

B.M.S COLLEGE OF ENGINEERING BENGALURU
Autonomous Institute, Affiliated To VTU

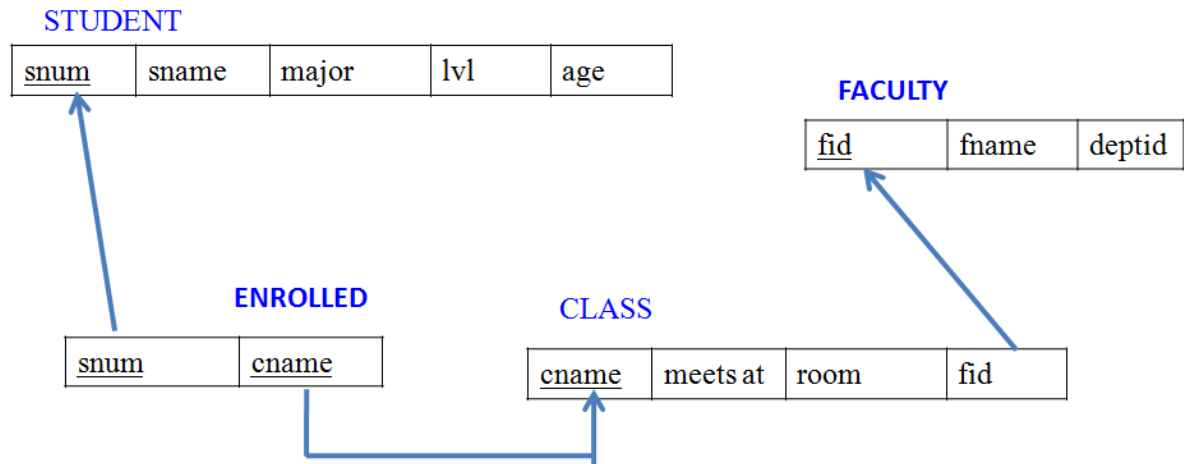
Bachelor of Engineering
in
Computer Science and Engineering

Submitted by:
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Lab : DBMS

Faculty in-charge : Panimozhi K

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```

CREATE TABLE student(

    snum INT,

    sname VARCHAR(10),

    major VARCHAR(2),

    lvl VARCHAR(2),

    age INT, primary key(snum));
  
```

```

desc student;
  
```

```

CREATE TABLE faculty(

    fid INT,fname VARCHAR(20),

    deptid INT,

    PRIMARY KEY(fid));
  
```

```

desc faculty;
  
```

```

CREATE TABLE class(

    cname VARCHAR(20),
  
```

```
metts_at TIMESTAMP,

room VARCHAR(10),

fid INT,

PRIMARY KEY(cname),

FOREIGN KEY(fid) REFERENCES faculty(fid));

DESC class;

CREATE TABLE enrolled(

snum INT,

cname VARCHAR(20),

PRIMARY KEY(snum,cname),

FOREIGN KEY(snum) REFERENCES student(snum),

FOREIGN KEY(cname) REFERENCES class(cname));

desc enrolled;

commit;

INSERT INTO STUDENT VALUES(&snum, '&sname', '&major', '&lvl', &age);

INSERT INTO STUDENT VALUES(1, 'jhon', 'CS', 'Sr', 19);

INSERT INTO STUDENT VALUES(2, 'Smith', 'CS', 'Jr', 20);

INSERT INTO STUDENT VALUES(3 , 'Jacob', 'CV', 'Sr', 20);

INSERT INTO STUDENT VALUES(4, 'Tom ', 'CS', 'Jr', 20);
```

```
INSERT INTO STUDENT VALUES(5, 'Rahul', 'CS', 'Jr', 20);
```

```
INSERT INTO STUDENT VALUES(6, 'Rita', 'CS', 'Sr', 21);
```

```
select * from student;
```

```
INSERT INTO FACULTY VALUES(&FID, '&FNAME', &DEPTID);
```

```
INSERT INTO FACULTY VALUES(11, 'Harish', 1000);
```

```
INSERT INTO FACULTY VALUES(12, 'MV', 1000);
```

```
INSERT INTO FACULTY VALUES(13, 'Mira', 1001);
```

```
INSERT INTO FACULTY VALUES(14, 'Shiva', 1002);
```

```
INSERT INTO FACULTY VALUES(15, 'Nupur', 1000);
```

```
commit;
```

```
select * from faculty;
```

```
commit;
```

```
alter session set nls_timestamp_format = 'RR/MM/DD HH24:MI:SSXFF';
```

```
alter session set nls_date_language = 'ENGLISH';
```

```
insert into class values('&cname', '&meets_at', '&room', &fid);
```

```
insert into class values('class1', '12/11/15 10:15:16', 'R1', 14);
```

```
insert into class values('class10', '12/11/15 10:15:16', 'R128', 14);
```

```
insert into class values('class2', '12/11/15 10:15:20', 'R2', 12);
```

```
insert into class values('class3', '12/11/15 10:15:25', 'R3', 12);
```

```
insert into class values('class4', '12/11/15 20:15:20', 'R4', 14);
```

```
insert into class values('class5', '12/11/15 20:15:20', 'R3', 15);
```

```
insert into class values('class6', '12/11/15 13:20:20', 'R2', 14);
```

```
insert into class values('class7', '12/11/15 10:10:10', 'R3', 14);
```

```
select * from class;
```

```
commit;
```

```
insert into enrolled values(&snum, '&cname');
```

```
insert into enrolled values(1, 'class1');
```

```
insert into enrolled values(2, 'class1');
```

```
insert into enrolled values(3, 'class3');
```

```
insert into enrolled values(4, 'class3');
```

```
insert into enrolled values(5, 'class4');
```

```
insert into enrolled values(1, 'class5');
```

```
insert into enrolled values(2, 'class5');
```

```
insert into enrolled values(3, 'class5');
```

```
insert into enrolled values(4, 'class5');
```

```
insert into enrolled values(5, 'class5');
```

select * from enrolled;

FID	FNAME	DEPTID
11	Harish	1000
12	MV	1000
13	Mira	1001
14	Shiva	1002
15	Nupur	1000

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CNAME	METTS_AT	ROOM	FID
class1	12/11/15 10:15:16.000000	R1	14
class10	12/11/15 10:15:16.000000	R128	14
class2	12/11/15 10:15:20.000000	R2	12
class3	12/11/15 10:15:25.000000	R3	12
class4	12/11/15 20:15:20.000000	R4	14
class5	12/11/15 20:15:20.000000	R3	15
class6	12/11/15 13:20:20.000000	R2	14
class7	12/11/15 10:10:10.000000	R3	14

SNUM	CNAME
1	class1
1	class5
2	class1
2	class5
3	class3
3	class5
4	class3
4	class5
5	class4
5	class5

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10 rows selected.

SNUM	SNAME	MAJOR	LVL	AGE
1	Jhon	CS	Sr	19
2	Smith	CS	Jr	20
3	Jacob	CV	Sr	20
4	Tom	CS	Jr	20
5	Rahul	CS	Jr	20
6	Rita	CS	Sr	21

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```
SELECT DISTINCT S.Sname
FROM Student S, Class C, Enrolled E, Faculty F
WHERE S.snum = E.snum AND E.cname = C.cname AND C.fid = F.fid AND
F.fname = 'Harish' AND S.lvl = 'Jr';
```

SNAME

Tom

```
SQL>SELECT C.cname
FROM Class C
WHERE C.room = 'R128'
OR C.cname IN (SELECT E.cname
                FROM Enrolled E
                GROUP BY E.cname
                HAVING COUNT (*) >= 5);
```

CNAME

class10

class5

```
SELECT DISTINCT S.sname
```



```

FROM Student S
WHERE S.snum IN (SELECT E1.snum
                  FROM Enrolled E1, Enrolled E2, Class C1, Class C2
                  WHERE E1.snum = E2.snum AND E1.cname <> E2.cname
                  AND E1.cname = C1.cname
                  AND E2.cname = C2.cname AND C1.meets_at =
C2.meets_at);

```

SNAME

Rahul

```

SELECT DISTINCT F.fname
FROM Faculty F
WHERE NOT EXISTS ((SELECT C.roomFROM Class C )
                  MINUS
                  (SELECTC1.room
                   FROM Class C1
                   WHERE C1.fid = F.fid ));

```

FNAME

Shiva

```

SELECT DISTINCT F.fname
FROM Faculty F
WHERE 5 > (SELECT COUNT (E.snum)
           FROM Class C, Enrolled E
           WHERE C.cname = E.cname
           AND C.fid = F.fid)

```

FNAME

Harish

MV

Mira
Shiva

viii. Find the names of students who are not enrolled in any class.

```
SELECT DISTINCT S.sname
FROM Student S
WHERE S.snum NOT IN (SELECT E.snum
                     FROM Enrolled E );
```

SNAME

Rita

ix. For each age value that appears in Students, find the level value that appears most often. For example, if there are more FR level students aged 18 than SR, JR, or SO students aged 18, you should print the pair (18, FR).

```
SELECT S.age, S.lvl
FROM Student S
GROUP BY S.age, S.lvl
HAVING S.lvl IN (SELECT S1.lvl FROM Student S1
                WHERE S1.age = S.age
                GROUP BY S1.lvl, S1.age
                HAVING COUNT (*) >= ALL (SELECT COUNT (*)
                                         FROM Student S2
                                         WHERE s1.age = S2.age
                                         GROUP BY S2.lvl,
                                         S2.age));
```

AGE LV

19 Sr

20 Jr

21 Sr