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```

1. To list all records with sal > 2000 and comm>200

```
mysql> select *
-> from emp
-> where sal>2000 and comm > 200;
Empty set (0.00 sec)
```

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2. To list all record with job='Clerk' or sal>2000

```
mysql> select *
-> from emp
-> where job='clerk' or sal>2000;
```

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
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
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
7369	SMITH	CLERK	7902	1980-12-17	800.00	NULL	20
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
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

20 rows in set (0.00 sec)

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3. To list all the record with sal=1250 or 1100 or 2850

```
mysql> select *
-> from emp
-> where sal in (1250,1100,2850);
```

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
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
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 |
| 7876 | ADAMS  | CLERK   | 7788 | 1983-01-12 | 1100.00 |    NULL  |      20 |
+-----+-----+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

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4. To list all employees with sal>1250 and <2850

```

mysql> select *
-> from emp
-> where sal between 1251 and 2849;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499  | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 |      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 |
| 7499  | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 |      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 |
+-----+-----+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

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5. To list all employees with name ends with AS

```

mysql> select *
-> from emp
-> where ename like '%AS';
Empty set (0.00 sec)

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6. To list all employees with job starts with C and ends with K

```

mysql> select *
-> from emp
-> where job like 'c%k';
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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 | 950.00 |    NULL  |      30 |
| 7934  | MILLER | CLERK  | 7782 | 1982-01-23 | 1300.00 |    NULL  |      10 |
| 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 | 950.00 |    NULL  |      30 |
| 7934  | MILLER | CLERK  | 7782 | 1982-01-23 | 1300.00 |    NULL  |      10 |
+-----+-----+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)

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7. To list all employees with job contains L at third position and M at third last position

```
mysql> select *
-> from emp
-> where job like '__L%M__';
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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     |
| 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     |
+-----+-----+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)
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8. To list all the record with sal not equal to 1250 or 1100 or 2850

```
mysql> select *
-> from emp
-> where sal not in (1250,1100,2850);
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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     |
| 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     |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1500.00 | 0.00   | 30     |
| 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     |
| 7369  | SMITH  | CLERK  | 7902  | 1980-12-17 | 800.00 | NULL   | 20     |
| 7499  | ALLEN  | SALESMAN | 7698  | 1981-02-20 | 1600.00 | 300.00 | 30     |
| 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     |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1500.00 | 0.00   | 30     |
| 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     |
+-----+-----+-----+-----+-----+-----+-----+-----+
20 rows in set (0.00 sec)
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9. To list all employees with salnot >1250 and <2850

```
mysql> select *
-> from emp
-> where sal not between 1250 and 2850;
+-----+-----+-----+-----+-----+-----+-----+-----+
```

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
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
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
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
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10
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

14 rows in set (0.00 sec)

10. To list all employees with job starts with C , E at 3rd position and ends with K

```
mysql> select *
-> from emp
-> where job like 'C_E%K';
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB   | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 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 | 950.00 | NULL   | 30     |
| 7934  | MILLER | CLERK | 7782  | 1982-01-23 | 1300.00 | NULL   | 10     |
| 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 | 950.00 | NULL   | 30     |
| 7934  | MILLER | CLERK | 7782  | 1982-01-23 | 1300.00 | NULL   | 10     |
+-----+-----+-----+-----+-----+-----+-----+
```

8 rows in set (0.00 sec)

11. To list all rows with comm is null

```
mysql> select *
-> from emp
-> where comm is NULL;
+-----+-----+-----+-----+-----+-----+-----+
| 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     |
| 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     |
| 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     |
| 7369  | SMITH  | CLERK | 7902  | 1980-12-17 | 800.00 | NULL   | 20     |
| 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 |
| 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 |
+-----+-----+-----+-----+-----+-----+-----+-----+
20 rows in set (0.00 sec)

*****
*****
```

12. To list all employees with sal is null and name starts with 'S'

```
mysql> select *
   -> from emp
   -> where sal is null
   -> and ename like 'S%';
Empty set (0.00 sec)
```

13. To list all employees with job contains 5 characters

```
mysql> select *
   -> from emp
   -> where job like '_____';
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB    | MGR   | HIREDATE | SAL    | COMM  | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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 | 950.00 | NULL  | 30   |
| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL  | 10   |
| 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 | 950.00 | NULL  | 30   |
| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL  | 10   |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

8 rows in set (0.00 sec)

```
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```

14. To list all employees with name contain 'A' at 1 position and job
Contains 5 characters

```
mysql> select *
   -> from emp
   -> where ename like 'A%' and job like '_____';
```

```
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB    | MGR   | HIREDATE | SAL    | COMM  | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7876 | ADAMS  | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL  | 20   |
| 7876 | ADAMS  | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL  | 20   |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

2 rows in set (0.00 sec)

```
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```
#####
Q2. Solve the following
#####
```

1. Retrieve the details (Name, Salary and dept no) of the emp who are working in department code 20, 30 and 40.

```
mysql> select ename,sal,deptno
-> from emp
-> where deptno in (20,30,40);
+-----+-----+-----+
| ename | sal   | deptno |
+-----+-----+-----+
| SMITH | 800.00 |    20 |
| ALLEN | 1600.00 |   30 |
| WARD  | 1250.00 |   30 |
| JONES | 2975.00 |    20 |
| MARTIN | 1250.00 |   30 |
| BLAKE | 2850.00 |   30 |
| SCOTT | 3000.00 |    20 |
| TURNER | 1500.00 |   30 |
| ADAMS | 1100.00 |    20 |
| JAMES | 950.00 |   30 |
| FORD  | 3000.00 |    20 |
| SMITH | 800.00 |    20 |
| ALLEN | 1600.00 |   30 |
| WARD  | 1250.00 |   30 |
| JONES | 2975.00 |    20 |
| MARTIN | 1250.00 |   30 |
| BLAKE | 2850.00 |   30 |
| SCOTT | 3000.00 |    20 |
| TURNER | 1500.00 |   30 |
| ADAMS | 1100.00 |    20 |
| JAMES | 950.00 |   30 |
| FORD  | 3000.00 |    20 |
+-----+-----+-----+
22 rows in set (0.00 sec)
```

```
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```

2. Display the total salary of all employees . Total salary will be calculated as $\text{sal}+\text{comm}+\text{sal} \times 0.10$

```
mysql> select empno,ename,job,sal,comm,sal+ifnull(comm,0)+sal*0.10 "Net Salary"
-> from emp;
+-----+-----+-----+-----+-----+-----+
| empno | ename | job   | sal   | comm   | Net Salary |
+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | CLERK | 800.00 | NULL   | 880.0000 |
| 7499 | ALLEN | SALESMAN | 1600.00 | 300.00 | 2060.0000 |
| 7521 | WARD  | SALESMAN | 1250.00 | 500.00 | 1875.0000 |
| 7566 | JONES | MANAGER | 2975.00 | NULL   | 3272.5000 |
| 7654 | MARTIN | SALESMAN | 1250.00 | 1400.00 | 2775.0000 |
| 7698 | BLAKE | MANAGER | 2850.00 | NULL   | 3135.0000 |
| 7782 | CLARK | MANAGER | 2450.00 | NULL   | 2695.0000 |
| 7788 | SCOTT | ANALYST | 3000.00 | NULL   | 3300.0000 |
| 7839 | KING  | PRESIDENT | 5000.00 | NULL   | 5500.0000 |
| 7844 | TURNER | SALESMAN | 1500.00 | 0.00   | 1650.0000 |
| 7876 | ADAMS | CLERK  | 1100.00 | NULL   | 1210.0000 |
| 7900 | JAMES | CLERK  | 950.00 | NULL   | 1045.0000 |
| 7902 | FORD  | ANALYST | 3000.00 | NULL   | 3300.0000 |
| 7934 | MILLER | CLERK  | 1300.00 | NULL   | 1430.0000 |
+-----+-----+-----+-----+-----+-----+
```

```
+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

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```

3. List the Name and job of the emp who have joined before 1 jan 1986 and whose salary range is between 1200and 2500. Display the columns with user defined Column headers.

```
mysql> select empno,ename,job,hiredate,sal
      -> from emp
      -> where datediff(curdate(),hiredate)>datediff(curdate(),'1986-01-01');
+-----+-----+-----+-----+-----+
| empno | ename  | job    | hiredate | sal   |
+-----+-----+-----+-----+-----+
| 7369  | SMITH  | CLERK  | 1980-12-17 | 800.00
| 7499  | ALLEN  | SALESMAN | 1981-02-20 | 1600.00
| 7521  | WARD   | SALESMAN | 1981-02-22 | 1250.00
| 7566  | JONES  | MANAGER | 1981-04-02 | 2975.00
| 7654  | MARTIN | SALESMAN | 1981-09-28 | 1250.00
| 7698  | BLAKE   | MANAGER | 1981-05-01 | 2850.00
| 7782  | CLARK   | MANAGER | 1981-06-09 | 2450.00
| 7788  | SCOTT   | ANALYST | 1982-12-09 | 3000.00
| 7839  | KING    | PRESIDENT | 1981-11-17 | 5000.00
| 7844  | TURNER  | SALESMAN | 1981-09-08 | 1500.00
| 7876  | ADAMS   | CLERK   | 1983-01-12 | 1100.00
| 7900  | JAMES   | CLERK   | 1981-12-03 | 950.00
| 7902  | FORD    | ANALYST | 1981-12-03 | 3000.00
| 7934  | MILLER  | CLERK   | 1982-01-23 | 1300.00
+-----+-----+-----+-----+-----+
14 rows in set (0.03 sec)
```

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4. List the empno, name, and department number of the emp works under manager with id 7698

```
mysql> select empno,ename,deptno
      -> from emp
      -> where mgr=7698;
+-----+-----+-----+
| empno | ename  | deptno |
+-----+-----+-----+
| 7499  | ALLEN  | 30   |
| 7521  | WARD   | 30   |
| 7654  | MARTIN | 30   |
| 7844  | TURNER | 30   |
| 7900  | JAMES   | 30   |
+-----+-----+-----+
5 rows in set (0.00 sec)
```

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5. List the name, job, and salary of the emp who are working in departments 10 and 30.

```
mysql> select ename,job,sal
      -> from emp
      -> where deptno in (10,30);
+-----+-----+-----+
```

```

| ename | job      | sal   |
+-----+-----+-----+
| ALLEN | SALESMAN | 1600.00 |
| WARD  | SALESMAN | 1250.00 |
| MARTIN | SALESMAN | 1250.00 |
| BLAKE  | MANAGER   | 2850.00 |
| CLARK  | MANAGER   | 2450.00 |
| KING   | PRESIDENT | 5000.00 |
| TURNER | SALESMAN | 1500.00 |
| JAMES  | CLERK    | 950.00  |
| MILLER | CLERK    | 1300.00 |
+-----+-----+-----+
9 rows in set (0.00 sec)

```

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6. Display name concatenated with dept code separated by comma and space. Name the column as 'Emp info'.

```
mysql> select ename,deptno,concat(ename, " ", deptno) "Emp info"
-> from emp
-> ;
```

```

+-----+-----+-----+
| ename | deptno | Emp info   |
+-----+-----+-----+
| SMITH |     20 | SMITH, 20  |
| ALLEN |     30 | ALLEN, 30  |
| WARD  |     30 | WARD, 30  |
| JONES |     20 | JONES, 20  |
| MARTIN |    30 | MARTIN, 30 |
| BLAKE  |    30 | BLAKE, 30  |
| CLARK  |    10 | CLARK, 10  |
| SCOTT  |    20 | SCOTT, 20  |
| KING   |    10 | KING, 10   |
| TURNER |    30 | TURNER, 30 |
| ADAMS  |    20 | ADAMS, 20  |
| JAMES  |    30 | JAMES, 30  |
| FORD   |    20 | FORD, 20   |
| MILLER |    10 | MILLER, 10 |
+-----+-----+-----+

```

```
14 rows in set (0.00 sec)
```

```
*****
*****
```

7. Display the emp details who do not have manager.

```
mysql> select *
-> from emp
-> where mgr is null;
+-----+-----+-----+-----+-----+-----+-----+
| 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)
```

```
*****
*****
```

8. Write a query which will display name, department no and date of joining of

all employee who were joined January 1, 1981 and March 31, 1983. Sort it based on date of joining (ascending).

```
mysql> select empno,ename,deptno,hiredate
-> from emp
-> where hiredate between '1981-1-1' and '1983-3-31'
-> order by hiredate;
+-----+-----+-----+
| empno | ename  | deptno | hiredate   |
+-----+-----+-----+
| 7499  | ALLEN  |      30 | 1981-02-20 |
| 7521  | WARD    |      30 | 1981-02-22 |
| 7566  | JONES   |      20 | 1981-04-02 |
| 7698  | BLAKE   |      30 | 1981-05-01 |
| 7782  | CLARK   |      10 | 1981-06-09 |
| 7844  | TURNER  |      30 | 1981-09-08 |
| 7654  | MARTIN  |      30 | 1981-09-28 |
| 7839  | KING    |      10 | 1981-11-17 |
| 7900  | JAMES   |      30 | 1981-12-03 |
| 7902  | FORD    |      20 | 1981-12-03 |
| 7934  | MILLER  |      10 | 1982-01-23 |
| 7788  | SCOTT   |      20 | 1982-12-09 |
| 7876  | ADAMS   |      20 | 1983-01-12 |
+-----+-----+-----+
13 rows in set (0.00 sec)
```

```
*****
*****
```

9. Display the employee details where the job contains word 'AGE' anywhere in the Job

```
mysql> select *
-> from emp
-> where job like '%age%';
+-----+-----+-----+-----+-----+-----+-----+
| 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)
```

```
mysql> select *
-> from emp
-> where job regexp 'age';
+-----+-----+-----+-----+-----+-----+-----+
| 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 (0.10 sec)
```

```
*****
*****
```

10. List the details of the employee , whose names start with 'A' and end with 'S' or whose names contains N as the second or third character, and ending with either 'N' or 'S'.

```

mysql> select *
-> from emp
-> where ename REGEXP '^A.*S$| ^..?N.*[NS]$';
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
|  7876 | ADAMS | CLERK | 7788  | 1983-01-12 | 1100.00 | NULL   |    20  |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

*****
*****
```

11. List the names of the emp having '_' character in their name.

```

mysql> select *
-> from emp
-> where ename regexp '_';
Empty set (0.00 sec)

#####
##### Single Row functions #####
#####
1. To list all employees and their email, to generate email use 2 to 5
characters from ename
Concat it with 2 to 4 characters in job and then concat it with '@mycompany.com'

*****
```

```

mysql> select
empno,ename,job,concat(substr(ename,2,5),substr(job,2,4),"@mycompany.com")
"Email ID"
-> from emp;
+-----+-----+-----+-----+
| empno | ename | job      | Email ID           |
+-----+-----+-----+-----+
| 7369 | SMITH | CLERK    | MITHLERK@mycompany.com
| 7499 | ALLEN | SALESMAN | LLENALES@mycompany.com
| 7521 | WARD   | SALESMAN | ARDALES@mycompany.com
| 7566 | JONES  | MANAGER   | ONESANAG@mycompany.com
| 7654 | MARTIN | SALESMAN | ARTINALES@mycompany.com
| 7698 | BLAKE   | MANAGER   | LAKEANAG@mycompany.com
| 7782 | CLARK   | MANAGER   | LARKANAG@mycompany.com
| 7788 | SCOTT   | ANALYST  | COTTNALY@mycompany.com
| 7839 | KING    | PRESIDENT | INGRESI@mycompany.com
| 7844 | TURNER  | SALESMAN | URNERALES@mycompany.com
| 7876 | ADAMS   | CLERK    | DAMSLERK@mycompany.com
| 7900 | JAMES   | CLERK    | AMESLERK@mycompany.com
| 7902 | FORD    | ANALYST  | ORDNALY@mycompany.com
| 7934 | MILLER  | CLERK    | ILLERLERK@mycompany.com
+-----+-----+-----+-----+
14 rows in set (0.00 sec)
```

```

*****
*****
```

2. List all employees who joined in September.

```

mysql> select *
-> from emp
-> where month(hiredate)=9;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB       | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
```

```

| 7654 | MARTIN | SALESMAN | 7698 | 1981-09-28 | 1250.00 | 1400.00 |      30 |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1500.00 |     0.00 |      30 |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.01 sec)

*****
*****
```

3. List the empno, name, and department number of the emp who have experience of 18 or more years and sort them based on their experience.

```

mysql> select empno,ename,deptno,floor(datediff(curdate(),hiredate)/365)
Experience
-> from emp
-> where floor(datediff(curdate(),hiredate)/365)>=18
-> order by floor(datediff(curdate(),hiredate)/365);
+-----+-----+-----+-----+
| empno | ename  | deptno | Experience |
+-----+-----+-----+-----+
| 7788 | SCOTT  |    20 |      39 |
| 7876 | ADAMS  |    20 |      39 |
| 7839 | KING   |    10 |      40 |
| 7900 | JAMES  |    30 |      40 |
| 7902 | FORD   |    20 |      40 |
| 7934 | MILLER |    10 |      40 |
| 7369 | SMITH  |    20 |      41 |
| 7499 | ALLEN  |    30 |      41 |
| 7521 | WARD   |    30 |      41 |
| 7566 | JONES  |    20 |      41 |
| 7654 | MARTIN |    30 |      41 |
| 7698 | BLAKE  |    30 |      41 |
| 7782 | CLARK  |    10 |      41 |
| 7844 | TURNER |    30 |      41 |
+-----+-----+-----+-----+
14 rows in set (0.00 sec)

*****
*****
```

4. Display the employee details who joined on 3rd of any month or any year

```

mysql> select *
-> from emp
-> where day(hiredate)=3;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 950.00 | NULL   |      30 |
| 7902 | FORD  | ANALYST| 7566 | 1981-12-03 | 3000.00 | NULL   |      20 |
+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

*****
*****
```

5. display all employees who joined between years 1981 to 1983.
Group functions

```

mysql> select *
-> from emp
-> where year(hiredate) between 1981 and 1983;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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)

```

```

mysql> select *
-> from emp
-> where year(hiredate) in (1981,1982,1983);
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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. Display the Highest, Lowest, Total & Average salary of all employee. Label the columns Maximum, Minimum, Total and Average respectively for each Department. Also round the result to the nearest whole number.

```

mysql> select deptno,round(max(sal),0) Maximum,round(min(sal),0)
Minimum,round(sum(sal),0) Total,round(avg(sal),0) Average
-> from emp
-> group by deptno
-> order by deptno;
+-----+-----+-----+-----+
| deptno | Maximum | Minimum | Total  | Average |
+-----+-----+-----+-----+
| 10    | 5000   | 1300   | 8750  | 2917   |
| 20    | 3000   | 800    | 10875 | 2175   |
| 30    | 2850   | 950    | 9400  | 1567   |
+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```

*****
*****
```

7. Display Department no and number of managers working in that department. Label the column as 'Total Number of Managers' for each department.

```
mysql> select deptno,count(*) "Total Number of Managers"
-> from emp
-> where job="manager"
-> group by deptno
-> order by deptno;
+-----+-----+
| deptno | Total Number of Managers |
+-----+-----+
|    10  |          1 |
|    20  |          1 |
|    30  |          1 |
+-----+
3 rows in set (0.00 sec)

*****
```

8. Get the Department number, and sum of Salary of all non managers where the sum is greater than 20000.

```
mysql> select deptno, sum(sal) "Total Salary"
-> from emp
-> where job !="manager"
-> group by deptno
-> having sum(sal)>20000
-> order by deptno;
Empty set (0.00 sec)
```

```
***** THE END
*****
```

```
#####
# practice SQL 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
-> order by deptno;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB   | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
|  7782 | CLARK  | MANAGER | 7839 | 1981-06-09 | 2450.00 | NULL   |      10 |
|  7566 | JONES  | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL   |      20 |
|  7698 | BLAKE  | MANAGER | 7839 | 1981-05-01 | 2850.00 | NULL   |      30 |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
*****
```

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

```
mysql> select *
```

```

-> from emp
-> where sal between 1201 and 1999;
+-----+-----+-----+-----+-----+-----+-----+
| 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 (0.01 sec)

*****
*****
```

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

```

mysql> select *
-> from emp
-> where ename regexp 'R.$'
-> order by ename;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB    | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7782  | CLARK  | MANAGER | 7839  | 1981-06-09 | 2450.00 | NULL   | 10     |
| 7902  | FORD   | ANALYST | 7566  | 1981-12-03 | 3000.00 | NULL   | 20     |
| 7521  | WARD   | SALESMAN | 7698  | 1981-02-22 | 1250.00 | 500.00 | 30     |
+-----+-----+-----+-----+-----+-----+-----+
3 rows in set (0.03 sec)

*****
*****
```

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

```

mysql> select *
-> from emp
-> where ename regexp '^A.*N$'
-> order by ename;
+-----+-----+-----+-----+-----+-----+-----+
| 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
-> order by sal;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB      | MGR    | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7844  | TURNER | SALESMAN | 7698   | 1981-09-08 | 1500.00 | 0.00   | 30     |
| 7499  | ALLEN  | SALESMAN | 7698   | 1981-02-20 | 1600.00 | 300.00 | 30     |
| 7698  | BLAKE   | MANAGER   | 7839   | 1981-05-01 | 2850.00 | NULL   | 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
-> order by sal;
+-----+-----+-----+-----+-----+-----+-----+-----+
| 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     |
| 7934  | MILLER  | CLERK    | 7782   | 1982-01-23 | 1300.00 | NULL   | 10     |
| 7844  | TURNER  | SALESMAN | 7698   | 1981-09-08 | 1500.00 | 0.00   | 30     |
| 7499  | ALLEN   | SALESMAN | 7698   | 1981-02-20 | 1600.00 | 300.00 | 30     |
| 7782  | CLARK   | MANAGER   | 7839   | 1981-06-09 | 2450.00 | NULL   | 10     |
| 7698  | BLAKE   | MANAGER   | 7839   | 1981-05-01 | 2850.00 | NULL   | 30     |
| 7566  | JONES   | MANAGER   | 7839   | 1981-04-02 | 2975.00 | NULL   | 20     |
| 7788  | SCOTT   | ANALYST  | 7566   | 1982-12-09 | 3000.00 | NULL   | 20     |
| 7902  | FORD    | ANALYST  | 7566   | 1981-12-03 | 3000.00 | NULL   | 20     |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.00 sec)

*****
*****
```

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

```
mysql> select *
-> from emp
-> where sal between 1251 and 2999
-> order by sal;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB      | MGR    | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7934  | MILLER | CLERK    | 7782   | 1982-01-23 | 1300.00 | NULL   | 10     |
| 7844  | TURNER | SALESMAN | 7698   | 1981-09-08 | 1500.00 | 0.00   | 30     |
| 7499  | ALLEN  | SALESMAN | 7698   | 1981-02-20 | 1600.00 | 300.00 | 30     |
| 7782  | CLARK  | MANAGER   | 7839   | 1981-06-09 | 2450.00 | NULL   | 10     |
| 7698  | BLAKE  | MANAGER   | 7839   | 1981-05-01 | 2850.00 | NULL   | 30     |
| 7566  | JONES  | MANAGER   | 7839   | 1981-04-02 | 2975.00 | NULL   | 20     |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
```

```
*****  
*****
```

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

```
mysql> select *  
-> from emp  
-> where sal in (3000,1250,2500)  
-> order by sal;  
+-----+-----+-----+-----+-----+-----+-----+  
| 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)
```

```
*****  
*****
```

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.*'  
-> order by ename;  
+-----+-----+-----+-----+-----+-----+-----+  
| EMPNO | ENAME  | JOB    | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |  
+-----+-----+-----+-----+-----+-----+-----+  
| 7788  | SCOTT   | ANALYST | 7566  | 1982-12-09 | 3000.00 | NULL    | 20     |  
| 7369  | SMITH   | CLERK  | 7902  | 1980-12-17 | 800.00 | NULL    | 20     |  
+-----+-----+-----+-----+-----+-----+-----+  
2 rows in set (0.00 sec)
```

```
*****  
*****
```

7. list all employees with name ending with S

```
mysql> select *  
-> from emp  
-> where ename regexp 'S$'  
-> order by ename;  
+-----+-----+-----+-----+-----+-----+-----+  
| EMPNO | ENAME  | JOB    | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
```

```

+-----+-----+-----+-----+-----+-----+
| 7876 | ADAMS | CLERK | 7788 | 1983-01-12 | 1100.00 | NULL | 20 |
| 7900 | JAMES | CLERK | 7698 | 1981-12-03 | 950.00 | NULL | 30 |
| 7566 | JONES | MANAGER | 7839 | 1981-04-02 | 2975.00 | NULL | 20 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

*****
*****
```

8. list all employees with name contains I at 2nd position

```

mysql> select *
-> from emp
-> where ename regexp '^A.I.*'
-> order by ename;
+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB | MGR | HIREDATE | SAL | COMM | DEPTNO |
+-----+-----+-----+-----+-----+-----+
| 7839 | KING | PRESIDENT | NULL | 1981-11-17 | 5000.00 | NULL | 10 |
| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1300.00 | NULL | 10 |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

*****
*****
```

9. list all employees with name starts with A ends with N and somewhere in between L is there

```

mysql> select *
-> from emp
-> where ename regexp '^A.*L.*N$'
-> order by ename;
+-----+-----+-----+-----+-----+-----+
| 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)

*****
*****
```

10. list all employees with name starts with A and B at 3 rd position and P at second last position

```

mysql> select *
-> from emp
-> where ename regexp '^A.B.*P.$'
-> order by ename;
Empty set (0.00 sec)

*****
*****
```

11. List all employees with name starts with either A or starts with S or starts with W

```

mysql> select *
-> from emp
-> where ename regexp '^[ASW]'
-> order by ename;
+-----+-----+-----+-----+-----+-----+
```

```

| EMPNO | ENAME  | JOB       | MGR | HIREDATE | SAL   | COMM | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7876 | ADAMS  | CLERK    | 7788 | 1983-01-12 | 1100.00 | NULL  | 20    |
| 7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 1600.00 | 300.00 | 30    |
| 7788 | SCOTT   | ANALYST  | 7566 | 1982-12-09 | 3000.00 | NULL  | 20    |
| 7369 | SMITH   | CLERK    | 7902 | 1980-12-17 | 800.00  | NULL  | 20    |
| 7521 | WARD    | SALESMAN | 7698 | 1981-02-22 | 1250.00 | 500.00 | 30    |
+-----+-----+-----+-----+-----+-----+-----+-----+

```

5 rows in set (0.00 sec)
 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  | 800.00   |
| 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)
```

```
*****
*****
```

13. find how many employees have not received commission

```

mysql> select empno,ename,comm
      -> from emp
      -> where ifnull(comm,0)=0;
+-----+-----+-----+
| empno | ename  | comm   |
+-----+-----+-----+
| 7369 | SMITH  | NULL   |
| 7566 | JONES  | NULL   |
| 7698 | BLAKE  | NULL   |
| 7782 | CLARK  | NULL   |
| 7788 | SCOTT  | NULL   |
| 7839 | KING    | NULL   |
| 7844 | TURNER | 0.00   |
| 7876 | ADAMS  | NULL   |
| 7900 | JAMES  | NULL   |
| 7902 | FORD   | NULL   |
| 7934 | MILLER | NULL   |
+-----+-----+-----+
11 rows in set (0.00 sec)
```

```
*****
*****
```

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

```

mysql> select deptno, round(sum(sal),2) "Total salary"
      -> from emp
      -> where deptno=10;
+-----+-----+
| deptno | Total salary |
+-----+-----+
```

```

+-----+
|    10 |      8750.00 |
+-----+
1 row in set (0.00 sec)

*****
*****
```

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

```

mysql> select deptno,job,max(sal) "Maximum Salary",min(sal) "Minimum Salary"
-> from emp
-> group by deptno,job
-> order by deptno,job;
+-----+-----+-----+-----+
| deptno | job      | Maximum Salary | Minimum Salary |
+-----+-----+-----+-----+
|    10  | CLERK    |      1300.00  |     1300.00   |
|    10  | MANAGER   |      2450.00  |     2450.00   |
|    10  | PRESIDENT |      5000.00  |     5000.00   |
|    20  | ANALYST   |      3000.00  |     3000.00   |
|    20  | CLERK    |      1100.00  |      800.00   |
|    20  | MANAGER   |      2975.00  |     2975.00   |
|    30  | CLERK    |      950.00   |      950.00   |
|    30  | MANAGER   |      2850.00  |     2850.00   |
|    30  | SALESMAN  |      1600.00  |     1250.00   |
+-----+-----+-----+-----+
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) "Maximum Salary"
-> from emp
-> where deptno>15
-> group by deptno
-> order by deptno;
+-----+
| deptno | Maximum Salary |
+-----+
|    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) "Total salary"
```

```

-> from emp
-> group by deptno
-> having sum(sal)>3000
-> order by deptno;
+-----+
| deptno | Total salary |
+-----+
|    10  |      8750.00  |
|    20  |     10875.00  |
|    30  |      9400.00  |
+-----+
```

```
3 rows in set (0.00 sec)
```

```
*****
*****
```

```
18. list all department which has minimum 5 employees
```

```
mysql> select deptno,count(*)  
      -> from emp  
      -> group by deptno  
      -> having count(*) >=5;  
+-----+-----+  
| deptno | count(*) |  
+-----+-----+  
|     20 |      5 |  
|     30 |      6 |  
+-----+-----+  
2 rows in set (0.00 sec)
```

```
*****
*****
```

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

```
mysql> select job,count(*) "No. of employee"  
      -> from emp  
      -> where sal>2000  
      -> group by job  
      -> order by count(*);  
+-----+-----+  
| job        | No. of employee |  
+-----+-----+  
| PRESIDENT   |          1 |  
| ANALYST    |          2 |  
| MANAGER    |          3 |  
+-----+-----+  
3 rows in set (0.00 sec)
```

```
*****
*****
```

```
20. list all enames and jobs in small case letter
```

```
mysql> select lower(ename),lower(job)  
      -> from emp;  
+-----+-----+  
| lower(ename) | lower(job) |  
+-----+-----+  
| 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      |  
+-----+-----+  
14 rows in set (0.02 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," "), lpad(job,15," ")  
-> from emp  
-> ;  
+-----+-----+  
| lpad(ename,15," ") | lpad(job,15," ") |  
+-----+-----+  
| 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 |  
+-----+-----+  
14 rows in set (0.00 sec)
```

```
*****  
*****
```

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

```
mysql> select mgr,min(sal) "Min salary",max(sal) "Max salary",avg(sal) "Average"  
-> from emp  
-> group by mgr  
-> order by mgr;  
+-----+-----+-----+  
| mgr | Min salary | Max salary | Average |  
+-----+-----+-----+  
| NULL | 5000.00 | 5000.00 | 5000.00000 |  
| 7566 | 3000.00 | 3000.00 | 3000.00000 |  
| 7698 | 950.00 | 1600.00 | 1310.00000 |  
| 7782 | 1300.00 | 1300.00 | 1300.00000 |  
| 7788 | 1100.00 | 1100.00 | 1100.00000 |  
| 7839 | 2450.00 | 2975.00 | 2758.33333 |  
| 7902 | 800.00 | 800.00 | 800.00000 |  
+-----+-----+-----+  
7 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 sum(sal+ifnull(comm,0)) "Total Earning",avg(sal+ifnull(comm,0))  
"Average"  
-> from emp  
-> where sal >2000 and deptno in (10,20);  
+-----+
```

```

| Total Earning | Average      |
+-----+-----+
|    16425.00 | 3285.000000 |
+-----+-----+
1 row 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 month(hiredate)=8 and year(hiredate)=1980 and
-> sal between 1501 and 2499;
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 (8,5,12)
-> order by hiredate;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB      | MGR   | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH  | CLERK    | 7902  | 1980-12-17 | 800.00  | NULL   | 20     |
| 7698  | BLAKE   | MANAGER   | 7839  | 1981-05-01 | 2850.00 | NULL   | 30     |
| 7900  | JAMES   | CLERK    | 7698  | 1981-12-03 | 950.00  | NULL   | 30     |
| 7902  | FORD    | ANALYST  | 7566  | 1981-12-03 | 3000.00 | NULL   | 20     |
| 7788  | SCOTT   | ANALYST  | 7566  | 1982-12-09 | 3000.00 | NULL   | 20     |
+-----+-----+-----+-----+-----+-----+-----+
5 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') "Hiredate"
-> from emp
-> where job = 'clerk' and comm is not null;
Empty 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,3,3),right(job,2)) "empcode" , empno,ename,
job
-> from emp;
+-----+-----+-----+
| empcode | empno | ename | job      |
+-----+-----+-----+
| ITHRK  | 7369  | SMITH | CLERK    |
| LENAN  | 7499  | ALLEN | SALESMAN |
| RDAN   | 7521  | WARD  | SALESMAN |
+-----+-----+-----+
```

```

| NESER   | 7566 | JONES    | MANAGER |
| RTIAN   | 7654 | MARTIN   | SALESMAN|
| AKEER   | 7698 | BLAKE    | MANAGER |
| ARKER   | 7782 | CLARK    | MANAGER |
| OTTST   | 7788 | SCOTT    | ANALYST |
| NGNT    | 7839 | KING     | PRESIDENT|
| RNEAN   | 7844 | TURNER   | SALESMAN|
| AMSRK   | 7876 | ADAMS    | CLERK  |
| MESRK   | 7900 | JAMES    | CLERK  |
| RDST    | 7902 | FORD     | ANALYST|
| LLERK   | 7934 | MILLER   | CLERK  |
+-----+-----+-----+-----+
14 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("$",format(ifnull(comm,0),2)) Commission
      -> from emp
      -> where ename regexp '^A.*N$';
+-----+-----+
| ename | Commission |
+-----+-----+
| 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> delimiter $$ 
mysql> create procedure remark29(in peno int)
      -> begin
      -> declare veno int;
      -> declare vname varchar(20);
      -> declare vsal decimal(9,2);
      -> declare vcomm decimal(9,2);
      -> declare remark varchar(20);
      -> Select empno,ename,sal,comm into veno,vname,vsal,vcomm
      -> from emp
      -> where empno=peno;
      -> if vcomm is not null or vcomm<600 then
      -> set remark='good';
      -> elseif vcomm>= 600 then
      -> set remark='excellent keep it up';
      -> else
      -> set remark='need improvement';
      -> end if;
      -> select veno,vname,vsal,vcomm,remark;
      -> end$$
Query OK, 0 rows affected (0.07 sec)

```

```

mysql> delimiter ;
mysql> call remark29(7369);
+-----+-----+-----+-----+
| veno | vname | vsal  | vcomm | remark        |
+-----+-----+-----+-----+

```

```
| 7369 | SMITH | 800.00 | NULL | need improvement |
+-----+-----+-----+-----+
1 row in set (0.02 sec)
```

Query OK, 0 rows affected (0.03 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> delimiter $$
```

```
mysql> create procedure remark30(in pempno int)
-> begin
->     declare vempid int;
->     declare vname varchar(20);
->     declare vdeptno int;
->     declare vdname varchar(20);
->     declare remark varchar(20) default '';
->
->     select e.empno, e.ename, e.deptno, d.dname into vempid, vname,
vdeptno, vdname
->         from emp e,dept d
->         where e.empno=pempno and e.deptno=d.deptno;
->
->     if vdeptno = 10 then
->         set remark = 'HR';
->     elseif vdeptno = 20 then
->         set remark = 'Admin';
->     elseif vdeptno = 30 then
->         set remark = 'Accounts';
->     else
->         set remark = 'Purchase';
->     end if;
->
->     select vempid, vname, vdeptno, vdname, remark;
-> end$$
```

Query OK, 0 rows affected (0.06 sec)

```
mysql>
mysql> delimiter ;
mysql> call remark4(7902);
+-----+-----+-----+-----+
| vempid | vname | vdeptno | vdname   | remark  |
+-----+-----+-----+-----+
|    7902 | FORD  |      20 | RESEARCH | Admin   |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

Query OK, 0 rows affected (0.01 sec)

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

31. Practice creating following tables

```

create table mydept_DBDA
(
deptid int primary key,
dname varchar(20) not null unique,
dloc varchar(20)
)
insert into mydept_DBDA values(30, 'Purchase', 'Mumbai');
create table myemployee
(
empno int primary key,
fname varchar(15) not null,
mname varchar(15),
lname varchar(15) not null,
sal decimal(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 cascade
);

```

```

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

```

```

mysql> select * from myemployee;
Empty set (0.00 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      | decimal(9,2) | YES  |     | NULL    |       |
| DOJ      | date     | YES  |     | NULL    |       |
| passportnum | varchar(15) | YES  | UNI | NULL    |       |
| deptno   | int      | YES  | MUL | NULL    |       |
+-----+-----+-----+-----+-----+-----+
8 rows in set (0.03 sec)

```

```

mysql> insert into myemployee
values(101,'Sujit','Ashok','Phadtare',100000,'2000-05-14',12345,30);
Query OK, 1 row affected (0.07 sec)

```

```

mysql> select * from myemployee;
+-----+-----+-----+-----+-----+-----+-----+
| empno | fname | mname | lname   | sal      | DOJ      | passportnum |
| deptno |
+-----+-----+-----+-----+-----+-----+-----+
|   101 | Sujit | Ashok | Phadtare | 100000.00 | 2000-05-14 | 12345      |
| 30   |
+-----+-----+-----+-----+-----+-----+-----+
1 row 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
-> sna^C
mysql> create table Student(
-> sid int primary key,
-> sname varchar(20) not null);
Query OK, 0 rows affected (0.31 sec)

mysql> create table course(
-> cid int primary key
-> cname varchar(20) not null);
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MySQL server version for the right syntax to use near 'cname
varchar(20) not null' at line 3
mysql> create table course(
-> cid int primary key,
-> cname varchar(20) not null);
Query OK, 0 rows affected (0.26 sec)

mysql> insert into student values(1,'varad');
Query OK, 1 row affected (0.04 sec)

mysql> insert into student values(2,'sujit');
Query OK, 1 row affected (0.06 sec)

mysql> insert into course values(1,'DAC');
Query OK, 1 row affected (0.06 sec)

mysql> insert into course values(2,'DBDA');
Query OK, 1 row affected (0.07 sec)

mysql> insert into course values(3,'DITTIS');
Query OK, 1 row affected (0.04 sec)

mysql> create table marks(
-> studid int,
-> courseid int,
-> marks int,
-> constraint pk primary key(studid,courseid),
-> constraint fk foreign key(studid) references student(sid)
-> on delete cascade,
```

```

-> constraint fk foreign key
-> ^C
mysql> create table marks(
-> studid int,
-> courseid int,
-> marks int,
-> constraint pk primary key(studid,courseid),
-> constraint fk foreign key(studid) references student(sid)
-> on delete cascade,
-> constraint fk_2 foreign key(courseid) references course(cid));
Query OK, 0 rows affected (0.61 sec)

mysql> insert into marks values(1,1,99);
Query OK, 1 row affected (0.04 sec)

mysql> insert into marks values(1,3,98);
Query OK, 1 row affected (0.08 sec)

mysql> insert into marks values(2,1,95);
Query OK, 1 row affected (0.04 sec)

mysql> insert into marks values(2,2,97);
Query OK, 1 row affected (0.06 sec)

mysql> select * from student;
+----+-----+
| sid | sname |
+----+-----+
| 1 | varad |
| 2 | sujith |
+----+-----+
2 rows in set (0.00 sec)

mysql> select * from course;
+----+-----+
| cid | cname |
+----+-----+
| 1 | DAC |
| 2 | DBDA |
| 3 | DITTIS |
+----+-----+
3 rows in set (0.00 sec)

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)

```

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

```

(
select *
from emp
where 1=2
);
```

```

mysql> create table emp10 as
-> (
-> select *
-> from emp
-> where 1=2
-> );
Query OK, 0 rows affected (0.38 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> select * from emp10;
Empty set (0.00 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)

*****
34. Solve following using alter table
add primary key constraint on emp,dept,salgrade
emp -----> empno
dept---> deptno
salgrade---> grade
add foreign key constarint in emp
deptno ---> dept(deptno)
add new column in emp table netsal with constraint default 1000

mysql> alter table emp
-> add constraint emp_pk primary key(empno);
Query OK, 0 rows affected (1.34 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table dept
-> add constraint dept_pk primary key(deptno);
Query OK, 0 rows affected (0.88 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table salgrade
-> add constraint salgrade_pk primary key(grade);
Query OK, 0 rows affected (0.94 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table emp
-> add constraint emp_fk foreign key(deptno) references dept(deptno);
Query OK, 14 rows affected (1.09 sec)
Records: 14  Duplicates: 0  Warnings: 0

mysql> alter table emp
-> add column netsal decimal(9,2) default 1000;
Query OK, 0 rows affected (0.29 sec)
Records: 0  Duplicates: 0  Warnings: 0

```

```
mysql> desc emp;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| EMPNO | int       | NO   | PRI | 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  | MUL | NULL    |          |
| netsal | decimal(9,2) | YES  |     | 1000.00 |          |
+-----+-----+-----+-----+-----+
9 rows in set (0.00 sec)
```

```
mysql> desc dept;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| DEPTNO | int       | NO   | PRI | NULL    |          |
| DNAME  | varchar(14) | YES  |     | NULL    |          |
| LOC    | varchar(13) | YES  |     | NULL    |          |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> desc salgrade;
+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| GRADE | int  | NO  | PRI | NULL    |          |
| LOSAL | int  | YES |     | NULL    |          |
| HISAL | int  | YES |     | NULL    |          |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

 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.

```
mysql> update emp
      -> set job = 'manager', sal=1.15*(sal+ifnull(comm,0)),mgr=7777
      -> where deptno =10
      -> order by deptno;
Query OK, 3 rows affected (0.07 sec)
Rows matched: 3  Changed: 3  Warnings: 0
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7934	MILLER	manager	7777	1982-01-23	1495.00	NULL	10
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
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
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 |
+-----+-----+-----+-----+-----+-----+-----+-----+

```

36. change job of smith to senior clerk

```

mysql> alter table emp
       -> modify job varchar(20) not null;
Query OK, 0 rows affected (1.17 sec)
Records: 0  Duplicates: 0  Warnings: 0

```

```

mysql> update emp
       -> set job ='Senior Clerk'
       -> where ename ='smith';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

```

```

mysql> select * from emp
       -> where ename ='smith';
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| EMPNO | ENAME  | job           | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
netsal |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
| 7369 | SMITH  | Senior Clerk | 7902 | 1980-12-17 | 800.00 | NULL   |      20 |
1000.00 |
+-----+-----+-----+-----+-----+-----+-----+-----+
+-----+
1 row in set (0.00 sec)

```

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

```

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB        | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH  | Senior     | 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    | 7777 | 1981-06-09 | 2817.50 | NULL   |      10 |
| 7788 | SCOTT   | ANALYST   | 7566 | 1982-12-09 | 3000.00 | NULL   |      20 |
| 7839 | KING    | manager    | 7777 | 1981-11-17 | 5750.00 | NULL   |      10 |
| 7844 | TURNER  | SALESMAN   | 7698 | 1981-09-08 | 1983.75 | 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  | manager   | 7777 | 1982-01-23 | 1495.00 | NULL   |      10 |
+-----+-----+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)

```

```

mysql> update emp
       -> set sal=1.15*sal
       -> where ifnull(comm,0) != 0;
Query OK, 3 rows affected, 2 warnings (0.07 sec)
Rows matched: 3  Changed: 3  Warnings: 2

```

```

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB   | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH | Senior | 7902  | 1980-12-17 | 800.00 | NULL   | 20     |
| 7499  | ALLEN | SALESMAN | 7698  | 1981-02-20 | 2116.00 | 300.00 | 30     |
| 7521  | WARD  | SALESMAN | 7698  | 1981-02-22 | 1653.13 | 500.00 | 30     |
| 7566  | JONES | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL   | 20     |
| 7654  | MARTIN | SALESMAN | 7698  | 1981-09-28 | 1653.13 | 1400.00 | 30     |
| 7698  | BLAKE  | MANAGER | 7839  | 1981-05-01 | 2850.00 | NULL   | 30     |
| 7782  | CLARK  | manager | 7777  | 1981-06-09 | 2817.50 | NULL   | 10     |
| 7788  | SCOTT  | ANALYST | 7566  | 1982-12-09 | 3000.00 | NULL   | 20     |
| 7839  | KING   | manager | 7777  | 1981-11-17 | 5750.00 | NULL   | 10     |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1983.75 | 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 | manager | 7777  | 1982-01-23 | 1495.00 | 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 | 2116.00 | 300.00 | 30     |
| 7521  | WARD  | SALESMAN | 7698  | 1981-02-22 | 1653.13 | 500.00 | 30     |
| 7566  | JONES | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL   | 20     |
| 7654  | MARTIN | SALESMAN | 7698  | 1981-09-28 | 1653.13 | 1400.00 | 30     |
| 7698  | BLAKE  | MANAGER | 7839  | 1981-05-01 | 2850.00 | NULL   | 30     |
| 7782  | CLARK  | manager | 7777  | 1981-06-09 | 2817.50 | NULL   | 10     |
| 7788  | SCOTT  | ANALYST | 7566  | 1982-12-09 | 3000.00 | NULL   | 20     |
| 7839  | KING   | manager | 7777  | 1981-11-17 | 5750.00 | NULL   | 10     |
| 7844  | TURNER | SALESMAN | 7698  | 1981-09-08 | 1983.75 | 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 | manager | 7777  | 1982-01-23 | 1495.00 | NULL   | 10     |
+-----+-----+-----+-----+-----+-----+-----+-----+
13 rows in set (0.06 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 |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH | Senior | 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)
```

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

```
mysql> select *
-> from emp
-> where sal between (select sal+1
-> from emp
-> where ename ='rajan') and (select sal-1
-> from emp
-> where ename ='revati');
Empty set (0.00 sec)
```

41. delete all employees working in allen's department

```
mysql> select * from emp;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	Senior	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	2116.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1653.13	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1653.13	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	manager	7777	1982-01-23	1495.00	NULL	10

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

```
mysql> select * from emp;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	Senior	7902	1980-12-17	800.00	NULL	20
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	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	manager	7777	1982-01-23	1495.00	NULL	10

```
*****
```

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

```
mysql> update emp
   -> set sal=(select sal
   -> from (select * from emp) 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 emp;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	Senior	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1495.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1653.13	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1653.13	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	manager	7777	1982-01-23	1495.00	NULL	10

14 rows in set (0.00 sec)

```
*****
```

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

```
mysql> update emp
   -> set sal=(select sal
   -> from (select * from emp) e
   -> where ename= 'miller')
   -> where deptno=(Select deptno
   -> from (select * from emp) e1
   -> where ename= 'ward');
Query OK, 5 rows affected (0.00 sec)
Rows matched: 6  Changed: 5  Warnings: 0
```

```
mysql> select * from emp;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	Senior	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	1495.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1495.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1495.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	1495.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1495.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	1495.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20
7934	MILLER	manager	7777	1982-01-23	1495.00	NULL	10

```
+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)
```

```
*****
```

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

```
mysql> select * from emp;
```

```
+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB   | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH   | Senior | 7902  | 1980-12-17 | 800.00 | NULL   | 20    |
| 7499  | ALLEN   | SALESMAN | 7698  | 1981-02-20 | 2116.00 | 300.00 | 30    |
| 7521  | WARD    | SALESMAN | 7698  | 1981-02-22 | 1653.13 | 500.00 | 30    |
| 7566  | JONES   | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL   | 20    |
| 7654  | MARTIN  | SALESMAN | 7698  | 1981-09-28 | 1653.13 | 1400.00 | 30    |
| 7698  | BLAKE   | MANAGER | 7839  | 1981-05-01 | 2850.00 | NULL   | 30    |
| 7782  | CLARK   | manager  | 7777  | 1981-06-09 | 2817.50 | NULL   | 10    |
| 7788  | SCOTT   | ANALYST | 7566  | 1982-12-09 | 3000.00 | NULL   | 20    |
| 7839  | KING    | manager  | 7777  | 1981-11-17 | 5750.00 | NULL   | 10    |
| 7844  | TURNER  | SALESMAN | 7698  | 1981-09-08 | 1983.75 | 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  | manager  | 7777  | 1982-01-23 | 1495.00 | NULL   | 10    |
+-----+-----+-----+-----+-----+-----+
14 rows in set (0.00 sec)
```

```
mysql> select *
```

```
  -> from emp
  -> where sal > any (select sal from emp
  -> where ename in ('smith','allen'));
```

```
+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB   | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+
| 7499  | ALLEN   | SALESMAN | 7698  | 1981-02-20 | 2116.00 | 300.00 | 30    |
| 7521  | WARD    | SALESMAN | 7698  | 1981-02-22 | 1653.13 | 500.00 | 30    |
| 7566  | JONES   | MANAGER | 7839  | 1981-04-02 | 2975.00 | NULL   | 20    |
| 7654  | MARTIN  | SALESMAN | 7698  | 1981-09-28 | 1653.13 | 1400.00 | 30    |
| 7698  | BLAKE   | MANAGER | 7839  | 1981-05-01 | 2850.00 | NULL   | 30    |
| 7782  | CLARK   | manager  | 7777  | 1981-06-09 | 2817.50 | NULL   | 10    |
| 7788  | SCOTT   | ANALYST | 7566  | 1982-12-09 | 3000.00 | NULL   | 20    |
| 7839  | KING    | manager  | 7777  | 1981-11-17 | 5750.00 | NULL   | 10    |
| 7844  | TURNER  | SALESMAN | 7698  | 1981-09-08 | 1983.75 | 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  | manager  | 7777  | 1982-01-23 | 1495.00 | NULL   | 10    |
+-----+-----+-----+-----+-----+-----+
13 rows in set (0.00 sec)
```

```
*****
```

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

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

```
+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB   | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+
```

```
| 7839 | KING | manager | 7777 | 1981-11-17 | 5750.00 | NULL |      10 |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
*****
```

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

```
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 | 2116.00 | 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   | 7777   | 1981-06-09 | 2817.50 | NULL    | 10      |
| 7788  | SCOTT   | ANALYST   | 7566   | 1982-12-09 | 3000.00 | NULL    | 20      |
| 7839  | KING    | manager   | 7777   | 1981-11-17 | 5750.00 | NULL    | 10      |
| 7844  | TURNER  | SALESMAN | 7698   | 1981-09-08 | 1983.75 | 0.00    | 30      |
| 7902  | FORD    | ANALYST   | 7566   | 1981-12-03 | 3000.00 | NULL    | 20      |
+-----+-----+-----+-----+-----+-----+-----+-----+
8 rows in set (0.00 sec)
```

```
*****
```

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 (0.03 sec)
```

```
mysql> select *
-> from emp
-> where deptno = ( select deptno
-> from dept
-> where dname = 'purchase');
Empty set (0.00 sec)
```

```
*****
```

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

```
mysql> select *
-> from emp e
-> where sal > (select avg(sal)
-> from emp f
-> where f.deptno = e.deptno);
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME   | JOB      | MGR    | HIREDATE | SAL     | COMM    | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
```

```

| 7499 | ALLEN | SALESMAN | 7698 | 1981-02-20 | 2116.00 | 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 | manager | 7777 | 1981-11-17 | 5750.00 | NULL | 10 |
| 7844 | TURNER | SALESMAN | 7698 | 1981-09-08 | 1983.75 | 0.00 | 30 |
| 7902 | FORD | ANALYST | 7566 | 1981-12-03 | 3000.00 | NULL | 20 |
+-----+-----+-----+-----+-----+-----+-----+-----+
7 rows in set (0.00 sec)

*****

```

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

```

mysql> select *
   -> from emp p
   -> where sal<(select sal
   -> from emp c
   -> where p.mgr=c.empno);
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR    | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH | Senior | 7902   | 1980-12-17 | 800.00 | NULL   | 20    |
| 7499 | ALLEN | SALESMAN | 7698   | 1981-02-20 | 2116.00 | 300.00 | 30    |
| 7521 | WARD  | SALESMAN | 7698   | 1981-02-22 | 1653.13 | 500.00 | 30    |
| 7566 | JONES | MANAGER | 7839   | 1981-04-02 | 2975.00 | NULL   | 20    |
| 7654 | MARTIN | SALESMAN | 7698   | 1981-09-28 | 1653.13 | 1400.00 | 30    |
| 7698 | BLAKE | MANAGER | 7839   | 1981-05-01 | 2850.00 | NULL   | 30    |
| 7844 | TURNER | SALESMAN | 7698   | 1981-09-08 | 1983.75 | 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    |
+-----+-----+-----+-----+-----+-----+-----+-----+
9 rows in set (0.00 sec)

*****

```

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

```

mysql> select *
   -> from emp p
   -> where sal>(select avg(sal)
   -> from emp c
   -> where c.job = p.job);
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB    | MGR    | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499 | ALLEN | SALESMAN | 7698   | 1981-02-20 | 2116.00 | 300.00 | 30    |
| 7839 | KING | manager | 7777   | 1981-11-17 | 5750.00 | NULL   | 10    |
| 7844 | TURNER | SALESMAN | 7698   | 1981-09-08 | 1983.75 | 0.00   | 30    |
| 7876 | ADAMS | CLERK   | 7788   | 1983-01-12 | 1100.00 | NULL   | 20    |
+-----+-----+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

*****

```

51. display employee name and department

```

mysql> select ename,(select dname from dept c
   -> where c.deptno = p.deptno) Department
   -> from emp p;
+-----+-----+
| ename | Department |
+-----+-----+
| 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)

```

-----OR-----

```

mysql> select ename,dname
-> from emp,dept
-> where emp.deptno=dept.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)

```

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

```

mysql> select empno,ename,(select dname from dept c1
-> where c1.deptno = p.deptno) dname,(select grade from salgrade s
-> where p.sal between s.losal and s.hisal) grade
-> from emp p;
+-----+-----+-----+-----+
| empno | ename | dname   | grade |
+-----+-----+-----+-----+
| 7369 | SMITH | RESEARCH | 1    |
| 7499 | ALLEN | SALES   | 3    |
| 7521 | WARD  | SALES   | 2    |
| 7566 | JONES | RESEARCH | 4    |
| 7654 | MARTIN| SALES   | 2    |
| 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)

```

----- OR -----

```

mysql> select empno,ename,dname,grade
-> from emp,dept,salgrade
-> where emp.deptno = dept.deptno and
-> emp.sal between salgrade.losal and salgrade.hisal;
+-----+-----+-----+-----+
| empno | ename  | dname   | grade  |
+-----+-----+-----+-----+
| 7369 | SMITH  | RESEARCH |      1 |
| 7876 | ADAMS  | RESEARCH |      1 |
| 7900 | JAMES  | SALES   |      1 |
| 7521 | WARD   | SALES   |      3 |
| 7654 | MARTIN | SALES   |      3 |
| 7844 | TURNER | SALES   |      3 |
| 7934 | MILLER | ACCOUNTING |      3 |
| 7499 | ALLEN  | SALES   |      4 |
| 7566 | JONES  | RESEARCH |      4 |
| 7698 | BLAKE  | SALES   |      4 |
| 7782 | CLARK  | ACCOUNTING |      4 |
| 7788 | SCOTT  | RESEARCH |      4 |
| 7902 | FORD   | RESEARCH |      4 |
| 7839 | KING   | ACCOUNTING |      5 |
+-----+-----+-----+-----+
14 rows in set (0.03 sec)

```

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

```

mysql> select empno,ename,mgr,
-> select ename from emp c
-> where c.empno = p.mgr) 'manager name'
-> from emp p
-> order by empno;
+-----+-----+-----+-----+
| empno | ename  | mgr   | manager name |
+-----+-----+-----+-----+
| 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  | 7777 | NULL  |
| 7788 | SCOTT  | 7566 | JONES |
| 7839 | KING   | 7777 | NULL  |
| 7844 | TURNER | 7698 | BLAKE |
| 7876 | ADAMS  | 7788 | SCOTT |
| 7900 | JAMES  | 7698 | BLAKE |
| 7902 | FORD   | 7566 | JONES |
| 7934 | MILLER | 7777 | NULL  |
+-----+-----+-----+-----+
14 rows in set (0.00 sec)

```

----- OR -----

```

mysql> select e1.empno,e1.ename,e1.mgr,e2.ename
-> from emp e1,emp e2

```

```

-> where e2.empno = e1.mgr
-> order by e1.empno;
+-----+-----+-----+
| 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   |
| 7788  | SCOTT  | 7566  | JONES  |
| 7844  | TURNER | 7698  | BLAKE  |
| 7876  | ADAMS  | 7788  | SCOTT  |
| 7900  | JAMES  | 7698  | BLAKE  |
| 7902  | FORD   | 7566  | JONES  |
+-----+-----+-----+
11 rows in set (0.00 sec)

```

```
*****
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, cname, descripttion)
mysql> create table salesman(
-> sid int primary key,
-> sname varchar(20),
-> address varchar(20));
Query OK, 0 rows affected (0.52 sec)
```

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

```
mysql> create table category(
-> cid int primary key,
-> cname varchar(20),
-> description varchar(20));
Query OK, 0 rows affected (0.51 sec)
```

```
mysql> desc category;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| cid   | int    | NO  | PRI | NULL    |       |
| cname | varchar(20) | YES |     | NULL    |       |
| description | varchar(20) | YES |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)
```

```
mysql> create table product(
-> pid int primary key
-> pname varchar(20) not null^C
mysql> create table product(
-> pid int primary key,
```

```

-> pname varchar(20) not null,
-> price decimal(7,2) check(price>0),
-> qty int check(qty>0),
-> cid int,
-> sid int,
-> constraint cid_fk foreign key(cid) references category(cid)
-> on delete cascade
-> on update cascade,
-> constraint sid_fk foreign key(sid) references salesman(sid)
-> on delete cascade
-> on update cascade);
Query OK, 0 rows affected (0.55 sec)

```

```

mysql> desc product;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| pid   | int       | NO   | PRI | NULL    |        |
| pname | varchar(20) | NO   |     | NULL    |        |
| price | decimal(7,2) | YES  |     | NULL    |        |
| qty   | int       | YES  |     | NULL    |        |
| cid   | int       | YES  | MUL | NULL    |        |
| sid   | int       | YES  | MUL | NULL    |        |
+-----+-----+-----+-----+-----+
6 rows in set (0.00 sec)
mysql> insert into category
values(101 , 'Dairy', 'cheeses, eggs, milk, yougurt, butter');
Query OK, 1 row affected (0.04 sec)

mysql> insert into category values(102, 'Bakery', 'Bread, Khaari, Toast, Cupcakes');
Query OK, 1 row affected (0.06 sec)

mysql> insert into category values(103, 'Personal Care', 'Shampoo, Soap, Hand
soap, Creams');
Query OK, 1 row affected (0.05 sec)

mysql> insert into salesman values(1001, 'Varad', 'Nanded');
Query OK, 1 row affected (0.04 sec)

mysql> insert into salesman values(1002, 'Sujit', 'Navi Mumbai');
Query OK, 1 row affected (0.07 sec)

mysql> insert into salesman values(1003, 'Shikha', 'Gorakhpur');
Query OK, 1 row affected (0.05 sec)

```

```

mysql> insert into product values(1, 'Amul milk', 25, 100, 101, 1001);
Query OK, 1 row affected (0.05 sec)

mysql> insert into product values(2, 'Monginis chocolava', 50, 150, 102, 1002);
Query OK, 1 row affected (0.07 sec)

mysql> insert into product values(3, 'Isak Perfume', 899, 100, 103, 1003);
Query OK, 1 row affected (0.37 sec)

mysql> select * from salesman;
+-----+-----+-----+
| sid  | sname | address |
+-----+-----+-----+
| 1001 | Varad | Nanded |
| 1002 | Sujit | Navi Mumbai |
| 1003 | Shikha | Gorakhpur |
+-----+-----+-----+

```

```

3 rows in set (0.00 sec)

mysql> select * from category;
+-----+-----+-----+
| cid | cname      | description          |
+-----+-----+-----+
| 101 | Dairy       | cheeses, eggs, milk, yougurt, butter |
| 102 | Bakery      | Bread, Khaari, Toast, Cupcakes           |
| 103 | Personal Care | Shampoo, Soap, Hand soap, Creams        |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from product;
+-----+-----+-----+-----+-----+-----+
| pid | pname      | price | qty   | cid   | sid   |
+-----+-----+-----+-----+-----+-----+
| 1   | Amul milk   | 25.00 | 100  | 101  | 1001 |
| 2   | Monginis chocolava | 50.00 | 150  | 102  | 1002 |
| 3   | Isak Perfume | 899.00 | 100  | 103  | 1003 |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql>

-----
1. list all product name,their category name and name of a person, who sold that
product
mysql> select p.pname,c.cname,s.sname
      -> from product p inner join salesman s
      -> on p.sid = s.sid
      -> inner join category c on p.cid = c.cid;
+-----+-----+-----+
| pname      | cname      | sname    |
+-----+-----+-----+
| Amul milk   | Dairy       | Varad   |
| Monginis chocolava | Bakery     | Sujit   |
| Isak Perfume | Personal Care | Shikha |
+-----+-----+-----+
3 rows in set (0.00 sec)
-----
2. list all product name and salesman name for all salesman who stays in Navi
Mumbai

mysql> select p.pname,s.sname,s.address
      -> from product p inner join salesman s
      -> on s.sid=p.sid and s.address = 'Navi Mumbai';
+-----+-----+-----+
| pname      | sname    | address  |
+-----+-----+-----+
| Monginis chocolava | Sujit   | Navi Mumbai |
+-----+-----+-----+
1 row in set (0.00 sec)
-----

3. list all product name and category name
mysql> select p.pname,c.cname
      -> from product p inner join category c
      -> on c.cid=p.cid;
+-----+-----+
| pname      | cname    |
+-----+-----+
| Amul milk   | Dairy    |
| Monginis chocolava | Bakery |
+-----+-----+

```

```

| Isak Perfume      | Personal Care |
+-----+-----+
3 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 spskill2
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 room(
    -> roomid int primary key,
    -> rname varchar(20) not null,
    -> rloc varchar(50) not null);
Query OK, 0 rows affected (0.74 sec)

```

```

mysql> desc room;
+-----+-----+-----+-----+-----+
| Field | Type      | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| roomid | int       | NO   | PRI | NULL    |       |
| rname  | varchar(20) | NO   |     | NULL    |       |
| rloc   | varchar(50) | NO   |     | NULL    |       |
+-----+-----+-----+-----+-----+
3 rows in set (0.02 sec)

```

```

mysql> insert into room values(100,'jasmin','1st floor');
Query OK, 1 row affected (0.07 sec)

```

```

mysql> insert into room values(101,'rose','2nd floor');
Query OK, 1 row affected (0.09 sec)

```

```

mysql> insert into room values(105,'lotus','3rd floor');
Query OK, 1 row affected (0.03 sec)

```

```

mysql> insert into room values(103,'mogra','1st floor');
Query OK, 1 row affected (0.07 sec)

```

```

mysql> alter table room
    -> modify column rloc ^C
mysql> delete from room
    -> where roomid=105;

```

```

Query OK, 1 row affected (0.06 sec)

mysql> insert into room values(105,'lotus','1st floor');
Query OK, 1 row affected (0.07 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> create table faculty(
    -> fid int primary key,
    -> fname varchar(20) not null,
    -> skill1 varchar(5) not null,
    -> skill2 varchar(5) not null);
Query OK, 0 rows affected (0.28 sec)

mysql> create table courses(
    -> cid int primary key,
    -> cname varchar(10) not null,
    -> rid int,
    -> fid int,
    -> constraint rid_fk foreign key(rid) references room(roomid)
    -> on delete cascade
    -> on update cascade,
    -> constraint fid_fk foreign key(fid) references faculty(fid)
    -> on delete cascade
    -> on update cascade);
Query OK, 0 rows affected (0.54 sec)

mysql> insert into faculty values(10,'kjzhcjhz','a','b');
Query OK, 1 row affected (0.06 sec)

mysql> insert into faculty values(11,'sdd','x','z');
Query OK, 1 row affected (0.09 sec)

mysql> insert into faculty values(12,'lksjk','a','x');
Query OK, 1 row affected (0.09 sec)

mysql> insert into faculty values(13,'ksdjlkj','a','b');
Query OK, 1 row affected (0.10 sec)

mysql> insert into courses values(121,'DBDA',100,10);
Query OK, 1 row affected (0.08 sec)

mysql> insert into faculty values(13,'ksdjlkj','a','b');
ERROR 1062 (23000): Duplicate entry '13' for key 'faculty.PRIMARY'
mysql> desc courses;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| cid   | int    | NO  | PRI | NULL    |       |
| cname | varchar(10) | NO  |     | NULL    |       |
| rid   | int    | YES | MUL | NULL    |       |
| fid   | int    | YES | MUL | NULL    |       |
+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)

```

```

mysql> select * from courses;
+----+-----+-----+-----+
| cid | cname | rid  | fid  |
+----+-----+-----+-----+
| 121 | DBDA  | 100 | 10   |
+----+-----+-----+-----+
1 row in set (0.00 sec)

mysql> insert into courses(cid,cname,rid) values(131,'DAC',101);
Query OK, 1 row affected (0.05 sec)

mysql> insert into courses(cid,cname) values(141,'DTISSL');
Query OK, 1 row affected (0.07 sec)

mysql> insert into courses values(151,'DIOT',105,12);
Query OK, 1 row affected (0.05 sec)

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

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)

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

```

available

```
mysql> select c cname, r rname
-> from courses c left join room r on c.rid=r.roomid
-> where r.rname is null
-> union
-> select c cname, r rname
-> from courses c right join room r on c.rid =r.roomid
-> where c cname is null;
+-----+
| cname | rname |
+-----+
| DTISS | NULL  |
| NULL  | mogra |
+-----+
2 rows 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 f fname, c cname, null
-> from courses c right join faculty f on c.fid=f.fid
-> where c cname is null
-> union
->
-> select null, c cname, r rname
-> from courses c right join room r on c.rid=r.roomid
-> where c cname is null;
+-----+
| fname  | cname  | NULL   |
+-----+
| sdd    | NULL   | NULL   |
| ksdjlkj | NULL   | NULL   |
| NULL   | NULL   | mogra |
+-----+
3 rows in set (0.00 sec)
```

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

```
mysql> select r rname, c cname
-> from courses c right join room r on c.rid=r.roomid;
+-----+
| rname  | cname  |
+-----+
| jasmin | DBDA   |
| rose   | DAC    |
| mogra  | NULL   |
| lotus  | DIOT   |
+-----+
4 rows in set (0.00 sec)
```

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

```
mysql> select *
-> from courses c right join room r on c.rid=r.roomid
-> where c cname is null;
+-----+
| cid   | cname | rid  | fid  | roomid | rname | rloc   |
+-----+
| NULL  | NULL  | NULL | NULL |      103 | mogra | 1st floor |
+-----+
```

```
1 row in set (0.00 sec)
```

```
-----  
5. display courses and faculty assigned to those courses whose special skill is  
database=x
```

```
mysql> select c.cname, f.fname  
-> from courses c inner join faculty f on c.fid=f.fid  
-> where f.skill1='x' or f.skill2='x';  
+-----+  
| cname | fname |  
+-----+  
| DIOT | lksjk |  
+-----+  
1 row in set (0.00 sec)
```

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

```
mysql> select cid,cname,f.fid,fname,roomid,rname,rloc  
-> from courses c INNER JOIN faculty f  
-> ON c.fid=f.fid  
-> INNER JOIN room r  
-> ON r.roomid = c.rid;  
+-----+-----+-----+-----+-----+-----+  
| cid | cname | fid | fname | roomid | rname | rloc |  
+-----+-----+-----+-----+-----+-----+  
| 121 | DBDA | 10 | kjzhcjhz | 100 | jasmin | 1st floor |  
| 151 | DIOT | 12 | lksjk | 105 | lotus | 1st floor |  
+-----+-----+-----+-----+-----+-----+  
2 rows in set (0.08 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 product56(  
-> prodid int primary key,  
-> pname varchar(20) not null unique,  
-> qty int check(qty>0),  
-> price decimal(7,2) default 20,  
-> catid int,
```

```
-> sid int);
Query OK, 0 rows affected (0.47 sec)

mysql> create table salesman56(
-> sid int primary key,
-> sname varchar(20) not null,
-> city varchar(50));
Query OK, 0 rows affected (0.26 sec)

mysql> create table category(
-> cid int primary key,
-> cname varchar(20) not null unique,
-> cname varchar(20) not null unique,^C
mysql> create table category56(
-> cid int primary key,
-> cname varchar(20) not null unique,
-> description varchar(50));
Query OK, 0 rows affected (0.34 sec)

mysql> alter table product56
-> add constraint catid_fk foreign key(catid) references category56(cid);
Query OK, 0 rows affected (1.11 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table product56
-> add constraint sid_fk1 foreign key(sid) references salesman56(sid);
Query OK, 0 rows affected (1.57 sec)

mysql> insert into category56 values(1,'chips','very crunchy');
Query OK, 1 row affected (0.06 sec)

mysql> insert into category56 values(2,'chocolate','very choclaty');
Query OK, 1 row affected (0.06 sec)

mysql> insert into category56 values(3,'snack','yummy');
Query OK, 1 row affected (0.06 sec)

mysql> insert into category56 values(4,'cold drinks','thanda thanda cool cool');
Query OK, 1 row affected (0.09 sec)

mysql> insert into salesman56 values(11,'rahul','pune');
Query OK, 1 row affected (0.07 sec)

mysql> insert into salesman56 values(12,'kirti','mumbai');
Query OK, 1 row affected (0.06 sec)

mysql> insert into salesman56 values(13,'Prasad','nashik');
Query OK, 1 row affected (0.07 sec)

mysql> insert into salesman56 values(14,'arnav','amaravati');
Query OK, 1 row affected (0.06 sec)

mysql> insert into product56 values(123,'lays',30,30,1,12);
Query OK, 1 row affected (0.07 sec)

mysql> insert into product56 values(111,'pepsi',40,50,4,11);
Query OK, 1 row affected (0.08 sec)

mysql> insert into product56 values(134,'nachos',50,50,1,12);
Query OK, 1 row affected (0.06 sec)

mysql> insert into product56 values(124,'dairy milk',40,60,2,14);
Query OK, 1 row affected (0.06 sec)
```

```
mysql> insert into product56 values(125,'pringles',40,60,1,14);
Query OK, 1 row affected (0.05 sec)
```

```
mysql> select * from product56;
+-----+-----+-----+-----+-----+
| prodid | pname      | qty   | price  | catid | sid   |
+-----+-----+-----+-----+-----+
|    111 | pepsi       |    40 | 50.00 |     4 |    11 |
|    123 | lays        |    30 | 30.00 |     1 |    12 |
|    124 | dairy milk   |    40 | 60.00 |     2 |    14 |
|    125 | pringles     |    40 | 60.00 |     1 |    14 |
|    134 | nachos      |    50 | 50.00 |     1 |    12 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
```

```
mysql> select * from category56;
+-----+-----+
| cid | cname      | description          |
+-----+-----+
|   1 | chips       | very crunchy         |
|   2 | chocolate    | very choclaty       |
|   3 | snack        | yummy                |
|   4 | cold drinks  | thanda thanda cool cool |
+-----+-----+
4 rows in set (0.00 sec)
```

```
mysql> select * from salesman56;
+-----+-----+
| sid | sname      | city   |
+-----+-----+
| 11  | rahul      | pune  |
| 12  | kirti      | mumbai |
| 13  | Prasad     | nashik |
| 14  | arnav      | amaravati |
+-----+-----+
4 rows in set (0.00 sec)
```

1. List all products with category chips

```
mysql> select prodid,pname,qty,price
      -> from product56 p inner join category56 c
      -> on p.catid = c.cid
      -> where c.cname = 'chips';
+-----+-----+-----+
| prodid | pname      | qty   | price  |
+-----+-----+-----+
|    123 | lays        |    30 | 30.00 |
|    125 | pringles    |    40 | 60.00 |
|    134 | nachos      |    50 | 50.00 |
+-----+-----+-----+
3 rows in set (0.00 sec)
```

2. display all products sold by kirti

```
mysql> select prodid,pname,qty,price
      -> from product56 p inner join salesman56 s
      -> on s.sid=p.sid
      -> where s.sname  = 'kirti';
+-----+-----+-----+
| prodid | pname      | qty   | price  |
+-----+-----+-----+
```

```
| 123 | lays   | 30 | 30.00 |
| 134 | nachos | 50 | 50.00 |
+-----+-----+-----+
2 rows in set (0.00 sec)
```

3. display all salesman who do not sold any product

```
mysql> select s.sid,s.sname,s.city
      -> from salesman56 s left join product56 p
      -> on s.sid = p.sid
      -> where p.pname is null;
+-----+-----+-----+
| 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 c.cid,c cname
      -> from category56 c left join product56 p
      -> on c.cid = p.catid
      -> where p.pname is null;
+-----+
| cid | cname  |
+-----+
| 3   | snack  |
+-----+
1 row in set (0.00 sec)
```

5. display all products with no category assigned

```
mysql> select p.prodid,p.pname,p.qty,p.price
      -> from product56 p left join category56 c
      -> on c.cid=p.catid
      -> where c cname 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 salesman56
      -> where city regexp '^[PN]';
+-----+-----+-----+
| sid | sname | city  |
+-----+-----+-----+
| 11  | rahul | pune |
| 13  | Prasad | nashik |
+-----+-----+
2 rows in set (0.00 sec)
```

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

```
mysql> alter table salesman56
      -> add credit_limit decimal(9,2);
```

```
Query OK, 0 rows affected (0.70 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> desc salesman56
-> ;
```

Field	Type	Null	Key	Default	Extra
sid	int	NO	PRI	NULL	
sname	varchar(20)	NO		NULL	
city	varchar(50)	YES		NULL	
credit_limit	decimal(9,2)	YES		NULL	

4 rows in set (0.00 sec)

```
***** THE END *****
```

```
#####
Assignment 3 - Views and Index
#####
```

A. Vehicle, Customer, Salesman, Cust_vehicle tables

1. create all given tables

```
mysql> create table Vehicle(
-> vid int primary key,
-> vname varchar(20),
-> price decimal(9,2),
-> description varchar(20));
Query OK, 0 rows affected (0.39 sec)
```

```
mysql> create table customer(
-> custid int primary key,
-> cname varchar(20),
-> address varchar(10));
Query OK, 0 rows affected (0.44 sec)
```

```
mysql> create table salesman(
-> sid int primary key,
-> sname varchar(10),
-> address varchar(10));
Query OK, 0 rows affected (0.32 sec)
```

```
mysql> create table cust_vehicle(
-> custid int,
-> vid int,
-> sid int,
-> buy_price decimal(9,2),
-> constraint cv_pk primary key(custid,vid),
-> constraint custid_fk foreign key(custid) references customer(custid)
-> on update cascade,
-> constraint vid_fk foreign key(vid) references vehicle(vid)
-> on update cascade,
-> constraint sid_fk foreign key(sid) references salesman(sid)
-> on update cascade);
Query OK, 0 rows affected (0.48 sec)
```

```
mysql>
mysql> insert into vehicle values(1,'Activa',80000,'honda activa');
Query OK, 1 row affected (0.06 sec)
```

```
mysql> insert into vehicle values(2,'Santro',800000,'SUV');
Query OK, 1 row affected (0.13 sec)
```

```

mysql> insert into vehicle values(3,'Motor bike',100000,'YAMAHA');
Query OK, 1 row affected (0.09 sec)

mysql> insert into customer values(1,'Nilima','Pimpri');
Query OK, 1 row affected (0.06 sec)

mysql> insert into customer values(2,'Ganesh','Pune');
Query OK, 1 row affected (0.19 sec)

mysql> insert into customer values(3,'Pankaj','Mumbai');
Query OK, 1 row affected (0.06 sec)

mysql> insert into salesman values(10,'Rajesh','Mumbai');
Query OK, 1 row affected (0.11 sec)

mysql> insert into salesman values(11,'Seema','Pune');
Query OK, 1 row affected (0.10 sec)

mysql> insert into salesman values(13,'Rakhi','Pune');
Query OK, 1 row affected (0.09 sec)

mysql> insert into cust_vehicle values(1,1,10,75000);
Query OK, 1 row affected (0.07 sec)

mysql> insert into cust_vehicle values(1,2,10,790000);
Query OK, 1 row affected (0.09 sec)

mysql> insert into cust_vehicle values(2,3,11,80000);
Query OK, 1 row affected (0.05 sec)

mysql> insert into cust_vehicle values(3,3,11,75000);
Query OK, 1 row affected (0.07 sec)

mysql> insert into cust_vehicle values(3,2,10,800000);
Query OK, 1 row affected (0.05 sec)

mysql> select * from vehicle;
+----+-----+-----+-----+
| vid | vname      | price    | description |
+----+-----+-----+-----+
|  1 | Activa     | 80000.00 | honda activa |
|  2 | Santro      | 800000.00 | SUV           |
|  3 | Motor bike  | 100000.00 | YAMAHA        |
+----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from customer;
+-----+-----+-----+
| custid | cname   | address  |
+-----+-----+-----+
|      1 | Nilima  | Pimpri   |
|      2 | Ganesh  | Pune     |
|      3 | Pankaj  | Mumbai   |
+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from salesman;
+----+-----+-----+
| sid | sname   | address  |
+----+-----+-----+
| 10 | Rajesh  | Mumbai   |
| 11 | Seema   | Pune     |
| 13 | Rakhi   | Pune     |

```

```

+-----+-----+
3 rows in set (0.00 sec)

mysql> select * from cust_vehicle;
+-----+-----+-----+-----+
| custid | vid | sid | buy_price |
+-----+-----+-----+
|     1 |    1 |   10 | 75000.00 |
|     1 |    2 |   10 | 790000.00 |
|     2 |    3 |   11 | 80000.00 |
|     3 |    2 |   10 | 800000.00 |
|     3 |    3 |   11 | 75000.00 |
+-----+-----+-----+
5 rows in set (0.00 sec)
*****
2. create index on vehicle table based on price

mysql> create index pri_idx on vehicle(price);
Query OK, 0 rows affected (0.36 sec)
Records: 0  Duplicates: 0  Warnings: 0
*****


3. find all customer name,vehicle name, salesman name, discount earn by all
customer

mysql> select c.cname,v.vname,s.sname,v.price,cf.buy_price,v.price -cf.buy_price
"Discount"
      -> from customer c,vehicle v,salesman s, cust_vehicle cf
      -> where v.vid= cf.vid and c.custid=cf.custid and s.sid=cf.sid;
+-----+-----+-----+-----+-----+
| cname | vname | sname | price | buy_price | Discount |
+-----+-----+-----+-----+-----+
| Nilima | Activa | Rajesh | 80000.00 | 75000.00 | 5000.00 |
| Nilima | Santro | Rajesh | 800000.00 | 790000.00 | 10000.00 |
| Ganesh | Motor bike | Seema | 100000.00 | 80000.00 | 20000.00 |
| Pankaj | Santro | Rajesh | 800000.00 | 800000.00 | 0.00 |
| Pankaj | Motor bike | Seema | 100000.00 | 75000.00 | 25000.00 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)
*****


4. find all customer name,vehicle name,salesman name for all salesman who stays
in pune
mysql> select c.cname,v.vname,s.sname
      -> from customer c,vehicle v, salesman s, cust_vehicle cf
      -> where v.vid=cf.vid and c.custid=cf.custid and s.sid=cf.sid and
s.address='pune';
+-----+-----+-----+
| cname | vname | sname |
+-----+-----+-----+
| Ganesh | Motor bike | Seema |
| Pankaj | Motor bike | Seema |
+-----+-----+-----+
2 rows in set (0.00 sec)
*****


5. find how many customers bought motor bike

mysql> select count(*)

```

```

->      from customer c,vehicle v, cust_vehicle cf
->      where v.vid=cf.vid and c.custid=cf.custid and v.vid=3;
+-----+
| count(*) |
+-----+
|      2 |
+-----+
1 row in set (0.00 sec)

*****
6. create a view find_discount which displays output
-----to create view
create view find_discount
as
select cname,vname,price,buy_price,price-buy_price "discount"
from customer c inner join cust_vehicle cv on c.custid=cv.custid inner join
vehicle v on
v.vid=cv.vid;
-----to display discount
select * from find_discount;

mysql> create view find_discount
-> as
-> select cname,vname,price,buy_price,price-buy_price "discount"
-> from customer c inner join cust_vehicle cv on c.custid=cv.custid inner
join vehicle v on
-> v.vid=cv.vid;
Query OK, 0 rows affected (0.08 sec)

mysql> select * from find_discount;
+-----+-----+-----+-----+-----+
| cname | vname   | price   | buy_price | discount |
+-----+-----+-----+-----+-----+
| Nilima | Activa  | 800000.00 | 750000.00 | 5000.00 |
| Nilima | Santro  | 800000.00 | 790000.00 | 10000.00 |
| Ganesh | Motor bike | 1000000.00 | 800000.00 | 20000.00 |
| Pankaj | Santro  | 800000.00 | 800000.00 | 0.00 |
| Pankaj | Motor bike | 1000000.00 | 750000.00 | 25000.00 |
+-----+-----+-----+-----+-----+
5 rows in set (0.03 sec)

*****
7. find all customer name, vehicle name, salesman name, discount earn by all
customer

mysql> select c.cname,v.vname,s.sname,v.price,cf.buy_price,v.price -cf.buy_price
"Discount"
-> from customer c,vehicle v,salesman s, cust_vehicle cf
-> where v.vid= cf.vid and c.custid=cf.custid and s.sid=cf.sid;
+-----+-----+-----+-----+-----+
| cname | vname   | sname   | price   | buy_price | Discount |
+-----+-----+-----+-----+-----+
| Nilima | Activa  | Rajesh  | 800000.00 | 750000.00 | 5000.00 |
| Nilima | Santro  | Rajesh  | 800000.00 | 790000.00 | 10000.00 |
| Ganesh | Motor bike | Seema  | 1000000.00 | 800000.00 | 20000.00 |
| Pankaj | Santro  | Rajesh  | 800000.00 | 800000.00 | 0.00 |
| Pankaj | Motor bike | Seema  | 1000000.00 | 750000.00 | 25000.00 |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

*****

```

8. create view my_hr to display empno,ename,job,comm for all employees who earn commission

```
mysql> create view my_hr
-> as
-> select e.empno,e.ename,e.job,e.comm
-> from emp e
-> where ifnull(comm,0) != 0 ;
Query OK, 0 rows affected (0.10 sec)
```

```
mysql> select * from my_hr;
+-----+-----+-----+-----+
| empno | ename | job    | comm   |
+-----+-----+-----+-----+
| 7499  | ALLEN | SALESMAN | 300.00 |
| 7521  | WARD  | SALESMAN | 500.00 |
| 7654  | MARTIN | SALESMAN | 1400.00|
+-----+-----+-----+-----+
3 rows in set (0.00 sec)

*****
```

9. create view mgr30 to display all employees from department 30

```
mysql> create view mgr30
-> as
-> select *
-> from emp
-> where deptno=30;
Query OK, 0 rows affected (0.07 sec)
```

```
mysql> select * from mgr30;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB     | MGR    | HIREDATE | SAL     | COMM    | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499  | ALLEN  | SALESMAN | 7698  | 1981-02-20 | 2116.00 | 300.00  | 30      |
| 7521  | WARD   | SALESMAN | 7698  | 1981-02-22 | 1653.13 | 500.00  | 30      |
| 7654  | MARTIN | SALESMAN | 7698  | 1981-09-28 | 1653.13 | 1400.00 | 30      |
| 7698  | BLAKE   | MANAGER  | 7839  | 1981-05-01 | 2850.00 | NULL    | 30      |
| 7844  | TURNER  | SALESMAN | 7698  | 1981-09-08 | 1983.75 | 0.00    | 30      |
| 7900  | JAMES   | CLERK    | 7698  | 1981-12-03 | 950.00  | NULL    | 30      |
+-----+-----+-----+-----+-----+-----+-----+-----+
6 rows in set (0.02 sec)

*****
```

10. insert 3 employees in view mgr30 check whether insertion is possible

```
mysql> insert into mgr30 values(1,'varad','developer',7499,'2022-10-08',90000,20000,30);
Query OK, 1 row affected (0.05 sec)
```

```
mysql> insert into mgr30 values(2,'sujit','developer',7499,'2022-10-08',90000,20000,30);
Query OK, 1 row affected (0.09 sec)
```

```
mysql> insert into mgr30 values(3,'rajan','developer',7499,'2022-10-08',90000,20000,30);
Query OK, 1 row affected (0.13 sec)
```

```
mysql> select * from mgr30;
+-----+-----+-----+-----+-----+-----+-----+-----+
```

```

+
| EMPNO | ENAME   | JOB          | MGR | HIREDATE | SAL      | COMM     | DEPTNO
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7499 | ALLEN   | SALESMAN    | 7698 | 1981-02-20 | 2116.00 | 300.00  | 30
| 7521 | WARD    | SALESMAN    | 7698 | 1981-02-22 | 1653.13 | 500.00  | 30
| 7654 | MARTIN  | SALESMAN    | 7698 | 1981-09-28 | 1653.13 | 1400.00 | 30
| 7698 | BLAKE   | MANAGER     | 7839 | 1981-05-01 | 2850.00 | NULL    | 30
| 7844 | TURNER  | SALESMAN    | 7698 | 1981-09-08 | 1983.75 | 0.00    | 30
| 7900 | JAMES   | CLERK       | 7698 | 1981-12-03 | 950.00  | NULL    | 30
| 1 | varad   | developer   | 7499 | 2022-10-08 | 90000.00 | 20000.00 | 30
| 2 | sujit   | developer   | 7499 | 2022-10-08 | 90000.00 | 20000.00 | 30
| 3 | rajan   | developer   | 7499 | 2022-10-08 | 90000.00 | 20000.00 | 30
+-----+-----+-----+-----+-----+-----+-----+-----+
+
9 rows in set (0.00 sec)

*****

```

11. insert 3 records in dept and display all records from dept

```

insert into dept values(50, 'MARKETING', 'MUMBAI');
insert into dept values(60, 'QUALITY', 'PUNE');
insert into dept values(70, 'LOGISTICS', 'NANDED');

mysql> insert into dept values(50, 'MARKETING', 'MUMBAI');
Query OK, 1 row affected (0.06 sec)

mysql> insert into dept values(60, 'QUALITY', 'PUNE');
Query OK, 1 row affected (0.08 sec)

mysql> insert into dept values(70, 'LOGISTICS', 'NANDED');
Query OK, 1 row affected (0.04 sec)

```

```

mysql> select * from dept;
+-----+-----+-----+
| DEPTNO | DNAME   | LOC      |
+-----+-----+-----+
| 10 | ACCOUNTING | NEW YORK |
| 20 | RESEARCH   | DALLAS   |
| 30 | SALES     | CHICAGO  |
| 40 | OPERATIONS | BOSTON   |
| 50 | MARKETING  | MUMBAI  |
| 60 | QUALITY    | PUNE    |
| 70 | LOGISTICS  | NANDED  |
+-----+-----+-----+
7 rows in set (0.00 sec)

*****

```

12. use rollback command check what happens

```

mysql> rollback;
Query OK, 0 rows affected (0.00 sec)

```

```
*****
```

```
13. do the following
insert row in emp with empno 100
insert row in emp with empno 101
insert row in emp with empno 102
add savepoint A
insert row in emp with empno 103
insert row in emp with empno 104
insert row in emp with empno 105
add savepoint B
delete emp with empno 100
delete emp with emp no 104
rollback upto svaepoint B
check what all records will appear in employee table
rollback upto A
check what all records will appear in employee table
commit all changes
check what all records will appear in employee table
check whether you can roll back the contents.
```

```
mysql> set autocommit =0;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> insert into emp(empno) values(100);
Query OK, 1 row affected (0.02 sec)
```

```
mysql> insert into emp(empno) values(101);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into emp(empno) values(102);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> savepoint A;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> insert into emp(empno) values(103);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into emp(empno) values(104);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> insert into emp(empno) values(105);
Query OK, 1 row affected (0.00 sec)
```

```
mysql> savepoint B;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> delete from emp
      -> where empno=100;
Query OK, 1 row affected (0.01 sec)
```

```
mysql> delete from emp
      -> where empno=104;
Query OK, 1 row affected (0.00 sec)
```

```
mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB       | MGR    | HIREDATE | SAL     | COMM    | DEPTNO
+-----+-----+-----+-----+-----+-----+
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	Senior	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	2116.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1653.13	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1653.13	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	manager	7777	1982-01-23	1495.00	NULL	10
1	varad	developer	7499	2022-10-08	90000.00	20000.00	30
2	sujit	developer	7499	2022-10-08	90000.00	20000.00	30
3	rajan	developer	7499	2022-10-08	90000.00	20000.00	30
101	NULL	NULL	NULL	NULL	NULL	NULL	NULL
102	NULL	NULL	NULL	NULL	NULL	NULL	NULL
103	NULL	NULL	NULL	NULL	NULL	NULL	NULL
105	NULL	NULL	NULL	NULL	NULL	NULL	NULL

21 rows in set (0.00 sec)

```
mysql> rollback to B;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB   | MGR  | HIREDATE | SAL   | COMM  | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH  | Senior | 7902 | 1980-12-17 | 800.00 | NULL  | 20    |
| 7499 | ALLEN  | SALESMAN | 7698 | 1981-02-20 | 2116.00 | 300.00 | 30    |
| 7521 | WARD   | SALESMAN | 7698 | 1981-02-22 | 1653.13 | 500.00 | 30    |
```

7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1653.13	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	manager	7777	1982-01-23	1495.00	NULL	10
1	varad	developer	7499	2022-10-08	90000.00	20000.00	30
2	sujit	developer	7499	2022-10-08	90000.00	20000.00	30
3	rajan	developer	7499	2022-10-08	90000.00	20000.00	30
100	NULL	NULL	NULL	NULL	NULL	NULL	NULL
101	NULL	NULL	NULL	NULL	NULL	NULL	NULL
102	NULL	NULL	NULL	NULL	NULL	NULL	NULL
103	NULL	NULL	NULL	NULL	NULL	NULL	NULL
104	NULL	NULL	NULL	NULL	NULL	NULL	NULL
105	NULL	NULL	NULL	NULL	NULL	NULL	NULL

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

23 rows in set (0.00 sec)

```
mysql> rollback to A;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB       | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH  | Senior    | 7902 | 1980-12-17 | 800.00 | NULL   | 20      |
| 7499 | ALLEN  | SALESMAN  | 7698 | 1981-02-20 | 2116.00 | 300.00 | 30      |
| 7521 | WARD   | SALESMAN  | 7698 | 1981-02-22 | 1653.13 | 500.00 | 30      |
| 7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 2975.00 | NULL   | 20      |
+-----+-----+-----+-----+-----+-----+-----+
```

7654	MARTIN	SALESMAN	7698	1981-09-28	1653.13	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	manager	7777	1982-01-23	1495.00	NULL	10
1	varad	developer	7499	2022-10-08	90000.00	20000.00	30
2	sujit	developer	7499	2022-10-08	90000.00	20000.00	30
3	rajan	developer	7499	2022-10-08	90000.00	20000.00	30
100	NULL	NULL	NULL	NULL	NULL	NULL	NULL
101	NULL	NULL	NULL	NULL	NULL	NULL	NULL
102	NULL	NULL	NULL	NULL	NULL	NULL	NULL

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

20 rows in set (0.00 sec)

```
mysql> commit;
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB       | MGR    | HIREDATE | SAL     | COMM    | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH   | Senior    | 7902   | 1980-12-17 | 800.00  | NULL    | 20      |
| 7499 | ALLEN   | SALESMAN  | 7698   | 1981-02-20 | 2116.00 | 300.00  | 30      |
| 7521 | WARD    | SALESMAN  | 7698   | 1981-02-22 | 1653.13 | 500.00  | 30      |
| 7566 | JONES   | MANAGER   | 7839   | 1981-04-02 | 2975.00 | NULL    | 20      |
| 7654 | MARTIN  | SALESMAN  | 7698   | 1981-09-28 | 1653.13 | 1400.00 | 30      |
| 7698 | BLAKE   | MANAGER   | 7839   | 1981-05-01 | 2850.00 | NULL    | 30      |
| 7782 | CLARK   | manager   | 7777   | 1981-06-09 | 2817.50 | NULL    | 10      |
| 7788 | SCOTT   | ANALYST  | 7566   | 1982-12-09 | 3000.00 | NULL    | 20      |
| 7839 | KING    | manager   | 7777   | 1981-11-17 | 5750.00 | NULL    | 10      |
```

7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	manager	7777	1982-01-23	1495.00	NULL	10
1	varad	developer	7499	2022-10-08	90000.00	20000.00	30
2	sujit	developer	7499	2022-10-08	90000.00	20000.00	30
3	rajan	developer	7499	2022-10-08	90000.00	20000.00	30
100	NULL	NULL	NULL	NULL	NULL	NULL	NULL
101	NULL	NULL	NULL	NULL	NULL	NULL	NULL
102	NULL	NULL	NULL	NULL	NULL	NULL	NULL

20 rows in set (0.00 sec)

```
mysql> rollback;
Query OK, 0 rows affected (0.00 sec)
```

```
mysql> select * from emp;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	Senior	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	2116.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1653.13	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1653.13	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	manager	7777	1982-01-23	1495.00	NULL	10

```

    1 | varad  | developer | 7499 | 2022-10-08 | 90000.00 | 20000.00 |      30
    2 | sujit  | developer | 7499 | 2022-10-08 | 90000.00 | 20000.00 |      30
    3 | rajan  | developer | 7499 | 2022-10-08 | 90000.00 | 20000.00 |      30
100 | NULL   | NULL       | NULL  | NULL       | NULL       | NULL       |      NULL
101 | NULL   | NULL       | NULL  | NULL       | NULL       | NULL       |      NULL
102 | NULL   | NULL       | NULL  | NULL       | NULL       | NULL       |      NULL
+-----+-----+-----+-----+-----+-----+-----+
20 rows in set (0.00 sec)

*****

```

14. create a procedure getMin(deptno,minsal) to find minimum salary of given table.

```

delimiter $$ 
create procedure getmin(in pdeptno int,out minsal decimal(9,2))
begin
select min(sal) into minsal
from emp
where deptno=pdeptno;
end$$
Query OK, 0 rows affected (0.14 sec)

```

```
mysql> delimiter ;
```

```
mysql> call getmin(20,@m);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> select @m;
+-----+
| @m   |
+-----+
| 800.00 |
+-----+
1 row in set (0.00 sec)
```

```
select min(sal)
    -> from emp
    -> where deptno=20;
+-----+
| min(sal) |
+-----+
| 800.00 |
+-----+
```

```
***** THE END
*****
```

```
#####
Assignment 4 - PL/SQL
#####
Solve the following
```

1. write a procedure to insert record into employee table.
the procedure should accept empno, ename, sal, job, hiredate as input parameter

```
write insert statement inside procedure insert_rec to add one record into table
```

```
mysql> delimiter //
mysql> create procedure insert_rec(peno int,pnm varchar(20),psal
decimal(9,2),pjob varchar(20),phiredate date)
-> begin
-> insert into emp(empno,ename,sal,job,hiredate)
values(peno,pnm,psal,pjob,phiredate);
-> end//
```

```
Query OK, 0 rows affected (0.08 sec)
```

```
mysql> delimiter ;
mysql> call insert_rec(50,'shikha',70000,'Developer','2022-10-10');
Query OK, 1 row affected (0.07 sec)
```

```
mysql> select * from emp
-> where ename ='shikha';
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME   | JOB      | MGR    | HIREDATE | SAL     | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+
|    50 | shikha | Developer | NULL  | 2022-10-10 | 70000.00 | NULL   |      NULL |
+-----+-----+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
*****
```

```
2. write a procedure to delete record from employee table.
```

```
the procedure should accept empno as input parameter.
```

```
write delete statement inside procedure delete_emp to delete one record from emp
table
```

```
mysql> delimiter $$
```

```
mysql>
mysql> create procedure delete_emp(in pempno int)
-> begin
->
-> delete from emp
-> where empno = pempno;
->
-> end$$
```

```
Query OK, 0 rows affected (0.09 sec)
```

```
mysql> delimiter ;
mysql> call delete_emp(50);
Query OK, 1 row affected (0.05 sec)
```

```
*****
```

```
3. write a procedure to display empno,ename,deptno,dname for all employees with
sal > given salary. pass salary as a parameter to procedure
```

```
mysql> delimiter $$
```

```
mysql>
mysql> create procedure sal3(in psal decimal(9,2))
-> begin
-> select e.empno,e.ename,d.deptno,d.dname
-> from emp e, dept d
-> where e.deptno = d.deptno and e.sal > psal;
->
-> end$$
```

```
Query OK, 0 rows affected (0.06 sec)
```

```

mysql> delimiter ;
mysql> call sal3(5000);
+-----+-----+-----+-----+
| empno | ename | deptno | dname   |
+-----+-----+-----+-----+
| 7839 | KING  |      10 | ACCOUNTING |
| 1     | varad |      30 | SALES      |
| 2     | sujit |      30 | SALES      |
| 3     | rajan |      30 | SALES      |
+-----+-----+-----+-----+
4 rows in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

*****

```

4. write a procedure to find min,max,avg of salary and number of employees in the given deptno.
deptno --> in parameter
min,max,avg and count ---> out type parameter
execute procedure and then display values min,max,avg and count

```

mysql>
mysql> delimiter $$ 
mysql>
mysql> create procedure details4(in pdeptno int,out pmin decimal(9,2), out pmax
decimal(9,2), out pavg decimal(9,2),out pcnt decimal(9,2))
-> BEGIN
-> select min(sal),max(sal),avg(sal),count(*) into pmin,pmax,pavg,pcnt
-> from emp
-> where deptno = pdeptno;
-> END$$
Query OK, 0 rows affected (0.10 sec)

```

```

mysql> delimiter ;
mysql>
mysql> call details4(10,@min,@max,@avg,@cnt);
Query OK, 1 row affected, 1 warning (0.04 sec)

```

```

mysql> select @min min_sal ,@max max_sal ,@avg avg_sal,@cnt number_of_emp;
+-----+-----+-----+
| min_sal | max_sal | avg_sal | number_of_emp |
+-----+-----+-----+
| 1495.00 | 5750.00 | 3354.17 |          3.00 |
+-----+-----+-----+
1 row in set (0.00 sec)

*****

```

5. write a procedure to display all pid,pname,cid,cname and salesman name(use product,category and salesman table)

```

mysql> delimiter $$ 
mysql> create procedure details5()
-> begin
-> select p.prodid,p.pname,c.cid,c.cname,s.sname
-> from category56 c, product56 p, salesman56 s
-> where c.cid =p.catid and s.sid= p.sid;
-> end$$
Query OK, 0 rows affected (0.05 sec)

```

```

mysql> delimiter ;
mysql>
mysql> call details5();
+-----+-----+-----+-----+-----+
| prodid | pname      | cid | cname      | sname   |
+-----+-----+-----+-----+-----+
|    123 | lays        |    1 | chips       | kirti   |
|    125 | pringles    |    1 | chips       | arnav   |
|    134 | nachos      |    1 | chips       | kirti   |
|    124 | dairy milk  |    2 | chocolate   | arnav   |
|    111 | pepsi        |    4 | cold drinks | rahul   |
+-----+-----+-----+-----+-----+
5 rows in set (0.00 sec)

Query OK, 0 rows affected (0.02 sec)

*****
6. write a procedure to display all vehicles bought by a customer. pass cutome name as a parameter.(use vehicle,salesman,custome and relation table)

mysql> delimiter $$

mysql> create procedure details6(in pcname varchar(20))
-> BEGIN
-> select c.custid,c.cname,v.vid,v.vname,s.sid,s.sname from vehicle
v,customer c,salesman s, cust_vehicle cv
-> where c.cname = pcname and cv.custid = c.custid and cv.vid = v.vid and
cv.sid = s.sid;
-> END$$
Query OK, 0 rows affected (0.06 sec)

mysql>
mysql> delimiter ;
mysql> call details6('ganesh');
+-----+-----+-----+-----+-----+
| custid | cname     | vid | vname     | sid | sname   |
+-----+-----+-----+-----+-----+
|      2 | Ganesh    |   3 | Motor bike |  11 | Seema   |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

Query OK, 0 rows affected (0.01 sec)

*****
7. Write a procedure that displays the following information of all emp Empno,Name,job,Salary,Status,deptno
Note: - Status will be (Greater, Lesser or Equal) respective to average salary of their own department. Display an error message Emp table is empty if there is no matching record.

DELIMITER $$

CREATE FUNCTION AVGSAL(FDEPTNO INT) RETURNS DECIMAL(9,2)
BEGIN
    DECLARE X DECIMAL(9,2) DEFAULT 0;
    SELECT AVG(SAL) INTO X FROM EMP WHERE DEPTNO = FDEPTNO;
    RETURN X;
END$$
DELIMITER ;

mysql> DELIMITER $$
```

```

mysql> CREATE PROCEDURE SAL_STATUS1()
-> BEGIN
->   DECLARE VEMPNO INT;
->   DECLARE VNAME VARCHAR(20);
->   DECLARE VJOB VARCHAR(20);
->   DECLARE VSAL DECIMAL(9,2);
->   DECLARE VDEPTNO INT;
->   DECLARE VSTATUS VARCHAR(100);
->   DECLARE V_STOP INT DEFAULT 0;
->   DECLARE SALCUR CURSOR FOR SELECT EMPNO,ENAME,JOB,SAL,DEPTNO FROM EMP;
->   DECLARE CONTINUE HANDLER FOR NOT FOUND SET V_STOP= 1;
->
->   OPEN SALCUR;
->   LABEL1 : LOOP
->     FETCH SALCUR INTO VEMPNO,VNAME,VJOB,VSAL,VDEPTNO;
->     IF V_STOP =1 THEN
->       LEAVE LABEL1;
->     END IF;
->
->     IF VSAL > AVGSAL(VDEPTNO) THEN
->       SET VSTATUS = 'GREATER';
->
->     ELSEIF VSAL < AVGSAL(VDEPTNO) THEN
->       SET VSTATUS = 'LESSER';
->
->     ELSEIF VSAL = AVGSAL(VDEPTNO) THEN
->       SET VSTATUS = 'EQUAL';
->
->     ELSE
->       SET VSTATUS ='ERROR MESSAGE EMP TABLE IS EMPTY IF THERE IS NO
MATCHING RECORD .';
->     END IF;
->
->     SELECT VEMPNO,VNAME,VJOB,VSAL,VDEPTNO,VSTATUS;
->   END LOOP;
->   CLOSE SALCUR;
-> END$$

```

Query OK, 0 rows affected (0.14 sec)

```

mysql> DELIMITER ;
mysql>
mysql>
mysql> CALL SAL_STATUS1();
+-----+-----+-----+-----+-----+
| VEMPNO | VNAME | VJOB | VSAL | VDEPTNO | VSTATUS |
+-----+-----+-----+-----+-----+
|    7369 | SMITH | CLERK | 800.00 |      20 | LESSER  |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

+-----+-----+-----+-----+-----+
| VEMPNO | VNAME | VJOB | VSAL | VDEPTNO | VSTATUS |
+-----+-----+-----+-----+-----+
|    7499 | ALLEN | SALESMAN | 1600.00 |      30 | GREATER |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

+-----+-----+-----+-----+-----+
| VEMPNO | VNAME | VJOB | VSAL | VDEPTNO | VSTATUS |
+-----+-----+-----+-----+-----+
|    7521 | WARD  | SALESMAN | 1250.00 |      30 | LESSER  |
+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)

```

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7566	JONES	MANAGER	2975.00	20	GREATER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7654	MARTIN	SALESMAN	1250.00	30	LESSER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7698	BLAKE	MANAGER	2850.00	30	GREATER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7782	CLARK	MANAGER	2450.00	10	LESSER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7788	SCOTT	ANALYST	3000.00	20	GREATER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7839	KING	PRESIDENT	5000.00	10	GREATER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7844	TURNER	SALESMAN	1500.00	30	LESSER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7876	ADAMS	CLERK	1100.00	20	LESSER

1 row in set (0.01 sec)

VEMPNO	VNAME	VJOB	VSAL	VDEPTNO	VSTATUS
7900	JAMES	CLERK	950.00	30	LESSER

1 row in set (0.01 sec)

--	--	--	--	--	--

```

| VEMPNO | VNAME   | VJOB      | VSAL      | VDEPTNO | VSTATUS |
+-----+-----+-----+-----+-----+-----+
| 7902  | FORD    | ANALYST  | 3000.00  |      20 | GREATER |
+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)

```

```

+-----+-----+-----+-----+-----+
| VEMPNO | VNAME   | VJOB      | VSAL      | VDEPTNO | VSTATUS |
+-----+-----+-----+-----+-----+
| 7934  | MILLER  | CLERK    | 1300.00  |      10 | LESSER  |
+-----+-----+-----+-----+-----+
1 row in set (0.01 sec)

```

Query OK, 0 rows affected (0.01 sec)

8. Write a procedure to update salary in emp table based on following rules.

Exp< =35 then no Update

Exp> 35 and <=38 then 20% of salary

Exp> 38 then 25% of salary

delimiter \$\$

```

mysql> delimiter $$

mysql>
mysql> create procedure updsal8_cur()
-> begin
->     declare vempno int;
->     declare vname varchar(20);
->     declare vsal decimal(9,2);
->     declare vhiredate date;
->     declare datdif decimal(5,2) default 0;
->
->     declare v_stop int default 0;
->     declare salcur cursor for select empno,ename,sal,hiredate from emp;
->     declare continue handler for NOT FOUND set v_stop=1;
->
->     OPEN salcur;
->     label1 : LOOP
->         fetch salcur into vempno,vname,vsal,vhiredate;
->         if v_stop=1 then
->             leave label1;
->         end if;
->
->         set datdif = datediff(curdate(),vhiredate)/365;
->         if datdif > 35 and datdif <=38 then
->             set vsal =1.2*vsal;
->         elseif datdif > 38 then
->             set vsal = 1.25*vsal;
->         else
->             set vsal=vsal;
->         end if;
->
->         update emp
->             set sal = vsal
->             where empno = vempno;
->         END LOOP;
->
->         CLOSE salcur;
->     end$$

```

Query OK, 0 rows affected (0.07 sec)

```

mysql> delimiter ;
mysql> call updsal8_cur();
Query OK, 0 rows affected (0.97 sec)

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB       | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH   | Senior    | 7902  | 1980-12-17 | 1000.00 | NULL   | 20      |
| 7499 | ALLEN   | SALESMAN  | 7698  | 1981-02-20 | 2645.00 | 300.00 | 30      |
| 7521 | WARD    | SALESMAN  | 7698  | 1981-02-22 | 2066.41 | 500.00 | 30      |
| 7566 | JONES   | MANAGER   | 7839  | 1981-04-02 | 3718.75 | NULL   | 20      |
| 7654 | MARTIN  | SALESMAN  | 7698  | 1981-09-28 | 2066.41 | 1400.00 | 30      |
| 7698 | BLAKE   | MANAGER   | 7839  | 1981-05-01 | 3562.50 | NULL   | 30      |
| 7782 | CLARK   | manager   | 7777  | 1981-06-09 | 3521.88 | NULL   | 10      |
| 7788 | SCOTT   | ANALYST  | 7566  | 1982-12-09 | 3750.00 | NULL   | 20      |
| 7839 | KING    | manager   | 7777  | 1981-11-17 | 7187.50 | NULL   | 10      |
| 7844 | TURNER  | SALESMAN | 7698  | 1981-09-08 | 2479.69 | 0.00   | 30      |
| 7876 | ADAMS   | CLERK    | 7788  | 1983-01-12 | 1375.00 | NULL   | 20      |
| 7900 | JAMES   | CLERK    | 7698  | 1981-12-03 | 1187.50 | NULL   | 30      |
| 7902 | FORD    | ANALYST  | 7566  | 1981-12-03 | 7324.23 | NULL   | 20      |
| 7934 | MILLER  | manager   | 7777  | 1982-01-23 | 1868.75 | NULL   | 10      |
| 1  | varad   | developer | 7499  | 2022-10-08 | 90000.00 | 20000.00 | 30      |
| 2  | sujit   | developer | 7499  | 2022-10-08 | 90000.00 | 20000.00 | 30      |
| 3  | rajan   | developer | 7499  | 2022-10-08 | 90000.00 | 20000.00 | 30      |
+-----+-----+-----+-----+-----+-----+-----+-----+
17 rows in set (0.01 sec)

```

```

mysql> call updsal8_cur();
Query OK, 0 rows affected (1.00 sec)

```

```

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB       | MGR   | HIREDATE | SAL    | COMM   | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369 | SMITH   | Senior    | 7902  | 1980-12-17 | 1250.00 | NULL   | 20      |
| 7499 | ALLEN   | SALESMAN  | 7698  | 1981-02-20 | 3306.25 | 300.00 | 30      |
| 7521 | WARD    | SALESMAN  | 7698  | 1981-02-22 | 2583.01 | 500.00 | 30      |
+-----+-----+-----+-----+-----+-----+-----+-----+

```

7566	JONES	MANAGER	7839	1981-04-02	4648.44	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	2583.01	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	4453.13	NULL	30
7782	CLARK	manager	7777	1981-06-09	4402.35	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	4687.50	NULL	20
7839	KING	manager	7777	1981-11-17	8984.38	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	3099.61	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1718.75	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	1484.38	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	9155.29	NULL	20
7934	MILLER	manager	7777	1982-01-23	2335.94	NULL	10
1	varad	developer	7499	2022-10-08	90000.00	20000.00	30
2	sujit	developer	7499	2022-10-08	90000.00	20000.00	30
3	rajan	developer	7499	2022-10-08	90000.00	20000.00	30

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

+ 17 rows in set (0.00 sec)

9. Write a procedure and a function.

Function: write a function to calculate number of years of experience of employee.(note: pass hiredate as a parameter)

Procedure:

Capture the value returned by the above function to calculate the additional allowance for the emp based on the experience.
 Additional Allowance = Year of experience x 3000
 Calculate the additional allowance
 and store Empno, ename, Date of Joining, and Experience in years and additional allowance in Emp_Allowance table.

```
mysql>
mysql> create table emp_allowance(
-> empno int,
-> ename varchar(20),
-> hiredate date,
-> experience int,
-> allowance decimal(9,2));
Query OK, 0 rows affected (0.76 sec)
```

```
mysql>
mysql> delimiter $$
```

- mysql> create function calexp(fhiredate date) returns decimal(9,2)
-> begin
-> return datediff(curdate(), fhiredate)/365;
-> end\$\$

```
Query OK, 0 rows affected (0.08 sec)
```

```

mysql> create procedure proc_allowance()
-> BEGIN
->     declare vempno int;
->     declare vename varchar(20);
->     declare vhiredate date;
->     declare vexperience decimal(5,2);
->     declare vallowance decimal(9,2);
->
->     declare v_stop int default 0;
->     declare allowcur cursor for select empno,ename,hiredate from emp;
->     declare continue handler for NOT FOUND set v_stop = 1;
->
->     OPEN allowcur;
->     label1 : LOOP
->         fetch allowcur into vempno,vename,vhiredate;
->         if v_stop =1 then
->             leave label1;
->         end if;
->         set vexperience = calexp(vhiredate);
->         set vallowance = vexperience*3000;
->
->         insert into emp_allowance
values(vempno,vename,vhiredate,vexperience,vallowance);
->
->     END LOOP;
->     CLOSE allowcur;
-> END$$
Query OK, 0 rows affected (0.09 sec)

```

```

mysql> delimiter ;
mysql> call proc_allowance();
Query OK, 0 rows affected (1.10 sec)

```

```

mysql> select * from emp_allowance;
+-----+-----+-----+-----+-----+
| empno | ename | hiredate | experience | allowance |
+-----+-----+-----+-----+-----+
| 7369 | SMITH | 1980-12-17 | 42 | 125550.00 |
| 7499 | ALLEN | 1981-02-20 | 42 | 125010.00 |
| 7521 | WARD | 1981-02-22 | 42 | 124980.00 |
| 7566 | JONES | 1981-04-02 | 42 | 124680.00 |
| 7654 | MARTIN | 1981-09-28 | 41 | 123210.00 |
| 7698 | BLAKE | 1981-05-01 | 41 | 124440.00 |
| 7782 | CLARK | 1981-06-09 | 41 | 124110.00 |
| 7788 | SCOTT | 1982-12-09 | 40 | 119610.00 |
| 7839 | KING | 1981-11-17 | 41 | 122790.00 |
| 7844 | TURNER | 1981-09-08 | 41 | 123360.00 |
| 7876 | ADAMS | 1983-01-12 | 40 | 119340.00 |
| 7900 | JAMES | 1981-12-03 | 41 | 122640.00 |
| 7902 | FORD | 1981-12-03 | 41 | 122640.00 |
| 7934 | MILLER | 1982-01-23 | 41 | 122250.00 |
| 1 | varad | 2022-10-08 | 0 | 30.00 |
| 2 | sujit | 2022-10-08 | 0 | 30.00 |
| 3 | rajan | 2022-10-08 | 0 | 30.00 |
+-----+-----+-----+-----+-----+
17 rows in set (0.00 sec)

```

10. Write a function to compute the following. Function should take sal and hiredate as i/p and return the cost to company.
DA = 15% Salary, HRA= 20% of Salary, TA= 8% of Salary.
Special Allowance will be decided based on the service in the company.
< 1 Year Nil

```

>=1 Year< 2 Year 10% of Salary
>=2 Year< 4 Year 20% of Salary
>4 Year 30% of Salary

mysql> delimiter $$ 
mysql> create function cost_to_company(psal decimal(9,2),phiredate date) returns decimal(9,2)
-> begin
->     declare netsal decimal(9,2) default 0;
->     declare datdif decimal(5,2);
->     set datdif =datediff(curdate(),phiredate)/365;
->
->     if datdif >= 1 and datdif < 2 then
->         set netsal=0.1*psal;
->     elseif datdif >= 2 and datdif < 4 then
->         set netsal=0.2*psal;
->     elseif datdif >=4 then
->         set netsal= 0.3*psal;
->     else
->         set netsal=0;
->     end if;
->     set netsal=netsal+1.43*psal;
->
->     return netsal;
-> end$$
Query OK, 0 rows affected (0.06 sec)

```

```

mysql> delimiter ;
mysql>
mysql> select cost_to_company(1000,'2021-10-20');
+-----+
| cost_to_company(1000,'2021-10-20') |
+-----+
|          1430.00 |
+-----+
1 row in set (0.00 sec)

```

```

mysql> select cost_to_company(1000,'2020-10-20');
+-----+
| cost_to_company(1000,'2020-10-20') |
+-----+
|          1530.00 |
+-----+
1 row in set (0.00 sec)

```

```

mysql> select cost_to_company(1000,'2018-10-20');
+-----+
| cost_to_company(1000,'2018-10-20') |
+-----+
|          1630.00 |
+-----+
1 row in set (0.00 sec)

```

11. Write query to display empno,ename,sal,cost to company for all employees(note: use function written in question 10)

```

mysql> select empno,ename,sal,cost_to_company(sal,hiredate) 'Cost to Company'
from emp;
+-----+-----+-----+-----+
| empno | ename | sal      | Cost to Company |
+-----+-----+-----+-----+

```

7369	SMITH	800.00	1384.00
7499	ALLEN	2116.00	3660.68
7521	WARD	1653.13	2859.92
7566	JONES	2975.00	5146.75
7654	MARTIN	1653.13	2859.92
7698	BLAKE	2850.00	4930.50
7782	CLARK	2817.50	4874.28
7788	SCOTT	3000.00	5190.00
7839	KING	5750.00	9947.50
7844	TURNER	1983.75	3431.89
7876	ADAMS	1100.00	1903.00
7900	JAMES	950.00	1643.50
7902	FORD	5859.38	10136.72
7934	MILLER	1495.00	2586.35
1	varad	90000.00	128700.00
2	sujit	90000.00	128700.00
3	rajan	90000.00	128700.00

17 rows in set (0.00 sec)

Q2. Write trigger

1. Write a trigger to store the old salary details in Emp _Back (Emp _Back has the same structure as emp table without any constraint) table.

(note :create emp_back table before writing trigger)

----- to create emp_back table

```
create table emp_back(
empno int,
ename varchar(20),
oldsal decimal(9,2),
newsal decimal(9,2)
)
```

(note :

execute procedure written in Q8 and
check the entries in EMP_back table after execution of the procedure)

```
create table emp_back(
empno int,
ename varchar(20),
oldsal decimal(9,2),
newsal decimal(9,2)
);
```

```
delimiter $$  
create trigger sal_trigger before update on emp  
for each row  
begin  
insert into emp_back values(old.empno,old.ename,old.sal,new.sal);  
end$$  
delimiter ;
```

```
mysql>  
mysql> create table emp_back(  
-> empno int,  
-> ename varchar(20),  
-> oldsal decimal(9,2),  
-> newsal decimal(9,2)  
-> );
```

```
Query OK, 0 rows affected (0.49 sec)
```

```
mysql> delimiter $$  
mysql> create trigger sal_trigger before update on emp  
      -> for each row  
      -> begin  
      -> insert into emp_back values(old.empno,old.ename,old.sal,new.sal);  
      -> end$$
```

```
Query OK, 0 rows affected (0.25 sec)
```

```
mysql> call updsal8_cur();  
Query OK, 0 rows affected (1.26 sec)
```

```
mysql> select * from emp_back;
```

empno	ename	oldsal	newsal
7369	SMITH	1250.00	1562.50
7499	ALLEN	3306.25	4132.81
7521	WARD	2583.01	3228.76
7566	JONES	4648.44	5810.55
7654	MARTIN	2583.01	3228.76
7698	BLAKE	4453.13	5566.41
7782	CLARK	4402.35	5502.94
7788	SCOTT	4687.50	5859.38
7839	KING	8984.38	11230.48
7844	TURNER	3099.61	3874.51
7876	ADAMS	1718.75	2148.44
7900	JAMES	1484.38	1855.48
7902	FORD	9155.29	11444.11
7934	MILLER	2335.94	2919.93
1	varad	90000.00	90000.00
2	sujit	90000.00	90000.00
3	rajan	90000.00	90000.00

```
17 rows in set (0.00 sec)
```

```
mysql> select * from emp;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	Senior	7902	1980-12-17	1562.50	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	4132.81	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	3228.76	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	5810.55	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	3228.76	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	5566.41	NULL	30
7782	CLARK	manager	7777	1981-06-09	5502.94	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	5859.38	NULL	20
7839	KING	manager	7777	1981-11-17	11230.48	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	3874.51	0.00	30

```

+-----+-----+-----+-----+-----+-----+-----+-----+
| 7876 | ADAMS | CLERK      | 7788 | 1983-01-12 | 2148.44 | NULL   | 20
| 7900 | JAMES  | CLERK      | 7698 | 1981-12-03 | 1855.48 | NULL   | 30
| 7902 | FORD   | ANALYST    | 7566 | 1981-12-03 | 11444.11 | NULL   | 20
| 7934 | MILLER | manager    | 7777 | 1982-01-23 | 2919.93 | NULL   | 10
| 1   | varad   | developer  | 7499 | 2022-10-08 | 90000.00 | 20000.00 | 30
| 2   | sujit   | developer  | 7499 | 2022-10-08 | 90000.00 | 20000.00 | 30
| 3   | rajan   | developer  | 7499 | 2022-10-08 | 90000.00 | 20000.00 | 30
+-----+-----+-----+-----+-----+-----+-----+-----+
17 rows in set (0.00 sec)

```

2. Write a trigger which add entry in audit table when user tries to insert or delete records in employee table store empno, name, username and date on which operation performed and which action is done insert or delete. in emp_audit table.

```

create table before writing trigger.
create table emp_audit(
empno int,
ename varchar(20),
username varchar(20),
chdate date,
action varchar(20)
);

```

```

mysql> create table emp_audit(
-> empno int,
-> ename varchar(20),
-> username varchar(20),
-> chdate date,
-> action varchar(20)
-> );
Query OK, 0 rows affected (0.38 sec)

```

```

mysql> delimiter $$ 
mysql> create trigger emp_audit_trigger before insert on emp
-> for each row
-> begin
-> insert into emp_audit
values(new.empno,new.ename,currentuser(),now(),'insert before');
-> end$$
Query OK, 0 rows affected (0.22 sec)

```

```
mysql> delimiter ;
```

```

mysql> insert into emp values(4,'sujit','dev 2.0',7499,'2022-08-
12',50000,6888,30);
Query OK, 1 row affected (0.06 sec)

```

```

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME  | JOB       | MGR   | HIREDATE | SAL     | COMM    | DEPTNO
+-----+-----+-----+-----+-----+-----+-----+

```

7369	SMITH	Senior	7902	1980-12-17	800.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	2116.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1653.13	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1653.13	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30
7782	CLARK	manager	7777	1981-06-09	2817.50	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	manager	7777	1981-11-17	5750.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1983.75	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	5859.38	NULL	20
7934	MILLER	manager	7777	1982-01-23	1495.00	NULL	10
1	varad	developer	7499	2022-10-08	90000.00	20000.00	30
2	sujit	developer	7499	2022-10-08	90000.00	20000.00	30
3	rajan	developer	7499	2022-10-08	90000.00	20000.00	30
4	sujit	dev 2.0	7499	2022-08-12	50000.00	6888.00	30

18 rows in set (0.00 sec)

```
mysql> select * from emp_audit;
+-----+-----+-----+-----+
| empno | ename | username      | chdate    | action      |
+-----+-----+-----+-----+
|     4 | sujit | root@localhost | 2022-10-12 | insert before |
+-----+-----+-----+-----+
1 row in set (0.00 sec)
```

```
mysql> delimiter $$
```

```
mysql> create trigger emp_audit_delete after delete on emp
      -> for each row
      -> begin
      -> insert into emp_audit
values(OLD.empno,OLD.ename,current_user(),now(),'Delete After');
      -> end$$
Query OK, 0 rows affected (0.09 sec)
```

```
mysql> delimiter ;
mysql>
```

```

mysql> delete from emp
-> where empno=4;
Query OK, 1 row affected (0.12 sec)

mysql> select * from emp_audit;
+-----+-----+-----+-----+
| empno | ename | username      | chdate      | action          |
+-----+-----+-----+-----+
|    4  | sujit | root@localhost | 2022-10-12   | insert before  |
|    4  | sujit | root@localhost | 2022-10-12   | Delete After   |
+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select * from emp;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| EMPNO | ENAME | JOB        | MGR     | HIREDATE    | SAL     | COMM    | DEPTNO |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 7369  | SMITH  | Senior     | 7902    | 1980-12-17  | 800.00  | NULL    | 20      |
| 7499  | ALLEN  | SALESMAN   | 7698    | 1981-02-20  | 2116.00 | 300.00  | 30      |
| 7521  | WARD   | SALESMAN   | 7698    | 1981-02-22  | 1653.13 | 500.00  | 30      |
| 7566  | JONES  | MANAGER    | 7839    | 1981-04-02  | 2975.00 | NULL    | 20      |
| 7654  | MARTIN | SALESMAN   | 7698    | 1981-09-28  | 1653.13 | 1400.00 | 30      |
| 7698  | BLAKE   | MANAGER    | 7839    | 1981-05-01  | 2850.00 | NULL    | 30      |
| 7782  | CLARK   | manager    | 7777    | 1981-06-09  | 2817.50 | NULL    | 10      |
| 7788  | SCOTT   | ANALYST    | 7566    | 1982-12-09  | 3000.00 | NULL    | 20      |
| 7839  | KING    | manager    | 7777    | 1981-11-17  | 5750.00 | NULL    | 10      |
| 7844  | TURNER  | SALESMAN   | 7698    | 1981-09-08  | 1983.75 | 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  | 5859.38 | NULL    | 20      |
| 7934  | MILLER  | manager    | 7777    | 1982-01-23  | 1495.00 | NULL    | 10      |
| 1    | varad   | developer  | 7499    | 2022-10-08  | 90000.00 | 20000.00 | 30      |
| 2    | sujit   | developer  | 7499    | 2022-10-08  | 90000.00 | 20000.00 | 30      |
| 3    | rajan   | developer  | 7499    | 2022-10-08  | 90000.00 | 20000.00 | 30      |
+-----+-----+-----+-----+-----+-----+-----+-----+
17 rows in set (0.00 sec)

```

3. Create table vehicle_history. Write a trigger to store old vehicleprice and new vehicle price in history table before you update price in vehicle table (note: use vehicle table).

```

create table vehicle_history(
vno int,

```

```

vname varchar(20),
oldprice decimal(9,2),
newprice decimal(9,2),
chdate date,
username varchar(20)
);

mysql> delimiter $$ 
mysql> create trigger vehicle_history_trigger before update on vehicle
      -> for each row
      -> BEGIN
      ->     insert into vehicle_history
values(OLD.vid,OLD.vname,OLD.price,NEW.price,now(),current_user());
      -> END$$
Query OK, 0 rows affected (0.10 sec)

mysql> delimiter ;
mysql>
mysql> update vehicle
      -> set price = 150000
      -> where vid=1;
Query OK, 1 rows affected (0.06 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql>
mysql> select * from vehicle_history;
+-----+-----+-----+-----+-----+
| vno | vname | oldprice | newprice | chdate   | username |
+-----+-----+-----+-----+-----+
|   1 | Activa | 150000.00 | 150000.00 | 2022-10-12 | root@localhost |
+-----+-----+-----+-----+-----+
1 row in set (0.00 sec)

mysql>

```

```

#####
      NOSQL
#####

```

```

> show dbs
admin    0.000GB
config   0.000GB
local    0.000GB
test     0.000GB

> db
test

> use test
switched to db test

> show collections
movie
restaurant

> db.employee.insert({ empno:10, ename:'kishori'});
WriteResult({ "nInserted" : 1 })
> db.employee.find();
{ "_id" : ObjectId("63492952d61ab408b6279d14"), "empno" : 10, "ename" :

```

```

"kishori" }
> db.movie.find({}, {rating:1}).pretty();
{
  "_id" : ObjectId("5aaa31a2639395f86922a87e"), "rating" : 8 }
{
  "_id" : ObjectId("5aaa3334639395f86922a880"), "rating" : 6 }
{
  "_id" : ObjectId("5aaa3334639395f86922a882"), "rating" : 3 }
{
  "_id" : ObjectId("5aab6da4639395f86922a883"), "rating" : 5 }
{
  "_id" : ObjectId("5bf6a38c57b2d4cc676c7a96"), "rating" : 4 }
{
  "_id" : ObjectId("5bf6a36f57b2d4cc676c7a95"), "rating" : 4 }
{
  "_id" : ObjectId("5c865923d82c19b8ed996550"), "rating" : 3 }
{
  "_id" : ObjectId("5c8283789eb55675f0272933"), "rating" : 5 }
{
  "_id" : ObjectId("5ca453ef2952ebdd7ae2a92f"), "rating" : 6 }
{
  "_id" : ObjectId("5ca456072952ebdd7ae2a930"), "rating" : 2 }
{
  "_id" : ObjectId("5aaa31ee639395f86922a87f"), "rating" : 3 }
{
  "_id" : ObjectId("5d6935a3470e2bef2a82cdfa"), "rating" : 6 }
{
  "_id" : ObjectId("5ca47e5b2952ebdd7ae2a931"), "rating" : 4 }
{
  "_id" : ObjectId("5ca47ef82952ebdd7ae2a932") }
{
  "_id" : ObjectId("5aaa3334639395f86922a881"), "rating" : 6 }
{
  "_id" : ObjectId("5d8f6eec620d2353221b91dd") }
{
  "_id" : ObjectId("5d89e9adfd4adc2f84279f43"), "rating" : 4.3 }
{
  "_id" : ObjectId("5d8f51ce065d3e2aa902aa22"), "rating" : null }

> db.movie.find({price:{$gt:250}}, {name:1, _id:0}).pretty();
{
  "name" : "lagaan" }
{
  "name" : "aradhana" }
{
  "name" : "Andhadhund" }
{
  "name" : "Dil dhadakane do" }
{
  "name" : "Kesari" }
{
  "name" : "paa" }
{
  "name" : "mission mangal" }
{
  "name" : "newton" }
{
  "name" : "sholay" }
{
}
{
  "name" : "chichore" }
> db.movie.find({}, {name:1, _id:0}).pretty();
{
  "name" : "kahani" }
{
  "name" : "lagaan" }
{
  "name" : "aradhana" }
{
  "name" : "kahani 2" }
{
  "name" : "Andhadhund" }
{
  "name" : "Andhadhund" }
{
  "name" : "Dil dhadakane do" }
{
  "name" : "uri" }
{
  "name" : "Kesari" }
{
  "name" : "paa" }
{
  "name" : "3 idiots" }
{
  "name" : "mission mangal" }
{
  "name" : "padmavat" }
{
  "name" : "newton" }
{
  "name" : "sholay" }
{
}
{
  "name" : "chichore" }
{
  "name" : "dream girl" }
> db.movie.find({}, {name:1,
db.movie.find({}, {name: 1, rating:1, _id:0}).limit(10).sort({name:1}).pretty();
{
}
{
  "name" : "3 idiots", "rating" : 3 }
{
  "name" : "Andhadhund", "rating" : 4 }
{
  "name" : "Andhadhund", "rating" : 4 }
{
  "name" : "Dil dhadakane do", "rating" : 3 }
{
  "name" : "Kesari", "rating" : 6 }
{
  "name" : "aradhana", "rating" : 3 }
{
  "name" : "chichore", "rating" : 4.3 }
{
  "name" : "dream girl", "rating" : null }

```

```
{ "name" : "kahani", "rating" : 8 }
> db.movie.find({},{name:
1, rating:1,_id:0}).limit(10).sort({rating:1}).pretty();
{ "name" : "newton" }
{
  "name" : "dream girl", "rating" : null }
{ "name" : "paa", "rating" : 2 }
{ "name" : "3 idiots", "rating" : 3 }
{ "name" : "aradhana", "rating" : 3 }
{ "name" : "Dil dhadakane do", "rating" : 3 }
{ "name" : "padmavat", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
> db.movie.find({},{name:
1, rating:1,_id:0}).limit(10).sort({rating:1}).pretty();
{ "name" : "newton" }
{
  "name" : "dream girl", "rating" : null }
{ "name" : "paa", "rating" : 2 }
{ "name" : "3 idiots", "rating" : 3 }
{ "name" : "aradhana", "rating" : 3 }
{ "name" : "Dil dhadakane do", "rating" : 3 }
{ "name" : "padmavat", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
> db.movie.find({}, {name: 1, rating:1,_id:0}).limit(10).sort({name:1}).pretty();
{
  "name" : "3 idiots", "rating" : 3 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "Dil dhadakane do", "rating" : 3 }
{ "name" : "Kesari", "rating" : 6 }
{ "name" : "aradhana", "rating" : 3 }
{ "name" : "chichore", "rating" : 4.3 }
{ "name" : "dream girl", "rating" : null }
{ "name" : "kahani", "rating" : 8 }
> db.movie.find({},{name:
1, rating:1,_id:0}).limit(10).sort({rating:1}).pretty();
{ "name" : "newton" }
{
  "name" : "dream girl", "rating" : null }
{ "name" : "paa", "rating" : 2 }
{ "name" : "3 idiots", "rating" : 3 }
{ "name" : "aradhana", "rating" : 3 }
{ "name" : "Dil dhadakane do", "rating" : 3 }
{ "name" : "padmavat", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
> db.movie.find({}, {name: 1, rating:1,_id:0}).sort({rating:1}).pretty();
{ "name" : "newton" }
{
  "name" : "dream girl", "rating" : null }
{ "name" : "paa", "rating" : 2 }
{ "name" : "aradhana", "rating" : 3 }
{ "name" : "Dil dhadakane do", "rating" : 3 }
{ "name" : "3 idiots", "rating" : 3 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "padmavat", "rating" : 4 }
{ "name" : "chichore", "rating" : 4.3 }
{ "name" : "kahani 2", "rating" : 5 }
{ "name" : "uri", "rating" : 5 }
{ "name" : "lagaan", "rating" : 6 }
{ "name" : "Kesari", "rating" : 6 }
```

```

{ "name" : "mission mangal", "rating" : 6 }
{ "name" : "sholay", "rating" : 6 }
{ "name" : "kahani", "rating" : 8 }
>

> db.movie.find({}, {name:
1, rating:1, _id:0}).limit(5).sort({rating:1}).skip(0).pretty();
{ "name" : "dream girl", "rating" : null }
{
{ "name" : "newton" }
{ "name" : "paa", "rating" : 2 }
{ "name" : "Dil dhadakane do", "rating" : 3 }
>
>

db.createCollection('vs', {capped:true, max:2, size:50000});
{ "ok" : 1 }
> db.vs.insert({varad:'room6', Sujit:'room1'});
WriteResult({ "nInserted" : 1 })
> db.vs.find().pretty();
{
    "_id" : ObjectId("634933f38875b8590c5e2c43"),
    "varad" : "room6",
    "Sujit" : "room1"
}
> db.vs.insert({varad:'room6', Sujit:'room1', mohak:'room9'});
WriteResult({ "nInserted" : 1 })
> db.vs.find().pretty();
{
    "_id" : ObjectId("634933f38875b8590c5e2c43"),
    "varad" : "room6",
    "Sujit" : "room1"
}
{
    "_id" : ObjectId("6349343d8875b8590c5e2c44"),
    "varad" : "room6",
    "Sujit" : "room1",
    "mohak" : "room9"
}
> db.vs.insert({varad:'room6', Sujit:'room1', mohak:'room9'});
WriteResult({ "nInserted" : 1 })
> db.vs.find().pretty();
{
    "_id" : ObjectId("6349343d8875b8590c5e2c44"),
    "varad" : "room6",
    "Sujit" : "room1",
    "mohak" : "room9"
}
{
    "_id" : ObjectId("6349344a8875b8590c5e2c45"),
    "varad" : "room6",
    "Sujit" : "room1",
    "mohak" : "room9"
}
> db.vs.insert({varad:'room6', Sujit:'room1', moha:'room9'});
WriteResult({ "nInserted" : 1 })
> db.vs.find().pretty();
{
    "_id" : ObjectId("6349344a8875b8590c5e2c45"),
    "varad" : "room6",
    "Sujit" : "room1",
    "mohak" : "room9"
}

```

```

{
    "_id" : ObjectId("634934598875b8590c5e2c46"),
    "varad" : "room6",
    "Sujit" : "room1",
    "moha" : "room9"
}
> db.vs.insert({varad:'room6', Sujit:'room1', mohak:'room9', sagar:'room6'});
WriteResult({ "nInserted" : 1 })
> db.vs.find().pretty();
{
    "_id" : ObjectId("634934598875b8590c5e2c46"),
    "varad" : "room6",
    "Sujit" : "room1",
    "moha" : "room9"
}
{
    "_id" : ObjectId("6349348b8875b8590c5e2c47"),
    "varad" : "room6",
    "Sujit" : "room1",
    "mohak" : "room9",
    "sagar" : "room6"
}
> db.vs.insert({sagar:'room6'});
WriteResult({ "nInserted" : 1 })
> db.vs.find().pretty();
{
    "_id" : ObjectId("6349348b8875b8590c5e2c47"),
    "varad" : "room6",
    "Sujit" : "room1",
    "mohak" : "room9",
    "sagar" : "room6"
}
}

>
> db.movie.find({rating:{$exists:true}}).pretty();
{
    "_id" : ObjectId("5aaa31a2639395f86922a87e"),
    "name" : "kahani",
    "actor" : [
        "aaaa",
        "bbbb",
        "karan",
        "karri",
        "vidya"
    ],
    "ticket_no" : 420,
    "price" : 200,
    "ac7tors" : [
        "bbbb"
    ],
    "rating" : 8,
    "lastmodified" : ISODate("2019-04-07T11:25:40.634Z")
}
{
    "_id" : ObjectId("5aaa3334639395f86922a880"),
    "name" : "lagaan",
    "actor" : [
        "amir",
        "angraz"
    ],
    "rating" : 6,
}

```

```
"ticket_no" : 410,
"price" : 350,
"cancellation" : {
    "date" : Timestamp(1554356003, 1),
    "reason" : "user request"
},
"lastModified" : ISODate("2019-04-04T05:33:23.022Z")
}
{
    "_id" : ObjectId("5aaa3334639395f86922a882"),
    "name" : "aradhana",
    "actor" : [
        "amitabh",
        "prem",
        "rajesh khanna"
    ],
    "rating" : 3,
    "ticket_no" : 550,
    "price" : 260
}
{
    "_id" : ObjectId("5aab6da4639395f86922a883"),
    "name" : "kahani 2",
    "ticket_no" : 820,
    "actor" : [
        "vidya",
        "Arjun",
        "Jonny",
        "nawaz",
        "prasad",
        "Shreyas",
        "Jonny",
        "yash"
    ],
    "rating" : 5,
    "price" : 200
}
{
    "_id" : ObjectId("5bf6a38c57b2d4cc676c7a96"),
    "name" : "Andhadhund",
    "price" : null,
    "actor" : [
        "Tabbu"
    ],
    "rating" : 4
}
{
    "_id" : ObjectId("5bf6a36f57b2d4cc676c7a95"),
    "name" : "Andhadhund",
    "price" : 400,
    "actor" : [
        "Ayushman",
        "radhika"
    ],
    "rating" : 4
}
{
    "_id" : ObjectId("5c865923d82c19b8ed996550"),
    "name" : "Dil dhadakane do",
    "rating" : 3,
    "price" : 340,
    "actor" : ["'Anil kapoor']"
}
{
```

```
        "_id" : ObjectId("5c8283789eb55675f0272933"),
        "name" : "uri",
        "rating" : 5,
        "actor" : [
            "vicky kaushal",
            "yami",
            "Paresh Rawal"
        ]
    }
{
    "_id" : ObjectId("5ca453ef2952ebdd7ae2a92f"),
    "name" : "Kesari",
    "actor" : [
        "Akshay Kumar",
        "Pariniti chopra"
    ],
    "rating" : 6,
    "price" : 350,
    "ticket_no" : 270,
    "rdate" : ISODate("2019-01-23T00:00:00Z")
}
{
    "_id" : ObjectId("5ca456072952ebdd7ae2a930"),
    "name" : "paa",
    "actor" : [
        "Amitabh",
        "vidya balan",
        "Abhishek"
    ],
    "rating" : 2,
    "price" : 270,
    "ticket_no" : 210,
    "rdate" : ISODate("2019-01-23T00:00:00Z"),
    "others" : {
        "director" : "R Balki",
        "songs" : "Amit trivedi"
    }
}
{
    "_id" : ObjectId("5aaa31ee639395f86922a87f"),
    "name" : "3 idiots",
    "actor" : [
        "Kareena Kapoor",
        "amir",
        "kareena",
        "mahadavan",
        "sharman"
    ],
    "rating" : 3,
    "ticket_no" : 150,
    "price" : 200
}
{
    "_id" : ObjectId("5d6935a3470e2bef2a82cdfa"),
    "name" : "mission mangal",
    "price" : 350,
    "actor" : [
        "Sonakshi",
        "Vidya Balan"
    ],
    "rating" : 6
}
{
    "_id" : ObjectId("5ca47e5b2952ebdd7ae2a931"),
```

```

        "name" : "padmavat",
        "rating" : 4,
        "price" : 250,
        "ticket_no" : 300,
        "actor" : [
            "Deepika",
            "shahid kapoor",
            "ranveer singh",
            "aditi Rao",
            "aaaaaa"
        ],
        "cancellation" : {
            "date" : Timestamp(1567175239, 1)
        }
    }
{
    "_id" : ObjectId("5aaa3334639395f86922a881"),
    "name" : "sholay",
    "actor" : [
        "Dharamendra",
        "Amitabh",
        "Sachin Pilgaokar",
        "Dharamendra",
        "Dharamendra",
        "Mr. Khote",
        "jaya bacchan",
        "sanjiv kapoor"
    ],
    "rating" : 6,
    "ticket_no" : 550,
    "price" : 350,
    "position" : [
        2,
        2
    ]
}
{
    "_id" : ObjectId("5d89e9adfd4adc2f84279f43"),
    "name" : "chichore",
    "price" : 274,
    "rating" : 4.3,
    "actor" : [
        "sushant",
        "shradha kapoor",
        "zzz",
        "harshal"
    ]
}
{
    "_id" : ObjectId("5d8f51ce065d3e2aa902aa22"),
    "name" : "dream girl",
    "actor" : [
        "ayushman",
        "nushrat bharucha"
    ],
    "price" : 250,
    "rating" : null
}
> db.movie.find({rating:{$exists:false}}).pretty();
{
    "_id" : ObjectId("5ca47ef82952ebdd7ae2a932"),
    "name" : "newton",
    "ticket_no" : 690,
    "actor" : [

```

```

        "Rajkumar Rao",
        "Pankaj Tripathi"
    ],
    "price" : 310,
    "lastmodified" : ISODate("2019-09-28T14:47:49.204Z")
}
{ "_id" : ObjectId("5d8f6eec620d2353221b91dd"), "price" : 280 }
>

>
> db.movie.find({rating:{$in:[null],$exists:true}}).pretty();
{
    "_id" : ObjectId("5d8f51ce065d3e2aa902aa22"),
    "name" : "dream girl",
    "actor" : [
        "ayushman",
        "nushrat bharucha"
    ],
    "price" : 250,
    "rating" : null
}
>

---


> db.movie.find({$and:[{rating:{$gt:3}},{price:200}]},{name:1,rating:1,_id:0});
{ "name" : "kahani", "rating" : 8 }
{ "name" : "kahani 2", "rating" : 5 }

>
> db.movie.find({$or:[{rating:{$gt:3}},{price:200}]},{name:1,rating:1,_id:0});
{ "name" : "kahani", "rating" : 8 }
{ "name" : "lagaan", "rating" : 6 }
{ "name" : "kahani 2", "rating" : 5 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "Andhadhund", "rating" : 4 }
{ "name" : "uri", "rating" : 5 }
{ "name" : "Kesari", "rating" : 6 }
{ "name" : "3 idiots", "rating" : 3 }
{ "name" : "mission mangal", "rating" : 6 }
{ "name" : "padmavat", "rating" : 4 }
{ "name" : "sholay", "rating" : 6 }
{ "name" : "chichore", "rating" : 4.3 }
>

db.movie.find({actor:/^[Rr].*[i|ee]r$/});

> db.movie.find({actor:/^[Rr]/},{name:1,_id:0});
{ "name" : "aradhana" }
{ "name" : "Andhadhund" }
{ "name" : "padmavat" }
{ "name" : "newton" }
> db.movie.find({actor:/^[Rr]/},{actor:1,_id:0});
{ "actor" : [ "amitabh", "prem", "rajesh khanna" ] }
{ "actor" : [ "Ayushman", "radhika" ] }
{ "actor" : [ "Deepika", "shahid kapoor", "ranveer singh", "aditi Rao", "aaaaa" ] }
{ "actor" : [ "Rajkumar Rao", "Pankaj Tripathi" ] }
> db.movie.find({actor:ranveer},{actor:1,_id:0});
uncaught exception: ReferenceError: ranveer is not defined :
@(shell):1:16

```

```

> db.movie.find({actor:'ranveer'}, {actor:1,_id:0});
> db.movie.find({actor:/ranveer/}, {actor:1,_id:0});
{ "actor" : [ "Deepika", "shahid kapoor", "ranveer singh", "aditi Rao",
"aaaaaa" ] }
> db.movie.find({actor:'ranveer singh'}, {actor:1,_id:0});
{ "actor" : [ "Deepika", "shahid kapoor", "ranveer singh", "aditi Rao",
"aaaaaa" ] }

> db.movie.find({actor:{$size:3}}, {actor:1,_id:0});
{ "actor" : [ "amitabh", "prem", "rajesh khanna" ] }
{ "actor" : [ "vicky kaushal", "yami", "Paresh Rawal" ] }
{ "actor" : [ "Amitabh", "vidya balan", "Abhishek" ] }
> db.movie.find({actor:{$size:3}}, {name:1,actor:1,_id:0});
{ "name" : "aradhana", "actor" : [ "amitabh", "prem", "rajesh khanna" ] }
{ "name" : "uri", "actor" : [ "vicky kaushal", "yami", "Paresh Rawal" ] }
{ "name" : "paa", "actor" : [ "Amitabh", "vidya balan", "Abhishek" ] }
>
>
> db.movie.find({actor:{$size:1}}, {name:1,actor:1,_id:0});
{ "name" : "Andhadhund", "actor" : [ "Tabbu" ] }
> db.movie.find({actor:{$size:5}}, {name:1,actor:1,_id:0});
{ "name" : "kahani", "actor" : [ "aaaa", "bbbb", "karan", "karri", "vidya" ] }
{ "name" : "3 idiots", "actor" : [ "Kareena Kapoor", "amir", "kareena",
"mahadavan", "sharman" ] }
{ "name" : "padmavat", "actor" : [ "Deepika", "shahid kapoor", "ranveer singh",
"aditi Rao", "aaaaaa" ] }

> db.movie.find({actor:/amir/}, {name:1,actor:1,_id:0}).pretty();
{ "name" : "lagaan", "actor" : [ "amir", "angraz" ] }
{
    "name" : "3 idiots",
    "actor" : [
        "Kareena Kapoor",
        "amir",
        "kareena",
        "mahadavan",
        "sharman"
    ]
}

```

***** THE END *****