

SORTING & SEARCHING ALGORITHMS

TIME AND SPACE COMPLEXITIES CHEAT SHEET

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NOTES GALLERY (TELEGRAM)

Algorithm	Best Time Complexity	Average TIME Complexity	Worst Time Complexity	Worst Space Complexity
Linear Search	$O(1)$	$O(n)$	$O(n)$	$O(1)$
Binary Search	$O(1)$	$O(\log n)$	$O(\log n)$	$O(1)$
Bubble Sort	$O(n)$	$O(n^2)$	$O(n^2)$	$O(1)$
Selection Sort	$O(n^2)$	$O(n^2)$	$O(n^2)$	$O(1)$
Insertion Sort	$O(n)$	$O(n^2)$	$O(n^2)$	$O(1)$
Merge Sort	$O(n \log n)$	$O(n \log n)$	$O(n \log n)$	$O(n)$
Quick Sort	$O(n \log n)$	$O(n \log n)$	$O(n^2)$	$O(\log n)$
Bucket Sort	$O(n+k)$	$O(n+k)$	$O(n^2)$	$O(n)$
Heap Sort	$O(n \log n)$	$O(n \log n)$	$O(n \log n)$	$O(n)$
Radix Sort	$O(nk)$	$O(nk)$	$O(nk)$	$O(n+k)$
Tim Sort	$O(n)$	$O(n \log n)$	$O(n \log n)$	$O(n)$
Shell Sort	$O(n)$	$O((n \log(n))^2)$	$O((n \log(n))^2)$	$O(1)$