# Backtracking Algorithms

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**Standard Problems :**

1. [Backtracking | Set 1 (The Knight’s tour problem)](https://www.geeksforgeeks.org/backtracking-set-1-the-knights-tour-problem/)
2. [Backtracking | Set 2 (Rat in a Maze)](https://www.geeksforgeeks.org/backttracking-set-2-rat-in-a-maze/)
3. [Backtracking | Set 3 (N Queen Problem)](https://www.geeksforgeeks.org/backtracking-set-3-n-queen-problem/)
4. [Backtracking | Set 4 (Subset Sum)](https://www.geeksforgeeks.org/backttracking-set-4-subset-sum/)
5. [Backtracking | Set 5 (m Coloring Problem)](https://www.geeksforgeeks.org/backttracking-set-5-m-coloring-problem/)
6. [Backtracking | Set 6 (Hamiltonian Cycle)](https://www.geeksforgeeks.org/backtracking-set-7-hamiltonian-cycle/)
7. [Backtracking | Set 7 (Sudoku)](https://www.geeksforgeeks.org/backtracking-set-7-suduku/)
8. [Backtracking | Set 8 (Solving Cryptarithmetic Puzzles)](https://www.geeksforgeeks.org/backtracking-set-8-solving-cryptarithmetic-puzzles/)
9. [Backtracking | Set 9 (Magnet Puzzle)](https://www.geeksforgeeks.org/backtracking-set-9-magnet-puzzle/)
10. [N Queen in O(n) space](https://www.geeksforgeeks.org/n-queen-in-on-space/)
11. [Boggle | Set 2 (Using Trie)](https://www.geeksforgeeks.org/boggle-set-2-using-trie/)
12. [Remove Invalid Parentheses](https://www.geeksforgeeks.org/remove-invalid-parentheses/)
13. [Prime numbers after prime P with sum S](https://www.geeksforgeeks.org/prime-numbers-after-prime-p-with-sum-s/)
14. [Rat in a Maze with multiple steps or jump allowed](https://www.geeksforgeeks.org/rat-in-a-maze-with-multiple-steps-jump-allowed/)
15. [A backtracking approach to generate n bit Gray Codes](https://www.geeksforgeeks.org/backtracking-approach-generate-n-bit-gray-codes/)
16. [C++ program for Solving Cryptarithmetic Puzzles](https://www.geeksforgeeks.org/c-code-article-backtracking-set-8-solving-cryptarithmetic-puzzles/)
17. [Write a program to print all permutations of a given string](https://www.geeksforgeeks.org/write-a-c-program-to-print-all-permutations-of-a-given-string/)
18. [Print all possible paths from top left to bottom right of a mXn matrix](https://www.geeksforgeeks.org/print-all-possible-paths-from-top-left-to-bottom-right-of-a-mxn-matrix/)

**Misc :**

1. [Tug of War](https://www.geeksforgeeks.org/tug-of-war/)
2. [8 queen problem](https://www.geeksforgeeks.org/8-queen-problem/)
3. [Combinational Sum](https://www.geeksforgeeks.org/combinational-sum/)
4. [Backtracking to find all subsets](https://www.geeksforgeeks.org/backtracking-to-find-all-subsets/)
5. [Power Set in Lexicographic order](https://www.geeksforgeeks.org/powet-set-lexicographic-order/)
6. [Check if a given string is sum-string](https://www.geeksforgeeks.org/check-given-string-sum-string/)
7. [Fill 8 numbers in grid with given conditions](https://www.geeksforgeeks.org/fill-grid-1-8-numbers/)
8. [Word Break Problem using Backtracking](https://www.geeksforgeeks.org/word-break-problem-using-backtracking/)
9. [Minimize number of unique characters in string](https://www.geeksforgeeks.org/minimize-number-unique-characters-string/)
10. [Count all possible paths between two vertices](https://www.geeksforgeeks.org/count-possible-paths-two-vertices/)
11. [Partition of a set into K subsets with equal sum](https://www.geeksforgeeks.org/partition-set-k-subsets-equal-sum/)
12. [Warnsdorff’s algorithm for Knight’s tour problem](https://www.geeksforgeeks.org/warnsdorffs-algorithm-knights-tour-problem/)
13. [Longest Possible Route in a Matrix with Hurdles](https://www.geeksforgeeks.org/longest-possible-route-in-a-matrix-with-hurdles/)
14. [Match a pattern and String without using regular expressions](https://www.geeksforgeeks.org/match-a-pattern-and-string-without-using-regular-expressions/)
15. [Fill two instances of all numbers from 1 to n in a specific way](https://www.geeksforgeeks.org/fill-two-instances-numbers-1-n-specific-way/)
16. [Find all distinct subsets of a given set](https://www.geeksforgeeks.org/find-distinct-subsets-given-set/)
17. [Find shortest safe route in a path with landmines](https://www.geeksforgeeks.org/find-shortest-safe-route-in-a-path-with-landmines/)
18. [Find paths from corner cell to middle cell in maze](https://www.geeksforgeeks.org/find-paths-from-corner-cell-to-middle-cell-in-maze/)
19. [Find if there is a path of more than k length from a source](https://www.geeksforgeeks.org/find-if-there-is-a-path-of-more-than-k-length-from-a-source/)
20. [Find Maximum number possible by doing at-most K swaps](https://www.geeksforgeeks.org/find-maximum-number-possible-by-doing-at-most-k-swaps/)
21. [Print all palindromic partitions of a string](https://www.geeksforgeeks.org/print-palindromic-partitions-string/)
22. [Printing all solutions in N-Queen Problem](https://www.geeksforgeeks.org/printing-solutions-n-queen-problem/)
23. [Print all paths from a given source to a destination](https://www.geeksforgeeks.org/find-paths-given-source-destination/)
24. [Print all possible strings that can be made by placing spaces| Set-1](https://www.geeksforgeeks.org/print-possible-strings-can-made-placing-spaces/)
25. [Print all possible strings that can be made by placing spaces| Set-2](https://www.geeksforgeeks.org/print-possible-strings-can-made-placing-spaces-2/)
26. [Print all longest common sub-sequences in lexicographical order](https://www.geeksforgeeks.org/print-longest-common-sub-sequences-lexicographical-order/)
27. [Smallest expression to represent a number using single digit](https://www.geeksforgeeks.org/smallest-expression-represent-number-using-single-digit/)
28. [Given an array A[] and a number x, check for pair in A[] with sum as x](https://www.geeksforgeeks.org/write-a-c-program-that-given-a-set-a-of-n-numbers-and-another-number-x-determines-whether-or-not-there-exist-two-elements-in-s-whose-sum-is-exactly-x/)
29. [Combinations where every element appears twice and distance between appearances is equal to the value](https://www.geeksforgeeks.org/combinations-every-element-appears-twice-distance-appearances-equal-value/)