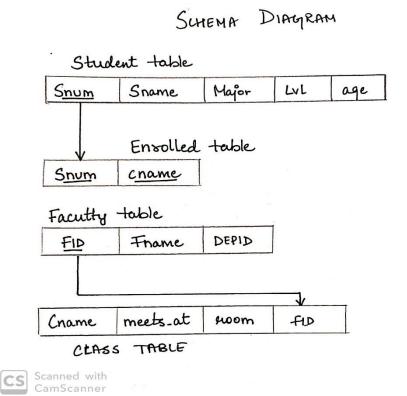# LAB 4

SCHEMA DIAGRAM

CODE:

```
CREATE TABLE student1(
snum INT,
sname VARCHAR(10),
major VARCHAR(10),
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),
```

```sql
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 student1(snum),
 FOREIGN KEY(cname) REFERENCES class(cname));

INSERT INTO STUDENT1 VALUES('&snum', '&sname', '&major', '&lvl', '&age');

select * from student1;

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

select * from faculty;

commit;
alter session set nls_timestamp_format = 'HH24:MI:SS';

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

select * from class;
commit;

insert into enrolled values('&snum','&cname');
select * from enrolled;

SELECT DISTINCT sname
FROM Student1 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 ='prof.Murthy' AND S.lvl ='JR';

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);

SELECT DISTINCT sname
FROM Student1 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 = C1.cname
AND E2.cname = C2.cname AND C1.metts_at ='12:10:00');

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

SELECT DISTINCT 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);

SELECT DISTINCT sname
FROM student1 s WHERE s.snum NOT IN(SELECT e.snum from enrolled e);

SELECT S.age,S.lvl
FROM student1 S
GROUP BY S.age,S.lvl
HAVING S.lvl IN(SELECT S1.lvl FROM student1 S1 WHERE S1.age=S.age
GROUP BY S1.lvl,S1.age
HAVING COUNT(*)>=ALL(SELECT COUNT(*)
FROM student1 S2 WHERE S1.age=S2.age GROUP BY S2.lvl,S2.age));

OUTPUT:

TABLES:

Student table: Class table:

	SNUM	SNAME	MAJOR	LVL	AGE
1	1	arjit	cs	JR	20
2	2	avinash	cs	JR	20
3	3	aditya	cs	SR	23
4	4	shreya	cs	JR	20
5	5	tanya	cs	JR	20
6	6	shiva	cs	JR	20
7	7	sai	ec	JR	20
8	8	prithvik	ec	SR	23
9	9	sakshi	ec	JR	20
10	10	snehita	cs	JR	23
11	11	rita	ec	SR	23

	CNAME	METTS_AT	ROOM	FID
1	4c	12:10:00	R128	10
2	4b	09:50:00	R129	20
3	4a	10:00:00	R200	10
4	3c	12:10:00	R201	10
5	3b	01:30:00	R129	10

Enrolled table:

	SNUM	CNAME
1	1	4c
2	2	4c
3	3	4b
4	4	4c
5	5	4a
6	6	4c
7	7	3c
8	8	3c
9	9	3c
10	10	3b

Faculty table:

	FID	FNAME	DEPTID
1	10	prof.Murthy	10
2	20	prof.sudha	10
3	30	prof.Latha	20

QUERY 1:

	SNAME
1	shiva
2	arjit
3	shreya
4	sai
5	sakshi
6	avinash
7	tanya

QUERY 2:

	CNAME
1	4c

QUERY 3:

	SNAME
1	shiva
2	arjit
3	shreya
4	sai
5	sakshi
6	avinash
7	prithvik

QUERY 4:

	FNAME
1	prof.Murthy

QUERY 5:

	FNAME
1	prof.Latha
2	prof.sudha

QUERY 6:

	SNAME
1	rita

QUERY 7:

	AGE	LVL
1	20	JR
2	23	SR