# Assignment 7 for CPTN278

**Name:** Demonstration of Sorting Algorithms

**References:**

* The text book
* In class notes
* Any other resource you can find other than people

### Assignment Description:

You are to create an application in C++ that demonstrates sorting algorithms on an unsorted array of 20 integers. You will also be required to provide a detailed description of the program along with conclusions.

The application will initially create a single array in the main function of 20 integers in this order.

23, 135, 12, 10, 67, 87, 42, 1, 56, 577,

754, 32, 989, 76, 51, 28, 73, 99, 5, 417

The application will then display the array contents.

The application will have a separate function demonstrating each of the following sort algorithms. That is one sorting algorithm per function.

* Bubble
* Bucket
* Merge
* Selection

Each function will copy the array to a second array and then use the copied array for the sort. How many other support items and arrays needed in each function is dependent upon the sort algorithm. The function will then print the sorted results.

The application will then print the original array showing it has not been modified.

Details on program requirements, format and construction are provided in class.

### Assignment Deliverables:

1. A C++ application program source file containing your application source code. The base name of this file must be **CPTN278\_A7\_Application\_*lastname*.cpp** where *lastname* is your actual last name.
2. A Microsoft Word 2010 document with the following contents and sections. Each major bullet needs to be a new section. The name of this file must be **CPTN278\_A7\_Description\_*lastname*.docx** where *lastname* is your actual last name.

* Title page
  + Document name
  + Author
  + Creation Date
  + Course Number
* Table of Contents
* Introduction
* A one paragraph description of what the application does
* A description of the program variables and objects
* A description of the class and application source code including
  + The list and correct sequence of steps used to accomplish the task
  + A description of what occurs in a section of code
  + A description of how the variables and objects “change” as a result of executing each section of code
* Captured Program Output
* Conclusions about the application
* Conclusion
* References documented using APA style
* Appendix (if needed)

### Strenuously Recommended Approach:

See Previous Assignments for details.

Post the deliverables to Blackboard via the “Assignment 7” link.

You will be submitting two files. They are:

* CPTN278\_A7\_Application\_lastname.cpp – The application source file
* CPTN278\_A7\_Description\_lastname.docx – Your design document

Use the above link for assignment submissions. Do not submit assignments via the Blackboard Digital Drop Box or forums. Do not use e-mail attachments. Do not hand in hard copies of documents. Please zip them into a single file that has the .zip extension. That is, do not use any other zip utilities other than the default from Microsoft Windows. They should not have extensions like .tar, .gz7, .gzip, .rar or anything else, requiring me to use any other zip utilities. The zipped file should only contain these files. Do not include any files other than theses files like .sln or .vcproj files.