# Problem Statement 5 - Joins, Subquery, and View (MySQL)

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-- Step 1: Create Database
CREATE DATABASE bank5;
USE bank5;

-- Step 2: Create Tables
CREATE TABLE branch(
    branch_name VARCHAR(30) PRIMARY KEY,
    branch_city VARCHAR(30) NOT NULL,
    assets INT CHECK(assets >= 0)
);

CREATE TABLE Account(
    Acc_no INT PRIMARY KEY,
    branch_name VARCHAR(30),
    balance INT CHECK(balance >= 0),
    FOREIGN KEY(branch_name) REFERENCES branch(branch_name)
);

CREATE TABLE customer(
    cust_name VARCHAR(30) PRIMARY KEY,
    cust_street VARCHAR(30),
    cust_city VARCHAR(30)
);

CREATE TABLE Depositor(
    cust_name VARCHAR(30),
    acc_no INT,
    PRIMARY KEY(cust_name, acc_no),
    FOREIGN KEY(cust_name) REFERENCES customer(cust_name),
    FOREIGN KEY(acc_no) REFERENCES Account(acc_no)
);

CREATE TABLE Loan(
    loan_no INT PRIMARY KEY,
    branch_name VARCHAR(30),
    amount INT CHECK(amount > 0),
    FOREIGN KEY(branch_name) REFERENCES branch(branch_name)
);

CREATE TABLE Borrower(
    cust_name VARCHAR(30),
    loan_no INT,
    PRIMARY KEY(cust_name, loan_no),
    FOREIGN KEY(cust_name) REFERENCES customer(cust_name),
    FOREIGN KEY(loan_no) REFERENCES Loan(loan_no)
);

-- Step 3: Insert Sample Data
INSERT INTO branch VALUES
('Akurdi','Pune',500000),
('Shivaji Nagar','Pune',650000),
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```
('Kothrud','Pune',450000);

INSERT INTO customer VALUES
('Suyash','MG Road','Pune'),
('Rahul','Karve Road','Pune'),
('Amit','Akurdi Gaon','Pune');

INSERT INTO Account VALUES
(101,'Akurdi',20000),
(102,'Shivaji Nagar',15000),
(103,'Kothrud',30000);

INSERT INTO Depositor VALUES
('Suyash',101),
('Rahul',102),
('Amit',103);

INSERT INTO Loan VALUES
(201,'Akurdi',12000),
(202,'Shivaji Nagar',25000),
(203,'Kothrud',18000);

INSERT INTO Borrower VALUES
('Suyash',201),
('Rahul',202),
('Amit',203);

-- Step 4: Required Queries

-- 1) INNER JOIN: Customers who have accounts
SELECT customer.cust_name, Account.acc_no, Account.balance
FROM customer
JOIN Depositor ON customer.cust_name = Depositor.cust_name
JOIN Account ON Depositor.acc_no = Account.acc_no;

-- 2) LEFT JOIN: Show all customers (even those without accounts)
SELECT customer.cust_name, Account.acc_no, Account.balance
FROM customer
LEFT JOIN Depositor ON customer.cust_name = Depositor.cust_name
LEFT JOIN Account ON Depositor.acc_no = Account.acc_no;

-- 3) RIGHT JOIN: Show all loans even if no customer borrowed
SELECT Loan.loan_no, Loan.branch_name, Loan.amount, Borrower.cust_name
FROM Loan
LEFT JOIN Borrower ON Loan.loan_no = Borrower.loan_no;

-- 4) SUBQUERY: Customers who have taken a loan
SELECT cust_name
FROM customer
WHERE cust_name IN (SELECT cust_name FROM Borrower);

-- 5) VIEW: Customer Loan View
CREATE VIEW loan_customers AS
SELECT cust_name, loan_no
FROM Borrower;
```