1. **Bubble Sort**

**In Bubble sort compare to next value and swap if the next value is smaller than the current value**

**Complexities**

**Worst Case and Average case time complexity**

If the array is in reverse order then this condition is the worst case and Its time complexity is O(n2).

**Best case time complexity**

If the array is already sorted then it is the best-case scenario and its time complexity is O(n)

**Auxiliary Space**: O(1)

1. **Selection Sort**

**Selection Sort find minimum value**

**Complexity Analysis of Selection Sort:**

**Time Complexity: The time complexity of Selection Sort is O(N2) as there are two nested loops:**

**One loop to select an element of Array one by one = O(N)**

**Another loop to compare that element with every other Array element = O(N)**

**Therefore overall complexity = O(N) \* O(N) = O(N\*N) = O(N2)**

**Auxiliary Space: O(1) as the only extra memory used is for temporary variables while swapping two values in Array. The selection sort never makes more than O(N) swaps and can be useful when the memory write is a costly operation.**