Searching Algorithms - GeeksforGeeks

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Courses Tutorials Practice Jobs DSA Tutorial Interview Questions Quizzes Must Do Advanced DSA System Design Aptitude Puzzles Interview Corner DSA Python Technical Scripter 2026 Explore DSA Fundamentals Logic Building Problems Analysis of Algorithms Data Structures Array Data Structure String in Data Structure Hashing in Data Structure Linked List Data Structure Stack Data Structure Queue Data Structure Tree Data Structure Graph Data Structure Trie Data Structure Algorithms Searching Algorithms Sorting Algorithms Introduction to Recursion Greedy Algorithms Tutorial Graph Algorithms Dynamic Programming or DP Bitwise Algorithms Advanced Segment Tree Binary Indexed Tree or Fenwick Tree Square Root (Sqrt) Decomposition Algorithm Binary Lifting Geometry Interview Preparation Interview Corner GfG160 Practice Problem GeeksforGeeks Practice - Leading Online Coding Platform Problem of The Day - Develop the Habit of Coding DSA Course 90% Refund Searching Algorithms Last Updated : 28 Jan, 2026 Searching algorithms are essential tools in computer science used to locate specific items within a collection of data. In this tutorial, we are mainly going to focus upon searching in an array. When we search an item in an array, there are two most common algorithms used based on the type of input array. Linear Search : It is used for an unsorted array. It mainly does one by one comparison of the item to be search with array elements. It takes linear or O(n) Time. Binary Search : It is used for a sorted array. It mainly compares the array's middle element first and if the middle element is same as input, then it returns. Otherwise it searches in either left half or right half based on comparison result (Whether the mid element is smaller or greater). This algorithm is faster than linear search and takes O(Log n) time. Basics Introduction Two Pointers Technique Binary Search Implementations binary_search, lower_bound and upper_bound in C++ Arrays.binarySearch() in Java Arrays.binarySearch() in Java for Search in subarray Collections.binarySearch() in Java Bisect in Python List.BinarySearch in C# Easy Problems Largest in an Array Second Largest in an array Largest three in an array Missing Number First Repeating Missing and Repeating Count 1’s in a sorted binary array k largest(or smallest) Elements Kth smallest in row and column-wise sorted Common elements in 3 sorted Ceiling & Floor in a Sorted Max in a Bitonic More than n/k times Appearing Pair Sum Closest to Target Medium Problems Triplets with zero sum Partition Point Largest pair sum K’th Smallest in Unsorted Array Search , Min & Max in a Sorted & Rotated Peak element Fixed Point K Most Frequent K Closest Closest Pair from two sorted Binary Search for Rationals Missing in AP Hard Problems Median of two sorted of same sizes Median of two sorted of different sizes Search in an almost sorted Search in a sorted infinite Pair sum in a sorted and rotated K’th Smallest/Largest in Unsorted K’th largest in a stream More Searching Algorithms Sentinel Linear Search Meta Binary Search Ternary Search Jump Search Interpolation Search Exponential Search Fibonacci Search Best First Search (Informed Search) Quick Links: ‘Practice Problems’ on Searching Searching Interview Questions Quiz on Searching DSA Tutorial Comment Article Tags: Article Tags: Searching DSA