PL*SQL

Exercise 6

1. The ***median*** of an array of numbers is the element *m* of the array such that half the remaining numbers in the array are greater than or equal to *m* and half are less than or equal to *m*, if the number of elements in the array is odd. If the number of elements is even, the median is the average of the two elements *m1* and *m2* such that half the remaining elements are greater than or equal to *m1* and *m2*, and half the elements are less than or equal to *m1* and *m2*. Write a PL*SQL block that allows the user to enter 10 elements in a number array and outputs the median of the numbers in the array. Write another PL*SQL block that allows the user to enter 11 elements in a number array and outputs the median of the numbers in the array. Display the outputs on the screen using dbms_output.put_line.

```
DECLARE
   l_var1 number(2);
   l_var2 number(2);
   l_var3 number(2);
   l_var4 number(2);
   l_var5 number(2);
   l_temp number(2);


   TYPE v_arr IS TABLE OF NUMBER;
   v_arra v_arr:=v_arr();


BEGIN
 v_arra.extend(5);

 v_arra(1):=:l_var1;
 v_arra(2):=:l_var2;
 v_arra(3):=:l_var3;
 v_arra(4):=:l_var4;
 v_arra(5):=:l_var5;

 for i in 1..4
 loop
   for j in i+1..5
   loop
      if v_arra(i)>v_arra(j) then
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```
        l_temp:=v_arra(i);
         v_arra(i):=v_arra(j);
         v_arra(j):=l_temp;
       end if;
      end loop;
    end loop;


    for i in 1..5
    loop
    dbms_output.put_line(v_arra(i));
    end loop;

    dbms_output.put_line('Median Of Array is: '|| v_arra(3));


END;
```

2. The ***mode*** of an array of numbers is the number *m* in the array that is repeated most frequently. If more than 1 number is repeated with equal maximum frequencies, there is no mode. Write a PL*SQL block that allows the user to enter 10 elements in a number array and outputs the mode or indication that the mode does not exist. Display the above output on the screen using dbms_output.put_line.

3. Write a PL*SQL program to do the following:-
   Read a group of 10 temperature readings into two number arrays. A reading consists of two numbers:- an integer between –90 and 90, representing the latitude at which the reading was taken, and the observed temperature at that latitude. Print a table (display on screen in tabular format) consisting of each latitude and the average temperature at that latitude. If there are no 2 sets of readings at a particular latitude, print "NO DATA" instead of an average. Then print the average temperature in the northern and southern hemispheres (the northern consists of latitudes 1 through 90 and the southern consists of latitudes –1 through –90). (This average temperature should be computed as the average of the averages, not the average of the original readings). Also determine which hemisphere is warmer. In making the determination, take the average temperatures in all latitudes of each hemisphere for which there are data for both that latitude and the corresponding latitude in the other hemisphere. (For example, if there is data for latitude 57 but not for latitude –57, then the average temperature for latitude 57 should be ignored in determining which hemisphere is warmer). Display the above output on the screen using dbms_output.put_line.

4. Write a PL*SQL block to accept a number from the user. With the help of PL*SQL arrays, write a program for Number to word conversion up to 99 crores. The program should cater to Rs. and paise also.

  For example, if the user enters:-
123451250.75
The output of your program should be:-
    Rs. Twelve crores, Thirty Four lakhs, Fifty One thousand, Two hundred and Fifty and Seventy five paise only.

If the user enters:-
9728
The output of your program should be:-
Rs. Nine thousand, Seven hundred and Twenty Eight only.

5. Write a PL*SQL block to accept a character string from the user. The user should enter a number spelt out. With the help of PL*SQL arrays, write a program for Word to number conversion up to 99 crores. The program should cater to Rs. and paise also.

  For example, if the user enters:-
    Rs. Twelve crores, Thirty Four lakhs, Fifty One thousand, Two hundred and Fifty and Seventy five paise only.
The output of your program should be:-
123451250.75

If the user enters:-
Rs. Nine thousand, Seven hundred and Twenty Eight only.
The output of your program should be:-
9728