# Greedy Algorithms

### [Recent Articles on Greedy Algorithms !](https://www.geeksforgeeks.org/category/algorithm/greedy/)

* [Standard Greedy Algorithms](https://www.geeksforgeeks.org/greedy-algorithms/#standardGreedyAlgorithms)
* [Greedy Algorithms in Graphs](https://www.geeksforgeeks.org/greedy-algorithms/#greedyAlgorithmsInGraphs)
* [Greedy Algorithms in Operating Systems](https://www.geeksforgeeks.org/greedy-algorithms/#greedyAlgorithmsInOperatingSystems)
* [Greedy Algorithms in Arrays](https://www.geeksforgeeks.org/greedy-algorithms/#greedyAlgorithmsInArrays)
* [Approximate Greedy Algorithms for NP Complete Problems](https://www.geeksforgeeks.org/greedy-algorithms/#approximateGreedyAlgorthms)
* [Greedy Algorithms for Special Cases of DP problems](https://www.geeksforgeeks.org/greedy-algorithms/#greedyAlgorithmsforSpecialCases)
* [Misc](https://www.geeksforgeeks.org/greedy-algorithms/#moreGreedyProblems)
* [Quick Links](https://www.geeksforgeeks.org/greedy-algorithms/#quickLinks)

**Standard Greedy Algorithms :**

1. [Activity Selection Problem](https://www.geeksforgeeks.org/greedy-algorithms-set-1-activity-selection-problem/)
2. [Egyptian Fraction](https://www.geeksforgeeks.org/greedy-algorithm-egyptian-fraction/)
3. [Job Sequencing Problem](https://www.geeksforgeeks.org/job-sequencing-problem-set-1-greedy-algorithm/)
4. [Job Sequencing Problem (Using Disjoint Set)](https://www.geeksforgeeks.org/job-sequencing-using-disjoint-set-union/)
5. [Job Sequencing Problem – Loss Minimization](https://www.geeksforgeeks.org/job-sequencing-problem-loss-minimization/)
6. [Job Selection Problem – Loss Minimization Strategy | Set 2](https://www.geeksforgeeks.org/job-selection-problem-loss-minimization-strategy-set-2/)
7. [Huffman Coding](https://www.geeksforgeeks.org/greedy-algorithms-set-3-huffman-coding/)
8. [Efficient Huffman Coding for sorted input](https://www.geeksforgeeks.org/greedy-algorithms-set-3-huffman-coding-set-2/)
9. [Huffman Decoding](https://www.geeksforgeeks.org/huffman-decoding/)
10. [Water Connection Problem](https://www.geeksforgeeks.org/water-connection-problem/)
11. [Policemen catch thieves](https://www.geeksforgeeks.org/policemen-catch-thieves/)
12. [Minimum Swaps for Bracket Balancing](https://www.geeksforgeeks.org/minimum-swaps-bracket-balancing/)
13. [Fitting Shelves Problem](https://www.geeksforgeeks.org/fitting-shelves-problem/)
14. [Assign Mice to Holes](https://www.geeksforgeeks.org/assign-mice-holes/)

**Greedy Algorithms in Graphs :**

1. [Kruskal’s Minimum Spanning Tree](https://www.geeksforgeeks.org/greedy-algorithms-set-2-kruskals-minimum-spanning-tree-mst/)
2. [Prim’s Minimum Spanning Tree](https://www.geeksforgeeks.org/greedy-algorithms-set-5-prims-minimum-spanning-tree-mst-2/)
3. [Boruvka’s Minimum Spanning Tree](https://www.geeksforgeeks.org/greedy-algorithms-set-9-boruvkas-algorithm/)
4. [Reverse delete algorithm for MST](https://www.geeksforgeeks.org/reverse-delete-algorithm-minimum-spanning-tree/)
5. [Problem Solving for Minimum Spanning Trees (Kruskal’s and Prim’s)](https://www.geeksforgeeks.org/problem-solving-minimum-spanning-trees-kruskals-prims/)
6. [Dijkastra’s Shortest Path Algorithm](https://www.geeksforgeeks.org/greedy-algorithms-set-6-dijkstras-shortest-path-algorithm/)
7. [Dial’s Algorithm](https://www.geeksforgeeks.org/dials-algorithm-optimized-dijkstra-for-small-range-weights/)
8. [Dijkstra’s Algorithm for Adjacency List Representation](https://www.geeksforgeeks.org/greedy-algorithms-set-7-dijkstras-algorithm-for-adjacency-list-representation/)
9. [Prim’s MST for adjacency list representation](https://www.geeksforgeeks.org/greedy-algorithms-set-5-prims-mst-for-adjacency-list-representation/)
10. [Correctness of Greedy Algorithms](https://www.geeksforgeeks.org/correctness-greedy-algorithms/)
11. [Minimum cost to connect all cities](https://www.geeksforgeeks.org/minimum-cost-connect-cities/)
12. [Max Flow Problem Introduction](https://www.geeksforgeeks.org/max-flow-problem-introduction/)
13. [Number of single cycle components in an undirected graph](https://www.geeksforgeeks.org/number-of-simple-cyclic-components-in-an-undirected-graph/)

**Greedy Algorithms in Arrays :**

1. [Minimum product subset of an array](https://www.geeksforgeeks.org/minimum-product-subset-array/)
2. [Maximum product subset of an array](https://www.geeksforgeeks.org/maximum-product-subset-array/)
3. [Maximize array sum after k-negations | Set 1](https://www.geeksforgeeks.org/maximize-array-sun-after-k-negation-operations/)
4. [Maximize array sum after k-negations | Set 2](https://www.geeksforgeeks.org/maximize-array-sum-k-negations-set-2/)
5. [Maximize the sum of arr[i]\*i](https://www.geeksforgeeks.org/maximize-sum-arrii/)
6. [Maximum sum of increasing order elements from n arrays](https://www.geeksforgeeks.org/maximum-sum-increasing-order-elements-n-arrays/)
7. [Maximum sum of absolute difference of an array](https://www.geeksforgeeks.org/maximum-sum-absolute-difference-array/)
8. [Maximize sum of consecutive differences in a circular array](https://www.geeksforgeeks.org/maximize-sum-consecutive-differences-circular-array/)
9. [Maximum height pyramid from the given array of objects](https://www.geeksforgeeks.org/find-maximum-height-pyramid-from-the-given-array-of-objects/)
10. [Partition into two subarrays of lengths k and (N – k) such that the difference of sums is maximum](https://www.geeksforgeeks.org/partition-into-two-subarrays-of-lengths-k-and-n-k-such-that-the-difference-of-sums-is-maximum/)
11. [Minimum sum of product of two arrays](https://www.geeksforgeeks.org/minimum-sum-product-two-arrays/)
12. [Minimum sum by choosing minimum of pairs from array](https://www.geeksforgeeks.org/minimum-sum-choosing-minimum-pairs-array/)
13. [Minimum sum of absolute difference of pairs of two arrays](https://www.geeksforgeeks.org/minimum-sum-absolute-difference-pairs-two-arrays/)
14. [Minimum operations to make GCD of array a multiple of k](https://www.geeksforgeeks.org/minimum-operations-make-gcd-array-multiple-k/)
15. [Minimum sum of absolute difference of pairs of two arrays](https://www.geeksforgeeks.org/minimum-sum-absolute-difference-pairs-two-arrays/)
16. [Minimum sum of two numbers formed from digits of an array](https://www.geeksforgeeks.org/minimum-sum-two-numbers-formed-digits-array-2/)
17. [Minimum increment/decrement to make array non-Increasing](https://www.geeksforgeeks.org/minimum-incrementdecrement-to-make-array-non-increasing/)
18. [Making elements of two arrays same with minimum increment/decrement](https://www.geeksforgeeks.org/making-elements-of-two-arrays-same-with-minimum-incrementdecrement/)
19. [Minimize sum of product of two arrays with permutation allowed](https://www.geeksforgeeks.org/minimize-sum-product-two-arrays%20permutation/)
20. [Sorting array with reverse around middle](https://www.geeksforgeeks.org/sorting-array-reverse-around-middle/)
21. [Sum of Areas of Rectangles possible for an array](https://www.geeksforgeeks.org/sum-area-rectangles-possible-array/)
22. [Array element moved by k using single moves](https://www.geeksforgeeks.org/array-element-moved-k-using-single-moves/)
23. [Find if k bookings possible with given arrival and departure times](https://www.geeksforgeeks.org/find-k-bookings-possible-given-arrival-departure-times/)
24. [Lexicographically smallest array after at-most K consecutive swaps](https://www.geeksforgeeks.org/lexicographically-smallest-array-k-consecutive-swaps/)
25. [Largest lexicographic array with at-most K consecutive swaps](https://www.geeksforgeeks.org/largest-lexicographic-array-with-at-most-k-consecutive-swaps/)

**Greedy Algorithms in Operating Systems :**

1. [First Fit algorithm in Memory Management](https://www.geeksforgeeks.org/program-first-fit-algorithm-memory-management/)
2. [Best Fit algorithm in Memory Management](https://www.geeksforgeeks.org/program-best-fit-algorithm-memory-management/)
3. [Worst Fit algorithm in Memory Management](https://www.geeksforgeeks.org/program-worst-fit-algorithm-memory-management/)
4. [Operating System | Program for Next Fit algorithm in Memory Management](https://www.geeksforgeeks.org/program-next-fit-algorithm-memory-management/)
5. [Shortest Job First Scheduling](https://www.geeksforgeeks.org/program-shortest-job-first-sjf-scheduling-set-1-non-preemptive/)
6. [Program for Shortest Job First (SJF) scheduling | Set 2 (Preemptive)](https://www.geeksforgeeks.org/program-shortest-job-first-scheduling-set-2srtf-make-changesdoneplease-review/)
7. [Schedule jobs so that each server gets equal load](https://www.geeksforgeeks.org/schedule-jobs-server-gets-equal-load/)
8. [Job Scheduling with two jobs allowed at a time](https://www.geeksforgeeks.org/job-scheduling-two-jobs-allowed-time/)
9. [Scheduling priority tasks in limited time and minimizing loss](https://www.geeksforgeeks.org/scheduling-priority-tasks-limited-time-minimizing-loss/)
10. [Program for Optimal Page Replacement Algorithm](https://www.geeksforgeeks.org/program-optimal-page-replacement-algorithm/)
11. [Program for Page Replacement Algorithms | Set 1 ( LRU)](https://www.geeksforgeeks.org/program-page-replacement-algorithms-set-1-lru/)
12. [Program for Page Replacement Algorithms | Set 2 (FIFO)](https://www.geeksforgeeks.org/program-page-replacement-algorithms-set-2-fifo/)

**Approximate Greedy Algorithms for NP Complete Problems :**

1. [Set cover problem](https://www.geeksforgeeks.org/set-cover-problem-set-1-greedy-approximate-algorithm/)
2. [Bin Packing Problem](https://www.geeksforgeeks.org/bin-packing-problem-minimize-number-of-used-bins/)
3. [Graph Coloring](https://www.geeksforgeeks.org/graph-coloring-set-2-greedy-algorithm/)
4. [K-centers problem](https://www.geeksforgeeks.org/k-centers-problem-set-1-greedy-approximate-algorithm/)
5. [Shortest superstring problem](https://www.geeksforgeeks.org/shortest-superstring-problem/)
6. [Travelling Salesman Problem | Set 1 (Naive and Dynamic Programming)](https://www.geeksforgeeks.org/travelling-salesman-problem-set-1/)
7. [Traveling Salesman Problem | Set 2 (Approximate using MST)](https://www.geeksforgeeks.org/travelling-salesman-problem-set-2-approximate-using-mst/)

**Greedy Algorithms for Special Cases of DP problems :**

1. [Fractional Knapsack Problem](https://www.geeksforgeeks.org/fractional-knapsack-problem/)
2. [Minimum number of coins required](https://www.geeksforgeeks.org/greedy-algorithm-to-find-minimum-number-of-coins/)

**Misc :**

1. [Split n into maximum composite numbers](https://www.geeksforgeeks.org/split-n-maximum-composite-numbers/)
2. [Maximum trains for which stoppage can be provided](https://www.geeksforgeeks.org/maximum-trains-stoppage-can-provided/)
3. [Buy Maximum Stocks if i stocks can be bought on i-th day](https://www.geeksforgeeks.org/buy-maximum-stocks-stocks-can-bought-th-day/)
4. [Find the minimum and maximum amount to buy all N candies](https://www.geeksforgeeks.org/find-minimum-maximum-amount-buy-n-candies/)
5. [Maximum sum possible equal to sum of three stacks](https://www.geeksforgeeks.org/find-maximum-sum-possible-equal-sum-three-stacks/)
6. [Maximum elements that can be made equal with k updates](https://www.geeksforgeeks.org/maximum-elements-can-made-equal-k-updates/)
7. [Divide cuboid into cubes such that sum of volumes is maximum](https://www.geeksforgeeks.org/divide-cuboid-cubes-sum-volumes-maximum/)
8. [Maximum number of customers that can be satisfied with given quantity](https://www.geeksforgeeks.org/maximum-number-customers-can-satisfied-given-quantity/)
9. [Minimum Fibonacci terms with sum equal to K](https://www.geeksforgeeks.org/minimum-fibonacci-terms-sum-equal-k/)
10. [Divide 1 to n into two groups with minimum sum difference](https://www.geeksforgeeks.org/divide-1-n-two-groups-minimum-sum-difference/)
11. [Minimize cash flow among friends](https://www.geeksforgeeks.org/minimize-cash-flow-among-given-set-friends-borrowed-money/)
12. [Minimum rotations to unlock a circular lock](https://www.geeksforgeeks.org/minimum-rotations-unlock-circular-lock/)
13. [Paper cut into minimum number of squares](https://www.geeksforgeeks.org/paper-cut-minimum-number-squares/)
14. [Minimum difference between groups of size two](https://www.geeksforgeeks.org/minimum-difference-between-groups-of-size-two/)
15. [Minimum rooms for m events of n batches with given schedule](https://www.geeksforgeeks.org/minimum-rooms-for-m-events-of-n-batches-with-given-schedule/)
16. [Connect n ropes with minimum cost](https://www.geeksforgeeks.org/connect-n-ropes-minimum-cost/)
17. [Minimum Cost to cut a board into squares](https://www.geeksforgeeks.org/minimum-cost-cut-board-squares/)
18. [Minimum cost to process m tasks where switching costs](https://www.geeksforgeeks.org/minimum-cost-to-process-m-tasks-where-switching-costs/)
19. [Minimum cost to make array size 1 by removing larger of pairs](https://www.geeksforgeeks.org/minimum-cost-make-array-size-1-removing-larger-pairs/)
20. [Minimum cost for acquiring all coins with k extra coins allowed with every coin](https://www.geeksforgeeks.org/minimum-cost-for-acquiring-all-coins-with-k-extra-coins-allowed-with-every-coin/)
21. [Minimum time to finish all jobs with given constraints](https://www.geeksforgeeks.org/find-minimum-time-to-finish-all-jobs-with-given-constraints/)
22. [Minimum number of Platforms required for a railway/bus station](https://www.geeksforgeeks.org/minimum-number-platforms-required-railwaybus-station/)
23. [Minimize the maximum difference between the heights of towers](https://www.geeksforgeeks.org/minimize-the-maximum-difference-between-the-heights/)
24. [Minimum increment by k operations to make all elements equal](https://www.geeksforgeeks.org/minimum-increment-k-operations-make-elements-equal/)
25. [Minimum edges to reverse to make path from a source to a destination](https://www.geeksforgeeks.org/minimum-edges-reverse-make-path-source-destination/)
26. [Find minimum number of currency notes and values that sum to given amount](https://www.geeksforgeeks.org/find-number-currency-notes-sum-upto-given-amount/)
27. [Minimum initial vertices to traverse whole matrix with given conditions](https://www.geeksforgeeks.org/minimum-initial-vertices-traverse-whole-matrix-given-conditions/)
28. [Find the Largest Cube formed by Deleting minimum Digits from a number](https://www.geeksforgeeks.org/find-largest-cube-formed-deleting-minimum-digits-number/)
29. [Check if it is possible to survive on Island](https://www.geeksforgeeks.org/survival/)
30. [Largest palindromic number by permuting digits](https://www.geeksforgeeks.org/largest-palindromic-number-permuting-digits/)
31. [Smallest number with sum of digits as N and divisible by 10^N](https://www.geeksforgeeks.org/smallest-number-sum-digits-n-divisible-10n/)
32. [Find Smallest number with given number of digits and digits sum](https://www.geeksforgeeks.org/find-smallest-number-with-given-number-of-digits-and-digit-sum/)
33. [Rearrange characters in a string such that no two adjacent are same](https://www.geeksforgeeks.org/rearrange-characters-string-no-two-adjacent/)
34. [Rearrange a string so that all same characters become d distance away](https://www.geeksforgeeks.org/rearrange-a-string-so-that-all-same-characters-become-at-least-d-distance-away/)
35. [Print a closest string that does not contain adjacent duplicates](https://www.geeksforgeeks.org/print-a-closest-string-that-does-not-contain-adjacent-duplicates/)
36. [Smallest subset with sum greater than all other elements](https://www.geeksforgeeks.org/smallest-subset-sum-greater-elements/)
37. [Lexicographically largest subsequence such that every character occurs at least k times](https://www.geeksforgeeks.org/lexicographically-largest-subsequence-every-character-occurs-least-k-times/)

**Quick Links :**

1. [Top 20 Greedy Algorithms Interview Questions](https://www.geeksforgeeks.org/top-20-greedy-algorithms-interview-questions/)
2. [‘Practice Problems’ on Greedy Algorithms](https://practice.geeksforgeeks.org/topics/Greedy-Algorithm/)
3. [Practice Questions on Huffman Encoding](https://www.geeksforgeeks.org/practice-questions-on-huffman-encoding/)
4. [‘Quiz’ on Greedy Algorithms](https://www.geeksforgeeks.org/algorithms-gq/greedy-algorithms-gq/)
5. [Ask a Question on ‘Greedy Algorithms’](https://practice.geeksforgeeks.org/ask.php)