**Lab-12**

Instructions:

* Indent your code properly.
* Use meaningful variable names. Follow the naming conventions.
* Use meaningful prompt lines/labels for all input/output that is done by your programs.
* You are not allowed to discuss your problems with your fellows. If you feel any problem
* in understanding then you may ask your teacher or TA.

**Task: 1**

Write a program that contains following functions:

1- bool copyArray(int\*arr1, int size1, int\*arr2, int size2) it takes two arrays and if size of

both arrays is same then it copies the data of arr1 to arr2 and returns true, if size is not

same then data is not copied and the function returns false.

2- void swapArray(int\*arr1, int size1, int\*arr2, int size2) it takes two arrays and if size

of both arrays is same then it swaps their data and returns true, if size is not same then

data is not swapped and the function returns false.

3- void displayArray(int \*arr, const int size)it takes an array and its size and displays all

the elements of the array.

**Task: 2**

Write a function that dynamically allocates an array of integers. The function should accept an

integer argument indicating the number of elements to allocate. The function should return a

pointer to the array.

**Task: 3**

Write a function that accepts an int array and the array’s size as arguments. The function should

create a copy of the array, except that the element values should be reversed in the copy. The

function should return a pointer to the new array. Demonstrate the function in a complete

program.

**Task: 4**

Implement a function specialSearch which takes a one-dimensional array of integers, its size,

and an integer key as arguments. This function will determine the number of elements less than,

and number of elements greater than key in the given array. The prototype of your function

should be:

**void specialSearch (int arr[], int n, int key,**

**int& numLess, int& numGreater)**

In the above function prototype: arr is an array which contains n integers in unsorted order, key

is the value based upon which the searching will be performed, numLess and numGreater are

reference parameters which will be used to return the counts of the number of elements

less/greater than the key.

**Task: 5**

Write a program that takes two strings (character arrays) from user and concatenates (combines)

them. Size of strings can be fixed. For this you are required to define following functions.

Concatenate(char \* string1, char\* string2);

In main(), declare 2 character arrays with size not more than 10, take input in them and place a

null character at the end of both arrays. Pass them to function, declare a third array with size 20

to hold concatenated data and display it in function.

Example:

Enter first string: abcde

Enter second string: fghij

Output: abcdefghij