



Department of Computer Science

COMP2421 (Second semester – Spring2020/2021)

Project#4 Due Date: 24 May 2021

In this research paper, you are required to search/study/report 3 new sorting algorithms.

Your final report should include the following:

- A cover page including your name, student ID, and section number.
- Write 1-1.5 page about each sorting algorithm:
 - Write the algorithm and discuss it.
 - Mention the algorithm properties: time complexity and space complexity and various situations, stability, and whether it's in place or not.
 - Explain the running time of the algorithms if the input data array is:
 - Sorted (ascending)
 - Sorted (descending)
 - Not sorted
- A summary page comparing the 3 sorting algorithm based on the properties.
- A final page contains the used references reported in a scientific format.

Discussion: at discussion time, we will randomly choose one sorting algorithm and discuss it with you. You have to demonstrate that you understand this method very well.

The following methods should not be in your list:

1. Insertion
2. Selection
3. Bubble
4. Shell
5. Merge

6. Heap
7. Quick
8. Radix

Submission instructions:

1. **This is individual work.** It should represent your own efforts. It is fine to discuss your work and to ask your colleagues, but you are not allowed to copy/paste the work of others or give your work to anyone else, copy/paste from websites and other references is not allowed as well. You should describe the algorithms in your own words. As well, if you use an image from the internet please include it in the references.
2. **Document format.** Your submission should be a word document and named as:
“**P4_YourStudentID_FirstNameLastName_SectionNo.docx**”.
E.g., P4_1199999_MohammedAhmed_4.docx → given this student in section 3.
3. Make sure to include proper references of the paper.
4. Make sure to explain the concepts “In Your Own Words!”. No copy-paste is allowed.
5. In the discussion you may be asked about everything you include in your writing, so make sure you understand it well.