

## Lab 04 - Sorting & Searching

### Instructions:

- Your objective is to modify the accompanying file ‘`Ordered.h`’ by defining the functions described in each task.
- Your submissions must be submitted to the GitHub repository in your Lab04 directory.
- You cannot include additional libraries to ‘`Ordered.h`’.
- Cheating of any kind is prohibited and will not be tolerated.
- Violating or failing to follow any of the rules will result in an automatic zero (0) for the lab.

TO ACKNOWLEDGE THAT YOU HAVE READ AND UNDERSTOOD THE INSTRUCTIONS ABOVE, AT THE BEGINNING OF YOUR SUBMISSION(S), ADD A COMMENT THAT CONSISTS OF YOUR NAME AND THE DATE. PROVIDE THE NAME OF YOUR TEAMMATE IF YOU ARE WORKING IN A GROUP.

### Grading

Task	Maximum Points	Points Earned
1	2.0	
2	3.0	
Total	5.0	

## Task 1

- Define the Boolean function named `Contains()` whose header is

```
template <typename T>
bool Contains(Array<T>& data, const T& item)
```

It returns true if *item* is in *data*; otherwise, it returns false. It must use the binary search algorithm.

## Task 2

- Define the void method named `Sort()` whose header is

```
template <typename T>
void Sort(Array<T>& data)
```

It sorts *data* using the bubble sort algorithm.

## Extra Credit

- Define the void method named `SortII()` whose header is

```
template <typename T>
void SortII(Array<T>& data)
```

It sorts *data* using the insertion sort algorithm.

- Define the void method named `SortIII()` whose header is

```
template <typename T>
void SortIII(Array<T>& data)
```

It sorts *data* using the selection sort algorithm.