# Searching Algorithms

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**Searching Algorithms :**

1. [Linear Search](https://www.geeksforgeeks.org/linear-search/)
2. [Binary Search](https://www.geeksforgeeks.org/binary-search/)
3. [Jump Search](https://www.geeksforgeeks.org/jump-search/)
4. [Interpolation Search](https://www.geeksforgeeks.org/interpolation-search/)
5. [Exponential Search](https://www.geeksforgeeks.org/exponential-search/)
6. [Sublist Search (Search a linked list in another list)](https://www.geeksforgeeks.org/sublist-search-search-a-linked-list-in-another-list/)
7. [Fibonacci Search](https://www.geeksforgeeks.org/fibonacci-search/)
8. [The Ubiquitous Binary Search](https://www.geeksforgeeks.org/the-ubiquitous-binary-search-set-1/)
9. [Recursive program to linearly search an element in a given array](https://www.geeksforgeeks.org/recursive-c-program-linearly-search-element-given-array/)
10. [Recursive function to do substring search](https://www.geeksforgeeks.org/recursive-function-to-do-substring-search/)
11. [Unbounded Binary Search Example (Find the point where a monotonically increasing function becomes positive first time)](https://www.geeksforgeeks.org/find-the-point-where-a-function-becomes-negative/)

**Comparisons :**

1. [Linear Search vs Binary Search](https://www.geeksforgeeks.org/linear-search-vs-binary-search/)
2. [Interpolation search vs Binary search](https://www.geeksforgeeks.org/g-fact-84/)
3. [Why is Binary Search preferred over Ternary Search?](https://www.geeksforgeeks.org/binary-search-preferred-ternary-search/)

**Library Implementations of Searching Algorithms :**

1. [Binary Search functions in C++ STL (binary\_search, lower\_bound and upper\_bound)](https://www.geeksforgeeks.org/binary-search-functions-in-c-stl-binary_search-lower_bound-and-upper_bound/)
2. [Arrays.binarySearch() in Java with examples | Set 1](https://www.geeksforgeeks.org/arrays-binarysearch-java-examples-set-1/)
3. [Arrays.binarySearch() in Java with examples | Set 2 (Search in subarray)](https://www.geeksforgeeks.org/arrays-binarysearch-in-java-with-examples-set-2-search-in-subarray/)
4. [Collections.binarySearch() in Java with Examples](https://www.geeksforgeeks.org/collections-binarysearch-java-examples/)

**Coding Problems :**

1. [Find the Missing Number](https://www.geeksforgeeks.org/find-the-missing-number/)
2. [Search an element in a sorted and rotated array](https://www.geeksforgeeks.org/search-an-element-in-a-sorted-and-pivoted-array/)
3. [Median of two sorted arrays](https://www.geeksforgeeks.org/median-of-two-sorted-arrays/)
4. [Two elements whose sum is closest to zero](https://www.geeksforgeeks.org/two-elements-whose-sum-is-closest-to-zero/)
5. [Find the smallest and second smallest element in an array](https://www.geeksforgeeks.org/to-find-smallest-and-second-smallest-element-in-an-array/)
6. [Maximum and minimum of an array using minimum number of comparisons](https://www.geeksforgeeks.org/maximum-and-minimum-in-an-array/)
7. [k largest(or smallest) elements in an array | added Min Heap method](https://www.geeksforgeeks.org/k-largestor-smallest-elements-in-an-array/)
8. [Ceiling in a sorted array](https://www.geeksforgeeks.org/ceiling-in-a-sorted-array/)
9. [Count number of occurrences (or frequency) in a sorted array](https://www.geeksforgeeks.org/count-number-of-occurrences-or-frequency-in-a-sorted-array/)
10. [Find the repeating and the missing | Added 3 new methods](https://www.geeksforgeeks.org/find-a-repeating-and-a-missing-number/)
11. [Find a Fixed Point in a given array](https://www.geeksforgeeks.org/find-a-fixed-point-in-a-given-array/)
12. [Find the maximum element in an array which is first increasing and then decreasing](https://www.geeksforgeeks.org/find-the-maximum-element-in-an-array-which-is-first-increasing-and-then-decreasing/)
13. [Find a pair with the given difference](https://www.geeksforgeeks.org/find-a-pair-with-the-given-difference/)
14. [Find the k most frequent words from a file](https://www.geeksforgeeks.org/find-the-k-most-frequent-words-from-a-file/)
15. [Median of two sorted arrays of different sizes](https://www.geeksforgeeks.org/median-of-two-sorted-arrays-of-different-sizes/)
16. [Find a peak element](https://www.geeksforgeeks.org/find-a-peak-in-a-given-array/)
17. [Given an array of of size n and a number k, find all elements that appear more than n/k times](https://www.geeksforgeeks.org/given-an-array-of-of-size-n-finds-all-the-elements-that-appear-more-than-nk-times/)
18. [Find the minimum element in a sorted and rotated array](https://www.geeksforgeeks.org/find-minimum-element-in-a-sorted-and-rotated-array/)
19. [Kth smallest element in a row-wise and column-wise sorted 2D array | Set 1](https://www.geeksforgeeks.org/kth-smallest-element-in-a-row-wise-and-column-wise-sorted-2d-array-set-1/)
20. [Find k closest elements to a given value](https://www.geeksforgeeks.org/find-k-closest-elements-given-value/)
21. [Search in an almost sorted array](https://www.geeksforgeeks.org/search-almost-sorted-array/)
22. [A Problem in Many Binary Search Implementations](https://www.geeksforgeeks.org/problem-binary-search-implementations/)
23. [Find the first repeating element in an array of integers](https://www.geeksforgeeks.org/find-first-repeating-element-array-integers/)
24. [Find common elements in three sorted arrays](https://www.geeksforgeeks.org/find-common-elements-three-sorted-arrays/)
25. [Count 1’s in a sorted binary array](https://www.geeksforgeeks.org/count-1s-sorted-binary-array/)
26. [Given a sorted array and a number x, find the pair in array whose sum is closest to x](https://www.geeksforgeeks.org/given-sorted-array-number-x-find-pair-array-whose-sum-closest-x/)
27. [Find the closest pair from two sorted arrays](https://www.geeksforgeeks.org/given-two-sorted-arrays-number-x-find-pair-whose-sum-closest-x/)
28. [K’th Smallest/Largest Element in Unsorted Array | Set 1](https://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array/)
29. [K’th Smallest/Largest Element in Unsorted Array | Set 2 (Expected Linear Time)](https://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array-set-2-expected-linear-time-2/)
30. [K’th Smallest/Largest Element in Unsorted Array | Set 3 (Worst Case Linear Time)](https://www.geeksforgeeks.org/kth-smallestlargest-element-unsorted-array-set-3-worst-case-linear-time/)
31. [Find position of an element in a sorted array of infinite numbers](https://www.geeksforgeeks.org/find-position-element-sorted-array-infinite-numbers/)
32. [Given a sorted and rotated array, find if there is a pair with a given sum](https://www.geeksforgeeks.org/given-a-sorted-and-rotated-array-find-if-there-is-a-pair-with-a-given-sum/)
33. [Find the largest pair sum in an unsorted array](https://www.geeksforgeeks.org/find-the-largest-pair-sum-in-an-unsorted-array/)
34. [Find the nearest smaller numbers on left side in an array](https://www.geeksforgeeks.org/find-the-nearest-smaller-numbers-on-left-side-in-an-array/)
35. [K’th largest element in a stream](https://www.geeksforgeeks.org/kth-largest-element-in-a-stream/)
36. [Find a pair with maximum product in array of Integers](https://www.geeksforgeeks.org/return-a-pair-with-maximum-product-in-array-of-integers/)
37. [Find the element that appears once in a sorted array](https://www.geeksforgeeks.org/find-the-element-that-appears-once-in-a-sorted-array/)
38. [Find the odd appearing element in O(Log n) time](https://www.geeksforgeeks.org/find-the-element-that-odd-number-of-times-in-olog-n-time/)
39. [Find the largest three elements in an array](https://www.geeksforgeeks.org/find-the-largest-three-elements-in-an-array/)
40. [Search an element in an array where difference between adjacent elements is 1](https://www.geeksforgeeks.org/search-an-element-in-an-array-where-difference-between-adjacent-elements-is-1/)
41. [Find three closest elements from given three sorted arrays](https://www.geeksforgeeks.org/find-three-closest-elements-from-given-three-sorted-arrays/)
42. [Find the element before which all the elements are smaller than it, and after which all are greater](https://www.geeksforgeeks.org/find-the-element-before-which-all-the-elements-are-smaller-than-it-and-after-which-all-are-greater-than-it/)
43. [Binary Search for Rational Numbers without using floating point arithmetic](https://www.geeksforgeeks.org/binary-search-for-rational-numbers-without-using-floating-point-arithmetic/)
44. [Floor in a Sorted Array](https://www.geeksforgeeks.org/floor-in-a-sorted-array/)
45. [Third largest element in an array of distinct elements](https://www.geeksforgeeks.org/third-largest-element-array-distinct-elements/)
46. [Second minimum element using minimum comparisons](https://www.geeksforgeeks.org/second-minimum-element-using-minimum-comparisons/)
47. [Queries for greater than and not less than](https://www.geeksforgeeks.org/queries-greater-not-less/)
48. [Efficient search in an array where difference between adjacent is 1](https://www.geeksforgeeks.org/efficient-search-in-an-array-where-difference-between-adjacent-is-1/)
49. [Print all possible sums of consecutive numbers with sum N](https://www.geeksforgeeks.org/print-possible-sums-consecutive-numbers-sum-n/)
50. [Minimum time required to produce m items](https://www.geeksforgeeks.org/minimum-time-required-produce-m-items/)
51. [Make all array elements equal with minimum cost](https://www.geeksforgeeks.org/make-array-elements-equal-minimum-cost/)
52. [Check if there exist two elements in an array whose sum is equal to the sum of rest of the array](https://www.geeksforgeeks.org/check-exist-two-elements-array-whose-sum-equal-sum-rest-array/)
53. [Check if reversing a sub array make the array sorted](https://www.geeksforgeeks.org/check-reversing-sub-array-make-array-sorted/)
54. [Find all triplets with zero sum](https://www.geeksforgeeks.org/find-triplets-array-whose-sum-equal-zero/)
55. [Search, insert and delete in an unsorted array](https://www.geeksforgeeks.org/search-insert-and-delete-in-an-unsorted-array/)
56. [Search, insert and delete in a sorted array](https://www.geeksforgeeks.org/search-insert-and-delete-in-a-sorted-array/)
57. [Move all occurrences of an element to end in a linked list](https://www.geeksforgeeks.org/move-occurrences-element-end-linked-list/)
58. [Search in an array of strings where non-empty strings are sorted](https://www.geeksforgeeks.org/search-in-an-array-of-strings-where-non-empty-strings-are-sorted/)
59. [Smallest Difference Triplet from Three arrays](https://www.geeksforgeeks.org/smallest-difference-triplet-from-three-arrays/)
60. [Best First Search (Informed Search)](https://www.geeksforgeeks.org/best-first-search-informed-search/)