Basic pl/sql programs

1. Write a program in pl/sql to print empno of an employee as well as the corresponding managers.

**Ans:** **declare**

**cursor o is select \* from emp;**

**i emp%rowtype;**

**begin**

**open o;**

**loop**

**fetch o into i;**

**exit when o%notfound;**

**dbms\_output.put\_line(i.empno||' '||i.mgr||''||i.ename);**

**end loop;**

**close o;**

**end;**

**/**

1. Write a pl/sql program to get number of employees where salary in between given range.

**Ans:** **declare**

**cursor c(a number,b number) is select count(sal) from emp where sal between a and b;**

**i number;**

**begin**

**open c(&a,&b);**

**fetch c into i;**

**dbms\_output.put\_line(i);**

**close c;**

**end;**

**/**

**OUTPUT>>>SQL> @ C:\Users\yoshita\Desktop\clg\q2.sql;**

**Enter value for a: 2000**

**Enter value for b: 5000**

**old 5: open c(&a,&b);**

**new 5: open c(2000,5000);**

**6**

1. Write a pl/sql program to find whether a number is even or odd.

**Ans:** **declare**

**n number;**

**begin**

**if mod(&n,2)=0 then**

**dbms\_output.put\_line('even');**

**else**

**dbms\_output.put\_line('odd');**

**end if;**

**end;**

**/**

1. Write a pl/sql program to find sum of digits.

**Ans:** **DECLARE**

**n integer;**

**s integer;**

**d integer:=0;**

**BEGIN**

**n:=&n;**

**s:=0;**

**loop**

**d:=mod(n,10);**

**s:=s+d;**

**n:=floor(n/10);**

**exit when n=0;**

**end loop;**

**dbms\_output.put\_line('output :'||s);**

**end;**

**/**

1. Write a pl/sql program to find factorial of a number.

**Ans:** **declare**

**n number;**

**fac number:=1;**

**i number;**

**begin**

**n:=&n;**

**for i in 1..n**

**loop**

**fac:=fac\*i;**

**end loop;**

**dbms\_output.put\_line('factorial='||fac);**

**end;**

**/**

1. Write a pl/sql program to find a fibonaci series.

declare

**a number:=0;**

**b number:=1;**

**c number:=0;**

**i number;**

**n number;**

**begin**

**n:=&n;**

**dbms\_output.put\_line(a||' ');**

**dbms\_output.put\_line(b||' ');**

**for i in 1..n-2**

**loop**

**c:=a+b;**

**dbms\_output.put\_line(c||' ');**

**a:=b;**

**b:=c;**

**end loop;**

**end;**

**/**

1. Write a pl/sql program to find out whether a number is a palindrome.

Ans**:**

**DECLARE**

**n integer;**

**s integer;**

**a integer;**

**d integer:=0;**

**BEGIN**

**n:=&n;**

**a:=n;**

**s:=0;**

**loop**

**d:=mod(n,10);**

**s:=10\*s+d;**

**n:=floor(n/10);**

**exit when n=0;**

**end loop;**

**if s=a then**

**dbms\_output.put\_line('palindrome');**

**end if;**

**end;**

**/**

1. Write a pl/sql program to find an amtrong number.

Ans: **DECLARE**

**n integer;**

**s integer;**

**a integer;**

**d integer:=0;**

**BEGIN**

**n:=&n;**

**a:=n;**

**s:=0;**

**loop**

**d:=mod(n,10);**

**s:=s+d\*d\*d;**

**n:=floor(n/10);**

**exit when n=0;**

**end loop;**

**if s=a then**

**dbms\_output.put\_line('armstrong');**

**end if;**

**end;**

**/**

1. Write a pl/sql program to give number of employees working in a given department.

Ans**: declare**

**c number;**

**n number;**

**begin**

**select count(empno) into c from emp where deptno=&n;**

**dbms\_output.put\_line(c);**

**end;**

**/**

1. Write a pl/sql program to count number of people under a given manager.

Ans: **declare**

**c number;**

**n number;**

**begin**

**select count(empno) into c from emp where mgr=&n;**

**dbms\_output.put\_line(c);**

**end;**

**/**

1. Write a pl/sql program to list employee names whose salary is more than their manager salary.

Ans**: declare**

**c number;**

**n number;**

**begin**

**select count(empno) into c from emp e where e.sal>(select NVL(f.sal,0) from emp f where empno=e.mgr) ;**

**dbms\_output.put\_line(c);**

**end;**

**/**

1. Write a pl/sql program to list names of employees in alphabetical order along with their position, which is the position of an employee in the list sorted by salary in descending order.

Ans: **declare**

**cursor c1 is select \* from emp order by ename asc;**

**cursor c2 is select empno from emp order by sal desc;**

**i emp%rowtype;**

**j number;**

**s number;**

**begin**

**open c1;**

**loop**

**exit when c1%notfound;**

**fetch c1 into i;**

**open c2;**

**s:=0;**

**loop**

**exit when c2%notfound;**

**fetch c2 into j;**

**s:=s+1;**

**if i.empno=j then**

**dbms\_output.put\_line(i.ename||' '||s);**

**end if;**

**end loop;**

**close c2;**

**end loop;**

**close c1;**

**end;**

**/**

1. Write a pl/sql program to display top 3 earners of the complany.

**declare**

**cursor c is select \* from (select ename from emp order by sal desc) where rownum<=3;**

**i varchar2(20);**

**begin**

**open c;**

**loop**

**fetch c into i;**

**exit when c%notfound;**

**dbms\_output.put\_line(i);**

**end loop;**

**close c;**

**end;**

**/**

1. Write a pl/sql program to list emp names and their salary[salary and commision]in words

**Ans:** **declare**

**v2 varchar2(100);**

**v1 varchar2(100):='zero';**

**a varchar2(20);**

**b number;**

**c number;**

**cursor yo is select ename,sal,nvl(comm,0) from emp;**

**begin**

**open yo;**

**loop**

**v1:='zero';**

**fetch yo into a,b,c;**

**exit when yo%notfound;**

**select to\_char(to\_date(b,'j'),'jsp') into v2 from dual;**

**if c!=0 then**

**select to\_char(to\_date(c,'j'),'jsp') into v1 from dual;**

**end if;**

**dbms\_output.put\_line(a||'--comm:'||v1||'--sal:'||v2);**

**end loop;**

**close yo;**

**end;**

**/**

1. Write a pl/sql program to list top earners in a dept with salary in words.

**declare**

**cursor c is select \* from (select ename,sal from emp order by sal desc) where rownum<=3;**

**i varchar2(20);**

**n number;**

**v varchar2(100);**

**begin**

**open c;**

**loop**

**fetch c into i,n;**

**exit when c%notfound;**

**select to\_char(to\_date(n,'j'),'jsp') into v from dual;**

**dbms\_output.put\_line(i||' '||v);**

**end loop;**

**close c;**

**end;**

**/**

1. Write a pl/sql program to list names of managers and number of persons reporting in words.

Ans: **declare**

**cursor c is select mgr,count(empno) from emp group by mgr;**

**i number;**

**n number;**

**v varchar2(100);**

**begin**

**open c;**

**loop**

**fetch c into i,n;**

**exit when c%notfound;**

**select to\_char(to\_date(n,'j'),'jsp') into v from dual;**

**dbms\_output.put\_line(i||' '||v);**

**end loop;**

**close c;**

**end;**

**/**

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triggers

1. Write a trigger on employee table whenever user delete some rows,those rows are stored in another table.

Ans: **create or replace trigger t1 before delete on e**

**for each row**

**begin**

**insert into tt values(:old.empno);**

**end;**

**/**

1. **Write a trigger program to ensure that dept table does not contain duplicate or null values in deptno**.

**Ans**: **create or replace trigger t1 before insert or update on d**

**for each row**

**declare**

**v number:=0;**

**b number:=0;**

**begin**

**if :new.deptno is null then**

**dbms\_output.put\_line('error dont do that cause its null');**

**else**

**select deptno into b from d where deptno=:new.deptno;**

**if b!=0 then**

**dbms\_output.put\_line('!!!!error dont do that cause duplicate exists!!!!');**

**end if;**

**end if;**

**exception**

**when no\_data\_found then**

**dbms\_output.put\_line(' ');**

**end;**

**/**

1. Write a trigger such that salary of an employee must be modified only on Monday in any month with an entry in the log table.

Ans: **create or replace trigger t before update on e**

**for each row**

**begin**

**if (to\_char(sysdate,'dy')='mon') then**

**insert into ta values(sysdate);**

**end if;**

**end;**

**/**

...................................................................................................................

cursor

1. Write a curor to display the list of employees who are working as a manager.

Ans: **declare**

**Cursor c is Select \* from emp where empno in (select distinct(mgr) from emp);**

**i emp%rowtype;**

**begin**

**open c;**

**loop**

**fetch c into i;**

**exit when c%notfound;**

**dbms\_output.put\_line(i.ename||i.empno);**

**end loop;**

**close c;**

**end;**

**/**

1. Write a cursor to find employee with given job and deptno.

Ans: **declare**

**Cursor c(v varchar2,d number) is Select \* from emp where deptno=d and job like v;**

**i emp%rowtype;**

**begin**

**open c('&v',&d);**

**loop**

**fetch c into i;**

**exit when c%notfound;**

**dbms\_output.put\_line(i.ename||i.empno||' '||i.deptno);**

**end loop;**

**close c;**

**end;**

**/**

1. Display first 5 highest salary employees using cursor.

Ans**: declare**

**Cursor c is select \* from (Select \* from emp order by sal desc) where rownum<=5;**

**i emp%rowtype;**

**begin**

**open c;**

**loop**

**fetch c into i;**

**exit when c%notfound;**

**dbms\_output.put\_line(i.ename||i.sal||' '||i.deptno);**

**end loop;**

**close c;**

**end;**

**/**

1. Write a pl/sql cursor to transfer ename, sal of employees to another table who are getting more than 2000 salary.

Ans: **declare**

**Cursor c is select \* from emp where sal>2000;**

**i emp%rowtype;**

**begin**

**open c;**

**loop**

**fetch c into i;**

**exit when c%notfound;**

**dbms\_output.put\_line(i.ename||i.sal||' '||i.deptno);**

**insert into fake values(i.EMPNO,i.ENAME,i.JOB,i.MGR,i.HIREDATE,i.SAL,i.COMM,i.DEPTNO);**

**end loop;**

**close c;**

**end;**

**/**

1. Write a pl/sql parameterized cursor program. Display the employees who are working under job as manager and display the employees who are working under analyst.

Ans: **declare**

**Cursor c(v varchar2) is select \* from emp where job like v;**

**i emp%rowtype;**

**begin**

**open c('&v');**

**loop**

**fetch c into i;**

**exit when c%notfound;**

**dbms\_output.put\_line(i.ename||i.sal||' '||i.job);**

**end loop;**

**close c;**

**end;**

**/**

1. Write pl/sql program using %found attribute of cursor whenever user enter the job, count number of these jobs.

Ans: **declare**

**Cursor c(v varchar2) is select count(empno) from emp where job like v;**

**i number;**

**begin**

**open c('&v');**

**loop**

**fetch c into i;**

**exit when c%found=false;**

**dbms\_output.put\_line(i);**

**end loop;**

**close c;**

**end;**

**/**

1. Display all employees using %found attribute of cursor ,and use while loop within a cursor

Ans: **declare**

**Cursor c is select ename from emp;**

**i varchar2(20);**

**a number:=0;**

**begin**

**open c;**

**fetch c into i;**

**while c%found**

**loop**

**dbms\_output.put\_line(i);**

**fetch c into i;**

**end loop;**

**close c;**

**end;**

**/**

1. Write a pl/sql cursor program modify the salaries in employee table based on the following condition.
2. If job=’clerk’ increment salary 100.
3. If job=’salesman’ decrement salary 200.
4. If job=’analyst’ increment salary 300.

......................................................................................................

1. Write a package i.e ‘emp pack’ with the following procedures
2. To list top workers in each dept.

Ans:

1. To list designations that are unique to a dept.
2. To list names of employees to which maximum number of employees report.

SQL> select ename from emp where empno=(select mgr from emp group by mgr having count(\*)=(select max(count(\*)) from emp group by mgr));

1. To list names of employees who report to an emp with less salary.

**select e.\* from emp e,emp m where e.mgr=m.empno and m.sal<e.sal;**

1. To list chain of employee-managers.

..........................................................................................

Procedures and functions

1. Write a procedure and function to accept a empno and increase sal amount.if empno is not found or current salary is null, then raise exception otherwise diplay salary + increment.

Eg: **declare**

**z number;**

**begin**

**select sal into z from fake where empno=1234;**

**if z is null then**

**dbms\_output.put\_line('charlie puth<3');**

**end if;**

**exception**

**when no\_data\_found then**

**dbms\_output.put\_line('error');**

**end;**

**/**

1. Write a procedure to list employee name and their salary i.e salary + commision in words.
2. Write a procedure to get the number of employees under a given employee.

Ans: **create or replace procedure p3(d number) is**

**sa number;**

**begin**

**select count(ename) into sa from emp where mgr=d;**

**dbms\_output.put\_line(sa);**

**end;**

**/**

**>execute p3(7698)**

**>5**

1. Write a function to find a prime number.

Ans**: declare**

**r number;**

**begin**

**r:=f4(7);**

**if r=0 then**

**dbms\_output.put\_line('prime');**

**else**

**dbms\_output.put\_line('not prime');**

**end if;**

**end;**

**/**

**create or replace function f4(a number) return number is**

**ch number;**

**begin**

**for ch in 2..a-1**

**loop**

**if mod(a,ch)=0 then**

**return 1;**

**end if;**

**end loop;**

**return 0;**

**end;**

**/**

1. Create a function to list emp names and their total salary i.e salary + commision in words.

Ans**: create or replace function f5 return number is**

**a varchar2(20);**

**b number;**

**ch varchar2(200);**

**cursor c is select ename,sal+nvl(comm,0) from emp;**

**begin**

**open c;**

**loop**

**fetch c into a,b;**

**exit when c%notfound;**

**select to\_char(to\_date(b,'j'),'jsp') into ch from dual;**

**dbms\_output.put\_line(a||'....'||ch);**

**end loop;**

**return b;**

**end;**

**/**

**declare**

**a number;**

**begin**

**a:=f5();**

**end;**

**/**

1. Function to get number of employees under a given employee.

Ans: **declare**

**s number;**

**begin**

**s:=f6(7698);**

**dbms\_output.put\_line(s);**

**end;**

**/**

**create or replace function f6(d number) return number is**

**sa number;**

**begin**

**select count(ename) into sa from emp where mgr=d;**

**return sa;**

**end;**

**/**

1. Function to get number of employees working in a given dept name.

Ans: **create or replace function f7(d varchar2) return number is**

**sa number;**

**begin**

**select count(ename) into sa from emp e,dept d where e.deptno=d.deptno and d.dname like d;**

**return sa;**

**end;**

**/**

**declare**

**s number;**

**begin**

**s:=f7('SALES');**

**dbms\_output.put\_line(s);**

**end;**

**/**

1. Develop pl/sql stored procedure for passing empno as parameter to display name of the employee and salary.

Ans: **create or replace procedure p8(eno number) is**

**en varchar2(20);**

**sa number;**

**begin**

**select ename,sal into en,sa from emp where empno=eno;**

**dbms\_output.put\_line(en||'.....'||sa);**

**end;**

**/**

1. Develop a stored procedure to insert a record into dept table using formal parameters.

Ans: **create or replace procedure p9(dn varchar2,dno number) is**

**begin**

**insert into fa values(dn,dno);**

**end;**

**/**

..........................................

Exceptions

1. Write a pl/sql program to raise pre-defined exception when user try to access ename by entering invalid empno.

Ans:

**declare**

**v varchar2(20);**

**begin**

**select ename into v from emp where empno=&n;**

**dbms\_output.put\_line(v);**

**exception**

**when no\_data\_found then**

**dbms\_output.put\_line('errorr!!!!');**

**end;**

**/**

1. Write a pl/sql program to raise pre-defined exception when user try to access salary of employee to handle multiple values instead of single value expected.

Ans**: declare**

**v number;**

**begin**

**select sal into v from emp;**

**dbms\_output.put\_line(v);**

**exception**

**when too\_many\_rows then**

**dbms\_output.put\_line('errorr!!!!');**

**end;**

**/**

1. Write a pl/sql program to raise an exception today.

Ans : **create or replace trigger t before update on fake**

**for each row**

**begin**

**if (to\_char(sysdate,'dy')='wed') then**

**raise\_application\_error(-20017,'errorrrrr');**

**end if;**

**end;**

**/**

1. Write a user defined exception, raise exception if empno is 7902 salary is more than 4000 ,therwise increase salary by 100.

Ans: **declare**

**z exception;**

**v number;**

**begin**

**select sal into v from fake where empno=7902;**

**if (v>4000) then**

**raise z;**

**else**

**update fake set sal=sal+100 where empno=7902;**

**end if;**

**exception**

**when z then**

**dbms\_output.put\_line('what the hell!!');**

**end;**

**/**

1. Write an exception routine using raise-application-error(), raise exception if empno is 7902 salary is more than 4000 ,therwise increase salary by 100.

Ans:same q 4 hahahahaha yayy!!

1. Write an exception in pl/sql block with sqlcode and sqlerrm pre-defined functions.

Ans: **declare**

**z exception;**

**v number;**

**begin**

**select sal into v from fake where empno=7902;**

**if (v>4000) then**

**raise z;**

**else**

**update fake set sal=sal+100 where empno=7902;**

**end if;**

**exception**

**when z then**

**dbms\_output.put\_line(sqlcode||' '||sqlerrm);**

**end;**

**/**

**Output:1 user defined exception**

**Or**

**declare**

**v number;**

**begin**

**select sal into v from fake ;**

**exception**

**when others then**

**dbms\_output.put\_line(sqlcode||' '||sqlerrm);**

**end;**

**/ output -1422 exact fetch returns more than requested rows**

1. Write a pl/sql program to store sqlcode,qlerrm return values into eperate table.

Ans: **declare**

**v number;**

**a number;**

**b varchar2(100);**

**begin**

**select sal into v from fake ;**

**exception**

**when others then**

**a:=sqlcode;**

**b:=sqlerrm;**

**insert into h values(b,a);**

**end;**

**/**

1. Write a pl/sql program using unnamed method ,handle -2291.

Ans: **declare**

**z exception;**

**i number:=5;**

**pragma exception\_init(z,-2291);**

**begin**

**for i in 1..5**

**loop**

**if i=5 then**

**raise z;**

**end if;**

**dbms\_output.put\_line(i);**

**end loop;**

**exception**

**when z then**

**dbms\_output.put\_line('yeah i was 5..so what now');**

**end;**

**/**

....................................................................................

Forms and reports

1. Generate form on emp table and apply different functions.
2. Generate form on dpt table and apply different functions.
3. Generate report on employee data base table of your choice either paper layout or web layout.