Insertion sort is a simple sorting algorithm that works similar to the way you sort playing cards in your hands. The array is virtually split into a sorted and an unsorted part. Values from the unsorted part are picked and placed at the correct position in the sorted part.

**Time Complexity:** O(n^2)

**Space Complexity:**O(1)

Quicksort is [a sorting algorithm](https://www.programiz.com/dsa/sorting-algorithm) based on the **divide and conquer approach** where

1. An array is divided into subarrays by selecting a **pivot element** (element selected from the array).  
     
   While dividing the array, the pivot element should be positioned in such a way that elements less than pivot are kept on the left side and elements greater than pivot are on the right side of the pivot.
2. The left and right subarrays are also divided using the same approach. This process continues until each subarray contains a single element.
3. At this point, elements are already sorted. Finally, elements are combined to form a sorted array.

**Time Complexity:** O(n\*log n)

**Space Complexity:**O(log n)

Github-link: https://github.com/X1Wello1X/ALGORITHMS-DAY-1