

1. **Dynamic Programming (DP):**

- Dynamic programming is a method for solving complex problems by breaking them down into simpler overlapping subproblems.
- It stores the results of these subproblems in a table to avoid redundant calculations and achieves optimal solutions.
- Commonly used for optimization problems, like finding the shortest path or the maximum value.

2. **Backtracking:**

- Backtracking is a technique for solving problems through incremental trial-and-error.
- It explores possible solutions one by one and abandons a solution as soon as it's determined not to be suitable.
- Often used for solving problems with multiple possibilities, like the N-Queens problem.

3. **Search Methods in Branch and Bound:**

- Branch and Bound is an algorithmic technique used for solving optimization problems.
- It involves a search tree where at each node, we decide whether to further explore a branch or bound it based on certain criteria.
- Common search methods used include Depth-First Search (DFS) and Breadth-First Search (BFS) to traverse the search tree.

4. **Greedy Algorithm:**

- A greedy algorithm makes a series of choices at each step based on the current best option without considering the global optimal solution.
- It is simple and efficient but may not always guarantee the best solution for every problem.

5. **Optimal Solution:**

- An optimal solution is the best possible solution to a problem, considering all constraints and objectives.
- It might be the solution with the highest value (for maximization problems) or the lowest cost (for minimization problems).

6. **Explicit and Implicit Constraints:**

- Explicit constraints are directly stated limitations or requirements in a problem statement.
- Implicit constraints are restrictions that are not explicitly mentioned but can be inferred from the problem context.

7. **LIFO, FIFO, LC Search:**

- LIFO stands for Last-In, First-Out and is often used in stack data structures.
- FIFO stands for First-In, First-Out and is commonly used in queue data structures.
- LC Search (Lowest Cost Search) is a search strategy used in various algorithms, considering the lowest cost nodes first.

8. **Knapsack Problem:**

- The knapsack problem is a combinatorial optimization problem that involves selecting a subset of items from a set to maximize the total value while not exceeding a given weight constraint.

9. **N-Queens Problem:**

- The N-Queens problem is a classic combinatorial problem that asks for the placement of N chess queens on an $N \times N$ chessboard so that no two queens threaten each other (i.e., no two queens are in the same row, column, or diagonal).
- It's often solved using backtracking techniques.