

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA

SURATHKAL, MANGALORE - 575 025

Course Code – CS254

Course Name – Database Systems Lab

Lab - 02

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Submitted To

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**2. Build a Department database which consist of following information:**

**Student (Rollno, Name, Dob, Gender, Doa, Bcode);**

**Branch (Bcode, Bname, Dno);**

**Department (Dno, Dname);**

**Course (Ccode, Cname, Credits, Dno);**

**Branch\_Course (Bcode, Ccode, Semester);**

**Enrolls (Rollno, Ccode, Grade);**

**Write Queries for the following:**

CREATE DATABASE IF NOT EXISTS department\_info;

USE department\_info;

CREATE TABLE department (

    d\_no VARCHAR(5) NOT NULL,

    d\_name VARCHAR(50),

    PRIMARY KEY (d\_no));

CREATE TABLE branch (

    b\_code VARCHAR(5) NOT NULL,

    b\_name VARCHAR(50),

    d\_no VARCHAR(5) NOT NULL,

    PRIMARY KEY (b\_code),

    FOREIGN KEY (d\_no) REFERENCES department(d\_no));

CREATE TABLE course (

    c\_code VARCHAR(5) NOT NULL,

    c\_name VARCHAR(50),

    credits INT,

    d\_no VARCHAR(5) NOT NULL,

    PRIMARY KEY (c\_code),

    FOREIGN KEY (d\_no) REFERENCES department(d\_no));

CREATE TABLE student (

    rollno INT NOT NULL,

    name VARCHAR(50),

    dob DATE,

    gender CHAR(1),

    doa DATE,

    b\_code VARCHAR(5) NOT NULL,

    PRIMARY KEY (rollno),

    FOREIGN KEY (b\_code) REFERENCES branch(b\_code)

    );

CREATE TABLE branch\_course (

    b\_code VARCHAR(5) NOT NULL,

    c\_code VARCHAR(5) NOT NULL,

    semester INT,

    FOREIGN KEY (b\_code) REFERENCES branch(b\_code),

    FOREIGN KEY (c\_code) REFERENCES course(c\_code));

CREATE TABLE enrolls (

    rollno INT NOT NULL,

    c\_code VARCHAR(5) NOT NULL,

    grade INT,

    FOREIGN KEY (rollno) REFERENCES student(rollno),

    FOREIGN KEY (c\_code) REFERENCES course(c\_code));

INSERT INTO department

    VALUES ("D1", "CSE"),

    ("D2", "EEE"),

    ("D3", "IT"),

    ("D4", "ME"),

    ("D5", "IPE");

INSERT INTO branch

    VALUES ("B1", "B1\_CSE", "D1"),

    ("B2", "B2\_CSE", "D1"),

    ("B3", "B1\_EEE", "D2"),

    ("B4", "B2\_EEE", "D2"),

    ("B5", "B1\_IT", "D3"),

    ("B6", "B2\_IT", "D3"),

    ("B7", "B1\_ME", "D4"),

    ("B8", "B1\_IPE", "D5");

INSERT INTO course

    VALUES ("C1", "C1\_CSE", 4, "D1"),

    ("C2", "C2\_CSE", 4, "D1"),

    ("C3", "C1\_EEE", 2, "D2"),

    ("C4", "C1\_EEE", 3, "D2"),

    ("C5", "C1\_IT", 4, "D3"),

    ("C6", "C1\_IT", 4, "D3"),

    ("C7", "C1\_ME", 1, "D4"),

    ("C8", "C1\_IPE", 4, "D5");

INSERT INTO student

    VALUES (1, "S1", "2001-01-01", "M", "2005-01-01", "B1"),

    (2, "S2", "2000-01-01", "M", "2005-01-02", "B2"),

    (3, "S3", "2001-02-01", "F", "2005-01-01", "B3"),

    (4, "S4", "2001-03-01", "M", "2005-01-05", "B4"),

    (5, "S5", "2001-07-01", "M", "2005-01-01", "B5"),

    (6, "S6", "2001-02-05", "F", "2005-01-04", "B6"),

    (7, "S7", "2001-01-20", "M", "2005-01-06", "B7"),

    (8, "S8", "2001-05-01", "F", "2005-01-07", "B8"),

    (9, "S9", "2001-01-01", "M", "2005-01-01", "B1"),

    (10, "S10", "2001-02-01", "M", "2005-02-01", "B2"),

    (11, "S11", "2001-03-01", "F", "2005-01-11", "B3"),

    (12, "S12", "2001-04-01", "M", "2005-01-14", "B4"),

    (13, "S13", "2001-05-01", "M", "2005-01-13", "B5");

INSERT INTO branch\_course

    VALUES ("B1", "C2", 1),

    ("B2", "C2", 2),

    ("B3", "C3", 3),

    ("B4", "C4", 4),

    ("B5", "C5", 5),

    ("B6", "C6", 6),

    ("B7", "C7", 7),

    ("B8", "C8", 1),

    ("B2", "C1", 1),

    ("B2", "C8", 2),

    ("B3", "C4", 3),

    ("B1", "C4", 4),

    ("B5", "C6", 5),

    ("B6", "C5", 6),

    ("B8", "C7", 1),

    ("B7", "C8", 8);

INSERT INTO enrolls

    VALUES (1, "C1", 4),

    (2, "C2", 4),

    (3, "C3", 4),

    (4, "C4", 5),

    (5, "C5", 4),

    (6, "C6", 6),

    (7, "C7", 4),

    (8, "C8", 5),

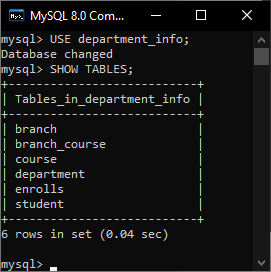
    (9, "C1", 8),

    (10, "C2", 9),

    (11, "C3", 4),

    (12, "C4", 7),

    (13, "C5", 6);

****

**a. Print the details of students who are from the same department.**

SELECT s.rollno,

        s.name,

        s.dob,

        s.gender,

        s.doa,

        d.d\_name

FROM student s

JOIN branch b

    USING (b\_code)

JOIN department d

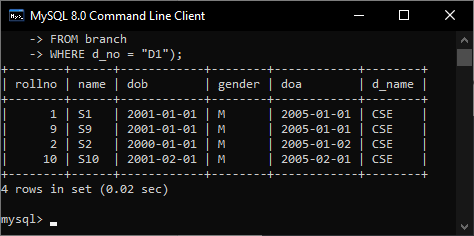
    USING (d\_no)

WHERE b\_code IN (

    SELECT b\_code

    FROM branch

    WHERE d\_no = "D1")

****

**b. Get the details of branches under a particular Department;**

SELECT d.d\_no as DEPT\_ID,

        d.d\_name as DEPT,

        b.b\_code as BRANCH\_CODE,

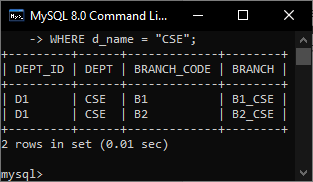
        b.b\_name as BRANCH

FROM department d

JOIN branch b

    USING (d\_no)

WHERE d\_name = "CSE"

****

**c. Print the names of courses offered in a particular department in a particular semester;**

SELECT c.c\_name, d.d\_name, bc.semester

FROM branch\_course bc

JOIN branch

    USING (b\_code)

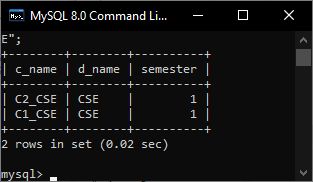
JOIN department d

    using (d\_no)

JOIN course c

    using (c\_code)

WHERE semester = 1 AND d\_name = "CSE"

****

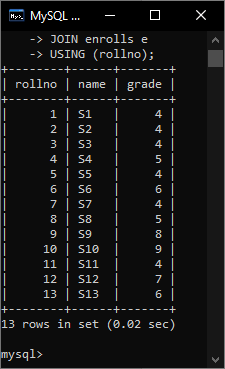
**d. Print the students roll no, Name and grades;**

SELECT s.rollno, s.name, e.grade

FROM student s

JOIN enrolls e

    USING (rollno)

****

**e. Print the details of students who are enrolled for different courses.**

**Roll Name Course**

**1 A C1**

**2 B C1**

**3 C C2**

**4 D C2**

**5 E C3**