	customer_name
1	John Doe
2	Jane Doe

QUESTIONS:2

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

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

```sql
# 2 What is the total number of accounts in the Accounts table?

SELECT
  count(AccountID) AS total_accounts
FROM accounts;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_accounts
15

Result 3

QUESTIONS:3

What is the total balance of all checking accounts?

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

```sql

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

SELECT
  round(sum(Balance),0) AS total_balance_in_accounts
FROM accounts
WHERE AccountType = "Checking";
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

	total_balance_in_accounts
▶	31000

QUESTIONS:4

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

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

```
# 4 What is the total balance of all accounts associated with customers who live

SELECT
  round(sum(a.Balance),0) AS total_balance
FROM accounts a
JOIN customers c
ON a.CustomerID = c.CustomerID
WHERE c.City = "Los Angeles";
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

total_balance
75000

QUESTIONS:5

Which branch has the highest average account balance?

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

```sql
# 5 Which branch has the highest average account balance?

SELECT
  b.BranchID , B.BranchName ,
  round(avg(a.Balance),1) as average_balance
FROM branches b
JOIN accounts a
ON a.BranchID = b.BranchID
GROUP BY b.BranchID , B.BranchName
ORDER BY average_balance DESC
LIMIT 1 ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

BranchID	BranchName	average_balance
14	North Beach	30000.0

QUESTIONS:6

Which customer has the highest current balance in their accounts?

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

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

SELECT
  concat(c.FirstName," ",c.LastName ) as customer_name,
  round(sum(a.Balance),0) as current_balance
FROM customers c JOIN accounts a ON c.CustomerID = a.CustomerID
GROUP BY c.FirstName,c.LastName
ORDER BY current_balance DESC
LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

customer_name	current_balance
Michael Lee	60000

QUESTIONS:7

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

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

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

SELECT
 c.FirstName, c.LastName,
 count(t.TransactionID) as num_of_transaction
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 num_of_transaction DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

FirstName	LastName	num_of_transaction
Jane	Doe	4
Alice	Johnson	4
John	Doe	3
Bob	Smith	3
Michael	Lee	1

QUESTIONS:8

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

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

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

SELECT
  b.BranchName,
  round(sum(a.Balance),0) AS total_balance
FROM accounts a JOIN branches b
ON a.BranchID = b.BranchID
GROUP BY b.BranchName
ORDER BY total_balance DESC
LIMIT 1;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

BranchName	total_balance
North Beach	60000

QUESTIONS:9

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

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel

Limit to 500 rows

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

SELECT
  a.CustomerID ,concat( FirstName," " , LastName) AS customer_name ,
  round(sum(a.balance),0) AS total_balance
FROM accounts a JOIN customers c
ON a.CustomerID = c.CustomerID
WHERE a.AccountType IN ("Savings","Checking")
GROUP BY a.CustomerID,customer_name
ORDER BY total_balance DESC;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

CustomerID	customer_name	total_balance
5	Michael Lee	60000
4	Alice Johnson	25000
3	Bob Smith	22500
6	Jennifer Wang	15000
2	Jane Doe	12500
1	John Doe	6000

QUESTIONS:10

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

Query 1 | accounts | branches | customers | transactions | SQL File 1* | Challenge_4_data_steel*

Limit to 500 rows

```sql
# 10 Which branch has the highest number of transactions in the Transactions table?

SELECT
  b.BranchName ,
  count(t.TransactionID) as num_of_transactions
FROM branches b JOIN accounts a ON a.BranchID = b.BranchID
JOIN transactions t ON a.AccountID = t.AccountID
GROUP BY b.BranchName
ORDER BY num_of_transactions DESC ;
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

BranchName	num_of_transactions
Main	4
South Bay	4
Uptown	3
Downtown	3
North Beach	1

Thank You!!