# Divide and Conquer

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* [Standard Algorithms](https://www.geeksforgeeks.org/divide-and-conquer/#standard)
* [Binary Search Based](https://www.geeksforgeeks.org/divide-and-conquer/#binary-search)
* [Misc](https://www.geeksforgeeks.org/divide-and-conquer/#sorting)
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**Standard Algorithms :**

1. [Intoduction to Divide and Conquer](https://www.geeksforgeeks.org/divide-and-conquer-introduction/)
2. [Binary Search](https://www.geeksforgeeks.org/binary-search/)
3. [Randomized Binary Search Algorithm](https://www.geeksforgeeks.org/randomized-binary-search-algorithm/)
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8. [Calculate pow(x, n)](https://www.geeksforgeeks.org/write-a-c-program-to-calculate-powxn/)
9. [Closest Pair of Points](https://www.geeksforgeeks.org/closest-pair-of-points/)
10. [Closest Pair of Points | O(nlogn) Implementation](https://www.geeksforgeeks.org/closest-pair-of-points-onlogn-implementation/)
11. [Multiply two polynomials](https://www.geeksforgeeks.org/multiply-two-polynomials-2/)
12. [Strassen’s Matrix Multiplication](https://www.geeksforgeeks.org/strassens-matrix-multiplication/)
13. [The Skyline Problem](https://www.geeksforgeeks.org/divide-and-conquer-set-7-the-skyline-problem/)
14. [Maximum Subarray Sum](https://www.geeksforgeeks.org/divide-and-conquer-maximum-sum-subarray/)
15. [Longest Common Prefix](https://www.geeksforgeeks.org/longest-common-prefix-set-3-divide-and-conquer/)
16. [Search in a Row-wise and Column-wise Sorted 2D Array](https://www.geeksforgeeks.org/divide-conquer-set-6-search-row-wise-column-wise-sorted-2d-array/)
17. [Karatsuba algorithm for fast multiplication](https://www.geeksforgeeks.org/divide-and-conquer-set-2-karatsuba-algorithm-for-fast-multiplication/)
18. [Convex Hull (Simple Divide and Conquer Algorithm)](https://www.geeksforgeeks.org/convex-hull-simple-divide-conquer-algorithm/)
19. [Quickhull Algorithm for Convex Hull](https://www.geeksforgeeks.org/quickhull-algorithm-convex-hull/)
20. [Distinct elements in subarray using Mo’s Algorithm](https://www.geeksforgeeks.org/distinct-elements-subarray-using-mos-algorithm/)

**Binary Search Based :**

1. [Median of two sorted arrays](https://www.geeksforgeeks.org/median-of-two-sorted-arrays/)
2. [Median of two sorted arrays of different sizes](https://www.geeksforgeeks.org/median-of-two-sorted-arrays-of-different-sizes/)
3. [Floor in a Sorted Array](https://www.geeksforgeeks.org/floor-in-a-sorted-array/)
4. [Find closest number in array](https://www.geeksforgeeks.org/find-closest-number-array/)
5. [Find a Fixed Point in a given arrray](https://www.geeksforgeeks.org/find-a-fixed-point-in-a-given-array/)
6. [Find a peak element in a given array](https://www.geeksforgeeks.org/find-a-peak-in-a-given-array/)
7. [Check for Majority Element in a sorted array](https://www.geeksforgeeks.org/check-for-majority-element-in-a-sorted-array/)
8. [K-th Element of Two Sorted Arrays](https://www.geeksforgeeks.org/k-th-element-two-sorted-arrays/)
9. [Find the Rotation Count in Rotated Sorted array](https://www.geeksforgeeks.org/find-rotation-count-rotated-sorted-array/)
10. [Find the minimum element in a sorted and rotated array](https://www.geeksforgeeks.org/find-minimum-element-in-a-sorted-and-rotated-array/)
11. [Find the only repeating element in a sorted array of size n](https://www.geeksforgeeks.org/find-repeating-element-sorted-array-size-n/)
12. [Find index of an extra element present in one sorted array](https://www.geeksforgeeks.org/find-index-of-an-extra-element-present-in-one-sorted-array/)
13. [Find the element that appears once in a sorted array](https://www.geeksforgeeks.org/find-the-element-that-appears-once-in-a-sorted-array/)
14. [Count number of occurrences (or frequency) in a sorted array](https://www.geeksforgeeks.org/count-number-of-occurrences-or-frequency-in-a-sorted-array/)
15. [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/)
16. [Decrease and Conquer](https://www.geeksforgeeks.org/decrease-and-conquer/)
17. [Binary Search using pthread](https://www.geeksforgeeks.org/binary-search-using-pthread/)
18. [Binary Search on Singly Linked List](https://www.geeksforgeeks.org/binary-search-on-singly-linked-list/)
19. [The painter’s partition problem](https://www.geeksforgeeks.org/painters-partition-problem/)
20. [The painter’s partition problem | Set 2](https://www.geeksforgeeks.org/painters-partition-problem-set-2/)
21. [Find the number of zeroes](https://www.geeksforgeeks.org/find-number-zeroes/)
22. [Numbers whose factorials end with n zeros](https://www.geeksforgeeks.org/numbers-whose-factorials-end-with-n-zeros/)
23. [Find the missing number in Arithmetic Progression](https://www.geeksforgeeks.org/find-missing-number-arithmetic-progression/)
24. [Number of days after which tank will become empty](https://www.geeksforgeeks.org/number-days-tank-will-become-empty/)
25. [Find bitonic point in given bitonic sequence](https://www.geeksforgeeks.org/find-bitonic-point-given-bitonic-sequence/)
26. [Find the point where a monotonically increasing function becomes positive first time](https://www.geeksforgeeks.org/find-the-point-where-a-function-becomes-negative/)

**Misc :**

1. [Iterative Tower of Hanoi](https://www.geeksforgeeks.org/iterative-tower-of-hanoi/)
2. [Program for Tower of Hanoi](https://www.geeksforgeeks.org/c-program-for-tower-of-hanoi/)
3. [Square root of an integer](https://www.geeksforgeeks.org/square-root-of-an-integer/)
4. [Find cubic root of a number](https://www.geeksforgeeks.org/find-cubic-root-of-a-number/)
5. [Allocate minimum number of pages](https://www.geeksforgeeks.org/allocate-minimum-number-pages/)
6. [Collect all coins in minimum number of steps](https://www.geeksforgeeks.org/collect-coins-minimum-number-steps/)
7. [Modular Exponentiation (Power in Modular Arithmetic)](https://www.geeksforgeeks.org/modular-exponentiation-power-in-modular-arithmetic/)
8. [Find a peak element in a 2D array](https://www.geeksforgeeks.org/find-peak-element-2d-array/)
9. [Program to count number of set bits in an (big) array](https://www.geeksforgeeks.org/program-to-count-number-of-set-bits-in-an-big-array/)
10. [Maximum and minimum of an array using minimum number of comparisons](https://www.geeksforgeeks.org/maximum-and-minimum-in-an-array/)
11. [Find frequency of each element in a limited range array in less than O(n) time](https://www.geeksforgeeks.org/find-frequency-of-each-element-in-a-limited-range-array-in-less-than-on-time/)
12. [Minimum difference between adjacent elements of array which contain elements from each row of a matrix](https://www.geeksforgeeks.org/minimum-difference-adjacent-elements-array-contain-elements-row-matrix/)
13. [Search element in a sorted matrix](https://www.geeksforgeeks.org/search-element-sorted-matrix/)
14. [Easy way to remember Strassen’s Matrix Equation](https://www.geeksforgeeks.org/easy-way-remember-strassens-matrix-equation/)
15. [Largest Rectangular Area in a Histogram | Set 1](https://www.geeksforgeeks.org/largest-rectangular-area-in-a-histogram-set-1/)
16. [Advanced master theorem for divide and conquer recurrences](https://www.geeksforgeeks.org/advanced-master-theorem-for-divide-and-conquer-recurrences/)
17. [Place k elements such that minimum distance is maximized](https://www.geeksforgeeks.org/place-k-elements-such-that-minimum-distance-is-maximized/)
18. [Iterative Fast Fourier Transformation for polynomial multiplication](https://www.geeksforgeeks.org/iterative-fast-fourier-transformation-polynomial-multiplication/)
19. [Write you own Power without using multiplication(\*) and division(/) operators](https://www.geeksforgeeks.org/write-you-own-power-without-using-multiplication-and-division/)
20. [Sequences of given length where every element is more than or equal to twice of previous](https://www.geeksforgeeks.org/sequences-given-length-every-element-equal-twice-previous/)
21. [Shuffle 2n integers in format {a1, b1, a2, b2, a3, b3, ……, an, bn} without using extra space](https://www.geeksforgeeks.org/shuffle-2n-integers-format-a1-b1-a2-b2-a3-b3-bn-without-using-extra-space/)