Nested queries

1. to find all employees with sal > either min sal of dept 10 or dept 20

   select * from emp
   where sal > any(select min(sal) from emp

          where deptno in (10,20)

          group by deptno)

2. to find all employees with sal > min sal of dept 10 and dept 20

   select * from emp
   where sal > all (select min(sal) from emp

          where deptno in (10,20)

          group by deptno)

3. to find all employees with salary < its own managers salary

   select *

   from emp e

   where sal < select sal

         from emp m

         where m.empno =e.mgr

4. find all employees with sal > avg sal of its own dept
   select * from emp e
   where sal > select avg(sal)
       from emp m
   where m.deptno=e.deptno

5. find all department in which some employees are there
   select * from dept d
   where exists(select * from emp e
   where e.deptno=d.deptno)

6. find all department in which no employees are there
   select * from dept d
   where not exists(select * from emp e
   where e.deptno=d.deptno)

pid	pname	qty	price	catid	sid	sid	sname	address
						1		

					1	2			

cid	cname	description		

1. find all products sold by salesman who stays in pune
   select * from product p
   where p.sid in (select sid from salesman s where s.address='pune')
2. find all products with category description contains word yummy
   select * from product p
   where p.catid in (select cid from category c where c.description like '%yummy%')

3. find all salesman who are performing good and stays in pune
   select * from salesman s where address='pune' and
   exists (select * from product p where p.sid=s.sid)
4. find all category for which no products are there in my shop.
   select * from category c
   where not exists (select * from product p where p.catid=ccid)
5. find all salesman who are not performing good
   select * from salesman s
   where not exists (select * from product p
                     where p.sid=s.sid)

To create a table with auto incrementing primary key
create table testable(
tid int primary key auto_increment,
tname varchar(20));

insert into testable values(default,'xxx')
insert into testable(tname) values('yyy')

ALTER TABLE testtable AUTO_INCREMENT=1001

Temparary table

create temporary table temtab(

te_id int primary key,

te_name varchar(20),

te_addr varchar(20));

to find first 5 highly paid employees

select * from emp e

where 6> (select count(*)

from emp m

where m.sal>e.sal)

order by sal desc;

Joins in table

1. When you want to display values from more than one table then use joins
2. if we are joining n tables then minimum n-1 join conditions are needed

Types of joins

cross join	when every row in the table emp is joined with every row from other table, then it is called as crossjoin

inner join
   1. equi join
   2. non equi join
   3. self join
	If we add join condition in the join query, then it is called as inner join
	1.if the condition is based on = sign then it is called as equi join
	2. if the condition is based on operator other than = then, it is called as non equijoin
	3. If in inner join we combine a table with itself, then it is called as self join

outer join
   1. left outer join
   2. right outer join
   3. full outer join
	when you want to retrieve matching as well as non matchin rows from multiple tables then use outer join
	   1. if we want nonmatching rows from the table which is on the left side in from clause, then use left outer join
	   2. if we want nonmatching rows from the table which is on the right side in from clause, then use right outer join
	   3. if we want nonmatching rows from both side tables then use full outer join, to use full outer join we need to write union query in mysql.

1. to display empno, deptno,dname for all employees

select e.empno,e.deptno,d.dname from emp e, dept d where e.deptno=d.deptno;	select e.empno,e.deptno,d.dname from emp e inner join dept d on e.deptno=d.deptno;

2. display all employees and their manager names

select e.empno,e.ename,e.mgr,m.empno mgrno. m.ename mgrname from emp e, emp m where e.mgr=m.empno;	select e.empno,e.ename,e.mgr,m.empno,m.ename from emp e inner join emp m on e.mgr=m.empno;

3. to display empno, deptno,dname for all employees with sal>2000

select e.empno,e.deptno,d.dname from emp e, dept d where e.deptno=d.deptno and sal>2000;	select e.empno,e.deptno,d.dname from emp e inner join dept d on e.deptno=d.deptno where sal>2000;

4. to display empno, deptno,dname for all employees with deptno is either 10 or 20

select empno,e.deptno,dname from emp e,dept d where e.deptno=d.deptno and e.deptno in (10,20)	select empno,e.deptno,dname from emp e inner join dept d on e.deptno=d.deptno where e.deptno in (10,20)

5. to display empno,ename,sal, and grade

```
select empno,ename,sal,grade,losal,hisal
from emp e, salgrade s
where sal between losal and hisal;
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6. to display courses name along with room name
```
select cid,cname,c.rid,r.rid,rname
from course c, room r
where c.rid=r.rid;
```

7. to display courses name along with faculty name
```
select cid,cname,c.fid,fname
from course c,faculty f
where c.fid=f.fid;
```

8. list courses, with room name and faculty name

select cid,cname,c.rid,r.rid,rname from course c, room r,faculty f where c.rid=r.rid and c.fid=f.fid;	select cid,cname,c.rid,r.rid,rname from course c inner join room r on c.rid=r.rid inner join faculty f on c.fid=f.fid

9. to list all employee name and department name , along with departments which do not have any employee

select empno,ename,e.deptno,d.deptno,dname from dept d left join emp e on e.deptno=d.deptno;	select empno,ename,e.deptno,d.deptno,dname from emp e right join dept d on e.deptno=d.deptno;

10. find all the employees name and department name, also display employees for whom no dept is assigned, and also display departments in which no employee is there?

    select empno,ename,e.deptno,d.deptno,d.dname

    from emp e left join dept d on e.deptno=d.deptno

    union

    select empno,ename,e.deptno,d.deptno,d.dname

    from emp e right join dept d on e.deptno=d.deptno;

11. to display course name and faculty name, for all courses, and also display faculty names which are not assigned to any course

    select cid,cname,fname

    from course c right join faculty f on c.fid=f.fid;

12. to display course name and room name, for all courses, and also display room names which are not assigned to any course

    select cid,cname,rname

    from course c right join room r on c.rid=r.rid;

13. to display course name and faculty name, for all courses, and also display faculty names which are not assigned to any course, and also display courses for which no faculty is assigned.

    select cid,cname,fname

    from course c right join faculty f on c.fid=f.fid

    union

    select cid,cname,fname

    from course c right left join faculty f on c.fid=f.fid;

14. to display course name for which no faculty is assigned and display all faculty names which are not assigned to any course,

select cid,cname,fname

from course c right join faculty f on c.fid=f.fid

where f.fname is null

union

select cid,cname,fname

from course c right left join faculty f on c.fid=f.fid

where c.cname is null;

15. find all employees for which no dept is assigned and all department for which no employee is assigned

    select empno,ename,e.deptno,d.deptno,d.dname
      from emp e right join dept d on e.deptno=d.deptno
    where e.ename is null
      union
    select empno,ename,e.deptno,d.deptno,d.dname
    from emp e left join dept d on e.deptno=d.deptno
     where d.dname is null;

16. find all faculties which are not assigned to any course and find all rooms which are not assigned to any course

    select cname,f.fid,f.fname,null,null
    from course c right join faculty f on c.fid=f.fid
    where c.cname is null
    union
    select cname,null,null,r.rid,r.rname
    from course c right join room r on c.rid=r.rid
    where c.cname is null