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);

                INSERT INTO FACULTY VALUES(11, 'Harish', 1000);
                INSERT INTO FACULTY VALUES(12, 'MV', 1000);
                INSERT INTO FACULTY VALUES(13 , 'Mira', 1001);
```

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            INSERT INTO FACULTY VALUES(14, 'Shiva', 1002);
            INSERT INTO FACULTY VALUES(15, 'Nupur', 1000);

            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);

            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');
```

Class Table:

cname	metts_at	room	fid
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
class3	2012-11-15 10:15:25	R3	11
class2	2012-11-15 10:15:20	R2	12
class1	2012-11-15 10:15:16	R1	14
class10	2012-11-15 10:15:16	R128	14
class7	2012-11-15 10:10:10	R3	14
NULL	NULL	NULL	NULL

Enrolled Table:

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

Faculty Table:

fid	fname	deptid
11	Harish	1000
12	MV	1000
13	Mira	1001
14	Shiva	1002
15	Nupur	1000
NULL	NULL	NULL

Student Table:
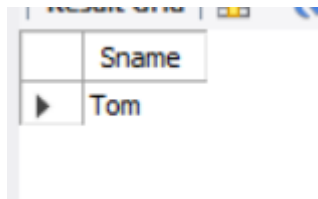
snum	sname	major	lvl	age
1	jhon	CS	Sr	19
2	Smith	CS	Jr	20
3	Jacob	CV	Sr	20
4	Tom	CS	Jr	20
5	Rahul	CS	Jr	20
6	Rita	CS	Sr	21
NULL	NULL	NULL	NULL	NULL

ADDITIONAL QUERIES

Query 1:

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
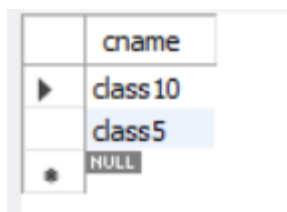
F.fname = 'Harish' AND S.lvl = 'Jr';

Output:

	Sname
▶	Tom

Query 2:

SELECT DISTINCT cname

FROM class

WHERE room='R128'

OR

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

Output:

	cname
▶	class10
	class5
*	NULL

Query 3:

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);

Output:

	sname
▶	Rahul

Query 4:

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));

Output:

	fname	fid
▶	Shiva	14
*	NULL	NULL

Query 5:

SELECT DISTINCT F.fname

FROM Faculty F

WHERE 5 > (SELECT COUNT(E.snum)

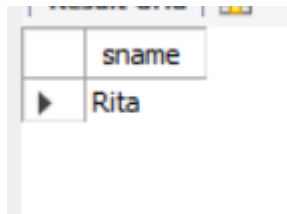FROM Class C, Enrolled E

WHERE C.cname = E.cname

AND C.fid = F.fid);

Output:

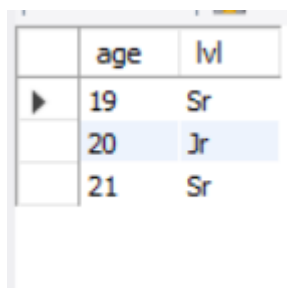|	fname
▶	Harish
	MV
	Mira
	Shiva

Query 6:

SELECT DISTINCT S.sname

FROM Student S

WHERE S.snum NOT IN (SELECT E.snum

FROM Enrolled E);

Output:

sname
Rita

Query 7:

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;

Output:

age	lvl
19	Sr
20	Jr
21	Sr