

HCSCI224: Design and Analysis of Algorithms

Practical Assignment 1 [30 Marks]

Due Date [06/08/2021]

Attempt all questions below in groups of 2 to 3 people and submit a Word document of the answers on Google Classroom on or before the due date. All pseudocode and code snippets should be clear and not simply copy-pasted from the internet. Also cite and reference your work.

- 1) Write the pseudocode for heap sort algorithm and demonstrate using any programming language of your choice its application in performing a sort on the array A with the following elements: {5; 13; 2; 25; 7; 17; 20; 8; 4}. **[15]**
- 2) Write a pseudocode to create a max-priority queue from the sorted array in *1)* above and illustrate using appropriate diagrams the steps in creating the resulting priority queue. **[15]**