

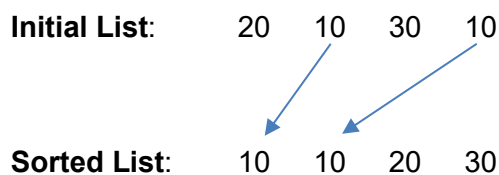
## Tutorial 08

### Advanced Sort – Quick Sort

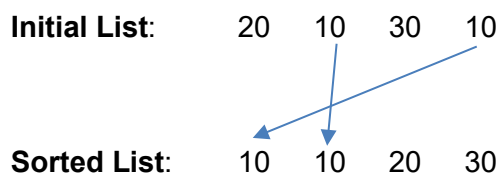
1. Using Quick Sort binary tree, trace the execution of quick sort with the following list of numbers, and using the first element of the list/sublists as the pivot value:
  - a. 4, 7, 1, 8, 3, 2, 6, 5 (in ascending order)
  - b. 5, 2, 7, 8, 1, 4, 6, 3 (in descending order)
2. A stable sorting algorithm maintains the relative order of records with equal keys. That is, a sorting algorithm is stable if whenever there are two records R and S with the same key and with R appearing before S in the original list, R will appear before S in the sorted list.

For example:

#### Stable Sort



#### Unstable Sort



Are the sorting algorithms we have discussed so far i.e. bubble sort, selection sort, insertion sort, merge sort and quick sort stable algorithm?

3. List one similarity and one difference between Merge Sort and Quick Sort.

**-- End of Tutorial --**