21-805-0206: Lab 3 - Data Structures Lab

Assignment 2

Instructions:
1. All programs have to be submitted as .cpp files that can be compiled and executed without error. The input & output shall be included in the same file as comments
2. A separate pdf file named as "**rollno_firstName**" shall be submitted for questions that require an explanation (marked with *). This should be **hand written.**
3. Compress all the above as a single .zip file and upload in the moodle page before **30/06/23**

Part 3: Sorting

1. Implement the bubble sort algorithm, to sort n real numbers in ascending order.

   Input format:
   The first line contains a positive integer n indicating the length of input array.
   The next line contains n space separated real numbers.
   Output Format:
   The output contains n space separated real numbers of the sorted array.
   Sample input:
   8
   623.43 82.412 534.612 137.6 -733.216 28.16 363.532 8.34423

2. Implement the insertion sort algorithm, to sort an array of unsigned integers in the descending order. Same format as previous question.

3. Implement the Selection sort algorithm, to sort an array of strings in the lexicographical order.
   Input format:
   The first line contains a positive integer n indicating the number of strings.
   The next line contains n space separated strings, where each string contains only lowercase letters [a-z]
   Output Format:
   The output contains n space strings, sorted lexicographically
   Sample input:
   9
   one picture is worth more than ten thousand words
   Sample output:
   is more one picture ten than thousand words worth

4. Implement the merge sort algorithm, to sort an array of positive integers in the ascending order. Same format as question 1.