

CHALLENGE - 4

SQL CASE STUDY

FINANCIAL ANALYSIS

The background of the slide features a close-up, shallow depth-of-field photograph of US currency. In the foreground, two gold coins are stacked on top of each other, resting on a US dollar bill. The bill's intricate patterns, including the portrait of a person and various text elements like 'B 270' and 'KB 0572796', are visible but slightly blurred. The overall lighting is warm, creating a professional and financial atmosphere.

INTRODUCTION

- You are a Finance Analyst working for 'The Big Bank'
- I have been tasked with finding out about the customers and their banking behavior. Examine the accounts they hold and the type of transactions they make to develop greater insight into the customers.
- The case study consisting of Four Tables;
 - Customers
 - Transactions
 - Branches
 - Accounts

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	####
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	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

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

```
select firstname, lastname  
from customers  
where city = 'New York';
```

Output:

firstname	lastname
John	Doe
Jane	Doe

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

```
select count(distinct AccountType) as no_of_accounts  
from accounts;
```

Output:

no_of_accounts
3

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

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  
on a.customerid = c.CustomerID  
where city = 'Los Angeles';
```

Output:

total_balance
75000

5. Which branch has the highest average account balance?

```
select b.branchname, avg(a.balance) as avg_balance
from branches b
inner join accounts a
on b.BranchID = a.BranchID
group by 1
order by 2 desc
limit 1;
```

Output:

branchname	avg_balance
North Beach	30000

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

```
select firstname, lastname, sum(a.balance) as total_balance
from customers c
inner join accounts a
on c.CustomerID = a.CustomerID
where AccountType = 'Checking'
group by 1,2
order by 3 desc
limit 1;
```

Output:

firstname	lastname	total_balance
Michael	Lee	10000

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

```
select  c.firstname,  c.lastname,  count(t.transactionid)  as  
no_of_transactionid  
from customers c  
inner join accounts a  
on c.customerid = a.CustomerID  
inner join transactions t  
on a.AccountID = t.AccountID  
group by 1,2  
order by 3 desc  
limit 1;
```

Output:

firstname	lastname	no_of_transactionid
Jane	Doe	4

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

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

Output:

branchname	total_balance
North Beach	60000

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

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

Output:

firstname	lastname	total_balance
Michael	Lee	60000

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

```
select branchname, count(transactionId) as no_of_id
from branches b
inner join accounts a
on b.BranchID = a.BranchID
inner join transactions t
on a.AccountID = t.AccountID
group by 1
order by 2 desc
limit 1;
```

Output:

branchname	no_of_id
Main	4

The background of the image features a close-up, shallow depth-of-field shot of US currency. In the foreground, several gold-colored coins are stacked, with the top one clearly showing a circular design. Below the coins, a US dollar bill is visible, showing the portrait of George Washington and the text "ONE DOLLAR". The lighting is warm and soft, creating a sense of value and appreciation.

THANK YOU



: Srinibas Rana

GitHub: <http://github.com/Rsrinibas>