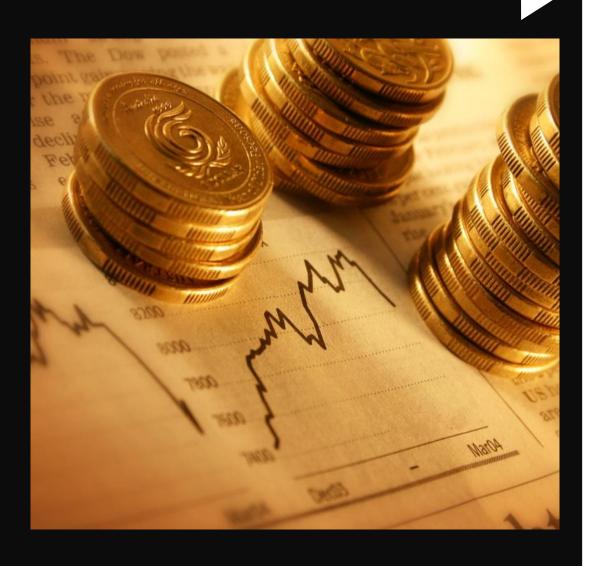# Finance Analytics

-Srabana Baidya

Introduction :

Welcome to 'The Big Bank,' a prominent financial institution renowned for its substantial size, extensive operations, and influential presence within the banking industry. With a commanding market share, we pride ourselves on offering a diverse range of financial services tailored to meet the needs of our esteemed customers. As a Finance Analyst tasked with delving into our customers' banking behaviors, my goal is to uncover valuable insights by examining the accounts they hold and the types of transactions they engage in. Through this analysis, we aim to enhance our understanding of customer preferences, habits, and trends, ultimately enabling us to better serve and anticipate their evolving needs.

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

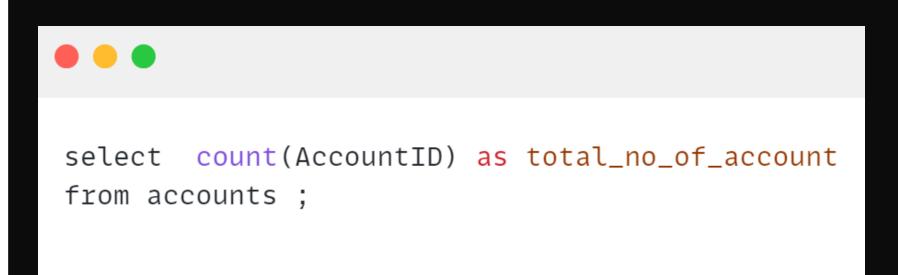# 1. What are the names of all the customers who live in New York?

```sql
select concat(FirstName, " " ,LastName) as customers_name , city
from customers
where city = "New York" ;
```
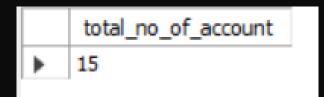
customers_name	city
John Doe	New York
Jane Doe	New York

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

```sql
select   count(AccountID) as total_no_of_account
from accounts ;
```

	total_no_of_account
▶	15

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

```sql
select round(sum(Balance)) as total_balance
from accounts
where AccountType = "checking" ;
```

	total_balance
▶	31000

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

```sql
select   round(sum(a.balance)) as total_balance
from accounts as a
join customers as c on c.CustomerID = a.CustomerID
where c.city = "Los Angeles"
group by c.city;
```

total_balance
▶ 75000

5. Which branch has the highest average account balance?

```sql
select b.BranchName, round(avg(a.Balance)) as avg_balance
from accounts as a
join branches as b ON b.BranchID = a.BranchID
group by  b.BranchName
order by avg_balance desc
limit 1;
```

BranchName	avg_balance
North Beach	30000

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

```sql
select a.CustomerID, concat(FirstName," " ,LastName) as customers_name,
     max(Balance) as total_balance
from accounts as a
inner join customers as c on a.CustomerID = c.CustomerID
group by 1
order by total_balance desc
limit 1 ;
```

CustomerID	customers_name	total_balance
5	Michael Lee	50000.00

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

```sql
with cte as (
select c.CustomerID, concat(c.FirstName," " ,c.LastName) as  customers_name ,
       count(t.TransactionID) as total_Transactions,
       dense_rank() over (order by count(t.TransactionID) desc) as rnk
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, customers_name )

 select CustomerID,  customers_name , total_Transactions
 from cte
 where rnk = 1 ;
```

CustomerID	customers_name	total_Transactions
2	Jane Doe	4
4	Alice Johnson	4

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

```sql
select  b.BranchName, round(sum(a.Balance)) as total_Balance
from accounts  as a
join branches as b on b.BranchID = a.BranchID
group by  b.BranchName
order by total_Balance  desc
limit 1 ;
```

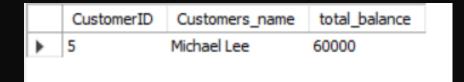|	BranchName	total_Balance
▶	North Beach	60000

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

```sql
with cte as
(select CustomerID,concat(FirstName, ' ' , LastName) as customers_name,
round(sum(a.balance)) as total_balance
from customers c
join accounts a using (CustomerID)
group by 1
order by total_balance desc)

select CustomerID,customers_name, total_balance
from cte
limit 1;
```
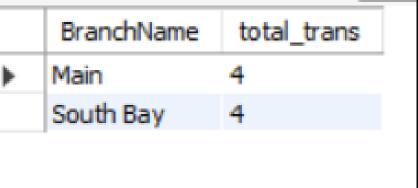
CustomerID	Customers_name	total_balance
5	Michael Lee	60000

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

```sql
with cte as (
select BranchName,  count(TransactionID) as total_trans,
       dense_rank () over(order by count(TransactionID) desc) as rnk
from accounts a
join branches b using (BranchID)
join transactions t  using (AccountID)
group by BranchName )

select  BranchName, total_trans
from cte
where rnk = 1 ;
```

BranchName	total_trans
Main	4
South Bay	4

Thank You!