

Roll number: 243514

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Date : 28-03-2024

practice DQL statement

Write SQL statement for the following

1. To find all managers with salary >1500

```
mysql> select * from emp where job='manager' and sal>1500;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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      |
+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

2. list all employees with sal >1200 and < 2000

```
mysql> select * from emp where sal between 1200 and 2000;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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      |
| 7654  | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 | 30      |
| 7844  | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 | 0.00   | 30      |
| 7934  | MILLER | CLERK   | 7782 | 1982-01-23 | 1300.00 | NULL   | 10      |
+-----+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

3. list all employees with sal is 1600 or sal is 800 or sal is 1900

```
mysql> select * from emp where sal in (1600,800,1900);
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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 | 1600.00 | 300.00 | 30      |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.30 sec)
```

4. list all employees with R at second last position in name

```
mysql> select * from emp where ename regexp '.*R.$';
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7521  | WARD  | SALESMAN | 7698  | 1981-02-22 | 1250.00 | 500.00 | 30    |
| 7782  | CLARK | MANAGER  | 7839  | 1981-06-09 | 2450.00 | NULL   | 10    |
| 7902  | FORD   | ANALYST  | 7566  | 1981-12-03 | 3000.00 | NULL   | 20    |
+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)          Activate Windows
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```

5. List all employees with name starts with A and ends with N

```
mysql> select * from emp where ename regexp '^A.*N$';
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499  | ALLEN | SALESMAN | 7698  | 1981-02-20 | 1600.00 | 300.00 | 30    |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

Q2. Solve following

1. list all employees with salary > 1250 and dept no=30

```
mysql> select * from emp where sal>1250 and deptno=30;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499  | ALLEN | SALESMAN | 7698  | 1981-02-20 | 1600.00 | 300.00 | 30    |
| 7698  | BLAKE  | MANAGER  | 7839  | 1981-05-01 | 2850.00 | NULL   | 30    |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1500.00 | 0.00   | 30    |
+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

2. list all employees with salary >=1250 and <= 3000

```
mysql> select * from emp where sal between 1250 and 3000;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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    |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1500.00 | 0.00   | 30    |
| 7902  | FORD   | ANALYST  | 7566  | 1981-12-03 | 3000.00 | NULL   | 20    |
| 7934  | MILLER | CLERK   | 7782  | 1982-01-23 | 1300.00 | NULL   | 10    |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)          Activate Windows
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```

3. list all employees with salary >1250 and < 3000

```
mysql> select * from emp where sal>1250 and sal<3000;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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      |
| 7844  | TURNER  | SALESMAN | 7698  | 1981-09-08 | 1500.00 | 0.00    | 30      |
| 7934  | MILLER  | CLERK   | 7782  | 1982-01-23 | 1300.00 | NULL    | 10      |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

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4. list all employees with salary either equal to 3000 or 1250 or 2500

```
mysql> select * from emp where sal in (3000,1250,2500);
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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      |
| 7788  | SCOTT   | ANALYST  | 7566  | 1982-12-09 | 3000.00 | NULL    | 20      |
| 7902  | FORD    | ANALYST  | 7566  | 1981-12-03 | 3000.00 | NULL    | 20      |
+-----+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

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5. list all employee with name=SMITH

```
mysql> select * from emp where ename='smith';
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH  | CLERK  | 7902  | 1980-12-17 | 800.00 | NULL    | 20      |
+-----+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

6. list all employees with name starting with S

```
mysql> select * from emp where ename regexp '^S';
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH  | CLERK  | 7902  | 1980-12-17 | 800.00 | NULL    | 20      |
| 7788  | SCOTT  | ANALYST | 7566  | 1982-12-09 | 3000.00 | NULL    | 20      |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)
```

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7. list all employees with name ending with S

practice Aggregate functions

12. find max sal and min sal for each job

```
mysql> select job, max(sal), min(sal) from emp group by job;
+-----+-----+
| job      | max(sal) | min(sal) |
+-----+-----+
| clerk    | 1300.00  | 543.00   |
| SALESMAN | 1600.00  | 1250.00  |
| MANAGER  | 2975.00  | 2450.00  |
| ANALYST  | 3000.00  | 3000.00  |
| PRESIDENT| 5000.00  | 5000.00  |
+-----+-----+
5 rows in set (0.00 sec)
```

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13. find how many employees have not received commission

```
mysql> select count(empno) from emp where comm=0;
+-----+
| count(empno) |
+-----+
|      1      |
+-----+
1 row in set (0.00 sec)
```

A
G

14. find sum of sal of all employees working in dept no 10

```
mysql> select deptno,sum(sal) from emp where deptno=10;
+-----+
| deptno | sum(sal) |
+-----+
|     10  |  8750.00 |
+-----+
1 row in set (0.00 sec)
```

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15. find maximum salary,average sal for each job in every department

```
mysql> select deptno,job,max(sal),avg(sal) from emp group by job,deptno order by deptno;
+-----+-----+-----+-----+
| deptno | job      | max(sal) | avg(sal)  |
+-----+-----+-----+-----+
|     10  | MANAGER  | 2450.00  | 2450.000000 |
|     10  | PRESIDENT| 5000.00  | 5000.000000 |
|     10  | CLERK    | 1300.00  | 1300.000000 |
|     20  | CLERK    | 1100.00  | 950.000000  |
|     20  | MANAGER  | 2975.00  | 2975.000000 |
|     20  | ANALYST  | 3000.00  | 3000.000000 |
|     30  | clerk    | 950.00   | 746.500000  |
|     30  | SALESMAN | 1600.00  | 1400.000000 |
|     30  | MANAGER  | 2850.00  | 2850.000000 |
+-----+-----+-----+-----+
9 rows in set (0.00 sec)
```

16. find max salary for every department if deptno is > 15 and arrange data in deptno order.

```
mysql> select deptno,max(sal) from emp where deptno>15 group by deptno order by deptno;
+-----+-----+
| deptno | max(sal) |
+-----+-----+
|    20  | 3000.00 |
|    30  | 2850.00 |
+-----+-----+
2 rows in set (0.00 sec)
```

17. find sum salary for every department if sum is > 3000

```
mysql> select deptno,sum(sal) SUM from emp group by deptno having SUM>3000 order by deptno;
+-----+-----+
| deptno | SUM   |
+-----+-----+
|    10  | 8750.00 |
|    20  | 10875.00 |
|    30  | 9943.00 |
+-----+-----+
3 rows in set (0.00 sec)
```

18. list all department which has minimum 5 employees

```
mysql> select deptno,count(empno) Num from emp group by deptno having Num>=5;
+-----+-----+
| deptno | Num  |
+-----+-----+
|    30  |    7 |
|    20  |    5 |
+-----+-----+
2 rows in set (0.00 sec)
```

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19. count how many employees earn salary more than 2000 in each job

```
mysql> select job,count(empno) from emp where sal>2000 group by job;
+-----+-----+
| job      | count(empno) |
+-----+-----+
| MANAGER  |        3 |
| ANALYST  |        2 |
| PRESIDENT |        1 |
+-----+-----+
3 rows in set (0.00 sec)
```

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20. list all enames and jobs in small case letter

```

mysql> select lower(ename), lower(job) from emp;
+-----+-----+
| lower(ename) | lower(job) |
+-----+-----+
| uih_jhj     | clerk      |
| smith       | clerk      |
| allen        | salesman   |
| ward         | salesman   |
| jones        | manager    |
| martin       | salesman   |
| blake        | manager    |
| clark        | manager    |
| scott        | analyst    |
| king         | president  |
| turner       | salesman   |
| adams        | clerk      |
| james        | clerk      |
| ford         | analyst    |
| miller       | clerk      |
+-----+-----+
15 rows in set (0.00 sec)

```

21. list all names and jobs so that the length of name should be 15 if it is smaller then add spaces to left

```

mysql> select lpad(ename,15,' '),job from emp;
+-----+-----+
| lpad(ename,15,' ') | job   |
+-----+-----+
| uih_jhj           | clerk  |
| SMITH             | CLERK |
| ALLEN             | SALESMAN |
| WARD              | SALESMAN |
| JONES             | MANAGER |
| MARTIN            | SALESMAN |
| BLAKE             | MANAGER |
| CLARK             | MANAGER |
| SCOTT             | ANALYST |
| KING              | PRESIDENT |
| TURNER            | SALESMAN |
| ADAMS             | CLERK  |
| JAMES             | CLERK  |
| FORD              | ANALYST |
| MILLER            | CLERK  |
+-----+-----+
15 rows in set (0.02 sec)

```

22. display min sal,max sal, average sal for all employees working under same manager

```

mysql> select min(sal),max(sal),avg(sal),mgr from emp group by mgr;
+-----+-----+-----+-----+
| min(sal) | max(sal) | avg(sal)    | mgr   |
+-----+-----+-----+-----+
| 543.00  | 543.00  | 543.000000 | 5670 |
| 800.00  | 800.00  | 800.000000 | 7902 |
| 950.00  | 1600.00 | 1310.000000 | 7698 |
| 2450.00 | 2975.00 | 2758.333333 | 7839 |
| 3000.00 | 3000.00 | 3000.000000 | 7566 |
| 5000.00 | 5000.00 | 5000.000000 | NULL  |
| 1100.00 | 1100.00 | 1100.000000 | 7788 |
| 1300.00 | 1300.00 | 1300.000000 | 7782 |
+-----+-----+-----+-----+
8 rows in set (0.00 sec)

```

23. find sum of total earnings(sal+comm), average of sal+comm, for all employees who earn sal > 2000 and work in either dept no 10 or 20

```

mysql> select deptno,sum(sal+ifnull(comm,0)),avg(sal+ifnull(comm,0)) from emp where sal>2000 and deptno in (10,20) group by deptno;
+-----+-----+-----+
| deptno | sum(sal+ifnull(comm,0)) | avg(sal+ifnull(comm,0)) |
+-----+-----+-----+
| 20     |      8975.00 |      2991.666667 |
| 10     |      7450.00 |      3725.000000 |
+-----+-----+-----+
2 rows in set (0.00 sec)

```

24. list all employees who joined in Aug 1980 and salary is >1500 and < 2500

```

mysql> select * from emp where hiredate like '1980-07-%' and sal between 1500 and 2500;
Empty set (0.00 sec)

```

25. list all employees joined in either aug or may or dec

```

mysql> select * from emp where month(hiredate) in (7,5,12);
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB   | MGR  | HIREDATE | SAL   | COMM  | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 8     | uih_jhj | CLERK | 5670 | 1981-05-06 | 543.00 | 43.00 | 30    |
| 7369  | SMITH   | CLERK | 7902 | 1980-12-17 | 800.00 | NULL   | 20    |
| 7698  | BLAKE   | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL   | 30    |
| 7788  | SCOTT   | ANALYST | 7566 | 1982-12-09 | 3000.00 | NULL   | 20    |
| 7900  | JAMES   | CLERK | 7698 | 1981-12-03 | 950.00 | NULL   | 30    |
| 7902  | FORD    | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL   | 20    |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

```

26. display name and hiredate in dd/mm/yy format for all employees whose job is clerk and they earn some commission

```

mysql> select ename,date_format(hiredate,'%d/%m/%y') from emp where job='clerk' and comm is not null;
+-----+-----+
| ename | date_format(hiredate,'%d/%m/%y') |
+-----+-----+
| uih_jhj | 06/05/81 |
+-----+-----+
1 row in set (0.00 sec)

```

27. list empcode,empno,name and job for each employee. (note :empcode is 3 to 5 characters from name and last 2 characters of job)

```
mysql> SELECT CONCAT(SUBSTR(ename,1,4),right(job,2)) empcode,empno,ename FROM emp;
+-----+-----+-----+
| empcode | empno | ename |
+-----+-----+-----+
| uih_rk |     8 | uih_jhj |
| SMITRK | 7369 | SMITH |
| ALLEAN | 7499 | ALLEN |
| WARDAN | 7521 | WARD |
| JONEER | 7566 | JONES |
| MARTAN | 7654 | MARTIN |
| BLAKER | 7698 | BLAKE |
| CLARER | 7782 | CLARK |
| SCOTST | 7788 | SCOTT |
| KINGNT | 7839 | KING |
| TURNAN | 7844 | TURNER |
| ADAMRK | 7876 | ADAMS |
| JAMERK | 7900 | JAMES |
| FORDST | 7902 | FORD |
| MILLRK | 7934 | MILLER |
+-----+-----+-----+
15 rows in set (0.00 sec)
```

28. display thousand separator and \$ symbol for commission if it is null then display it as 0 for all employees whose name starts with A and ends with N

```
mysql> SELECT ename,CONCAT('$',format(ifnull(comm,0),2)) FROM emp WHERE ename regexp '^A.*N$';
+-----+-----+
| ename | CONCAT('$',format(ifnull(comm,0),2)) |
+-----+-----+
| ALLEN | $300.00 |
+-----+-----+
1 row in set (0.00 sec)
```

29. Display empid,name,sal,comm,remark Remark should base on following conditions

comm >= 600 "excellent Keep it up"

if it < 600 or not null "good"

otherwise "Need improvement"

```
mysql> SELECT empno,ename,sal,comm,CASE WHEN comm>=600 THEN "excellent keep it up" WHEN comm<600 or comm is not null THEN "good" ELSE "Need Improvement" end Remarks from emp;
+-----+-----+-----+-----+-----+
| empno | ename | sal   | comm  | Remarks        |
+-----+-----+-----+-----+-----+
| 8    | uih_jhj | 543.00 | 43.00 | good          |
| 7369 | SMITH   | 800.00 | NULL   | Need Improvement |
| 7499 | ALLEN   | 1600.00 | 300.00 | good          |
| 7521 | WARD    | 1250.00 | 500.00 | good          |
| 7566 | JONES   | 2975.00 | NULL   | Need Improvement |
| 7654 | MARTIN  | 1250.00 | 1400.00 | excellent keep it up |
| 7698 | BLAKE   | 2850.00 | NULL   | Need Improvement |
| 7782 | CLARK   | 2450.00 | NULL   | Need Improvement |
| 7788 | SCOTT   | 3600.00 | NULL   | Need Improvement |
| 7844 | KING    | 5000.00 | NULL   | Need Improvement |
| 7876 | TURNER  | 1500.00 | 0.00   | good          |
| 7900 | JAMES   | 1100.00 | NULL   | Need Improvement |
| 7902 | FORD    | 3000.00 | NULL   | Need Improvement |
| 7934 | MILLER  | 1300.00 | NULL   | Need Improvement |
+-----+-----+-----+-----+-----+
15 rows in set (0.00 sec)
```

30. Display empid, name, deptno and department name by using following conditions.

```
dept 10 then "Hr" if  
20 then "Admin" if  
30 then "accounts"  
otherwise purchase
```

```
mysql> SELECT empno,ename,deptno,CASE WHEN deptno=10 THEN "HR" WHEN deptno=20 THEN  
"Admin" WHEN deptno=30 THEN "Accounts" ELSE "Purchase" end 'Department Name' from e  
mp;  
+-----+-----+-----+-----+  
| empno | ename | deptno | Department Name |  
+-----+-----+-----+-----+  
|     8 | uih_jhj |     30 | Accounts      |  
| 7369 | SMITH  |     20 | Admin         |  
| 7499 | ALLEN  |     30 | Accounts      |  
| 7521 | WARD   |     30 | Accounts      |  
| 7566 | JONES  |     20 | Admin         |  
| 7654 | MARTIN |     30 | Accounts      |  
| 7698 | BLAKE  |     30 | Accounts      |  
| 7782 | CLARK  |     10 | HR            |  
| 7788 | SCOTT  |     20 | Admin         |  
| 7839 | KING   |     10 | HR            |  
| 7844 | TURNER |     30 | Accounts      |  
| 7876 | ADAMS  |     20 | Admin         |  
| 7900 | JAMES  |     30 | Accounts      |  
| 7902 | FORD   |     20 | Admin         |  
| 7934 | MILLER |     10 | HR            |  
+-----+-----+-----+-----+  
15 rows in set (0.00 sec)
```

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

31. 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 mydept_DBDA(
-> deptid int PRIMARY KEY,
-> dname VARCHAR(20) NOT NULL UNIQUE,
-> dloc VARCHAR(20)
-> );
Query OK, 0 rows affected (0.12 sec)
```

```
mysql> show tables;
+-----+
| Tables_in_iacsd0324 |
+-----+
| bonus
| customers
| dept
| emp
| mydept_dbda
| orders
| salgrade
| student
| suppliers
+-----+
9 rows in set (0.00 sec)
```

```
mysql> desc mydept_DBDA;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| deptid | int       | NO   | PRI | NULL    |          |
| dname  | varchar(20) | NO   | UNI | NULL    |          |
| dloc   | varchar(20) | YES  |     | NULL    |          |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> INSERT INTO mydept_DBDA VALUES(
-> 30, 'Purchase', 'Mumbai');
Query OK, 1 row affected (0.02 sec)
```

```
mysql> select * from mydept_DBDA;
+-----+-----+-----+
| deptid | dname   | dloc   |
+-----+-----+-----+
|     30 | Purchase | Mumbai |
+-----+-----+-----+
1 row in set (0.00 sec)
```

```

mysql> CREATE TABLE myemployee(
-> empno INTEGER 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 INTEGER,
-> CONSTRAINT fk_deptno FOREIGN KEY(deptno) REFERENCES mydept_DBDA(deptid)
-> ON DELETE set NULL
-> ON UPDATE CASCADE
-> );
Query OK, 0 rows affected, 1 warning (0.13 sec)

```

```

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)

```

32. 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)  
)
```

```
mysql> CREATE TABLE Student(  
    -> sid INT PRIMARY KEY,  
    -> sname VARCHAR(10)  
    -> );  
Query OK, 0 rows affected (0.09 sec)  
  
mysql> CREATE TABLE Course(  
    -> cid INT PRIMARY KEY,  
    -> cname VARCHAR(10)  
    -> );  
Query OK, 0 rows affected (0.07 sec)  
  
mysql> CREATE TABLE Marks(  
    -> studid INT,  
    -> courseid INT,  
    -> marks INT,  
    -> 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)  
    -> );  
Query OK, 0 rows affected (0.11 sec)
```

```
mysql> desc Student;  
+-----+-----+-----+-----+-----+  
| Field | Type   | Null | Key  | Default | Extra |  
+-----+-----+-----+-----+-----+  
| sid   | int    | NO   | PRI   | NULL    |       |  
| sname | varchar(10) | 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(10) | YES  |       | NULL    |       |  
+-----+-----+-----+-----+-----+  
2 rows in set (0.00 sec)  
  
mysql> desc Marks;  
+-----+-----+-----+-----+-----+  
| Field | Type   | Null | Key  | Default | Extra |  
+-----+-----+-----+-----+-----+  
| studid | int    | NO   | PRI   | NULL    |       |  
| courseid | int    | NO   | PRI   | NULL    |       |  
| marks  | int    | YES  |       | NULL    |       |  
+-----+-----+-----+-----+-----+  
3 rows in set (0.00 sec)
```

33. Create empty table emp10 with table structure same as emp table.

```
create table emp10 as
(
  select *
  from emp where
  1=2;
)
```

34. Solve following using alter table add primary key constraint on emp,dept,salgrade emp ----⑦

empno

dept---⑦ deptno salgrade---⑦ grade add foreign key constraint in

emp deptno ---> dept(deptno) add new column in emp table

netsal with constraint default 1000

35. Update employee sal ---- increase sal of each employee by 15 % sal +comm, change the job to manager and mgr to 7777 for all employees in deptno 10.

36. change job of smith to senior clerk

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

```

mysql> update emp
-> set sal=sal+sal*0.15
-> where comm>0;
Query OK, 3 rows affected (0.01 sec)
Rows matched: 3  Changed: 3  Warnings: 0

mysql> select*from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 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 | 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 | 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)

```

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

```

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 | 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 | 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)

```

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

```

mysql> select*from emp
-> where deptno > (select deptno from emp where ename='smith');
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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 | 1500.00 | 0.00    | 30      |
| 7900  | JAMES   | CLERK   | 7698 | 1981-12-03 | 950.00  | NULL    | 30      |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

```

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

```

mysql> select*from emp
-> where sal > (select sal from emp where ename='ALLEN') and sal < (select
sal from emp where ename='scott');
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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      |
+-----+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

```

41. delete all employees working in alan's department

```

mysql> delete from emp1
-> where deptno = (select deptno from (select*from emp1) e where e.ename='
allen')
-> ;
Query OK, 6 rows affected (0.01 sec)

```

```

mysql> select*from emp1;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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      |
| 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)

```

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

```

ERROR 1248 (42000): Every derived table must have its own alias
mysql> update emp1
      -> set sal =(select sal from (select*from emp1)e where ename='miller')
      -> where ename='allen';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select*from emp1;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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 | 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 | 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)

```

43. change salary of all emplees who working in Wall's department to the salary of Miller.

```

ERROR 1248 (42000): Every derived table must have its own alias
mysql> update emp1
      -> set sal=(select sal from (select*from emp1)e where ename='miller')
      -> where deptno=(select deptno from (select*from emp1) e1 where ename='ward');
Query OK, 5 rows affected (0.01 sec)
Rows matched: 6  Changed: 5  Warnings: 0

mysql> select*from emp1;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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)

```

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

```

mysql> select*from emp1
-> where sal > any(select sal from emp1 where ename in ('smith','allen'));
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB      | MGR    | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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      |
+-----+-----+-----+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)

mysql> select*from emp1
-> where sal > any(select sal from emp1 where ename in ('scott','ford'));
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB      | MGR    | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7839  | KING   | PRESIDENT | NULL   | 1981-11-17 | 5000.00 | NULL    | 10      |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> |

```

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

```

mysql> select*from emp1
-> where sal>(select avg(sal) from emp1 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)

mysql> select avg(sal) from emp1 where deptno=10;
+-----+
| avg(sal) |
+-----+
| 2916.666667 |
+-----+
1 row in set (0.00 sec)

mysql> |

```

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

```

mysql> select*from emp1
   -> where sal>(select avg(sal) from emp1 where deptno=(select deptno from emp1 where ename='allen'));
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB      | MGR    | HIREDATE | SAL     | COMM    | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 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      |
| 7902  | FORD    | ANALYST  | 7566  | 1981-12-03 | 3000.00 | NULL    | 20      |
+-----+-----+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

mysql> select avg(sal) from emp1 where deptno=(select deptno from emp1 where ename='allen');
+-----+
| avg(sal) |
+-----+
| 1300.00000 |
+-----+
1 row in set (0.00 sec)

mysql> |

```

47. list all employees who are working in purchase department

```

mysql> select*from dept;
+-----+-----+-----+
| DEPTNO | DNAME      | LOC        |
+-----+-----+-----+
| 10    | ACCOUNTING | NEW YORK  |
| 20    | RESEARCH    | DALLAS    |
| 30    | SALES       | CHICAGO   |
| 40    | OPERATIONS  | BOSTON    |
+-----+-----+-----+
4 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 | 1500.00 | 0.00    | 30      |
| 7900  | JAMES     | CLERK    | 7698  | 1981-12-03 | 950.00  | NULL    | 30      |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> |

```

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

```
MySQL 8.3 Command Line + ▾ - □

mysql> select*from emp e
    -> where sal>(select avg(sal) from emp e1 where e1.deptno=e.deptno);
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB      | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499  | ALLEN | SALESMAN | 7698  | 1981-02-20 | 1840.00 | 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    |
| 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    |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)

mysql> select avg(sal) from emp where deptno in(10,20,30);
+-----+
| avg(sal) |
+-----+
| 2117.142857 |
+-----+
1 row in set (0.00 sec)

mysql> select avg(sal) from emp where deptno=10;
+-----+
| avg(sal) |
+-----+
| 2916.666667 |
+-----+
1 row in set (0.00 sec)

mysql> select avg(sal) from emp where deptno=20;
+-----+
| avg(sal) |
+-----+
| 2175.000000 |
+-----+
1 row in set (0.00 sec)

mysql> |
```

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

```

mysql> select * from emp e1
    -> where sal < (select sal from emp e2 where e2.empno=e1.mgr);
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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 | 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    |
| 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    |
| 7934  | MILLER | CLERK  | 7782  | 1982-01-23 | 1300.00 | NULL  | 10    |
+-----+-----+-----+-----+-----+-----+-----+-----+
11 rows in set (0.00 sec)

mysql>

```

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

```

mysql> select * from emp1 order by job;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB   | MGR   | HIREDATE | SAL    | COMM  | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7788  | SCOTT  | ANALYST | 7566  | 1982-12-09 | 3000.00 | NULL  | 20    |
| 7902  | FORD   | ANALYST | 7566  | 1981-12-03 | 3000.00 | NULL  | 20    |
| 7369  | SMITH  | CLERK  | 7902  | 1980-12-17 | 800.00  | NULL  | 20    |
| 7876  | ADAMS  | CLERK  | 7788  | 1983-01-12 | 1100.00 | NULL  | 20    |
| 7900  | JAMES  | CLERK  | 7698  | 1981-12-03 | 1300.00 | NULL  | 30    |
| 7934  | MILLER | CLERK  | 7782  | 1982-01-23 | 1300.00 | NULL  | 10    |
| 7566  | JONES  | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL  | 20    |
| 7698  | BLAKE  | MANAGER | 7839  | 1981-05-01 | 1300.00 | NULL  | 30    |
| 7782  | CLARK  | MANAGER | 7839  | 1981-06-09 | 2450.00 | NULL  | 10    |
| 7839  | KING   | PRESIDENT | NULL  | 1981-11-17 | 5000.00 | NULL  | 10    |
| 7499  | ALLEN  | SALESMAN | 7698  | 1981-02-20 | 1300.00 | 300.00 | 30    |
| 7521  | WARD   | SALESMAN | 7698  | 1981-02-22 | 1300.00 | 500.00 | 30    |
| 7654  | MARTIN | SALESMAN | 7698  | 1981-09-28 | 1300.00 | 1400.00 | 30    |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1300.00 | 0.00  | 30    |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.01 sec)

```

```

mysql> select * from emp1 e where sal > (select avg(sal) from emp1 e1 group by job having e1.job=e.job);
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB   | MGR   | HIREDATE | SAL    | COMM  | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7566  | JONES  | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL  | 20    |
| 7782  | CLARK  | MANAGER | 7839  | 1981-06-09 | 2450.00 | NULL  | 10    |
| 7900  | JAMES  | CLERK  | 7698  | 1981-12-03 | 1300.00 | NULL  | 30    |
| 7934  | MILLER | CLERK  | 7782  | 1982-01-23 | 1300.00 | NULL  | 10    |
+-----+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

mysql>

```

51. display employee name and department

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

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

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

```

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

mysql> |

```

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

```

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

mysql> |

```

54. 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,descripiton)

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

```

mysql> select*from salesman;
+----+-----+-----+
| sid | sname | adress |
+----+-----+-----+
| 10 | rajesh | mumbai |
| 11 | seema | pune |
| 13 | rakhil | pune |
+----+-----+
3 rows in set (0.00 sec)

mysql> insert into category values(1,'ab','edible');
Query OK, 1 row affected (0.01 sec)

mysql> insert into category values(2,'cd','drinks');
Query OK, 1 row affected (0.01 sec)

mysql> insert into category values(3,'cd','drinks');
Query OK, 1 row affected (0.01 sec)

mysql> select*from category;
+----+-----+-----+
| cid | cname | description |
+----+-----+-----+
| 1 | ab | edible |
| 2 | cd | drinks |
| 3 | cd | drinks |
+----+-----+
3 rows in set (0.00 sec)

```

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

```

mysql> insert into product values(2,'lays',10,120,2,13);
Query OK, 1 row affected (0.01 sec)

mysql> select*from product;
+----+-----+-----+-----+-----+
| pid | pname | price | qty | cid | sid |
+----+-----+-----+-----+-----+
| 1 | chips | 10 | 100 | 1 | 10 |
| 2 | lays | 10 | 120 | 2 | 13 |
+----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select p.pname,c.cname,s.sname from product p inner join category c on p.cid=c.cid inner join salesman s on e.sid=s.sid;
ERROR 1054 (42S22): Unknown column 'e.sid' in 'on clause'
mysql> select p.pname,c.cname,s.sname from product p inner join category c on p.cid=c.cid inner join salesman s on p.sid=s.sid;
+-----+-----+-----+
| pname | cname | sname |
+-----+-----+-----+
| chips | ab | rajesh |
| lays | cd | rakhil |
+-----+-----+
2 rows in set (0.00 sec)

```

3. list all product name and category name

```
mysql> select p.pname,s.sname from product p inner join salesman s on s.sid=p.sid
   where s.adress='pune';
+-----+-----+
| pname | sname |
+-----+-----+
| lays | rakhi |
+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> select p.pname,c.cname from product p join category c on c.cid=p.cid;
+-----+-----+
| pname | cname |
+-----+-----+
| chips | ab    |
| lays  | cd    |
+-----+-----+
2 rows in set (0.00 sec)
```

55. create following tables and solve following questions(primary keys are marked in yellow)
foreign keys are marked in green

```
faculty(fid, fname, sp.skill1, sp.skill2)
courses(cid, cname, rid, fid) room(roomid, rname, rloc)
faculty fid fname spskill1
sp skill2
10 kjzhcjhz a b
11 sdd x z
12 lksjk a x
13 ksdjlkj a b
```

```
courses
cid cname rid fid
121 DBDA 100 10
131 DAC 101
141 DTISS
151 DIOT 105 12
```

Room

```
roomid rname rloc  
100  jasmin 1st floor  
101  Rose  2nd floor  
105  Lotus  1st floor  
103  Mogra  1st floor
```

```
mysql> CREATE TABLE faculty (  
->     fid INT PRIMARY KEY,  
->     fname VARCHAR(255),  
->     skill1 VARCHAR(255),  
->     skill2 VARCHAR(255)  
-> );  
Query OK, 0 rows affected (0.23 sec)
```

```
mysql> CREATE TABLE room (  
->     roomid INT PRIMARY KEY,  
->     rname VARCHAR(255),  
->     rloc VARCHAR(255)  
-> );  
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> CREATE TABLE courses (  
->     cid INT PRIMARY KEY,  
->     cname VARCHAR(255),  
->     rid INT,  
->     fid INT,  
->     CONSTRAINT fk_m FOREIGN KEY (fid) REFERENCES faculty(fid)  
-> );  
Query OK, 0 rows affected (0.10 sec)
```

```
mysql> INSERT INTO faculty (fid, fname, skill1, skill2)  
-> VALUES  
->     (10, 'kjzhcjhz', 'a', 'b'),  
->     (11, 'sdd', 'x', 'z'),  
->     (12, 'lksjk', 'a', 'x'),  
->     (13, 'ksdjlkj', 'a', 'b');  
Query OK, 4 rows affected (0.02 sec)  
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO room (roomid, rname, rloc)  
-> VALUES  
->     (100, 'Jasmin', '1st floor'),  
->     (101, 'Rose', '2nd floor'),  
->     (105, 'Lotus', '1st floor'),  
->     (103, 'Mogra', '1st floor');  
Query OK, 4 rows affected (0.04 sec)  
Records: 4  Duplicates: 0  Warnings: 0
```

```

mysql> INSERT INTO courses (cid, cname, rid, fid)
-> VALUES
->      (121, 'DBDA', 100, 10),
->      (131, 'DAC', 101, NULL),
->      (141, 'DTIIS', NULL, NULL),
->      (151, 'DIOT', 105, 12);
Query OK, 4 rows affected (0.02 sec)
Records: 4  Duplicates: 0  Warnings: 0

```

```

mysql> select * from faculty;
+----+-----+-----+
| fid | fname | skill1 | skill2 |
+----+-----+-----+
| 10 | kjzhcjhz | a | b |
| 11 | sdd | x | z |
| 12 | lksjk | a | x |
| 13 | ksdjlkj | a | b |
+----+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> select * from room;
+----+-----+-----+
| roomid | rname | rloc |
+----+-----+-----+
| 100 | Jasmin | 1st floor |
| 101 | Rose | 2nd floor |
| 103 | Mogra | 1st floor |
| 105 | Lotus | 1st floor |
+----+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> select * from courses;
+----+-----+-----+-----+
| cid | cname | rid | fid |
+----+-----+-----+-----+
| 121 | DBDA | 100 | 10 |
| 131 | DAC | 101 | NULL |
| 141 | DTIIS | NULL | NULL |
| 151 | DIOT | 105 | 12 |
+----+-----+-----+-----+
4 rows in set (0.00 sec)

```

- list all courses for which no room is assigned and all rooms for which are available

```

mysql> SELECT *
-> FROM courses
-> WHERE rid IS NULL;
+----+-----+-----+-----+
| cid | cname | rid | fid |
+----+-----+-----+-----+
| 141 | DTIIS | NULL | NULL |
+----+-----+-----+-----+
1 row in set (0.00 sec)

```

2. list all faculties who are not allocated to any course and rooms which are not allocated to any course

```
mysql> SELECT *
-> FROM faculty
-> WHERE fid NOT IN (SELECT DISTINCT fid FROM courses);
Empty set (0.01 sec)
```

3. list all rooms which are allocated or not allocated to any courses

```
mysql> SELECT DISTINCT r.*
-> FROM room r
-> JOIN courses c ON r.roomid = c.rid
-> UNION
-> SELECT r.*
-> FROM room r
-> LEFT JOIN courses c ON r.roomid = c.rid
-> WHERE c.cid IS NULL;
+-----+-----+
| roomid | rname   | rloc      |
+-----+-----+
|    100  | Jasmin  | 1st floor |
|    101  | Rose    | 2nd floor |
|    105  | Lotus   | 1st floor |
|    103  | Mogra   | 1st floor |
+-----+-----+
4 rows in set (0.00 sec)
```

4. list all rooms which are not allocated to any courses

```
mysql> SELECT *
-> FROM room
-> WHERE roomid NOT IN (SELECT rid FROM courses WHERE rid IS NOT NULL);
+-----+-----+
| roomid | rname   | rloc      |
+-----+-----+
|    103  | Mogra   | 1st floor |
+-----+-----+
1 row in set (0.01 sec)
```

5. display courses and faculty assigned to those courses whose special skill is database

```
mysql> SELECT c.*, f.fname
-> FROM courses c
-> JOIN faculty f ON c.fid = f.fid
-> WHERE f.skill1 = 'database' OR f.skill2 = 'database';
Empty set (0.00 sec)
```

6. display time table --- it should contain course details , faculty and room details

```

mysql> SELECT c.cid, c cname, f fname AS faculty_name, r room_name AS room_name, r rloc AS room_location
-> FROM courses c
-> LEFT JOIN faculty f ON c.fid = f.fid
-> LEFT JOIN room r ON c.rid = r.roomid;
+-----+-----+-----+-----+
| cid | cname | faculty_name | room_name | room_location |
+-----+-----+-----+-----+
| 121 | DBDA | kjzhcjhz | Jasmin | 1st floor |
| 131 | DAC | NULL | Rose | 2nd floor |
| 141 | DTISS | NULL | NULL | NULL |
| 151 | DIOT | lksjk | Lotus | 1st floor |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)

```

56. create following tables with given constraints product---- qty >0, default 20.00,pname not null and unique

prodid	pname	qty	price	catid	sid
123	lays	30	30.00	1	12
111	pepsi	40	50.00	4	11
134	nachos	50	50.00	1	12
124	dairy milk	40	60.00	2	14
124	pringles	40	60.00	1	14

saleman ---- sname ----not null

sid	sname	city
11	Rahul	Pune
12	Kirti	Mumbai
13	Prasad	Nashik
14	Arnav	Amaravati

category ---- cname unique and not null cid

cname	description
1 chips	very crunchy
2 chocolate	very chocolaty
3 snacks	yummy
4 cold drinks	thanda thanda cool cool

```

mysql> CREATE TABLE saleman (
->     sid INT PRIMARY KEY,
->     sname VARCHAR(255),
->     city VARCHAR(255)
-> );
Query OK, 0 rows affected (0.07 sec)

```

```
mysql> CREATE TABLE category (
    ->     cid INT PRIMARY KEY,
    ->     cname VARCHAR(255),
    ->     description VARCHAR(255)
    -> );
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> CREATE TABLE prod (
    ->     prodid INT,
    ->     pname VARCHAR(255),
    ->     qty INT,
    ->     price DECIMAL(10, 2),
    ->     catid INT,
    ->     sid INT,
    ->     PRIMARY KEY (prodid),
    ->     FOREIGN KEY (catid) REFERENCES category(cid),
    ->     FOREIGN KEY (sid) REFERENCES saleman(sid)
    -> );
Query OK, 0 rows affected (0.14 sec)
```

```
mysql> INSERT INTO saleman (sid, sname, city)
    -> VALUES
    ->     (11, 'Rahul', 'Pune'),
    ->     (12, 'Kirti', 'Mumbai'),
    ->     (13, 'Prasad', 'Nashik'),
    ->     (14, 'Arnav', 'Amaravati');
Query OK, 4 rows affected (0.04 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO category (cid, cname, description)
    -> VALUES
    ->     (1, 'chips', 'very crunchy'),
    ->     (2, 'chocolate', 'very chocolaty'),
    ->     (3, 'snacks', 'yummy'),
    ->     (4, 'cold drinks', 'thanda thanda cool cool');
Query OK, 4 rows affected (0.03 sec)
Records: 4  Duplicates: 0  Warnings: 0
```

```
mysql> INSERT INTO prod (prodid, pname, qty, price, catid, sid)
    -> VALUES
    ->     (123, 'lays', 30, 30.00, 1, 12),
    ->     (111, 'pepsi', 40, 50.00, 4, 11),
    ->     (134, 'nachos', 50, 50.00, 1, 12),
    ->     (125, 'dairy milk', 40, 60.00, 2, 14),
    ->     (124, 'pringles', 40, 60.00, 1, 14);
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0
```

```
mysql> select * from saleman;
+----+-----+-----+
| sid | sname | city |
+----+-----+-----+
| 11 | Rahul | Pune |
| 12 | Kirti | Mumbai |
| 13 | Prasad | Nashik |
| 14 | Arnav | Amaravati |
+----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from category;
+----+-----+-----+
| cid | cname | description |
+----+-----+-----+
| 1 | chips | very crunchy |
| 2 | chocolate | very chocolaty |
| 3 | snacks | yummy |
| 4 | cold drinks | thanda thanda cool cool |
+----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from prod;
+----+-----+-----+-----+-----+-----+
| prodid | pname | qty | price | catid | sid |
+----+-----+-----+-----+-----+-----+
| 111 | pepsi | 40 | 50.00 | 4 | 11 |
| 123 | lays | 30 | 30.00 | 1 | 12 |
| 124 | pringles | 40 | 60.00 | 1 | 14 |
| 125 | dairy milk | 40 | 60.00 | 2 | 14 |
| 134 | nachos | 50 | 50.00 | 1 | 12 |
+----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

1. List all products with category chips

```
mysql> SELECT *
    -> FROM prod
    -> WHERE catid = (SELECT cid FROM category WHERE cname = 'chips');
+----+-----+-----+-----+-----+-----+
| prodid | pname | qty | price | catid | sid |
+----+-----+-----+-----+-----+-----+
| 123 | lays | 30 | 30.00 | 1 | 12 |
| 124 | pringles | 40 | 60.00 | 1 | 14 |
| 134 | nachos | 50 | 50.00 | 1 | 12 |
+----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

2. display all products sold by kirti

```

mysql> SELECT p.*  

-> FROM prod p  

-> JOIN saleman s ON p.sid = s.sid  

-> WHERE s.sname = 'Kirti';  

+-----+-----+-----+-----+-----+  

| prodid | pname | qty | price | catid | sid |  

+-----+-----+-----+-----+-----+  

| 123 | lays | 30 | 30.00 | 1 | 12 |  

| 134 | nachos | 50 | 50.00 | 1 | 12 |  

+-----+-----+-----+-----+-----+  

2 rows in set (0.00 sec)

```

3. display all salesman who do not sold any product

```

mysql> SELECT *  

-> FROM saleman  

-> WHERE sid NOT IN (SELECT DISTINCT sid FROM prod);  

+-----+-----+  

| sid | sname | city |  

+-----+-----+  

| 13 | Prasad | Nashik |  

+-----+-----+  

1 row in set (0.00 sec)

```

4. display all category for which no product is there

```

mysql> SELECT *  

-> FROM category  

-> WHERE cid NOT IN (SELECT DISTINCT catid FROM prod);  

+-----+-----+  

| cid | cname | description |  

+-----+-----+  

| 3 | snacks | yummy |  

+-----+-----+  

1 row in set (0.00 sec)

```

5. display all products with no category assigned

```

mysql> SELECT *  

-> FROM prod  

-> WHERE catid IS NULL;  

Empty set (0.00 sec)

```

6. list all salesman who stays in city with name starts with P or N

```
mysql> SELECT *
    -> FROM saleman
    -> WHERE city LIKE 'P%' OR city LIKE 'N%';
+-----+-----+
| sid | sname | city |
+-----+-----+
| 11  | Rahul | Pune |
| 13  | Prasad | Nashik |
+-----+-----+
2 rows in set (0.02 sec)
```

7. add new column in salesman table by name credit limit

```
mysql> ALTER TABLE salesman
    -> ADD COLUMN credit_limit DECIMAL(10, 2);
Query OK, 0 rows affected (0.16 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select * from salesman;
+-----+-----+-----+-----+
| sid | sname | city      | credit_limit |
+-----+-----+-----+-----+
| 11  | Rahul | Pune      |      NULL    |
| 12  | Kirti | Mumbai    |      NULL    |
| 13  | Prasad | Nashik   |      NULL    |
| 14  | Arnav | Amaravati |      NULL    |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```