**Assignment 3**

**1.** Find customer details having loan in both ‘HDFC’ and ‘ICICI’ branches.

SELECT c.\* FROM Customer c JOIN Borrower b ON c.customer\_id = b.customer\_id JOIN Loan l ON b.loan\_number = l.loan\_number WHERE l.branch\_name IN ('HDFC', 'ICICI') GROUP BY c.customer\_id, c.customer\_name, c.customer\_street, c.customer\_city HAVING COUNT(DISTINCT l.branch\_name) = 2;

**2.** List customer details who are borrower as well as depositor in the same branch.

SELECT DISTINCT c.\* FROM Customer c JOIN Depositor d ON c.customer\_id = d.customer\_id JOIN Account a ON d.account\_number = a.account\_number JOIN Borrower b ON c.customer\_id = b.customer\_id JOIN Loan l ON b.loan\_number = l.loan\_number WHERE a.branch\_name = l.branch\_name;

**3.** Count of depositors in each branch.

SELECT a.branch\_name, COUNT(DISTINCT d.customer\_id) AS number\_of\_depositors FROM Account a JOIN Depositor d ON a.account\_number = d.account\_number GROUP BY a.branch\_name;

**4.** Find all customer details having loan amount greater than average account balance at 'XYZ' branch

SELECT c.\*, l.amount AS loan\_amount FROM Customer c JOIN Borrower b ON c.customer\_id = b.customer\_id JOIN Loan l ON b.loan\_number = l.loan\_number WHERE l.amount > (SELECT AVG(balance) FROM Account WHERE branch\_name = 'XYZ');

**5.** Find customer names from each branch who has the highest balance.

WITH RankedBalances AS (SELECT c.customer\_name, a.branch\_name, a.balance, RANK() OVER(PARTITION BY a.branch\_name ORDER BY a.balance DESC) as rnk FROM Customer c JOIN Depositor d ON c.customer\_id = d.customer\_id JOIN Account a ON d.account\_number = a.account\_number) SELECT customer\_name, branch\_name, balance FROM RankedBalances WHERE rnk = 1;

**#JOINS**

**1.** List depositors who also have a loan account using (NATURAL JOIN).

SELECT T1.customer\_id, T1.customer\_name FROM (SELECT DISTINCT c.customer\_id, c.customer\_name FROM Customer c JOIN Depositor d ON c.customer\_id = d.customer\_id) AS T1 NATURAL JOIN (SELECT DISTINCT c.customer\_id, c.customer\_name FROM Customer c JOIN Borrower b ON c.customer\_id = b.customer\_id) AS T2;

**2.** Find all possible combinations of depositors and borrowers using (CROSS JOIN).

SELECT D.customer\_name AS depositor, B.customer\_name AS borrower FROM (SELECT DISTINCT c.customer\_name FROM Customer c JOIN Depositor d ON c.customer\_id = d.customer\_id) AS D CROSS JOIN (SELECT DISTINCT c.customer\_name FROM Customer c JOIN Borrower b ON c.customer\_id = b.customer\_id) AS B;

**3.** List all customer details who do not have a loan account (LEFT OUTER JOIN).

SELECT c.\* FROM Customer c LEFT JOIN Borrower b ON c.customer\_id = b.customer\_id WHERE b.customer\_id IS NULL;

**4.** List all customer details who borrowed a loan (RIGHT OUTER JOIN).

SELECT DISTINCT c.\* FROM Customer c RIGHT JOIN Borrower b ON c.customer\_id = b.customer\_id;

**5.** Give details of all customers having both loan and deposit account (FULL OUTER JOIN using UNION).

WITH CustomerDeposits AS (SELECT DISTINCT customer\_id FROM Depositor), CustomerBorrows AS (SELECT DISTINCT customer\_id FROM Borrower) SELECT c.\* FROM Customer c JOIN CustomerDeposits cd ON c.customer\_id = cd.customer\_id JOIN CustomerBorrows cb ON c.customer\_id = cb.customer\_id WHERE c.customer\_id IN (SELECT customer\_id FROM CustomerDeposits LEFT JOIN CustomerBorrows USING(customer\_id) UNION SELECT customer\_id FROM CustomerDeposits RIGHT JOIN CustomerBorrows USING(customer\_id));