

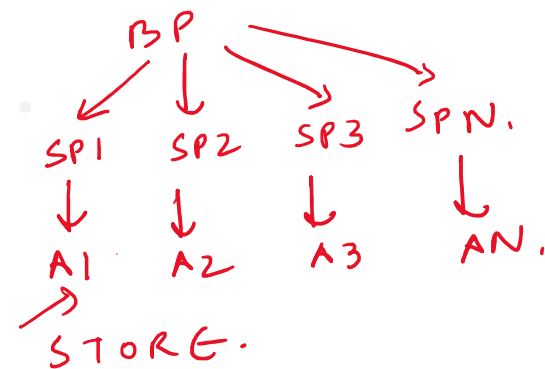
It is used to solve optimization problems

- 1 Breaks down the complex problem into simpler subproblems
- 2 Find optimal solution to these subproblems
- 3 Store the results of subproblems (memoization)
- 4 Reuse them so that same subproblem is not calculated more than once
- 5 Finally calculates the result of complex problem

Applicable to problems which are having properties of:

- Overlapping subproblems & Optimal Substructure

Max/Min, longest, shortest



In the context of algorithms and dynamic programming, "optimal substructure" means that an optimal solution to a problem can be constructed from optimal solutions to its subproblems.

The Fibonacci series is a sequence of numbers where each number is the sum of the two numbers before it. The sequence starts with 0 and 1, and continues with 1, 2, 3, 5, 8, 13, 21, and so on.

0m 1st  
0 1 1 2 3 5 8 13 - - -

RR,

$$f(n) = \begin{cases} f(n-1) + f(n-2), & n > 1 \\ 0, & n = 0 \\ 1, & n = 1 \end{cases}$$

