

Codenza

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Sorting Algorithms

Array Sorting Algorithms:

$$O(1) < O(\log(n)) < O(n) < O(n \log(n)) < O(n^2) < O(2^n) < O(n!)$$

	Best	Average	Worst
Quick Sort	$\Omega(n \log(n))$	$\Theta(n \log(n))$	$O(n^2)$
Merge Sort	$\Omega(n \log(n))$	$\Theta(n \log(n))$	$O(n \log(n))$
Timsort	$\Omega(n)$	$\Theta(n \log(n))$	$O(n \log(n))$
Heap Sort	$\Omega(n \log(n))$	$\Theta(n \log(n))$	$O(n \log(n))$
Bubble Sort	$\Omega(n)$	$\Theta(n^2)$	$O(n^2)$
Insertion Sort	$\Omega(n)$	$\Theta(n^2)$	$O(n^2)$
Selection Sort	$\Omega(n^2)$	$\Theta(n^2)$	$O(n^2)$
Tree Sort	$\Omega(n \log(n))$	$\Theta(n \log(n))$	$O(n^2)$
Shell Sort	$\Omega(n \log(n))$	$\Theta(n (\log(n))^2)$	$O(n (\log(n))^2)$
Bucket Sort	$\Omega(n+k)$	$\Theta(n+k)$	$O(n^2)$
Radix Sort	$\Omega(nk)$	$\Theta(nk)$	$O(nk)$
Counting Sort	$\Omega(n+k)$	$\Theta(n+k)$	$O(n+k)$
Cubesort	$\Omega(n)$	$\Theta(n \log(n))$	$O(n \log(n))$
Smooth Sort	$\Omega(n)$	$\Theta(n \log(n))$	$O(n \log(n))$
Tournament Sort	-	$\Theta(n \log(n))$	$O(n \log(n))$
Stooge sort	-	-	$O(n^{\log 3 / \log 1.5})$
Gnome/Stupid sort	$\Omega(n)$	$\Theta(n^2)$	$O(n^2)$
Comb sort	$\Omega(n \log(n))$	$\Theta(n^2/p^2)$	$O(n^2)$
Odd – Even sort	$\Omega(n)$	-	$O(n^2)$