

Course : CSE 2004 – Database Management Systems

Lab slot : L55+ L56

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Ex. No: 7

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### PL/SQL Basics

#### QUESTION 1

Write a PL/SQL structure to find the greatest number among three numbers using if-else.

#### CODE

```
SQL> set serveroutput on;

SQL> DECLARE
    2 a number;
    3 b number;
    4 c number;
    5 BEGIN
    6 a:= &a;
    7 b:= &b;
    8 c:= &c;
    9 IF (a>b) and (a>c) THEN
    10 dbms_output.put_line('A is the greatest
number. Value : ' || a);
    11 ELSIF (b>a) and (b>c) THEN
    12 dbms_output.put_line('B is the greatest
number. Value : ' || b);
    13 ELSE
    14 dbms_output.put_line('C is the greatest
number. Value : ' || c);
```

```
15 END IF;
```

```
16 END;
```

```
17 /
```

#### OUTPUT

Enter value for a: 40

old 6: a:= &a;

new 6: a:= 40;

Enter value for b: 80

old 7: b:= &b;

new 7: b:= 80;

Enter value for c: 60

old 8: c:= &c;

new 8: c:= 60;

B is the greatest number. Value : 80

PL/SQL procedure successfully completed.

**QUESTION 2**

Write a PL/SQL structure to find a given number is Armstrong number or not using loops.

Example 1:  $a=153$ ,  $b= 1^3+5^3+3^3= 1+125+27=153$

$a=153$  is equal to  $b=153$ , so 153 is an Armstrong number.

Example 2:  $a=121$ ,  $b= 1^3+2^3+1^3= 1+8+1=10$

$a=121$  is not equal to  $b=10$ , so 121 is not an Armstrong number.

**CODE**

```
SQL> DECLARE
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2 n number;
3 s number:=0;
4 t number;
5 BEGIN
6 n:= &n;
7 t:= n;
8 WHILE t > 0 LOOP
9 s:= s + power((t mod 10), 3);
10 t:= trunc(t/10);
11 END LOOP;
12 IF (s = n) THEN
13 dbms_output.put_line('The given number ' ||
n || ' is an Armstrong number');
14 ELSE
15 dbms_output.put_line('The given number ' ||
n || ' is an NOT an Armstrong number');
16 END IF;
17 END;
```

**OUTPUT**

Enter value for n: 153

old 6: n:= &n;

new 6: n:= 153;

The given number 153 is an Armstrong number

PL/SQL procedure successfully completed.

*Running the same code as above for another input :*

Enter value for n: 121

old 6: n:= &n;

new 6: n:= 121;

The given number 121 is an NOT an Armstrong number

PL/SQL procedure successfully completed.

**QUESTION 3**

Write a PL/SQL structure to find addition, subtraction, multiplication and division of two numbers using 'case'.

**CODE**

```
SQL> DECLARE
  2 a number;
  3 b number;
  4 ans number;
  5 choice char(1);
  6 BEGIN
  7 a:= &a;
  8 b:= &b;
  9 choice:= &choice;
 10 CASE choice
 11 WHEN '1' THEN
 12 ans:= a + b;
 13 dbms_output.put_line('Addition : ( ' || a || ' +
' || b || ') = ' || ans);
 14 WHEN '2' THEN
 15 ans:= a - b;
 16 dbms_output.put_line('Subtraction : ( ' || a ||
' - ' || b || ') = ' || ans);
 17 WHEN '3' THEN
 18 ans:= a * b;
 19 dbms_output.put_line('Multiplication : ( ' || a
|| ' * ' || b || ') = ' || ans);
 20 WHEN '4' THEN
 21 ans:= a / b;
 22 dbms_output.put_line('Division : ( ' || a || ' / '
|| b || ') = ' || ans);
 23 ELSE dbms_output.put_line('No such
operation');
 24 END CASE;
 25 END;
```

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**OUTPUT**

```
Enter value for a: 22
old 7: a:= &a;
new 7: a:= 22;
Enter value for b: 46
old 8: b:= &b;
new 8: b:= 46;
Enter value for choice: 1
old 9: choice:= &choice;
new 9: choice:= 1;
Addition : ( 22 + 46) = 68
```

PL/SQL procedure successfully completed.

*Running the same code as above for another input :*

Enter value for a: 95  
 old 7: a:= &a;  
 new 7: a:= 95;  
 Enter value for b: 81  
 old 8: b:= &b;  
 new 8: b:= 81;  
 Enter value for choice: 2  
 old 9: choice:= &choice;  
 new 9: choice:= 2;  
 Subtraction : ( 95 - 81) = 14

PL/SQL procedure successfully completed.

*Running the same code as above for another input :*

Enter value for a: 12  
 old 7: a:= &a;  
 new 7: a:= 12;  
 Enter value for b: 23  
 old 8: b:= &b;  
 new 8: b:= 23;  
 Enter value for choice: 3  
 old 9: choice:= &choice;  
 new 9: choice:= 3;  
 Multiplication : ( 12 \* 23) = 276

PL/SQL procedure successfully completed.

*Running the same code as above for another input :*

Enter value for a: 625  
 old 7: a:= &a;  
 new 7: a:= 625;  
 Enter value for b: 25  
 old 8: b:= &b;  
 new 8: b:= 25;  
 Enter value for choice: 4  
 old 9: choice:= &choice;  
 new 9: choice:= 4;  
 Division : ( 625 / 25) = 25

PL/SQL procedure successfully completed.

*Running the same code as above for another input :*

Enter value for a: 100  
 old 7: a:= &a;  
 new 7: a:= 100;  
 Enter value for b: 200  
 old 8: b:= &b;  
 new 8: b:= 200;  
 Enter value for choice: 6  
 old 9: choice:= &choice;  
 new 9: choice:= 6;  
 No such operation

PL/SQL procedure successfully completed.