**Problem Statement:-1**

Account(Acc\_no, branch\_name,balance)

branch(branch\_name,branch\_city,assets\_amt)

customer(cust\_name,cust\_street,cust\_city)

Depositor(cust\_name,acc\_no)

Loan(Acc\_no,loan\_no,branch\_name,amount)

Borrower(cust\_name,loan\_no)

Solve following query:

1. Create above tables with appropriate constraints like primary key, foreign key, check constrains, not null etc.

2. Find the names of all branches in loan relation.

3. Find all loan numbers for loans made at Pimpri Branch with loan amount &gt; 12000.

4. Find all customers who have a loan from bank. Find their names, loan\_no and loan amount.

5. List all customers in alphabetical order who have loan from Akurdi branch.

6. Find all customers who have an account or loan or both at bank.

7. Find all customers who have both account and loan at bank.

8. Find average account balance at Pimpri branch.

9. Find the average account balance at each branch

10. Find the branches where average account balance &gt; 12000.

11. Calculate total loan amount given by bank.

**Ans:**

Certainly! Below is the complete solution with the creation of tables, insertion of values, and answers to the queries using Indian names and addresses:

**1. Create the tables with appropriate constraints:**

```sql

-- Create the 'branch' table

CREATE TABLE branch (

branch\_name VARCHAR(255) PRIMARY KEY,

branch\_city VARCHAR(255) NOT NULL,

assets\_amt DECIMAL(10, 2) NOT NULL

);

-- Create the 'customer' table

CREATE TABLE customer (

cust\_name VARCHAR(255) PRIMARY KEY,

cust\_street VARCHAR(255),

cust\_city VARCHAR(255)

);

-- Create the 'account' table

CREATE TABLE account (

Acc\_no INT PRIMARY KEY,

branch\_name VARCHAR(255),

balance DECIMAL(10, 2),

FOREIGN KEY (branch\_name) REFERENCES branch(branch\_name)

);

-- Create the 'depositor' table

CREATE TABLE depositor (

cust\_name VARCHAR(255),

acc\_no INT,

FOREIGN KEY (cust\_name) REFERENCES customer(cust\_name),

FOREIGN KEY (acc\_no) REFERENCES account(Acc\_no)

);

-- Create the 'loan' table

CREATE TABLE loan (

Acc\_no INT,

loan\_no INT PRIMARY KEY,

branch\_name VARCHAR(255),

amount DECIMAL(10, 2),

FOREIGN KEY (Acc\_no) REFERENCES account(Acc\_no),

FOREIGN KEY (branch\_name) REFERENCES branch(branch\_name)

);

-- Create the 'borrower' table

CREATE TABLE borrower (

cust\_name VARCHAR(255),

loan\_no INT,

FOREIGN KEY (cust\_name) REFERENCES customer(cust\_name),

FOREIGN KEY (loan\_no) REFERENCES loan(loan\_no)

);

-- Insert sample data into the 'branch' table

INSERT INTO branch (branch\_name, branch\_city, assets\_amt) VALUES

('Pimpri', 'Pune', 1500000.00),

('Akurdi', 'Pune', 1200000.00),

('Chinchwad', 'Pune', 1800000.00);

-- Insert sample data into the 'customer' table with Indian names and addresses

INSERT INTO customer (cust\_name, cust\_street, cust\_city) VALUES

('Rahul', '123 Gandhi Road', 'Pune'),

('Sunita', '456 Tagore Street', 'Pune'),

('Amit', '789 Nehru Avenue', 'Pune');

-- Insert sample data into the 'account' table

INSERT INTO account (Acc\_no, branch\_name, balance) VALUES

(101, 'Pimpri', 5000.00),

(102, 'Akurdi', 8000.00),

(103, 'Chinchwad', 12000.00);

-- Insert sample data into the 'depositor' table

INSERT INTO depositor (cust\_name, acc\_no) VALUES

('Rahul', 101),

('Sunita', 102);

-- Insert sample data into the 'loan' table

INSERT INTO loan (Acc\_no, loan\_no, branch\_name, amount) VALUES

(103, 201, 'Pimpri', 15000.00),

(102, 202, 'Akurdi', 10000.00),

(101, 203, 'Chinchwad', 20000.00);

-- Insert sample data into the 'borrower' table

INSERT INTO borrower (cust\_name, loan\_no) VALUES

('Amit', 201),

('Rahul', 202);

```

Now that the tables are created and populated with sample data, you can execute the SQL queries to retrieve the desired information:

**2. Find the names of all branches in the loan relation:**

```sql

SELECT DISTINCT branch\_name

FROM loan;

```

**3. Find all loan numbers for loans made at Pimpri Branch with a loan amount > 12000:**

```sql

SELECT loan\_no

FROM loan

WHERE branch\_name = 'Pimpri' AND amount > 12000;

```

**4. Find all customers who have a loan from the bank. Find their names, loan\_no, and loan amount:**

```sql

SELECT c.cust\_name, l.loan\_no, l.amount

FROM customer c

INNER JOIN borrower b ON c.cust\_name = b.cust\_name

INNER JOIN loan l ON b.loan\_no = l.loan\_no;

```

**5. List all customers in alphabetical order who have a loan from Akurdi branch:**

```sql

SELECT c.cust\_name

FROM customer c

INNER JOIN borrower b ON c.cust\_name = b.cust\_name

INNER JOIN loan l ON b.loan\_no = l.loan\_no

WHERE l.branch\_name = 'Akurdi'

ORDER BY c.cust\_name;

```

**6. Find all customers who have an account or loan or both at the bank:**

```sql

SELECT DISTINCT c.cust\_name

FROM customer c

LEFT JOIN depositor d ON c.cust\_name = d.cust\_name

LEFT JOIN borrower b ON c.cust\_name = b.cust\_name

WHERE d.cust\_name IS NOT NULL OR b.cust\_name IS NOT NULL;

```

**7. Find all customers who have both an account and a loan at the bank:**

```sql

SELECT c.cust\_name

FROM customer c

JOIN depositor d ON c.cust\_name = d.cust\_name

JOIN borrower b ON c.cust\_name = b.cust\_name;

```

**8. Find the average account balance at the Pimpri branch:**

```sql

SELECT AVG(balance) AS avg\_balance

FROM account

WHERE branch\_name = 'Pimpri';

```

**9. Find the average account balance at each branch:**

```sql

SELECT branch\_name, AVG(balance) AS avg\_balance

FROM account

GROUP BY branch\_name;

```

**10. Find the branches where the average account balance > 12000:**

```sql

SELECT branch\_name

FROM (SELECT branch\_name, AVG(balance) AS avg\_balance

FROM account

GROUP BY branch\_name) AS avg\_balances

WHERE avg\_balance > 12000;

```

**11. Calculate the total loan amount given by the bank:**

```sql

SELECT SUM(amount) AS total\_loan\_amount

FROM loan;

```

You can now execute these SQL queries on your database with the Indian names and addresses to obtain the desired results.