Lab#1

Write a program that reads an array of 20 integers with an appropriate prompt, stores it, and then prints in three formats:

- One integer per line;

-All integers in a single line separated by spaces;

-All in integers in a single line in the reverse order separated by spaces,

- You program requests entering a positive integer n <=20 and then prints the 20 integers, n integers (separated by space) per line.

Test your program for one set of 20 integers and for n= 5 and n= 6 Submit a hardcopy of your programs and their outputs.

Lab#2

Write a program that reads (with an appropriate prompt) a sequence of 20 integers and stores them in an array, and then calls the following two functions and prints the results in a readable format. The two functions are:

smallestLargest: computes the smallest and the largest values in the array.

divisible: computes the number of integers in the array, which are divisible by 4.

Lab#3

1. Write a program that reads a string (from a keyboard), stores it in the memory, and computes and prints the frequency of each upper case, each lowercase, and the space character.
2. Write a function that receives the address of a string and checks whether it is palindrome or not. Write a program to test this function.

Test your program for at least 3 strings.

Lab#4

i. Write a program that reads and stores an array of 10 records, each record consists of name of type string of up to 40 characters, age of type integer, and salary of type integer.

ii. Write a program that prints the array of records of Part(i) in a readable format( a single line for each employee)

iii. Write a program that swaps any two records, and then prints the entire array. The program must ask the user to enter the record numbers. Assume the record are numbered from 1 to 10. For example, if the user enters 4 and 7, then the program swaps the record 4 and the record 7.

Lab#5

1.Write a recursive function that computes the smallest integer in a given array of integers.

Use the following algorithm:

int Min( int[] A, int low, int high)

{ if (low== high) return A[low];

int mid = (low+high)/2;

int min1 = Min( int[] A, low, mid);

int min2 =Min( int[] A, mid +1, high);

if(min1>min2) return min2;

return min1;

}

2. Write a recursive function that compute the Comb(n,r) where n >=r and n,r>=0

Comb(n,r) = 1 if n=r or r=0

Comb(n,r)= Comb(n-1,r) + Comb( n-1,r-1)

3. Write a program that reads several input data and tests the above two functions. Submit a hardcopy of your program and its output.