

# Dynamic Programming

To apply dynamic programming we have to look for these two conditions. They are,

1. Optimal Substructure
2. Optimal Subproblem.

## Types of DP

There are two types of Dynamic Programming, they are,

1. Memorization  
It usage recursion and top down approach
2. Tabulation  
It usage iteration method and bottom up approach

## Important concepts of dynamic programming

1. Fibonacci
2. 0-1 Knapsack
3. Unbounded knapsack
4. LCS (longest common subsequences).
5. Catalan Number
6. Matrix Chain Multiplication (MCM).
7. DP on Grid (2D arrays )