**Lab 5**

**Task 1** Ask the user to first enter the number n. Then take n numbers from the user and print out the average, highest, lowest for these n numbers.

Sample output:

Enter number of items: 4

Enter 4 numbers: 7

6

3

4

Mean: 5.0

Highest: 7

Lowest: 3

**Task 2** Given two vectors of length N that are represented with one-dimensional arrays, write a code fragment that computes the Euclidean distance between them (the square root

of the sums of the squares of the differences between corresponding entries).

Sample run:

Enter the size of the vectors: 3

Enter 3 coefficients of the first vector: 1

2

3

Enter 3 coefficients of the second vector: 1

2

1

The Euclidean distance is: 2

**Task 3** Redo Task 2 using a method. The method should take two arrays and should return the Euclidean distance.

**Task 4** Write a method that takes in an two integer arrays of the same size and returns another array with the sum of each corresponding entry. For instance, if the function is passed the following arrays:

array1 -> {1,2,3}

array2 -> {13,4,50}

It should return an array {14, 6, 53} because the first element of array1 is 1 added to first element of array2 which is 13 gives 14.

You should call this method in the main and display the result in the main method as well.

**Task 5** Initialize a String array named names with the following values:

"Elena", "Thomas", "Hamilton", "Suzie", "Phil", "Matt", "Alex","Emma", "John", "James", "Jane", "Emily", "Daniel", "Neda","Aaron", “Kate"

Initialize another integer array named times, with the following values:

341, 273, 278, 329, 445, 402, 388, 275, 243, 334, 412, 393, 299, 343, 317, 265

The names correspond to runners and. The times are the total time taken in minutes to run a race.

You need to do:

(i) Find the fastest runner. Print the name and his/her time (in minutes).

(ii) Find the second fastest runner.

(iii) Find the average time for the runners.

(iv) Display all runners whose running time was better than average

Sample run:

Fastest runner is John with 243 minutes

Second fastest runner: Kate with 265 minutes

Average time: 333.5625

All runners with better running time than average:

Thomas

Hamilton

Suzie

Emma

John

Daniel

Aaron

Kate