OBJECT ORIENTED PROGRAMMING – SPRING 2022

Dead line: 7th *March* 202

Assignment # 1
Total Marks: 80

[1] Find the second largest number entered by the user in a dynamically allocated 1D array. For this task you are supposed to create a function.

[2] Write a function which sorts a dynamic array using only pointers and pointers arithmetic.

[3] Find the smallest element in each row of a 2D dynamic array and store in a 1D dynamic array. For this functionality create a function minRow_wise which takes 2D array from the main and returns 1D array with minimum values from each row.

[4] Find the smallest element in each column of a 2D dynamic array and store in a 1D dynamic array. For this functionality create a function minCol_wise which takes 2D array from the main and returns 1D array with minimum values from each column.

[5] Create a function ***shrinkArray*** which takes a dynamic array from the main, shrinks it and returns to the main.

[6] Create a function ***growArray*** which takes a dynamic array from the main, grows it and returns to the main.

[7] Create a function ***union*** which takes two dynamic arrays from the main and returns a 1D dynamic array containing their union.

[8] For each of the following, write a single statement that performs the specified task. Assume that long variables value1 and value2 have been declared and value1 has been initialized to 200000.

1. Declare the variable longPtr to be a pointer to an object of type long.
2. Assignthe address of variable value1 to pointer variable longPtr.
3. Display the value of the object pointed to by longPtr.
4. Assignthevalueoftheobjectpointedtobylong Ptrtovariablevalue2.
5. Display the value of value2.
6. Display the address of value1.
7. Display the address stored in longPtr. Is the address displayed the same as value1's?