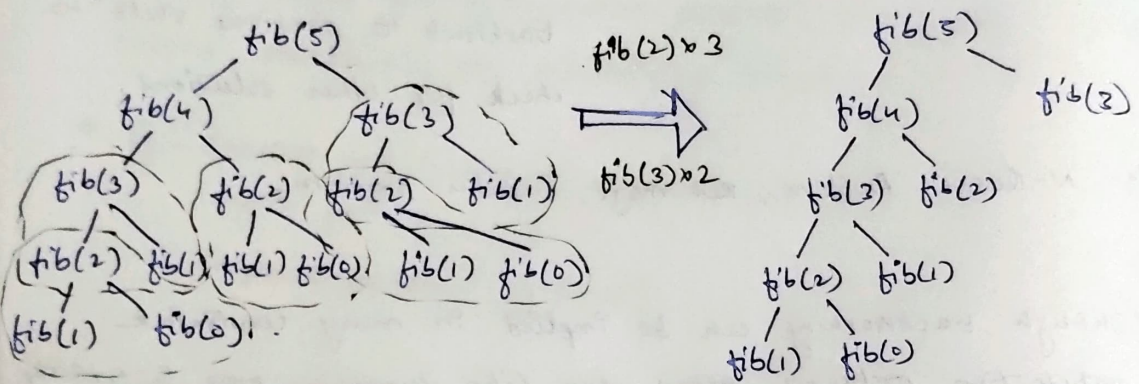


### 3) Dynamic Programming.

→ Optimization technique used with recursion.

→ It minimizes (or) eliminates the need of repeated computations for the same element. (i.e. overlapping subproblem).

Eg:- Fibonacci Problem



→ It is of 2 types

→ Memoization (Top-down).

→ Tabulation (Bottom-up).

→ Memoization generally uses an array to store already computed values.

→ Tabulation converts recursion to a for/while loop and solves it.

→ Applications

1) Bellman Ford Algorithm.

2) Floyd Warshall Algorithm.

3) LCS. (i.e. in utility).

4) Resource Allocation

etc.