```
--query 1 find how many students in each department
select d.dept_id,d.dept_name,count(s.*) from department as d
join student as s
on d.dept_id=s.dept_id
group by d.dept_id,d.dept_name;

 dept_id | dept_name | count
---------+-----------+-------
       4 | EEE       |     3
       6 | CIVIL     |     3
       2 | CSE       |     3
       3 | ECE       |     3
       5 | MECH      |     3

--query 2 find how many student in each department with order by department id
select d.dept_id,d.dept_name,count(s.*) from department as d
join student as s
on d.dept_id=s.dept_id
group by d.dept_id,d.dept_name
order by dept_id;

 dept_id | dept_name | count
---------+-----------+-------
       1 | IT        |     3
       2 | CSE       |     3
       3 | ECE       |     3
       4 | EEE       |     3
       5 | MECH      |     3
       6 | CIVIL     |     3

--query 3 find department where max student in that class
select d.dept_id,d.dept_name,count(s.*) from department as d
join student as s
on d.dept_id=s.dept_id
group by d.dept_id,d.dept_name
order by count(s.*) desc
limit 1;

 dept_id | dept_name | count
---------+-----------+-------
       1 | IT        |     5

--query 4 find oldest student
select * from department
where dept_start_date=(
select min(dept_start_date) from department
);

 dept_id | dept_name | dept_start_date
---------+-----------+-----------------
       6 | CIVIL     | 1879-04-25
```

```
--query 5 join M to M table
select c.course_id,c.course_name,c.credits,s.staff_name from course as c
join staff_course as st
on c.course_id=st.course_id
join staff as s
on st.staff_id=s.staff_id
order by course_id;

 course_id |    course_name    | credits | staff_name
-----------+-------------------+---------+------------
       101 | linear algebra    |       4 | Prakash
       101 | linear algebra    |       4 | Sundar
       102 | discrete          |       4 | Selvan
       103 | digital logic     |       3 | Vasu
       104 | statistics        |       4 | Durga
       104 | statistics        |       4 | Lakshmi
       105 | ECA               |       3 | Sanjay
       105 | ECA               |       3 | Meena
       106 | circuit analysis  |       2 | Kabilan
       107 | C++               |       3 | Velan
       108 | AIML              |       4 | Divya
       108 | AIML              |       4 | Kanda
       109 | Eng Mechanics     |       3 | Rohit
       110 | metal theory      |       2 | Arun
       111 | fluid mechanics   |       3 | Kumar

--query 6 find how many staff take each courses
select c.course_id,c.course_name,count(s.staff_id) as count from course as c
join staff_course as st
on c.course_id=st.course_id
join staff as s
on st.staff_id=s.staff_id
group by c.course_id,c.course_name
order by c.course_id;

 course_id |    course_name    | count
-----------+-------------------+-------
       101 | linear algebra    |     2
       102 | discrete          |     1
       103 | digital logic     |     1
       104 | statistics        |     2
       105 | ECA               |     2
       106 | circuit analysis  |     1
       107 | C++               |     1
       108 | AIML              |     2
       109 | Eng Mechanics     |     1
       110 | metal theory      |     1
       111 | fluid mechanics   |     1
```

```
--query 7 which course are taking by more than one staff
select c.course_id,c.course_name,count(s.staff_id) from course as c
join staff_course as st
on c.course_id=st.course_id
join staff as s
on st.staff_id=s.staff_id
group by c.course_id,c.course_name
having count(s.staff_id)>1
order by c.course_id;

 course_id |  course_name   | count
-----------+----------------+-------
       101 | linear algebra |     2
       104 | statistics     |     2
       105 | ECA            |     2
       108 | AIML           |     2

--query 8 find a students details whose marks are greater than avg of tot marks
select s.roll_no,s.stu_name,s.branch,m.tot_marks from students as s
join marks as m
 on s.roll_no=m.roll_no
where tot_marks>(
select avg(tot_marks) from marks
) and (stu_name like '%a' or stu_name like 'a%');

 roll_no | stu_name | branch | tot_marks
---------+----------+--------+-----------
   10001 | karuppa  | IT     |       417
   20002 | anand    | CSE    |       434
   40002 | viswa    | EEE    |       445

--query 9 left join
select s.roll_no,s.stu_name,s.branch,m.s1,m.s2,m.s3,m.s4,m.s5,m.tot_marks,m.avg_marks
from students as s
left join marks as m
on s.roll_no=m.roll_no;

 roll_no | stu_name | branch | s1 | s2 | s3 | s4 | s5 | tot_marks | avg_marks
---------+----------+--------+----+----+----+----+----+-----------+-----------
   10001 | karuppa  | IT     | 85 | 78 | 90 | 88 | 76 |       417 |     83.00
   10002 | tamil    | IT     | 80 | 70 | 75 | 68 | 72 |       365 |     73.00
   10003 | mari     | IT     | 90 | 88 | 84 | 79 | 85 |       426 |     85.00
   20001 | adithya  | CSE    | 77 | 82 | 86 | 80 | 78 |       403 |     80.00
   20002 | anand    | CSE    | 88 | 91 | 87 | 85 | 83 |       434 |     86.00
   20003 | pravin   | CSE    | 69 | 73 | 70 | 75 | 72 |       359 |     71.00
   30001 | vasanth  | ECE    | 92 | 89 | 90 | 93 | 91 |       455 |     91.00
   30002 | mani     | ECE    | 65 | 70 | 68 | 72 | 74 |       349 |     69.00
   30003 | guna     | ECE    | 78 | 82 | 85 | 80 | 79 |       404 |     80.00
   40001 | vijay    | EEE    | 86 | 84 | 88 | 82 | 80 |       420 |     84.00
   40002 | viswa    | EEE    | 90 | 89 | 87 | 91 | 88 |       445 |     89.00
   40003 | ganesh   | EEE    | 75 | 78 | 80 | 74 | 76 |       383 |     76.00
```

```
--query 10 right join
select s.roll_no,s.stu_name,s.branch,m.s1,m.s2,m.s3,m.s4,m.s5,m.tot_marks,m.avg_marks
from students as s
right join marks as m
on s.roll_no=m.roll_no;
```

roll_no	stu_name	branch	s1	s2	s3	s4	s5	tot_marks	avg_marks
10001	karuppa	IT	85	78	90	88	76	417	83.00
10002	tamil	IT	80	70	75	68	72	365	73.00
10003	mari	IT	90	88	84	79	85	426	85.00
20001	adithya	CSE	77	82	86	80	78	403	80.00
20002	anand	CSE	88	91	87	85	83	434	86.00
20003	pravin	CSE	69	73	70	75	72	359	71.00
30001	vasanth	ECE	92	89	90	93	91	455	91.00
30002	mani	ECE	65	70	68	72	74	349	69.00
30003	guna	ECE	78	82	85	80	79	404	80.00
40001	vijay	EEE	86	84	88	82	80	420	84.00
40002	viswa	EEE	90	89	87	91	88	445	89.00
40003	ganesh	EEE	75	78	80	74	76	383	76.00
50001	muthu	MECH	85	87	89	83	88	432	86.00
50002	vignesh	MECH	92	94	91	93	95	465	93.00
50003	siva	MECH	70	72	68	74	73	357	71.00
60001	santhosh	CIVIL	88	86	90	85	87	436	87.00
60002	thiru	CIVIL	81	80	79	83	82	405	81.00
60003	ragul	CIVIL	76	75	78	77	74	380	76.00
70001	kishore	BME	90	87	76	94	92	439	87.00
70002	rishitha	BME	89	87	67	73	92	408	81.00
70003	moni	BME	95	90	75	80	79	419	83.00
			80	85	88	87	82	422	84.40

```
query 11 full join
lect s.roll_no,s.stu_name,s.branch,m.s1,m.s2,m.s3,m.s4,m.s5,m.tot_marks,m.avg_marks
om students as s
ll join marks as m
  s.roll_no=m.roll_no;
```

oll_no	stu_name	branch	s1	s2	s3	s4	s5	tot_marks	avg_marks
10001	karuppa	IT	85	78	90	88	76	417	83.00
10002	tamil	IT	80	70	75	68	72	365	73.00
10003	mari	IT	90	88	84	79	85	426	85.00
20001	adithya	CSE	77	82	86	80	78	403	80.00
20002	anand	CSE	88	91	87	85	83	434	86.00
20003	pravin	CSE	69	73	70	75	72	359	71.00
30001	vasanth	ECE	92	89	90	93	91	455	91.00
30002	mani	ECE	65	70	68	72	74	349	69.00
30003	guna	ECE	78	82	85	80	79	404	80.00
40001	vijay	EEE	86	84	88	82	80	420	84.00
40002	viswa	EEE	90	89	87	91	88	445	89.00
40003	ganesh	EEE	75	78	80	74	76	383	76.00
50001	muthu	MECH	85	87	89	83	88	432	86.00
50002	vignesh	MECH	92	94	91	93	95	465	93.00
50003	siva	MECH	70	72	68	74	73	357	71.00
60001	santhosh	CIVIL	88	86	90	85	87	436	87.00
60002	thiru	CIVIL	81	80	79	83	82	405	81.00
60003	ragul	CIVIL	76	75	78	77	74	380	76.00
70001	kishore	BME	90	87	76	94	92	439	87.00
70002	rishitha	BME	89	87	67	73	92	408	81.00
70003	moni	BME	95	90	75	80	79	419	83.00
			80	85	88	87	82	422	84.40
80001	deepak	AIDS							