MICROFINANCE DATABASE SYSTEM(UMURENGE SACCO)

Peer Group Icon

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Agenda

- ★ Problem Statement
- ★ Solution statement
- ★ ERD Tables
- ★ Normalized ERD Table
- ★ Queries

Problem Statement

UMURENGE SACCO is a microfinance company whose aim is to provide Rwanda's citizens in the local regions with credit and saving services, UMURENGE SACCO company is experiencing series of robberies caused by Managers, which have raised concerns among the general public and the management about the safety of their savings, another issue is People in Kigali are not using UMURENGE SACCO.

Solution Statement

Restrict Users

We restrict some users to access some part of the database eg Grant,Drop create User etc..

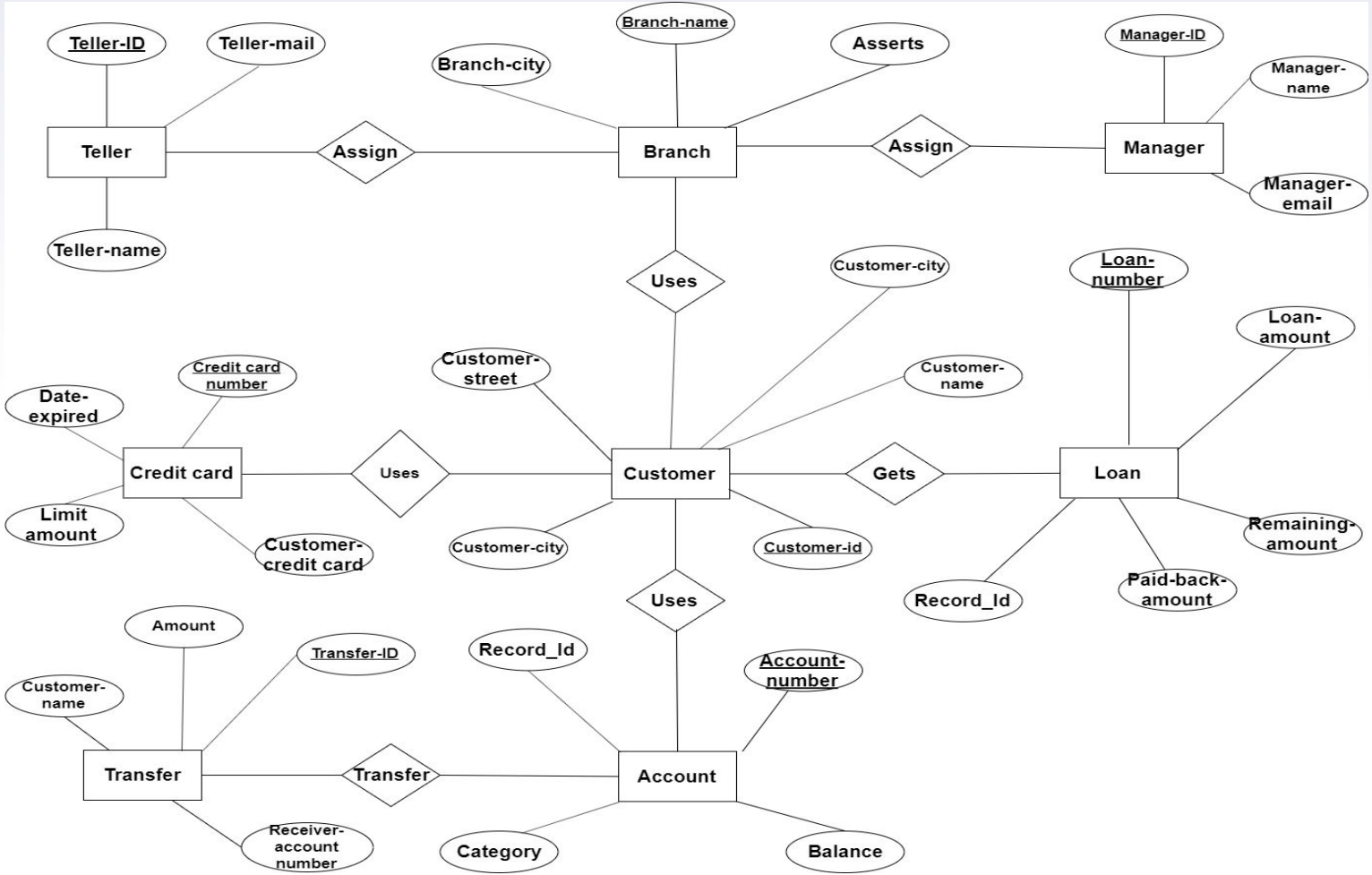
Normalized Database

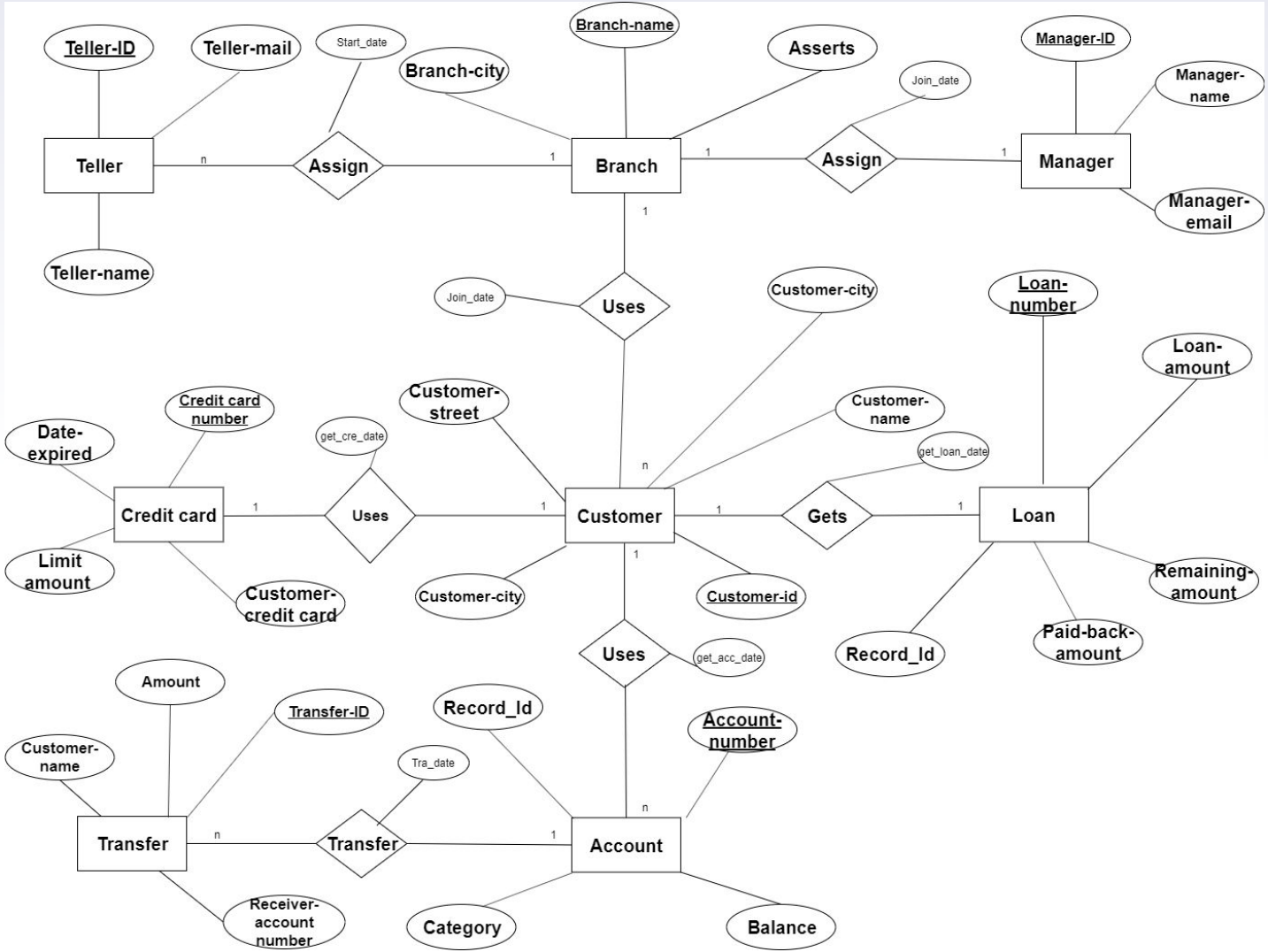
We will normalized our database to avoid repetition in the system

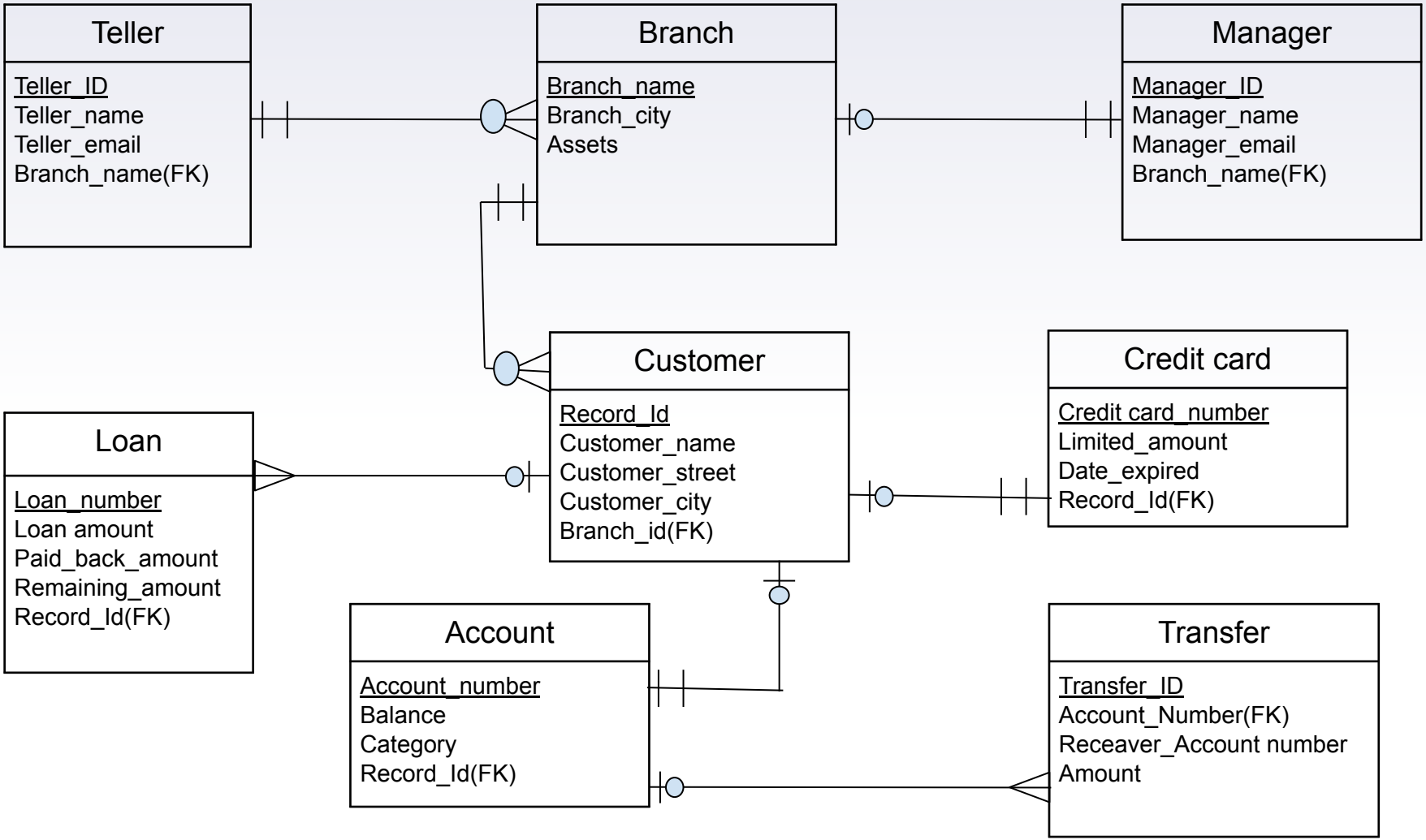
Credit card

To attract people from kigali will provide credit cards

ERD Tables


Teller-ID
Teller-mail
Teller
Assign
Teller-name
Branch-name
Branch-city
Asserts
Branch
Assign
Manager-ID
Manager-name
Manager
Manager-email
Uses
Customer-city
Loan-number
Loan-amount
Credit card number
Date-expired
Customer-street
Customer-name
Credit card
Uses
Customer
Gets
Loan
Limit amount
Customer-credit card
Customer-city
Customer-id
Remaining-amount
Paid-back-amount
Record_Id
Uses
Amount
Transfer-ID
Record_Id
Account-number
Customer-name
Transfer
Transfer
Account
Receiver-account number
Category
Balance


Teller-ID
Teller-mail
Start_date
Branch-name
Asserts
Manager-ID
Branch-city
Join_date
Manager-name
Teller
n
Assign
1
Branch
1
Assign
1
Manager
Manager-email
Teller-name
1
Join_date
Uses
Customer-city
Loan-number
Loan-amount
Credit card number
Customer-street
Customer-name
Date-expired
get_cre_date
get_loan_date
n
Credit card
1
Uses
1
Customer
1
Gets
1
Loan
Limit amount
Customer-credit card
Customer-city
Customer-id
1
Remaining-amount
Uses
get_acc_date
Record_Id
Paid-back-amount
Amount
Transfer-ID
Record_Id
Account-number
Customer-name
Tra_date
n
Transfer
n
Transfer
1
Account
Receiver-account number
Category
Balance


Teller
Teller_ID
Teller_name
Teller_email
Branch_name(FK)
Branch
Branch_name
Branch_city
Assets
Manager
Manager_ID
Manager_name
Manager_email
Branch_name(FK)
Customer
Record_Id
Customer_name
Customer_street
Customer_city
Branch_id(FK)
Credit card
Credit card_number
Limited_amount
Date_expired
Record_Id(FK)
Loan
Loan_number
Loan amount
Paid_back_amount
Remaining_amount
Record_Id(FK)
Account
Account_number
Balance
Category
Record_Id(FK)
Transfer
Transfer_ID
Account_Number(FK)
Receaver_Account number
Amount

Normalized ERD Table

branch-name	assets	Branch city
Gasabo_12	16000000	Gasabo
Huye_16	9000000	Huye
Kicukiro_11	15000000	Kicukiro
Muhanga_17	12000000	Muhanga

branch-name	Loan-Number	Amount
Gasabo_12	101	500,000
Huye_16	102	900,000
Kicukiro_11	103	300,000
Muhanga_17	104	700,000

Customer-Id	Loan-Number
1	101
2	102
3	103
4	105

Customer-Id	Customer-Name	Customer-Street	Customer-City
1	NTISERURWA SULAIMAN	kigali,Gasabo 23 ave	Gasabo
2	NZOZINZIZA NYAMPINGA GLORIA	Rwamagana,Muhazi	Rwamagana
3	MUKARUKUNDO DELPHINE	Huye,Kaminuza,56 st	Huye
4	JABO DIVIN PARACLET	Kigali,Kicukiro 23 st	Kicukiro

Credit-Card-Number	Credit-Card-Limit	Expiry-date
0000-1111-1111-1111	500,000Rwf	10-Mar-2021
0000-1111-1111-2222	500,000Rwf	06-Jan-2023
0000-2222-2222-2222	150,000Rwf	05-Feb-2025
0000-3333-3333-3333	200,000Rwf	20-Mar-2020

Customer-Id	Credit-Card-Number	Account-Number
1	0000-1111-1111-1111	0-1-2222-3333-4444
2	0000-1111-1111-2222	0-1-2222-2222-2222
3	0000-2222-2222-2222	0-1-4444-4444-4444
4	0000-3333-3333-3333	0-1-7777-7777-7777

Account-Number	Category	Balance
0000-1111-1111-1111	500,000Rwf	10-Mar-2021
0000-1111-1111-2222	500,000Rwf	06-Jan-2023
0000-2222-2222-2222	150,000Rwf	05-Feb-2025
0000-3333-3333-3333	200,000Rwf	20-Mar-2020

Banker-Id	Banker-Name	Banker-Email
1011	TUYISHIME ERIC	E.TUYISHIME@sacco.com
1022	KABATESI RUTH	R.KABATESI@sacco.com
1033	NIRAGIRE RUTAGENGWA EMERY	E.NIRAGIRE@sacco.com
1044	IRADUKUNDA UMUTONI LAETITIA	L.IRADUKUNDA@sacco.com

Branch-Name	Customer-Id	Banker-Id
Gasabo_12	1	1011
Huye_16	2	1022
Kicukiro_11	3	1033
Muhanga_17	4	1044

QUERIES

What it does?
This query is going to display the top account that have a highest balance

The query:

```
SELECT Account_number,
Customer_name,Balance FROM
customer JOIN account WHERE
customer.Record_id=account.Recor
d_id ORDER BY account.Balance
DESC LIMIT 10
```

Result

Account_number	Customer_name	Balance ▼ 1
8433-3333	NYIRANGIZWENIMANA THEOPISTE	340000000
2003-2008	MUKABYAGAJU HONORINE	10000000
2004-2001	TWAMBAJIMANA JEAN DE DIEU	9033333
2341-6098	NIYITUGIZE FABIOLA	9003456
3603-0932	USANASE UWINEZA VERONIQUE	8598484
6622-3333	NIGAKUZE PASCALINE	6677889
3451-7892	NGIRUWONSANGA EMMANUEL	5689000
2006-2003	NIZEYIMANA JEAN DE DIEU	4567777
2009-6782	PENDA YANGE NIYO NADINE	4000000
3560-6729	NIYIGENA ESTHER	3990234

What it does?
Here we want to find assets of different branches and Managers of those branches

The query:

```
SELECT
Branch_name,Assets,Manager_name
FROM branch JOIN manager WHERE
branch.Branch_name=manager.Branch_id ORDER BY branch.Assets DESC
```

Result

Branch_name	Assets ▼ 1	Manager_name
Nyarugenge_13	18000000	NYIRANDEGEYA DONATHA
Gasabo_12	16000000	KABATESI RUTH
Kicukiro_11	15000000	IRADUKUNDA UMUTONI LAETITIA
Muhanga_17	12000000	TUYISHIME ERIC
Musanze_18	12000000	NIYONGIRA AIMABLE
Rusizi_21	12000000	NIRINGIYIMANA VITAL
Rubavu_20	10000000	MAZIMPAKA EMMANUEL
Nyagatare_15	10000000	UWIRINGIYIMANA JOHN
Huye_16	9000000	HORANIMANA MAURICE
Rwamagana_14	8000000	NIRAGIRE RUTAGENGWA EMERY
Rulindo_19	8000000	BUNTUBWIMANA ENOCK

What it does?

It is going to check the soonest expiry credit cards and the owner

The query:

```
SELECT credit_card_number, Customer_name, Date_expired FROM customer JOIN credit_card WHERE customer.Record_id=credit_card.Record_id ORDER BY credit_card.Date_expired ASC LIMIT 1
```

Result

credit_card_number	Customer_name	Date_expired
0000-4444-4444-4444	NIYOMUTABAZI AIME	2020-01-10

What it does?

The number of customer in each city.

The query:

```
SELECT Customer_city,
COUNT(*) AS num_customers
FROM customer GROUP BY
Customer_city;
```

Result

Customer_city	num_customers
Gasabo	15
Huye	15
Kicukiro	15
Muhanga	15
Musanze	15
Nyagatare	15
Nyarugenge	15
Rubavu	15
Rulindo	15
Rusizi	15
Rwamagana	15

What is does?

This query will help us to find customer who have high amount of loans and where they are, so that it can be easy to track them

The query:

```
SELECT Customer_name, loan_amount,Customer_city FROM customer JOIN loan WHERE customer.Record_id=loan.Record_id ORDER BY loan.Loan_amount DESC LIMIT 3
```

Result

Customer_name	loan_amount	Customer_city
UWASE ANGELIQUE	8400000	Nyagatare
HABINEZA ELIE	4000000	Rubavu
NIYOBUHUNGIRO TITO	3000000	Musanze

What is does?

This query is going to help us all branch number of transfers their customer made

The query:

```
SELECT
Branch_name,COUNT(transfer.Acount_number)
FROM branch JOIN customer JOIN account
JOIN transfer WHERE
branch.Branch_name=customer.Branch_id and
customer.Record_id=account.Record_id AND
account.Account_number=transfer.Acount_num
ber GROUP BY branch.Branch_name
```

Result

Branch_name	COUNT(transfer.Acount_number)
Gasabo_12	2
Huye_16	1
Kicukiro_11	2
Muhanga_17	4
Musanze_18	1
Nyagatare_15	3
Nyarugenge_13	1
Rubavu_20	1
Rulindo_19	2
Rwamagana_14	3

What it does?

This query is helping us to display all branches with the total amount of money they managing for customers.

The query:

```
SELECT Branch_name, SUM(Balance)
FROM branch JOIN customer JOIN
account WHERE
branch.Branch_name=customer.Branch_
id AND
customer.Record_id=account.Record_id
GROUP BY branch.Branch_name
```

Result

Branch_name	SUM(Balance)
Gasabo_12	31765059
Huye_16	354180802
Kicukiro_11	16713415
Muhanga_17	24590398
Musanze_18	8443774
Nyagatare_15	7345679
Nyarugenge_13	8795528
Rubavu_20	564000
Rulindo_19	6980017
Rusizi_21	10663554
Rwamagana_14	7039650

What is does?

This query is helping to find all Branches offered credit cards to their customers and how many are they per branchers.

The query:

```
SELECT Branch_name,
COUNT(credit_card_number) FROM
branch JOIN customer JOIN
credit_card WHERE
branch.Branch_name=customer.Branc
h_id AND
customer.Record_id=credit_card.Re
cord_id GROUP BY
branch.Branch_name ORDER BY
COUNT(credit_card_number) DESC
```

Result

Branch_name	COUNT(credit_card_number) 1
Nyagatare_15	3
Musanze_18	2
Rubavu_20	2
Nyarugenge_13	2
Rusizi_21	2
Rwamagana_14	1
Gasabo_12	1
Huye_16	1
Kicukiro_11	1

What is does?

This query is helping us to find top 5 branches that has high remaining amount of money to pay for loan

The query:

```
SELECT Branch_name,
SUM(loan.Remaining_amount) FROM
branch JOIN customer JOIN loan
WHERE
branch.Branch_name=customer.Branc
h_id AND
customer.Record_id=loan.Record_id
GROUP BY branch.Branch_name ORDER
BY loan.Remaining_amount DESC
LIMIT 5
```

Result

Branch_name	SUM(loan.Remaining_amount)
Nyagatare_15	6200000
Rulindo_19	1900000
Musanze_18	1500000
Huye_16	1700000
Rusizi_21	600000

What is does?

This query is helping us to display all branches and number of tellers who works in each.

The query:

```
SELECT Branch_name,
COUNT(teller.Branch_id) FROM
branch JOIN teller WHERE
branch.Branch_name=teller.Bra
nch_id GROUP BY Branch_name
```

Result

Branch_name	COUNT(teller.Branch_id)
Gasabo_12	4
Huye_16	4
Kicukiro_11	4
Muhanga_17	4
Musanze_18	4
Nyagatare_15	4
Nyarugenge_13	4
Rubavu_20	4
Rulindo_19	4
Rusizi_21	4
Rwamagana_14	4

THANKS!

Any questions?