Lecture-07-CMSC351

Selection Sort:

- Sorts a list of elements on which there is a total order, such as integers or real numbers

- Identify the smallest integer in the array, then swap it with the index 0. Continue swapping the smallest integer from the remaining portions of the array to the front n-1 times (do not have to swap smallest integer when only one integer remains)

- Time complexity is theta(n^2) in best, worst, and average cases.

- The auxiliary space is O(1), which includes two indices, *min_index* and potentially a swap variable.

- SelectionSort is not stable, since an element of equal value could be moved when swapping the smallest element at *min_index* to index *i*.

- SelectionSort is in place.

- After *k* iterations, the first *k* elements of the list are sorted, while some elements at the end of the list may still be unsorted (this is the opposite of BubbleSort).