

# LAB 4- Student Database

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1BM19CS194

4-D

## QUERIES:

```
CREATE DATABASE student_faculty;
```

```
USE student_faculty;
```

```
CREATE TABLE student(  
    snum INT,  
    sname VARCHAR(10),  
    major VARCHAR(2),  
    lvl VARCHAR(2),  
    age INT, primary key(snum));
```

```
CREATE TABLE faculty(  
    fid INT, fname VARCHAR(20),  
    deptid INT,  
    PRIMARY KEY(fid));
```

```
CREATE TABLE class(  
    cname VARCHAR(20),  
    metts_at TIMESTAMP,  
    room VARCHAR(10),  
    fid INT,  
    PRIMARY KEY(cname),  
    FOREIGN KEY(fid) REFERENCES faculty(fid));
```

```

CREATE TABLE enrolled(
    snum INT,
    cname VARCHAR(20),
    PRIMARY KEY(snum,cname),
    FOREIGN KEY(snum) REFERENCES student(snum),
    FOREIGN KEY(cname) REFERENCES class(cname));

```

```

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);

```

	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
*	NULL	NULL	NULL	NULL	NULL

```

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);

```

Result Grid			
Filter Rows:			
	fid	fname	deptid
▶	11	Harish	1000
	12	MV	1000
	13	Mira	1001
	14	Shiva	1002
	15	Nupur	1000
*	NULL	NULL	NULL

```

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', 11);
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);

```

Result Grid				
Filter Rows:				
	cname	metts_at	room	fid
▶	class1	2012-11-15 10:15:16	R1	14
	class10	2012-11-15 10:15:16	R128	14
	class2	2012-11-15 10:15:20	R2	12
	class3	2012-11-15 10:15:25	R3	11
	class4	2012-11-15 20:15:20	R4	14
	class5	2012-11-15 20:15:20	R3	15
	class6	2012-11-15 13:20:20	R2	14
	class7	2012-11-15 10:10:10	R3	14
*	NULL	NULL	NULL	NULL

```

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');

	snum	cname
▶	1	class1
	2	class1
	3	class3
	4	class3
	5	class4
	1	class5
	2	class5
	3	class5
	4	class5
	5	class5

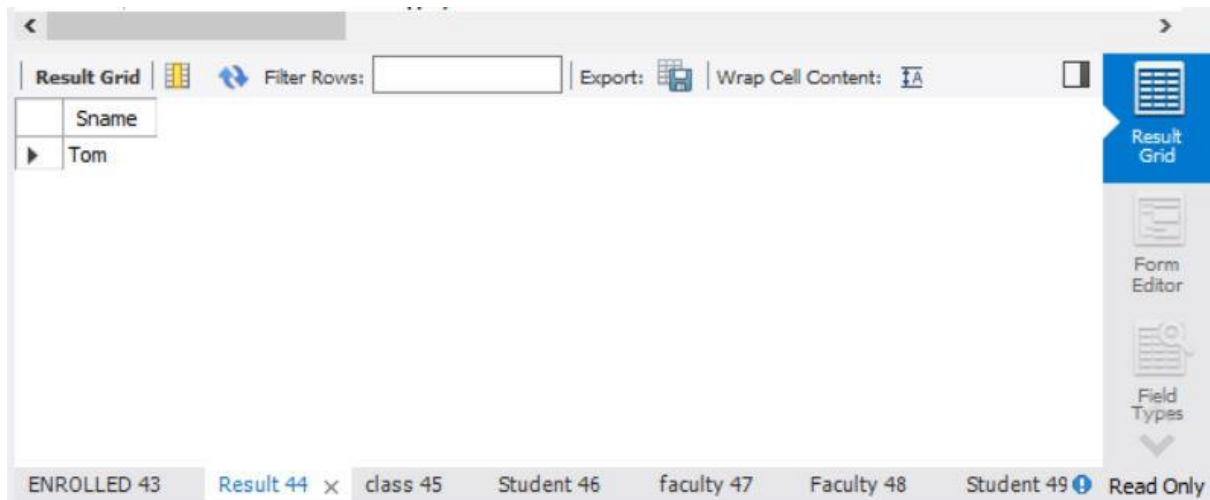
## Additional Queries:

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';



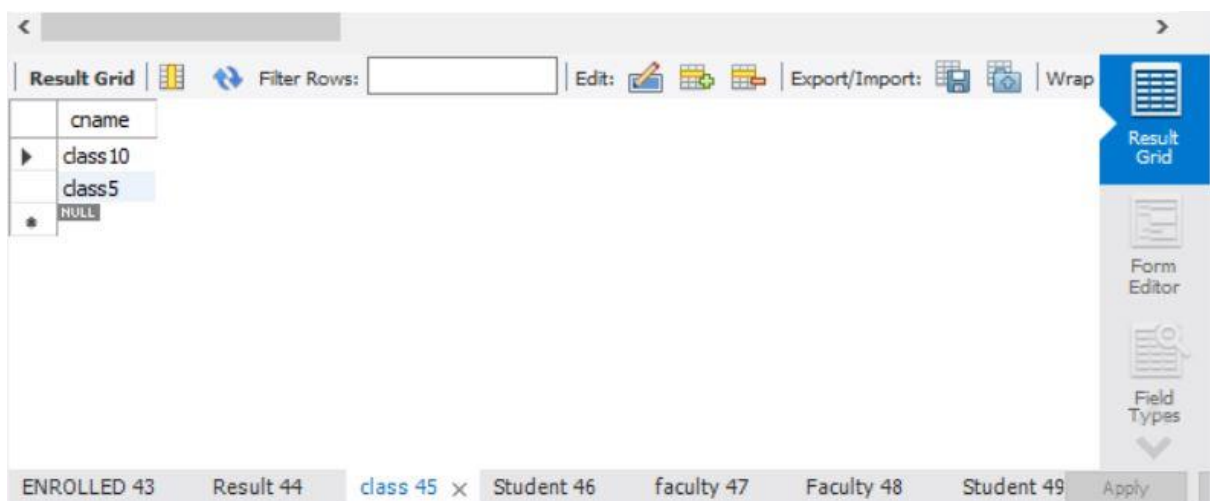
SELECT DISTINCT cname

FROM class

WHERE room='R128'

OR

cname IN (SELECT e.cname FROM enrolled e GROUP BY e.cname HAVING COUNT(\*)>=5);



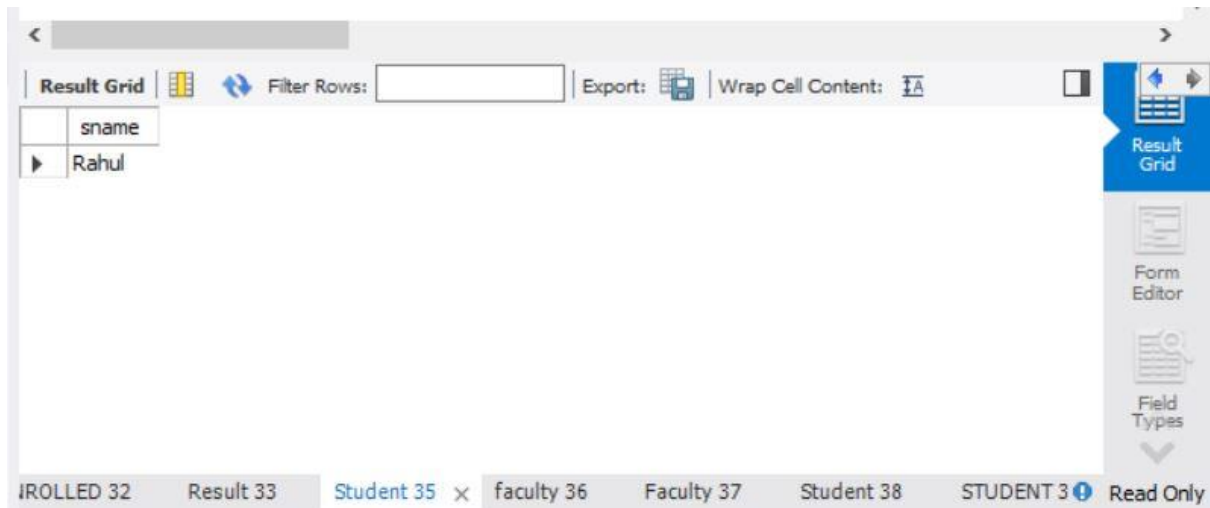
SELECT DISTINCT S.sname

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.metts_at = C2.metts_at);

```



```

SELECT f.fname,f.fid
      FROM faculty f
      WHERE f.fid in ( SELECT fid FROM class
                      GROUP BY fid HAVING COUNT(*)=(SELECT COUNT(DISTINCT room) FROM
class) );

```

Result Grid		Filter Rows:	Edit:	Export/Import:	Wrap
fname	fid				
Shiva	14				
NULL	NULL				

Result Grid

Form Editor

Field Types

ROLLED 32 Result 33 Student 35 faculty 36 x Faculty 37 Student 38 STUDENT 3 Apply

```

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);

```

Result Grid		Filter Rows:	Export:	Wrap Cell Content:
fname				
Harish				
MV				
Mira				
Shiva				

Result Grid

Form Editor

Field Types

ROLLED 32 Result 33 Student 35 faculty 36 Faculty 37 x Student 38 STUDENT 3 Read Only

```

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

```

Result Grid

Filter Rows:

Export: Wrap Cell Content:

	sname
▶	Rita

Result Grid

Form Editor

Field Types

ROLLED 32 Result 33 Student 35 faculty 36 Faculty 37 Student 38 × STUDENT 3 Read Only

```

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.age, S1.lvl
                HAVING COUNT(*) >= ALL (SELECT COUNT(*)
                FROM STUDENT S2
                WHERE S1.age=S2.age
                GROUP BY S2.lvl, S2.age))
ORDER BY S.age;

```

Result Grid

Filter Rows:

Export: Wrap Cell Content:

	age	lvl
▶	19	Sr
	20	Jr
	21	Sr

Result Grid

Form Editor

Field Types

ROLLED 32 Result 33 Student 35 faculty 36 Faculty 37 Student 38 STUDENT 3 Read Only