

Time			
	Worst Case	Best Case	Average Case
Selection Sort	$O(n^2)$	$O(n^2)$	$O(n^2)$
Insertion Sort	$O(n^2)$	$O(n)$	$O(n^2)$
Merge Sort	$O(n \log n)$	$O(n \log n)$	$O(n \log n)$
Quick Sort	$O(n^2)$	$O(n \log n)$	$O(n \log n)$
Heap Sort	$O(n \log n)$	$O(n)$	$O(n \log n)$
Counting Sort	$O(n)$	$O(n)$	$O(n)$
Radix Sort	$O(n)$	$O(n)$	$O(n)$

QuickSort

```

QUICKSORT(A, p, r)
    if p < r
        q = PARTITION(A, p, r)
        QUICKSORT(A, p, q - 1)
        QUICKSORT(A, q + 1, r)
PARTITION(A, p, r)
    x = A[r]
    i = p - 1
    for (p ≤ j ≤ r - 1) do
        if (A[j] ≤ x) then
            i = i + 1
            SWAP (A[i], A[j])
        fi
    od
    SWAP (A[i + 1], A[r])
    return i + 1

```



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Not published yet.

Last updated 12th February, 2024.

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