



Time complexities-1 - It will help you to learn and memorize the complexity of important topics which

Design and analysis of algorithm (Lovely Professional University)



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Name of algo	Worst complexity $O(n)$	Best complexity $\theta(n)$	Average complexity $\Omega(n)$
Sequential Search complexity	n	n	n
Brute force string matching	$m*n$	n	$m*n$
Rabin karp algorithm	$m(n-m+1)$	$m+n$	$m+n$
Naiva String-Matching Algorithm	$m*n$	$n-m+1$	$n-m+1$
Knuth-Morris-Pratt Algorithm	$m+n$	m	$m+n$
Merge sort	$n*\log n$	$n*\log n$	$n*\log n$
Quick Sort	n^2	$n*\log n$	$n*\log n$
Insertion Sort	n^2	n	n^2
Selection Sort	n^2	n^2	n^2
Bubble Sort	n^2	n	n^2
Heap Sort	$n*\log n$	$n*\log n$	$n*\log n$
Counting Sort	$n+k$	$n+k$	$n+k$
Radix Sort	$n*k$	$n*k$	$n*k$
Bucket sort	$n+k$	$n+k$	n^2
Binary Search	$\log n$	1	$\log n$
Depth-First Search	$ V ^2$	$ V + E $	$ V + E $
Breadth-First Search	$ V ^2$	$ V + E $	$ V + E $
Topological Sort	$ V ^2$	$ V + E $	$ V + E $
Strassen's Matrix Multiplication	$n^{\log_2(7)}$	$n^{\log_2(7)}$	$n^{\log_2(7)}$