Topic ---------- create Table, DML , subquery and joins

1. Practice creating following tables

MySQL syntax:

```
create table mydept_DBDA
(
deptid int primary key,
dname varchar(20) not null unique,
dloc varchar(20)
)
-
```

Oracle syntax:

```
create table mydept_DBDA
(
deptid number primary key,
dname varchar2(20) not null unique,
dloc varchar2(20)
)

insert into mydept_DBDA values(30,'Purchase','Mumbai');
```

MySql syntax:

```
create table myemployee
(
empno int primary key,
fname varchar(15) not null,
```

```
mname varchar(15),
lname varchar(15) not null,
sal float(9,2) check(sal >=1000),
doj date,
passportnum varchar(15) unique,
deptno int,
constraint fk_deptno foreign key(deptno) references mydept_DBDA(deptid) on
delete set null
on update cascade
)
```

Oracle syntax:

```
create table myemployee
(
empno number(5) primary key,
fname varchar2(15) not null,
mname varchar2(15),
lname varchar2(15) not null,
sal number(9,2) check(sal >=1000),
doj date default sysdate,
passportnum varchar2(15) unique,
deptno number constraint fk_deptno references mydept_DBDA(deptid) on delete
cascade
)
```

```
mysql> create table myemployee
    -> (
    -> empno int primary key,
    -> fname varchar(15) not null,
    -> mname varchar(15),
    -> lname varchar(15) not null,
    -> sal float(9,2) check(sal >=1000),
    -> doj date,
    -> passportnum varchar(15) unique,
    -> deptno int,
    -> constraint fk_deptno foreign key(deptno) references mydept_DBDA(deptid) on
    -> delete set null
    -> on update cascade
    -> )
    -> ;
Query OK, 0 rows affected, 1 warning (0.18 sec)

mysql> desc myemployeee;
ERROR 1146 (42S02): Table 'iacsd_march23.myemployeee' doesn't exist
mysql> desc myemployee;
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
| empno       | int         | NO   | PRI | NULL    |       |
| fname       | varchar(15) | NO   |     | NULL    |       |
| mname       | varchar(15) | YES  |     | NULL    |       |
| lname       | varchar(15) | NO   |     | NULL    |       |
| sal         | float(9,2)  | YES  |     | NULL    |       |
| doj         | date        | YES  |     | NULL    |       |
| passportnum | varchar(15) | YES  | UNI | NULL    |       |
| deptno      | int         | YES  | MUL | NULL    |       |
+-------------+-------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

2. Create following tables Student, Course Student (sid,sname) ---------- sid ---primary key Course(cid,cname)---------- cid ---primary key Marks(studid,courseid,marks) Sample data for marks table studid,courseid,marks 1 1 99 1 3 98 2 1 95 2 2 97 create table marks(studid number, courseid number, marks number, constraint pk primary key(studid,courseid), constraint fk_sid foreign key (studid) references student(sid) on delete cascade, constraint fk_cid foreign key (courseid) references course(cid))

Ans create table student(

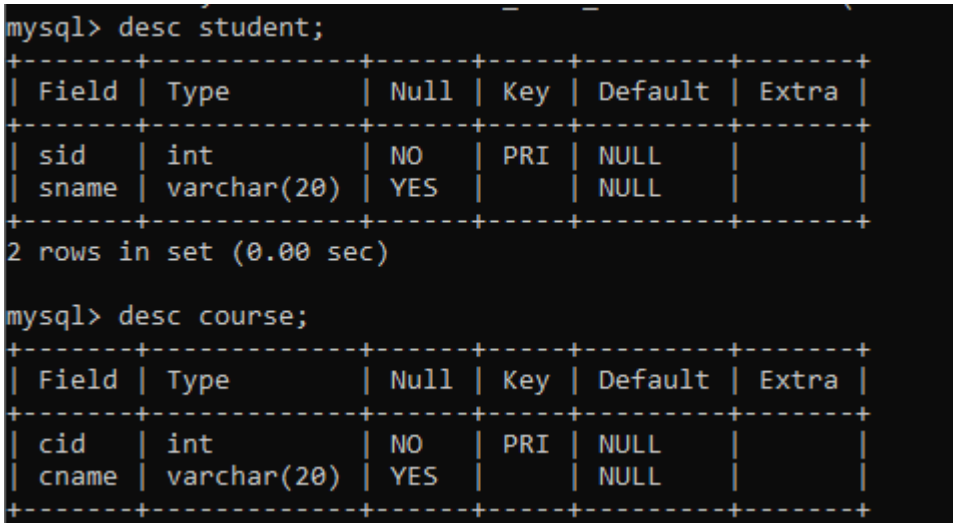
-> sid int primary key,

-> sname varchar (20));

Query OK, 0 rows affected (0.05 sec)

```
create table Course(
    -> cid int primary key,
    -> cname varchar (20));
Query OK, 0 rows affected (0.04 sec)

mysql>  create table Marks(
    -> studid int,
    -> courseid int,
    -> marks int,
    -> constraint pk primary key (studid,courseid),
    -> foreign key fk_sid (studid)  references student (sid),
    -> foreign key fk_cid (courseid)  references course (cid)
    -> );
Query OK, 0 rows affected (0.10 sec)
```



```
mysql> desc student;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| sid   | int         | NO   | PRI | NULL    |       |
| sname | varchar(20) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> desc course;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| cid   | int         | NO   | PRI | NULL    |       |
| cname | varchar(20) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
```

```
mysql> select * from marks;
+--------+----------+-------+
| studid | courseid | marks |
+--------+----------+-------+
|      1 |        1 |    99 |
|      1 |        3 |    98 |
|      2 |        1 |    95 |
|      2 |        2 |    97 |
+--------+----------+-------+
4 rows in set (0.00 sec)
```

3. Create empty table emp10 with table structure same as emp table. create table emp10 as (select * from emp where 1=2;)

Ans :

create table emp10 as

-> (select * from emp

-> where 1=2);

Query OK, 0 rows affected (0.09 sec)

```
mysql> desc emp10;
+----------+--------------+------+-----+---------+-------+
| Field    | Type         | Null | Key | Default | Extra |
+----------+--------------+------+-----+---------+-------+
| EMPNO    | int          | NO   |     | NULL    |       |
| ENAME    | varchar(10)  | YES  |     | NULL    |       |
| JOB      | varchar(9)   | YES  |     | NULL    |       |
| MGR      | int          | YES  |     | NULL    |       |
| HIREDATE | date         | YES  |     | NULL    |       |
| SAL      | decimal(7,2) | YES  |     | NULL    |       |
| COMM     | decimal(7,2) | YES  |     | NULL    |       |
| DEPTNO   | int          | YES  |     | NULL    |       |
+----------+--------------+------+-----+---------+-------+
8 rows in set (0.00 sec)
```

4. change job of smith to senior clerk

Ans :

update emp3

-> set job='senior cleark'

-> where ename='smith';

Query OK, 1 row affected (0.02 sec)

```
mysql>  update emp3
    ->  set job='senior cleark'
    ->  where ename='smith';
Query OK, 1 row affected (0.02 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from emp3;
+-------+--------+---------------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | job           | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+---------------+------+------------+---------+---------+--------+
|  7369 | SMITH  | senior cleark | 7902 | 1980-12-17 |  800.00 |    NULL |     20 |
|  7499 | ALLEN  | SALESMAN      | 7698 | 1981-02-20 | 1300.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN      | 7698 | 1981-02-22 | 1300.00 |  500.00 |     30 |
|  7566 | JONES  | MANAGER       | 7839 | 1981-04-02 | 2975.00 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN      | 7698 | 1981-09-28 | 1300.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER       | 7839 | 1981-05-01 | 1300.00 |    NULL |     30 |
|  7782 | CLARK  | MANAGER       | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST       | 7566 | 1982-12-09 | 3000.00 |    NULL |     20 |
|  7839 | KING   | PRESIDENT     | NULL | 1981-11-17 | 5000.00 |    NULL |     10 |
|  7844 | TURNER | SALESMAN      | 7698 | 1981-09-08 | 1300.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK         | 7788 | 1983-01-12 | 1100.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK         | 7698 | 1981-12-03 | 1300.00 |    NULL |     30 |
|  7902 | FORD   | ANALYST       | 7566 | 1981-12-03 | 3000.00 |    NULL |     20 |
|  7934 | MILLER | CLERK         | 7782 | 1982-01-23 | 1300.00 |    NULL |     10 |
+-------+--------+---------------+------+------------+---------+---------+--------+
14 rows in set (0.00 sec)
```

5. increase salary of all employees by 15% if they are earning some commission

38. list all employees with sal>smith's sal

Ans : select *

-> from emp

-> where sal>(select sal

-> from emp

-> where ename='smith');

```
mysql> select *
    -> from emp
    -> where sal>(select sal
    -> from emp
    -> where ename='smith');
+-------+--------+-----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB       | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+-----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN  | 7698 | 1981-02-20 | 1600.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN  | 7698 | 1981-02-22 | 1250.00 |  500.00 |     30 |
|  7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 2975.00 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN  | 7698 | 1981-09-28 | 1250.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER   | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1982-12-09 | 3000.00 |    NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 |    NULL |     10 |
|  7844 | TURNER | SALESMAN  | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK     | 7788 | 1983-01-12 | 1100.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK     | 7698 | 1981-12-03 |  950.00 |    NULL |     30 |
|  7902 | FORD   | ANALYST   | 7566 | 1981-12-03 | 3000.00 |    NULL |     20 |
|  7934 | MILLER | CLERK     | 7782 | 1982-01-23 | 1300.00 |    NULL |     10 |
+-------+--------+-----------+------+------------+---------+---------+--------+
13 rows in set (0.00 sec)
```

6. list all employees who are working in smith's department

Ans : select *

-> from emp

-> where deptno=(select deptno

-> from emp

-> where ename='smith');

```
mysql> select *
    -> from emp
    -> where deptno=(select deptno
    -> from emp
    -> where ename='smith');
+-------+-------+---------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB     | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+---------+------+------------+---------+------+--------+
|  7369 | SMITH | CLERK   | 7902 | 1980-12-17 |  800.00 | NULL |     20 |
|  7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL |     20 |
|  7788 | SCOTT | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL |     20 |
|  7876 | ADAMS | CLERK   | 7788 | 1983-01-12 | 1100.00 | NULL |     20 |
|  7902 | FORD  | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL |     20 |
+-------+-------+---------+------+------------+---------+------+--------+
5 rows in set (0.00 sec)
```

7. list all employees with sal < rajan's sal and salary > revati's sal

Ans : select *

-> from emp

-> where sal<any(select sal

-> from emp

-> where ename in ('rajan','revati'));

Empty set (0.02 sec)

7. delete all employees working in alan's department

Ans delete from emp2

-> where deptno=(select e.deptno

-> from (select *from emp2)e

-> where e.ename='allen');

Query OK, 6 rows affected (0.03 sec)

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	1980-12-17	1300.00	NULL	20
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10

8 rows in set (0.00 sec)

9. change salary of Alan to the salary of Miller.

Ans : update emp3

-> set sal=(select e.sal

-> from (select * from emp3) e

-> where e.ename='miller') where ename='allen';

Query OK, 1 row affected (0.03 sec)

```
mysql> update  emp3
    ->     set sal=(select e.sal
    ->     from (select * from emp3 ) e
    ->     where e.ename='miller') where ename='allen';
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from emp3;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1300.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10

14 rows in set (0.00 sec)

10. change salary of all emplees who working in Ward’s department to the salary of Miller.

Ans :

```
mysql>  update  emp3
    ->     set sal=(select e.sal
    ->     from (select * from emp3 ) e
    ->      where ename='miller') where deptno=(select b.deptno
    ->  from (select * from emp3) b
    ->  where b.ename='ward');
Query OK, 5 rows affected (0.02 sec)
Rows matched: 6  Changed: 5  Warnings: 0

mysql> select * from emp3;
+-------+--------+-----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB       | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+-----------+------+------------+---------+---------+--------+
|  7369 | SMITH  | CLERK     | 7902 | 1980-12-17 |  800.00 |    NULL |     20 |
|  7499 | ALLEN  | SALESMAN  | 7698 | 1981-02-20 | 1300.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN  | 7698 | 1981-02-22 | 1300.00 |  500.00 |     30 |
|  7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 2975.00 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN  | 7698 | 1981-09-28 | 1300.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER   | 7839 | 1981-05-01 | 1300.00 |    NULL |     30 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1982-12-09 | 3000.00 |    NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 |    NULL |     10 |
|  7844 | TURNER | SALESMAN  | 7698 | 1981-09-08 | 1300.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK     | 7788 | 1983-01-12 | 1100.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK     | 7698 | 1981-12-03 | 1300.00 |    NULL |     30 |
|  7902 | FORD   | ANALYST   | 7566 | 1981-12-03 | 3000.00 |    NULL |     20 |
|  7934 | MILLER | CLERK     | 7782 | 1982-01-23 | 1300.00 |    NULL |     10 |
+-------+--------+-----------+------+------------+---------+---------+--------+
14 rows in set (0.00 sec)
```

11. list all employees with salary > either Smith's salary or alan's sal

Ans :

mysql> select * from emp where sal>any(select sal from emp where ename='smith' or ename='allen');

```
+-------+--------+-----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | job       | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+-----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN  | 7698 | 1981-02-20 | 1840.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN  | 7698 | 1981-02-22 | 1437.50 |  500.00 |     30 |
|  7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 2975.00 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN  | 7698 | 1981-09-28 | 1437.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER   | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1982-12-09 | 3000.00 |    NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 5000.00 |    NULL |     10 |
|  7844 | TURNER | SALESMAN  | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK     | 7788 | 1983-01-12 | 1100.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK     | 7698 | 1981-12-03 |  950.00 |    NULL |     30 |
|  7902 | FORD   | ANALYST   | 7566 | 1981-12-03 | 3000.00 |    NULL |     20 |
|  7934 | MILLER | CLERK     | 7782 | 1982-01-23 | 1300.00 |    NULL |     10 |
+-------+--------+-----------+------+------------+---------+---------+--------+
13 rows in set (0.00 sec)
```

12. list all employees who earn more than average sal of dept 10

Ans :

```
select *
    -> from emp
    -> where sal >(select avg(sal)
    -> from emp
    -> where deptno=10);
```

```
mysql> select *
    -> from emp
    -> where sal >(select avg(sal)
    -> from emp
    -> where deptno=10);
+-------+-------+-----------+------+------------+---------+------+--------+
| EMPNO | ENAME | JOB       | MGR  | HIREDATE   | SAL     | COMM | DEPTNO |
+-------+-------+-----------+------+------------+---------+------+--------+
|  7566 | JONES | MANAGER   | 7839 | 1981-04-02 | 2975.00 | NULL |     20 |
|  7788 | SCOTT | ANALYST   | 7566 | 1982-12-09 | 3000.00 | NULL |     20 |
|  7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL |     10 |
|  7902 | FORD  | ANALYST   | 7566 | 1981-12-03 | 3000.00 | NULL |     20 |
+-------+-------+-----------+------+------------+---------+------+--------+
4 rows in set (0.00 sec)
```

13. list all employees who earn more than average sal of Alan's department

Ans : select *

-> from emp

-> where sal>(select avg(sal)

-> from emp

-> where deptno=(select deptno

-> from emp

-> where ename = 'allen'));

```
mysql> select *
    ->      from emp
    ->      where sal>(select avg(sal)
    ->      from emp
    ->      where deptno=(select deptno
    ->      from emp
    ->      where ename = 'allen'));
+-------+-------+-----------+------+------------+---------+---------+--------+
| EMPNO | ENAME | JOB       | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+-------+-----------+------+------------+---------+---------+--------+
|  7499 | ALLEN | SALESMAN  | 7698 | 1981-02-20 | 1600.00 | 300.00  |     30 |
|  7566 | JONES | MANAGER   | 7839 | 1981-04-02 | 2975.00 |    NULL |     20 |
|  7698 | BLAKE | MANAGER   | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7782 | CLARK | MANAGER   | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7788 | SCOTT | ANALYST   | 7566 | 1982-12-09 | 3000.00 |    NULL |     20 |
|  7839 | KING  | PRESIDENT | NULL | 1981-11-17 | 5000.00 |    NULL |     10 |
|  7902 | FORD  | ANALYST   | 7566 | 1981-12-03 | 3000.00 |    NULL |     20 |
+-------+-------+-----------+------+------------+---------+---------+--------+
7 rows in set (0.00 sec)
```

14. list all employees who are working in purchase department

Ans :

```
mysql> select * from emp where deptno=(select deptno from dept d where
d.dname="SALES");
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | job      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1840.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1437.50 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1437.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 |  950.00 |    NULL |     30 |
+-------+--------+----------+------+------------+---------+---------+--------+
6 rows in set (0.00 sec)

mysql> select * from emp where deptno=(select deptno from dept where dname="SALES");
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | job      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1840.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1437.50 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1437.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1725.00 |    0.00 |     30 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 |  950.00 |    NULL |     30 |
+-------+--------+----------+------+------------+---------+---------+--------+
6 rows in set (0.00 sec)
```

15. list all employees who earn more than average salary of their own department

Ans :select *

```
    ->    from emp b
    ->    where sal>(select avg(sal)
    ->    from emp a
    ->    where a.deptno=b.deptno);
```

16. list all employees who earn sal < than their managers salary

Ans :mysql> select *

-> from emp b

-> where sal< any(select sal

-> from emp a

-> where a.mgr=b.mgr);

```
mysql> select *
    ->      from emp b
    ->      where sal< any(select sal
    ->      from emp a
    ->      where a.mgr=b.mgr);
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1250.00 |  500.00 |     30 |
|  7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7782 | CLARK  | MANAGER  | 7839 | 1981-06-09 | 2450.00 |    NULL |     10 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
|  7900 | JAMES  | CLERK    | 7698 | 1981-12-03 |  950.00 |    NULL |     30 |
+-------+--------+----------+------+------------+---------+---------+--------+
6 rows in set (0.06 sec)
```

17. list all employees who are earning more than average salary of their job

Ans :mysql> select *

-> from emp b

-> where sal> any(select avg(sal)

-> from emp a

-> where a.job=b.job);

```
mysql> select *
    ->      from emp b
    ->      where sal> any(select avg(sal)
    ->      from emp a
    ->      where a.job=b.job);
+-------+--------+----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB      | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00  |     30 |
|  7566 | JONES  | MANAGER  | 7839 | 1981-04-02 | 2975.00 |    NULL |     20 |
|  7698 | BLAKE  | MANAGER  | 7839 | 1981-05-01 | 2850.00 |    NULL |     30 |
|  7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1100.00 |    NULL |     20 |
|  7934 | MILLER | CLERK    | 7782 | 1982-01-23 | 1300.00 |    NULL |     10 |
+-------+--------+----------+------+------------+---------+---------+--------+
6 rows in set (0.00 sec)
```

18. display employee name and department

Ans :mysql> select ename,dname

-> from emp e ,dept d

-> where e.deptno=d.deptno;

```
mysql> select ename,dname
    -> from emp e ,dept d
    -> where e.deptno=d.deptno;
+--------+------------+
| ename  | dname      |
+--------+------------+
| SMITH  | RESEARCH   |
| ALLEN  | SALES      |
| WARD   | SALES      |
| JONES  | RESEARCH   |
| MARTIN | SALES      |
| BLAKE  | SALES      |
| CLARK  | ACCOUNTING |
| SCOTT  | RESEARCH   |
| KING   | ACCOUNTING |
| TURNER | SALES      |
| ADAMS  | RESEARCH   |
| JAMES  | SALES      |
| FORD   | RESEARCH   |
| MILLER | ACCOUNTING |
+--------+------------+
14 rows in set (0.00 sec)
```

19. display empno,name,department name and grade (use emp,dept and salgrade table)

Ans:-mysql> select empno , ename, dname, grade

-> from emp e ,dept d ,salgrade s

-> where e.deptno= d.deptno and e.sal between s.losal and s.hisal;

```
mysql> select empno , ename, dname, grade
    ->  from emp e ,dept d ,salgrade s
    ->  where e.deptno= d.deptno and e.sal between s.losal and s.hisal;
+-------+--------+------------+-------+
| empno | ename  | dname      | grade |
+-------+--------+------------+-------+
|  7900 | JAMES  | SALES      |     1 |
|  7876 | ADAMS  | RESEARCH   |     1 |
|  7369 | SMITH  | RESEARCH   |     1 |
|  7934 | MILLER | ACCOUNTING |     2 |
|  7654 | MARTIN | SALES      |     2 |
|  7521 | WARD   | SALES      |     2 |
|  7844 | TURNER | SALES      |     3 |
|  7499 | ALLEN  | SALES      |     3 |
|  7902 | FORD   | RESEARCH   |     4 |
|  7788 | SCOTT  | RESEARCH   |     4 |
|  7782 | CLARK  | ACCOUNTING |     4 |
|  7698 | BLAKE  | SALES      |     4 |
|  7566 | JONES  | RESEARCH   |     4 |
|  7839 | KING   | ACCOUNTING |     5 |
+-------+--------+------------+-------+
14 rows in set (0.00 sec)
```

20. list all employees number,name, mgrno and manager name

Ans : mysql> select e.empno,e.ename,e.mgr,m.ename 'manager'

-> from emp e,emp m

-> where m.empno=e.mgr

-> ;

```
mysql>  select e.empno,e.ename,e.mgr,m.ename 'manager'
    ->  from emp e,emp m
    ->  where m.empno=e.mgr
    ->  ;
+-------+--------+------+---------+
| empno | ename  | mgr  | manager |
+-------+--------+------+---------+
|  7902 | FORD   | 7566 | JONES   |
|  7788 | SCOTT  | 7566 | JONES   |
|  7900 | JAMES  | 7698 | BLAKE   |
|  7844 | TURNER | 7698 | BLAKE   |
|  7654 | MARTIN | 7698 | BLAKE   |
|  7521 | WARD   | 7698 | BLAKE   |
|  7499 | ALLEN  | 7698 | BLAKE   |
|  7934 | MILLER | 7782 | CLARK   |
|  7876 | ADAMS  | 7788 | SCOTT   |
|  7782 | CLARK  | 7839 | KING    |
|  7698 | BLAKE  | 7839 | KING    |
|  7566 | JONES  | 7839 | KING    |
|  7369 | SMITH  | 7902 | FORD    |
+-------+--------+------+---------+
13 rows in set (0.00 sec)
```

21. create following tables and solve following questions(primary keys are marked in yellow)

foreign keys are marked in green

product(pid,pname,price,qty,cid,sid)

salesman (sid,sname,address)

category(cid,cnam,descritpion)

1. list all product name,their category name and name of a person, who sold that product

```
mysql> select * from product;
+-----+-----------+--------+------+------+------+
| pid | pname     | price  | qty  | cid  | sid  |
+-----+-----------+--------+------+------+------+
|   1 | kurkure   |  50.00 |    5 | 1001 |  100 |
|   2 | classmate | 500.00 |    5 | 1002 |  101 |
|   3 | yuva      | 400.00 |    6 | 1002 |  102 |
+-----+-----------+--------+------+------+------+
3 rows in set (0.00 sec)

mysql> select * from category;
+------+----------+-------------+
| cid  | cname    | description |
+------+----------+-------------+
| 1001 | chips    | yummy yummy |
| 1002 | notebook | awsome      |
+------+----------+-------------+
2 rows in set (0.00 sec)

mysql> select * from salesman;
+-----+---------+----------+
| sid | sname   | address  |
+-----+---------+----------+
| 100 | darshan | latur    |
| 101 | aditya  | kolhapur |
| 102 | ravi    | pune     |
+-----+---------+----------+
3 rows in set (0.00 sec)
```

2. list all product name and salesman name for all salesman who stays in pune

mysql> select pname,sname

-> from product p,salesman s

-> where p.sid=s.sid and s.address='pune';

```
mysql> select pname,sname
    -> from product p,salesman s
    -> where p.sid=s.sid and s.address='pune';
+-------+-------+
| pname | sname |
+-------+-------+
| yuva  | ravi  |
+-------+-------+
1 row in set (0.00 sec)
```

3. list all product name and category name

Ans:-

mysql> select pname,cname

-> from product p,category c

-> where p.cid=c.cid;

```
mysql> select pname,cname
    -> from product p,category c
    -> where p.cid=c.cid;
+-----------+----------+
| pname     | cname    |
+-----------+----------+
| kurkure   | chips    |
| classmate | notebook |
| yuva      | notebook |
+-----------+----------+
3 rows in set (0.00 sec)
```