Experiment 2.2

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Subject Name: DBMS | **Subject Code:** 21CSH-214

Aim:

Introduction and implementation of programs using looping statements like: For and while.

Objective:

Learning and implementing PL/SQL Iterative Control Statements.

Theory:

Iterative Control: LOOPING Statements

LOOP statements let you execute a sequence of statements multiple times. There are three forms of LOOP statements: LOOP, WHILE-LOOP, and FOR-LOOP.

1. SIMPLE-LOOP Statement

Syntax

```
LOOP
        <set of statements>
EXIT when <condition>;
END LOOP;
```

EXIT STATEMENT

The EXIT statement forces a loop to complete unconditionally. When an EXIT statement is encountered, the loop completes immediately and control passes to the next statement.

2. WHILE LOOP Statement
Syntax

```
WHILE <condition>
LOOP
        <set of statements>
END LOOP;
```

3. FOR LOOP statement
Syntax

```
FOR <variable> in start..end
LOOP
        <set of statements>
END LOOP;
```

SEQUENTIAL CONTROL STATEMENT
4. goto Statement
Syntax

```
<<label>>

        <set of statements>

IF <condition> then

        goto  label;

END IF;
```

Learning outcomes (What I have learnt):

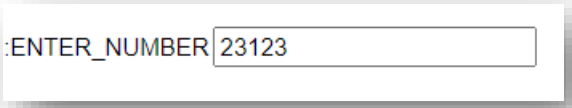
1. Learned about DBMS languages.
2. I have learned about PL/SQL block Structure.
3. Learn about Iterative Control of Pl/SQL and their implementation.

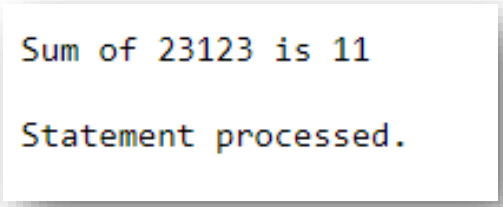
DBMS script and Output:

2. Sum of digits of a number using while loop.

```
Declare
        num number;
        tmp1 number;
        tmp2 number;
        total number;
Begin
        num:=:Enter_number;
        tmp1:=num;
        total:=0;

        While num>0
        Loop
                tmp2:=MOD(num, 10);
                total:=total+tmp2;
                num:=trunc(num/10);
        End Loop;

        dbms_output.put_line('Sum of '|| tmp1 ||' is '|| total);
END;
```

Output:

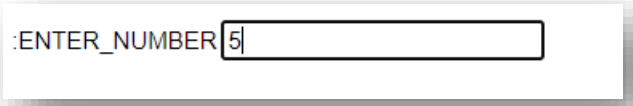




3. Find factorial of number using simple loop.

```
Declare
        num number;
        tmp number;
        fact number;
Begin
        num:=:Enter_number;
        fact:=1;
        tmp:=num;

        Loop
                fact:= fact*tmp;
                tmp:= tmp-1;
                exit when tmp=1;
        End Loop;

        dbms_output.put_line('Factorial of '|| num ||' is '|| fact);
END;
```

Output:

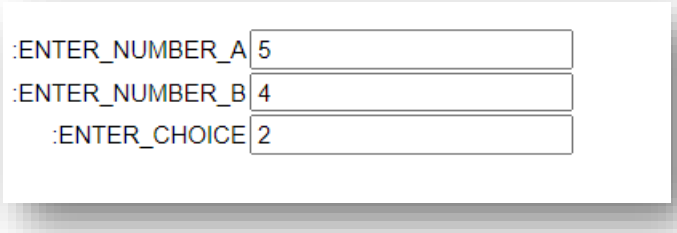



```
Factorial of 5 is 120

Statement processed.
```

4. Implement case statement for performing addition, substraction & multiplication of 2 numbers.

```
Declare
        n number;
        a number;
        b number;
Begin
        a:=:Enter_number_a;
        b:=:Enter_number_b;
        n:=:Enter_choice;

        Case n
                When 1 then
                        dbms_output.put_line(a+b);
                When 2 then
                        dbms_output.put_line(a-b);
                When 3 then
                        dbms_output.put_line(a*b);
                Else
                        dbms_output.put_line('Wrong Choice');
        End Case;
END;
```

Output:




```
1

Statement processed.
```

5.Implement goto statement in a loop.

Code:

```
Declare
        i number;
Begin
        i:=1;

        <<repeat>>
        Loop
                dbms_output.put_line(i);
                if i=10 then
                        i:= i+10;
                        goto repeat;
                end if;
                if i>15 then
                        exit;
                end if;
                i:=i+1;
        End Loop;
END;
```

Output:

```
1
2
3
4
5
6
7
8
9
10
20

Statement processed.
```

6.Increment salary of all employees of a table by 5000

Edata(Eid, Ename, Salary) using loop

```
select * from Edata;

create table Edata(Eid number(10), Ename varchar2(20), Salary number(20));

Insert into Edata values
(1,'Rohan', 2000);

Insert into Edata values
(2,'Sameer', 1000);

Insert into Edata values
(3,'Harsh', 1000);

Insert into Edata values
(4,'Ruhela', 2000);

Insert into Edata values
(5,'Sinu', 2000);
```

```
DECLARE
        sal number;
BEGIN
        For id in 1..5
        LOOP
                SELECT Salary into sal from Edata where Eid=id;
                sal:=sal+5000;
                UPDATE Edata SET Salary=sal where Eid=id;
        END LOOP;
END;
```

Output:

Before Updating:

EID	ENAME	SALARY
1	Rohan	2000
2	Sameer	1000
3	Harsh	1000
4	Ruhela	2000
5	Sinu	2000

5 rows returned in 0.00 seconds Download

After Updating:

EID	ENAME	SALARY
1	Rohan	7000
2	Sameer	6000
3	Harsh	6000
4	Ruhela	7000
5	Sinu	7000

5 rows returned in 0.00 seconds Download