Assignment 2
Algorithms and Data Structures 1 (1DL210)
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Comparison

Insertion Sort algorithm is the simplest among the three. It uses a comparison method to sort an array. Insertion sort has best case linear complexity, and at worst case, it is quadratic. Insertion sort is best when the array size is small and suitable for partially sorted arrays.

Quicksort algorithm is the fastest sorting algorithm among the three. It is an in-place algorithm and uses the divide and conquer method for sorting, and it uses less number of swaps, and therefore it is the fastest. Quicksort is recursive and requires more memory.

Heapsort algorithm starts by building a heap and maxifying the heap, and it is a comparison method based sorting. Heapsort algorithm's memory usage is low compared to the other two algorithms, and it doesn't require an extra array during the sorting process.