

Custom Search

COURSES

HIRE WITH US



Time Complexities of all Sorting Algorithms

Following is a quick revision sheet that you may refer at last minute

Algorithm	Time Complexity		
	Best	Average	Worst
Selection Sort	$\Omega(n^2)$	$\theta(n^2)$	$O(n^2)$
Bubble Sort	$\Omega(n)$	$\theta(n^2)$	$O(n^2)$
Insertion Sort	$\Omega(n)$	$\theta(n^2)$	$O(n^2)$
Heap Sort	$\Omega(n \log(n))$	$\theta(n \log(n))$	$O(n \log(n))$
Quick Sort	$\Omega(n \log(n))$	$\theta(n \log(n))$	$O(n^2)$
Merge Sort	$\Omega(n \log(n))$	$\theta(n \log(n))$	$O(n \log(n))$
Bucket Sort	$\Omega(n+k)$	$\theta(n+k)$	$O(n^2)$
Radix Sort	$\Omega(nk)$	$\theta(nk)$	$O(nk)$

Also see:

- [Searching and Sorting articles](#)
- [Previous year GATE Questions on Sorting](#)

Please write comments if you find anything incorrect, or you want to share more information about the topic discussed above

Recommended Posts:

[Find the Minimum length Unsorted Subarray, sorting which makes the complete array sorted](#)

[Stability in sorting algorithms](#)

[Which sorting algorithm makes minimum number of memory writes?](#)

[Lower bound for comparison based sorting algorithms](#)

[Pancake sorting](#)

[A Pancake Sorting Problem](#)

[Sort n numbers in range from 0 to \$n^2 - 1\$ in linear time](#)

[Time complexity of insertion sort when there are \$O\(n\)\$ inversions?](#)

[Can QuickSort be implemented in \$O\(n \log n\)\$ worst case time complexity?](#)

[External Sorting](#)

Cartesian Tree Sorting

Sorting 2D Vector in C++ | Set 2 (In descending order by row and column)

Know Your Sorting Algorithm | Set 1 (Sorting Weapons used by Programming Languages)

Know Your Sorting Algorithm | Set 2 (Introsort- C++'s Sorting Weapon)

Sleep Sort – The King of Laziness / Sorting while Sleeping

Article Tags : [Sorting](#)

Practice Tags : [Sorting](#)



23

☐ To-do ☐ Done

1.8

Based on 36 vote(s)

[Feedback/ Suggest Improvement](#)

[Notes](#)

[Improve Article](#)

Please write to us at contribute@geeksforgeeks.org to report any issue with the above content.

Writing code in comment? Please use ide.geeksforgeeks.org, generate link and share the link here.

[Load Comments](#)



**Protect Your Organization's Office 365
and SharePoint/OneDrive Data**

Backup to enable a point-in-time
restore with an unlimited retention
period.

A computer science portal for geeks

5th Floor, A-118,
Sector-136, Noida, Uttar Pradesh - 201305
feedback@geeksforgeeks.org

COMPANY

[About Us](#)
[Careers](#)
[Privacy Policy](#)
[Contact Us](#)

PRACTICE

[Courses](#)
[Company-wise](#)
[Topic-wise](#)
[How to begin?](#)

LEARN

[Algorithms](#)
[Data Structures](#)
[Languages](#)
[CS Subjects](#)
[Video Tutorials](#)

CONTRIBUTE

[Write an Article](#)
[Write Interview Experience](#)
[Internships](#)
[Videos](#)