
OBJECT ORIENTED PROGRAMMING — FALL 2022

Dead line: 14th September 2022

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. Assign the address of variable `value1` to pointer variable `longPtr`.
 3. Display the value of the object pointed to by `longPtr`.
 4. Assign the value of the object pointed to by `longPtr` to variable `value2`.
 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?