PLSQL:-

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

   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//

   Ans:-

```
mysql> create procedure insert_rec(peno int, pnm varchar(20),
    -> psal double(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, 1 warning (0.09 sec)
```

```
mysql> call insert_rec(1001,'akash',5000,'manager','1965-11-22');
    -> //
Query OK, 1 row affected (0.05 sec)
```

```
mysql> select *
    -> from emp;
    -> //
+-------+--------+-----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB       | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+-----------+------+------------+---------+---------+--------+
|  7369 | SMITH  | CLERK     | 7902 | 1980-12-17 |  800.00 |    NULL |     20 |
|  7499 | ALLEN  | SALESMAN  | 7698 | 1981-02-20 | 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 |
|  1001 | akash  | manager   | NULL | 1965-11-22 | 5000.00 |    NULL |   NULL |
+-------+--------+-----------+------+------------+---------+---------+--------+
15 rows 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

Ans:-

```
mysql> delimiter //
mysql> create procedure delete_emp(peno int)
    -> begin
    -> delete from emp
    -> where empno=peno;
    -> end//
Query OK, 0 rows affected (0.04 sec)

mysql>  delimiter;
    ->  call delete_emp(1001);
    -> //
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version fo
ll delete_emp(1001)' at line 1
mysql> call delete_emp(1001);
    -> //
Query OK, 1 row affected (0.03 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

Ans:-
mysql> delimiter //

mysql> create procedure dis_emp5(psal double(9,2))
   ->   begin
   -> select empno,ename,e.deptno ,d.dname ,e.sal
   -> from emp e,dept d
   -> where e.deptno=d.deptno and sal>psal ;
   -> end//
Query OK, 0 rows affected, 1 warning (0.02 sec)

```
mysql> delimiter //
mysql>  create procedure dis_emp5(psal double(9,2))
    ->   begin
    -> select empno,ename,e.deptno ,d.dname ,e.sal
    -> from emp e,dept d
    -> where e.deptno=d.deptno and sal>psal ;
    -> end//
Query OK, 0 rows affected, 1 warning (0.02 sec)

mysql> delimiter;
    -> ^C
mysql> call dis_emp5(2000);
    -> //
+-------+-------+--------+------------+---------+
| empno | ename | deptno | dname      | sal     |
+-------+-------+--------+------------+---------+
|  7566 | JONES |     20 | RESEARCH   | 2975.00 |
|  7698 | BLAKE |     30 | SALES      | 2850.00 |
|  7782 | CLARK |     10 | ACCOUNTING | 2450.00 |
|  7788 | SCOTT |     20 | RESEARCH   | 3000.00 |
|  7839 | KING  |     10 | ACCOUNTING | 5000.00 |
|  7902 | FORD  |     20 | RESEARCH   | 3000.00 |
+-------+-------+--------+------------+---------+
6 rows in set (0.00 sec)
```

4. write a procedure to find min,max,avg of salary and number of employees in the given deptno.

deptno --à in parameter

min,max,avg and count ---à out type parameter

execute procedure and then display values min,max,avg and count

Ans:-

mysql> delimiter //

mysql> create procedure dis_val1(in pdeptno int ,out pmin float,out pmax float,

   -> out pavg float ,out pcount int)

   -> begin

   -> select deptno, min(sal),max(sal),avg(sal),count(sal) into pdeptno,pmin,pmax,pavg,pcount

   -> from emp

   -> where deptno=pdeptno

-> group by deptno;
-> end//
Query OK, 0 rows affected (0.02 sec)

```
mysql> delimiter //
mysql> create procedure dis_val1( in pdeptno int ,out pmin float,out pmax float,
    ->          out pavg float ,out pcount int )
    ->  begin
    ->  select deptno, min(sal),max(sal),avg(sal),count(sal) into pdeptno,pmin,pmax,pavg,pcount
    ->          from emp
    ->  where deptno=pdeptno
    ->  group by deptno;
    ->  end//
Query OK, 0 rows affected (0.02 sec)

mysql>  delimiter;
    -> ^C
mysql> call dis_val1(20,@bmin,@bmax,@bavg,@bcount//
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server ve
mysql> call dis_val1(20,@bmin,@bmax,@bavg,@bcount;
    -> //
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server ve
mysql> call dis_val1(20,@bmin,@bmax,@bavg,@bcount);
    -> //
Query OK, 1 row affected (0.03 sec)

mysql> select deptno,@bmin,@bmax,@bavg,@bcount;
    -> //
ERROR 1054 (42S22): Unknown column 'deptno' in 'field list'
mysql> select @bmin,@bmax,@bavg,@bcount;
    -> //
+-------+-------+-------+---------+
| @bmin | @bmax | @bavg | @bcount |
+-------+-------+-------+---------+
|   800 |  3000 |  2175 |       5 |
+-------+-------+-------+---------+
1 row in set (0.01 sec)
```

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

Ans:-

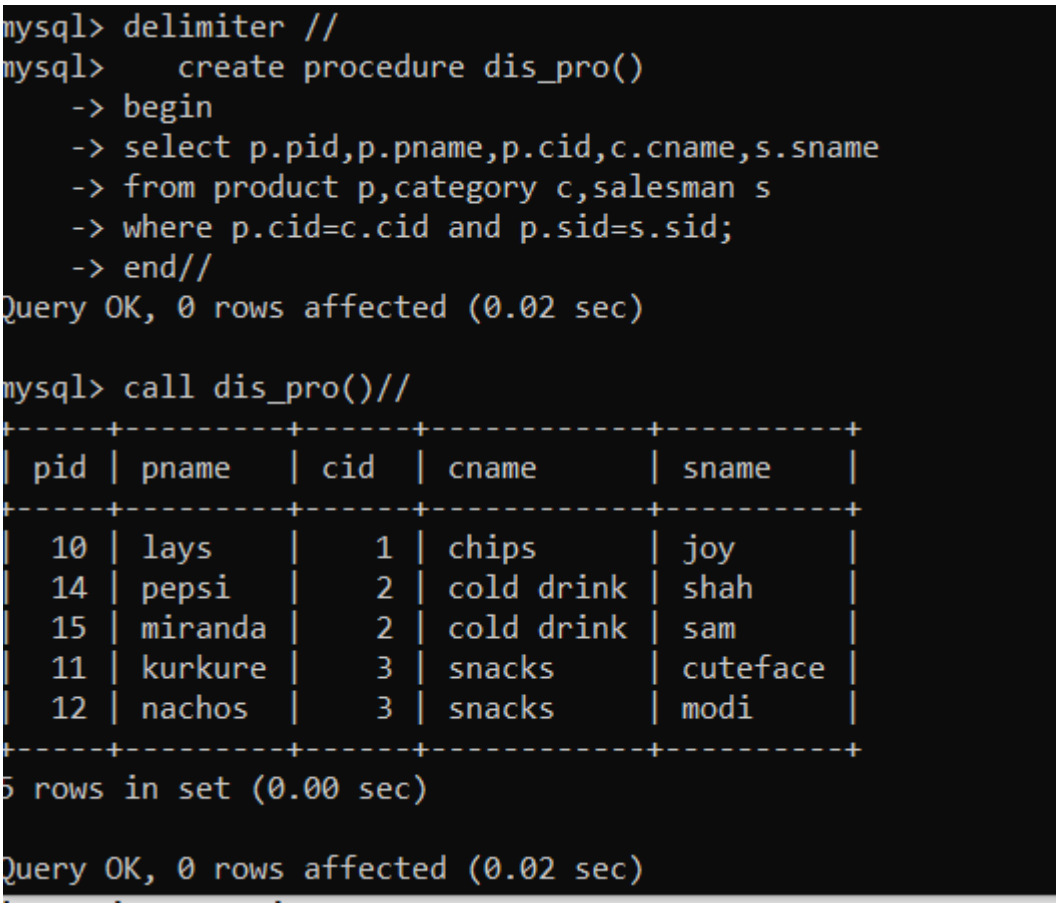
mysql> delimiter //
mysql> create procedure dis_pro()
-> begin
-> select p.pid,p.pname,p.cid,c.cname,s.sname
-> from product p,category c,salesman s
-> where p.cid=c.cid and p.sid=s.sid;
-> end//
Query OK, 0 rows affected (0.02 sec)

mysql> call dis_pro()//

pid	pname	cid	cname	sname
10	lays	1	chips	joy
14	pepsi	2	cold drink	shah
15	miranda	2	cold drink	sam
11	kurkure	3	snacks	cuteface

| 12 | nachos | 3 | snacks | modi |
+-----+---------+------+-----------+----------+
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)

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.

Ans:-

```
mysql>  delimiter //

mysql>   create procedure dis_info()

    ->   begin

    ->    select e.empno,e.ename,e.job,e.sal,e.deptno,case when

    ->     (select avg(sal) from emp group by deptno having deptno=e.deptno)>e.sal then "lesser" when

    -> (select avg(sal) from emp group by deptno having deptno=e.deptno)<e.sal then "greater"

    -> else "equal" end status from emp e;

    -> end//

Query OK, 0 rows affected (0.02 sec)
```

```
mysql>  delimiter //
mysql>   create procedure dis_info()
    ->   begin
    ->    select e.empno,e.ename,e.job,e.sal,e.deptno,case when
    ->     (select avg(sal) from emp group by deptno having deptno=e.deptno)>e.sal then "lesser" when
    -> (select avg(sal) from emp group by deptno having deptno=e.deptno)<e.sal then "greater"
    -> else "equal" end status from emp e;
    -> end//
Query OK, 0 rows affected (0.02 sec)

mysql> delimiter;
    -> //
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL

mysql> call dis_info()
    -> ;
    -> //
+-------+--------+--------------+----------+--------+---------+
| empno | ename  | job          | sal      | deptno | status  |
+-------+--------+--------------+----------+--------+---------+
|  7369 | SMITH  | senior clerk |  2866.55 |     20 | lesser  |
|  7499 | ALLEN  | SALESMAN     |  6593.04 |     30 | lesser  |
|  7521 | WARD   | SALESMAN     |  5150.82 |     30 | lesser  |
|  7566 | JONES  | MANAGER      | 10659.96 |     20 | lesser  |
|  7654 | MARTIN | SALESMAN     |  5150.82 |     30 | lesser  |
|  7698 | BLAKE  | MANAGER      | 10212.06 |     30 | greater |
|  7782 | CLARK  | MANAGER      |  8778.79 |     10 | lesser  |
|  7788 | SCOTT  | ANALYST      |  3000.00 |     20 | lesser  |
|  7839 | KING   | PRESIDENT    | 17915.90 |     10 | greater |
|  7844 | TURNER | SALESMAN     |  6180.98 |     30 | lesser  |
|  7876 | ADAMS  | CLERK        |  1100.00 |     20 | lesser  |
|  7900 | JAMES  | CLERK        | 12197.21 |     30 | greater |
|  7902 | FORD   | ANALYST      | 38517.55 |     20 | greater |
|  7934 | MILLER | CLERK        |  4658.14 |     10 | lesser  |
+-------+--------+--------------+----------+--------+---------+
14 rows in set (0.02 sec)

Query OK, 0 rows affected (0.07 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

Ans:

```
delimiter //
create function retnexp2(hdate date) returns int
begin

declare pexp int default 0;
```

```
set pexp=(floor(datediff(curdate(),hdate)/365));
return pexp;


end//




delimiter //
create procedure updtsal()
begin
   declare finished int default 0;
   declare vhdate date;
   declare updsal_cur cursor for select hiredate from emp;
   declare continue handler for not found set finished = 1;

   open updsal_cur;

   l1: loop
      fetch updsal_cur into vhdate;

      if finished = 1 then
         leave l1;
      end if;


          if retnexp2(vhdate)>40 and retnexp2(vhdate)<=42 then
          update emp set sal=sal*1.2 where hiredate=vhdate;

          elseif retnexp2(vhdate)>42 then
          update emp set sal=sal*1.25 where hiredate=vhdate;


          end if;
   end loop;

close updsal_cur;
end //
delimiter ;
```

```
mysql> create procedure updtsal()
   -> begin
   ->    declare finished int default 0;
   ->    declare vhdate date;
   ->    declare updsal_cur cursor for select hiredate from emp;
   ->    declare continue handler for not found set finished = 1;
   ->
   ->    open updsal_cur;
   ->
   ->    l1: loop
   ->       fetch updsal_cur into vhdate;
   ->
   ->       if finished = 1 then
   ->          leave l1;
   ->       end if;
   ->
   ->
   -> if retnexp2(vhdate)>40 and retnexp2(vhdate)<=42 then
   -> update emp set sal=sal*1.2 where hiredate=vhdate;
   ->
   -> elseif retnexp2(vhdate)>42 then
   -> update emp set sal=sal*1.25 where hiredate=vhdate;
   ->
   ->
   -> end if;
   ->    end loop;
   ->
   -> close updsal_cur;
   -> end //
Query OK, 0 rows affected (0.03 sec)

mysql> delimiter ;
mysql> select * from emp;
+-------+----------+-----------+------+------------+----------+---------+--------+
| EMPNO | ENAME    | JOB       | MGR  | HIREDATE   | SAL      | COMM    | DEPTNO |
+-------+----------+-----------+------+------------+----------+---------+--------+
|  7369 | SMITH    | CLERK     | 7902 | 1980-12-17 |   800.00 |    NULL |     20 |
|  7499 | ALLEN    | SALESMAN  | 7698 | 1981-02-20 |  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
4561	sour_abh	president	NULL	1981-04-02	99999.00	1000.00	50
+-------+----------+-----------+------+------------+----------+---------+--------+
15 rows in set (0.00 sec)

mysql> call updtsal;
ERROR 1264 (22003): Out of range value for column 'SAL' at row 15
mysql> delete from emp where ename='sour_abh';
Query OK, 1 row affected (0.04 sec)

mysql> call updtsal;
Query OK, 0 rows affected (0.39 sec)

mysql> select * from emp;
+-------+--------+-----------+------+------------+---------+---------+--------+
| EMPNO | ENAME | JOB | MGR | HIREDATE | SAL | COMM | DEPTNO |
+-------+--------+-----------+------+------------+---------+---------+--------+
7369	SMITH	CLERK	7902	1980-12-17	1152.00	NULL	20
7499	ALLEN	SALESMAN	7698	1981-02-20	2304.00	300.00	30
7521	WARD	SALESMAN	7698	1981-02-22	1800.00	500.00	30
7566	JONES	MANAGER	7839	1981-04-02	3570.00	NULL	20
7654	MARTIN	SALESMAN	7698	1981-09-28	1500.00	1400.00	30
7698	BLAKE	MANAGER	7839	1981-05-01	3420.00	NULL	30
7782	CLARK	MANAGER	7839	1981-06-09	2940.00	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	6000.00	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	1800.00	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	1368.00	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	4320.00	NULL	20

| 7934 | MILLER | CLERK | 7782 | 1982-01-23 | 1560.00 | NULL | 10 |
+-------+--------+-----------+------+------------+---------+---------+--------+
14 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.

```
create table
emp_allowance(
empno int,
ename varchar(20),
hiredate date,
experience int,
allowance
decimal(9,2));
```

Ans:

```
delimiter //
create function retnexp2(hdate date) returns int
begin

declare pexp int default 0;
set pexp=(floor(datediff(curdate(),hdate)/365));
return pexp;


end//
delimiter ;
```

```
mysql> create table emp_allowance((select
*,floor(datediff(curdate(),hiredate)/365) exp from emp));
Query OK, 15 rows affected (0.25 sec)
Records: 15  Duplicates: 0  Warnings: 0

mysql> alter table emp_allowance add column allowance decimal(9,2);
Query OK, 0 rows affected (0.10 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
mysql> select * from emp_allowance;
+-------+----------+-----------+------+------------+----------+---------+--------+------+-----------+
| EMPNO | ENAME    | JOB       | MGR  | HIREDATE   | SAL      | COMM    | DEPTNO | exp  |
allowance |
+-------+----------+-----------+------+------------+----------+---------+--------+------+-----------+
|  7369 | SMITH    | CLERK     | 7902 | 1980-12-17 |   800.00 |    NULL |     20 |   42 |      NULL |
|  7499 | ALLEN    | SALESMAN  | 7698 | 1981-02-20 |  1600.00 |  300.00 |     30 |   42 |      NULL |
|  7521 | WARD     | SALESMAN  | 7698 | 1981-02-22 |  1250.00 |  500.00 |     30 |   42 |      NULL |
|  7566 | JONES    | MANAGER   | 7839 | 1981-04-02 |  2975.00 |    NULL |     20 |   42 |      NULL |
|  7654 | MARTIN   | SALESMAN  | 7698 | 1981-09-28 |  1250.00 | 1400.00 |     30 |   41 |      NULL |
|  7698 | BLAKE    | MANAGER   | 7839 | 1981-05-01 |  2850.00 |    NULL |     30 |   41 |      NULL |
|  7782 | CLARK    | MANAGER   | 7839 | 1981-06-09 |  2450.00 |    NULL |     10 |   41 |      NULL |
|  7788 | SCOTT    | ANALYST   | 7566 | 1982-12-09 |  3000.00 |    NULL |     20 |   40 |      NULL |
|  7839 | KING     | PRESIDENT | NULL | 1981-11-17 |  5000.00 |    NULL |     10 |   41 |      NULL |
|  7844 | TURNER   | SALESMAN  | 7698 | 1981-09-08 |  1500.00 |    0.00 |     30 |   41 |      NULL |
|  7876 | ADAMS    | CLERK     | 7788 | 1983-01-12 |  1100.00 |    NULL |     20 |   40 |      NULL |
|  7900 | JAMES    | CLERK     | 7698 | 1981-12-03 |   950.00 |    NULL |     30 |   41 |      NULL |
|  7902 | FORD     | ANALYST   | 7566 | 1981-12-03 |  3000.00 |    NULL |     20 |   41 |      NULL |
|  7934 | MILLER   | CLERK     | 7782 | 1982-01-23 |  1300.00 |    NULL |     10 |   41 |      NULL |
```

```
|  4561 | sour_abh | president | NULL | 1981-04-02 | 99999.00 | 1000.00 |     50 |   42 |      NULL |
+-------+----------+-----------+------+------------+----------+---------+--------+------+-----------+
15 rows in set (0.00 sec)

mysql>


mysql> create procedure updtallwnc11()
    -> begin
    ->     declare finished int default 0;
    ->     declare vhdate date;
    ->     declare updall_cur cursor for select hiredate from emp_allowance;
    ->     declare continue handler for not found set finished = 1;
    ->
    ->     open updall_cur;
    ->
    ->     l1: loop
    ->         fetch updall_cur into vhdate;
    ->
    ->         if finished = 1 then
    ->             leave l1;
    ->         end if;
    ->
    ->         update emp_allowance
    ->         set allowance = retnexp2(vhdate)*3000
    ->         where hiredate = vhdate;
    ->     end loop;
    ->
    ->     close updall_cur;
    -> end //
Query OK, 0 rows affected (0.04 sec)

mysql> delimiter ;
mysql> call updtallwnc11;
Query OK, 0 rows affected (0.23 sec)

mysql> select * from emp_allowance;
+-------+----------+-----------+------+------------+----------+---------+--------+------+-----------+
| EMPNO | ENAME    | JOB       | MGR  | HIREDATE   | SAL      | COMM    | DEPTNO | exp  |
allowance |
+-------+----------+-----------+------+------------+----------+---------+--------+------+-----------+
|  7369 | SMITH    | CLERK     | 7902 | 1980-12-17 |   800.00 |    NULL |     20 |   42 | 126000.00 |
```

7499	ALLEN	SALESMAN	7698	1981-02-20	1600.00	300.00	30	42	126000.00
7521	WARD	SALESMAN	7698	1981-02-22	1250.00	500.00	30	42	126000.00
7566	JONES	MANAGER	7839	1981-04-02	2975.00	NULL	20	42	126000.00
7654	MARTIN	SALESMAN	7698	1981-09-28	1250.00	1400.00	30	41	123000.00
7698	BLAKE	MANAGER	7839	1981-05-01	2850.00	NULL	30	41	123000.00
7782	CLARK	MANAGER	7839	1981-06-09	2450.00	NULL	10	41	123000.00
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20	40	120000.00
7839	KING	PRESIDENT	NULL	1981-11-17	5000.00	NULL	10	41	123000.00
7844	TURNER	SALESMAN	7698	1981-09-08	1500.00	0.00	30	41	123000.00
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20	40	120000.00
7900	JAMES	CLERK	7698	1981-12-03	950.00	NULL	30	41	123000.00
7902	FORD	ANALYST	7566	1981-12-03	3000.00	NULL	20	41	123000.00
7934	MILLER	CLERK	7782	1982-01-23	1300.00	NULL	10	41	123000.00
4561	sour_abh	president	NULL	1981-04-02	99999.00	1000.00	50	42	126000.00

15 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

Ans:

```
delimiter //
create function retnctc(psal double(9,2),pdate date) returns double(9,2)
begin
declare pctc double(9,2);
declare spallwnc int default 0;
```

```
if retnexp2(pdate)<=40 then set spallwnc=psal*1.1;
elseif retnexp2(pdate)<=41 then set spallwnc=psal*1.2;
else set spallwnc=psal*1.3;
end if;
set pctc=psal*(1+(0.15+0.2+0.08))+spallwnc;
return pctc;
end//
delimiter ;
```

```
mysql> select retnctc(5000,'1980-12-03');
+---------------------------+
| retnctc(5000,'1980-12-03') |
+---------------------------+
|                  13650.00 |
+---------------------------+
1 row in set (0.02 sec)
```

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

Ans:

```
mysql> select empno,ename,sal,retnctc(sal,hiredate)'cost to company' from
emp;
+-------+--------+---------+-----------------+
| empno | ename  | sal     | cost to company |
+-------+--------+---------+-----------------+
|  7369 | SMITH  |  800.00 |         2184.00 |
|  7499 | ALLEN  | 1840.00 |         5023.20 |
|  7521 | WARD   | 1437.50 |         3924.62 |
|  7566 | JONES  | 2975.00 |         8122.25 |
|  7654 | MARTIN | 1437.50 |         3780.62 |
|  7698 | BLAKE  | 2850.00 |         7495.50 |
|  7782 | CLARK  | 2450.00 |         6443.50 |
|  7788 | SCOTT  | 3000.00 |         7590.00 |
|  7839 | KING   | 5000.00 |        13150.00 |
```

```
|  7844 | TURNER | 1725.00 |         4536.75 |
|  7876 | ADAMS  | 1100.00 |         2783.00 |
|  7900 | JAMES  |  950.00 |         2498.50 |
|  7902 | FORD   | 3000.00 |         7890.00 |
|  7934 | MILLER | 1300.00 |         3419.00 |
+-------+--------+---------+-----------------+
14 rows in set (0.00 sec)
```

Q2. Write trigger

1. Write a tigger 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)

```
mysql> create table emp_back
   -> (
```

```
    -> empno int,
    -> ename varchar(20),
    -> oldsal double(9,2),
    -> newsal double(9,2),
    -> action varchar(20),
    -> user varchar(20),
    -> actdate date
    -> )//
Query OK, 0 rows affected, 2 warnings (0.10 sec)

mysql> delimiter //
mysql> create trigger details after update on emp
    -> for each row
    -> begin
    -> insert into emp_back values
(old.empno,old.ename,old.sal,new.sal,'update',user(),curdate());
    -> end//
Query OK, 0 rows affected (0.03 sec)

mysql>call updtsal;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from emp;
+-------+--------+--------------+------+------------+----------+---------+--------+
| EMPNO | ENAME  | job          | MGR  | HIREDATE   | SAL      | COMM    | DEPTNO |
+-------+--------+--------------+------+------------+----------+---------+--------+
|  7369 | SMITH  | senior clerk | 7902 | 1980-12-17 |  2866.55 |    NULL |     20 |
|  7499 | ALLEN  | SALESMAN     | 7698 | 1981-02-20 |  6593.04 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN     | 7698 | 1981-02-22 |  5150.82 |  500.00 |     30 |
|  7566 | JONES  | MANAGER      | 7839 | 1981-04-02 | 10659.96 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN     | 7698 | 1981-09-28 |  5150.82 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER      | 7839 | 1981-05-01 | 10212.06 |    NULL |     30 |
```

7782	CLARK	MANAGER	7839	1981-06-09	8778.79	NULL	10
7788	SCOTT	ANALYST	7566	1982-12-09	3000.00	NULL	20
7839	KING	PRESIDENT	NULL	1981-11-17	17915.90	NULL	10
7844	TURNER	SALESMAN	7698	1981-09-08	6180.98	0.00	30
7876	ADAMS	CLERK	7788	1983-01-12	1100.00	NULL	20
7900	JAMES	CLERK	7698	1981-12-03	12197.21	NULL	30
7902	FORD	ANALYST	7566	1981-12-03	38517.55	NULL	20
7934	MILLER	CLERK	7782	1982-01-23	4658.14	NULL	10
+-------+--------+-------------+------+------------+----------+---------+--------+
14 rows in set (0.00 sec)

mysql> select * from emp_back;
+-------+--------+----------+----------+--------+----------------+------------+
| empno | ename | oldsal | newsal | action | user | actdate |
+-------+--------+----------+----------+--------+----------------+------------+
7369	SMITH	2388.79	2866.55	update	root@localhost	2023-04-14
7499	ALLEN	5494.20	6593.04	update	root@localhost	2023-04-14
7521	WARD	4292.35	5150.82	update	root@localhost	2023-04-14
7566	JONES	8883.30	10659.96	update	root@localhost	2023-04-14
7654	MARTIN	4292.35	5150.82	update	root@localhost	2023-04-14
7698	BLAKE	8510.05	10212.06	update	root@localhost	2023-04-14
7782	CLARK	7315.66	8778.79	update	root@localhost	2023-04-14
7839	KING	14929.92	17915.90	update	root@localhost	2023-04-14
7844	TURNER	5150.82	6180.98	update	root@localhost	2023-04-14
7900	JAMES	8470.28	10164.34	update	root@localhost	2023-04-14
7902	FORD	26748.30	32097.96	update	root@localhost	2023-04-14
7900	JAMES	10164.34	12197.21	update	root@localhost	2023-04-14
7902	FORD	32097.96	38517.55	update	root@localhost	2023-04-14
7934	MILLER	3881.78	4658.14	update	root@localhost	2023-04-14
+-------+--------+----------+----------+--------+----------------+------------+
14 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
      empaudit(
      empno int;
   ename varchar(20),
   username
   varchar(20); chdate
   date;
   action varchar(20)
);
```

Ans:

```
mysql> create trigger trg before insert on emp
   -> for each row
   -> begin
   -> insert into empaudit values(new.empno,new.ename,user(),curdate(),'insert');
   -> end//
Query OK, 0 rows affected (0.03 sec)

mysql> create trigger trg1 before delete on emp
   -> for each row
   -> begin
   -> insert into empaudit values(old.empno,old.ename,user(),curdate(),'delete');
   -> end//
Query OK, 0 rows affected (0.03 sec)

mysql> delete from emp
   -> where ename="Smith";
   -> //
Query OK, 1 row affected (0.04 sec)

mysql> select * from empaudit//
+-------+-------+----------------+------------+--------+
| empno | ename | username       | chdate     | action |
+-------+-------+----------------+------------+--------+
|  7369 | SMITH | root@localhost | 2023-04-22 | delete |
+-------+-------+----------------+------------+--------+
1 row in set (0.00 sec)

mysql> insert into emp (empno,ename) values(7369,"Smith");
   -> //
Query OK, 1 row affected (0.02 sec)

mysql> select * from empaudit//
```

```
+-------+-------+----------------+------------+--------+
| empno | ename | username       | chdate     | action |
+-------+-------+----------------+------------+--------+
|  7369 | SMITH | root@localhost | 2023-04-22 | delete |
|  7369 | Smith | root@localhost | 2023-04-22 | insert |
+-------+-------+----------------+------------+--------+
2 rows in set (0.00 sec)

mysql> select * from emp//
+-------+--------+-----------+------+------------+---------+---------+--------+
| EMPNO | ENAME  | JOB       | MGR  | HIREDATE   | SAL     | COMM    | DEPTNO |
+-------+--------+-----------+------+------------+---------+---------+--------+
|  7499 | ALLEN  | SALESMAN  | 7698 | 1981-02-20 | 2000.00 |  300.00 |     30 |
|  7521 | WARD   | SALESMAN  | 7698 | 1981-02-22 | 1562.50 |  500.00 |     30 |
|  7566 | JONES  | MANAGER   | 7839 | 1981-04-02 | 3718.75 |    NULL |     20 |
|  7654 | MARTIN | SALESMAN  | 7698 | 1981-09-28 | 1562.50 | 1400.00 |     30 |
|  7698 | BLAKE  | MANAGER   | 7839 | 1981-05-01 | 3562.50 |    NULL |     30 |
|  7782 | CLARK  | MANAGER   | 7839 | 1981-06-09 | 3062.50 |    NULL |     10 |
|  7788 | SCOTT  | ANALYST   | 7566 | 1982-12-09 | 3750.00 |    NULL |     20 |
|  7839 | KING   | PRESIDENT | NULL | 1981-11-17 | 6250.00 |    NULL |     10 |
|  7844 | TURNER | SALESMAN  | 7698 | 1981-09-08 | 1875.00 |    0.00 |     30 |
|  7876 | ADAMS  | CLERK     | 7788 | 1983-01-12 | 1375.00 |    NULL |     20 |
|  7900 | JAMES  | CLERK     | 7698 | 1981-12-03 | 1484.38 |    NULL |     30 |
|  7902 | FORD   | ANALYST   | 7566 | 1981-12-03 | 4687.50 |    NULL |     20 |
|  7934 | MILLER | CLERK     | 7782 | 1982-01-23 | 1625.00 |    NULL |     10 |
|  7369 | Smith  | NULL      | NULL | NULL       |    NULL |    NULL |   NULL |
+-------+--------+-----------+------+------------+---------+---------+--------+
14 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)

 );
```

Ans:

```
create trigger veh before update on vehicle
for each row
begin
insert into vehicle_history1 values(vid,vname,old.vprice,new.vprice,curdate(),user(),'update
          ');
end//

mysql> update vehicle
   -> set vprice=100000
   -> where vid=1;
   -> //
Query OK, 1 row affected (0.03 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from vehicle_history1//
+------+-------+-----------+-----------+------------+----------------+--------+
| vid  | vname | oldvprice | newvprice | chdate     | username       | action |
+------+-------+-----------+-----------+------------+----------------+--------+
| NULL | NULL  |  80000.00 | 100000.00 | 2023-04-22 | root@localhost | update |
+------+-------+-----------+-----------+------------+----------------+--------+
1 row in set (0.00 sec)
```