Pre Requisites:

- Basic Java
- Recursion in Java

List of concepts involved :

- Introduction to Backtracking
- Permutations of string
- N-Queen Interview Problem
- Sudoko Solver interview problem
- Rat in a maze interview problem

Introduction to Backtracking

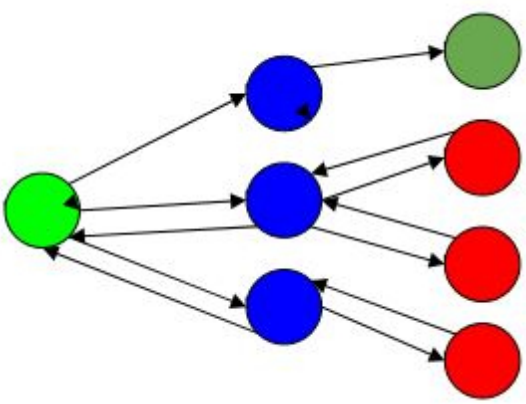
Return is a method based problem-solving algorithm. It uses recursive calls to find a solution, builds the solution step by step, and increments the value over time. Eliminate solutions that do not lead to a solution to the problem based on constraints set to solve the problem.

Backtracking algorithms apply to some specific types of problems.

Solution problems are used to find valid solutions to problems.

Optimization problem used to find the best acceptable solution.

In a backtracking problem, the algorithm tries to find a sequential path to a solution with a few small breakpoints where the problem can return if no acceptable solution can be found.



Example here,
green is the starting point, blue is the midpoint, red is the point for no valid solution, and dark green is the final solution.

Here, if the algorithm reaches the end and checks whether it is a solution or not, it returns a solution, otherwise it returns to a point one step later and finds a solution by finding a path to the next point.