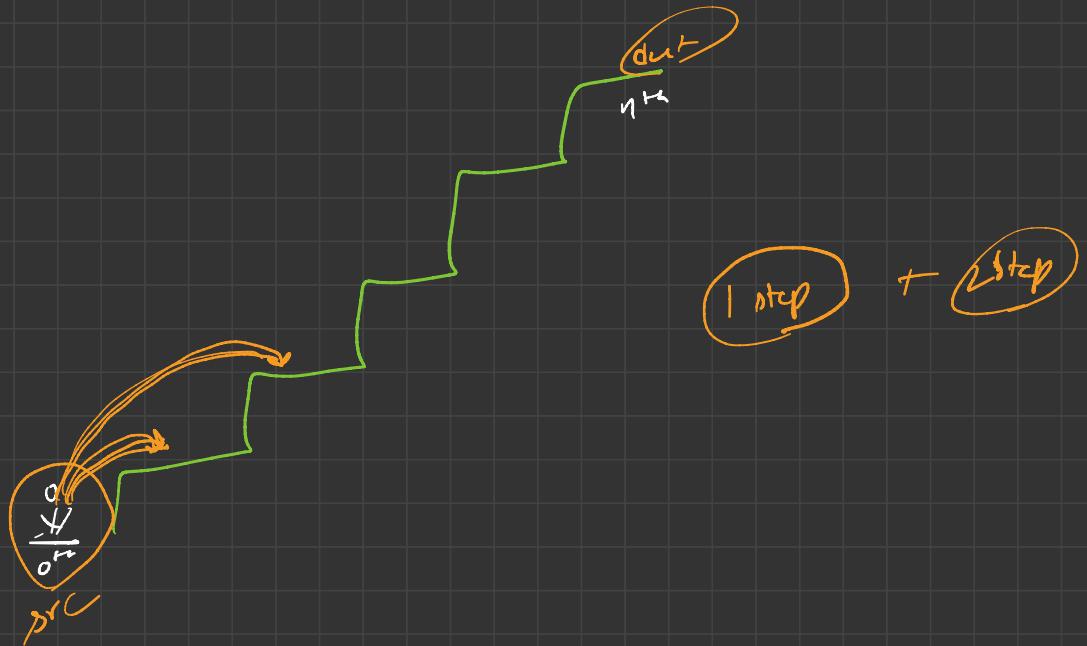
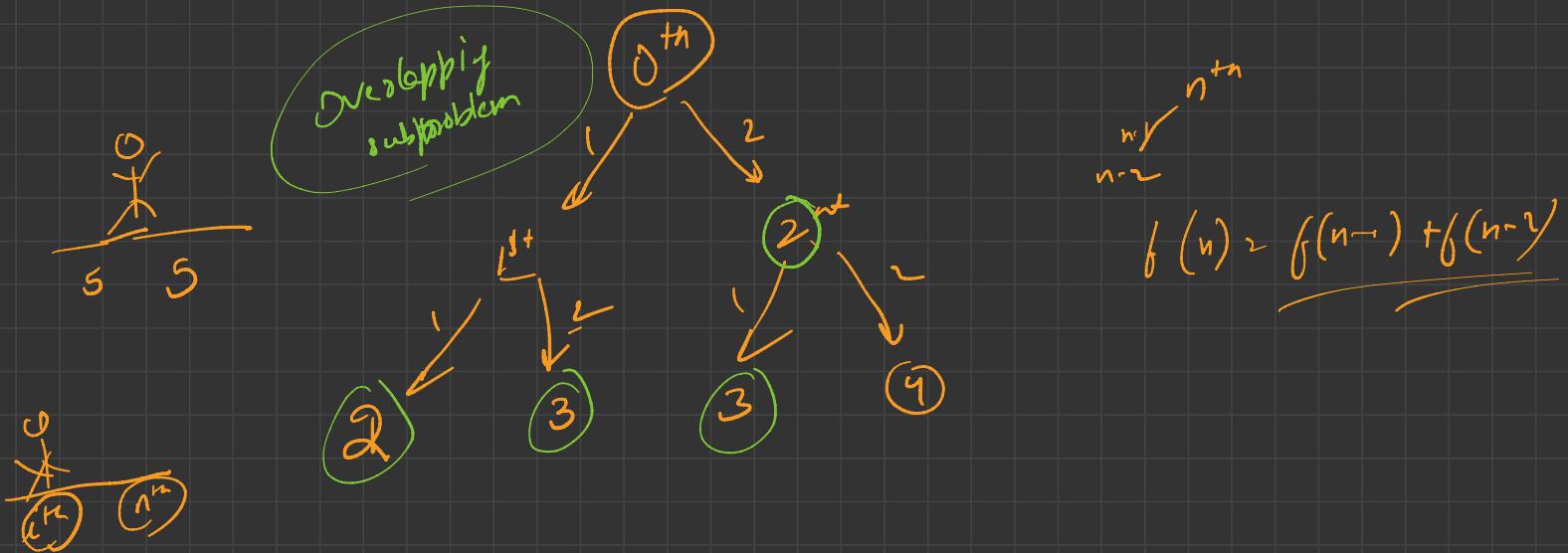



Dynamic

Programming

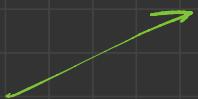




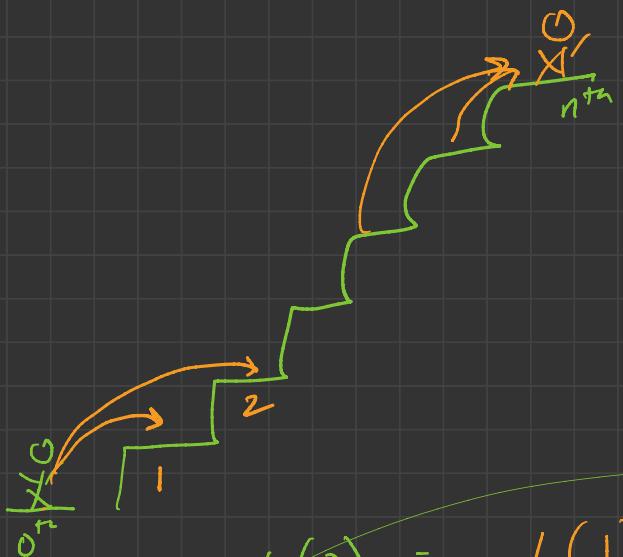
$$f(n) = f(n-1) + f(n-2)$$

$$f(n) = \underbrace{f(n-1)}_{\text{pochy}} + \underbrace{f(n-2)}_{\text{pochy}}$$

$$= \underbrace{f(1)}_{\text{pochy}} + \underbrace{f(2)}_{\text{pochy}}$$



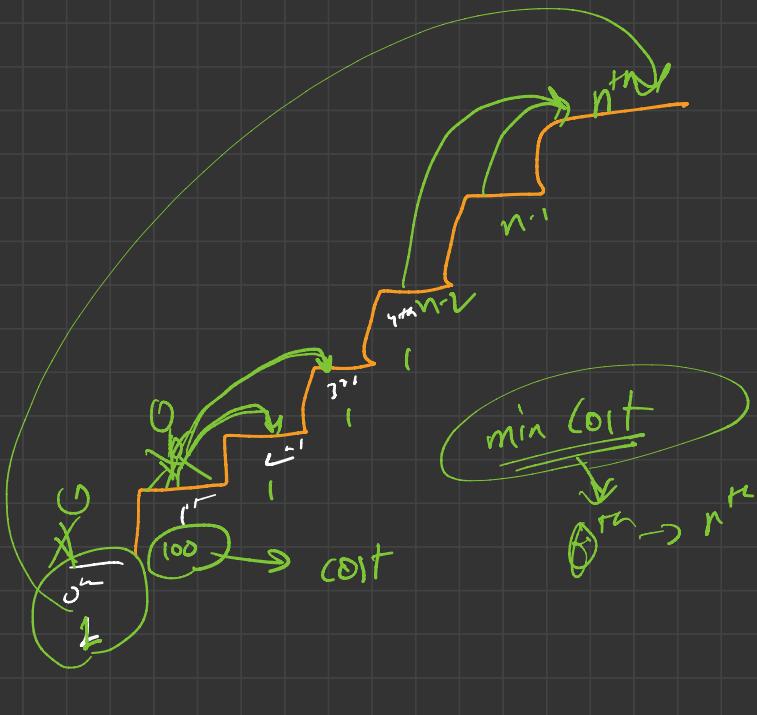
$$f(n) = f(n-1) + f(n-2)$$



Min Cost Climbing Stair

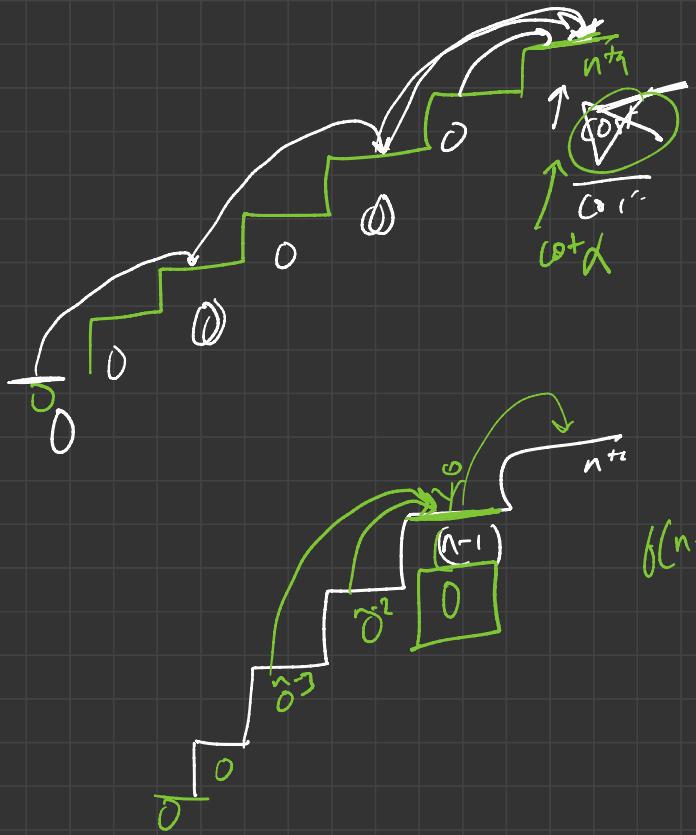
① we can start from 0th or 1st stair

② we have to pay cost, only then we can move 1 or 2 steps ahead



③ Action min Cost to reach top floor

Recusi



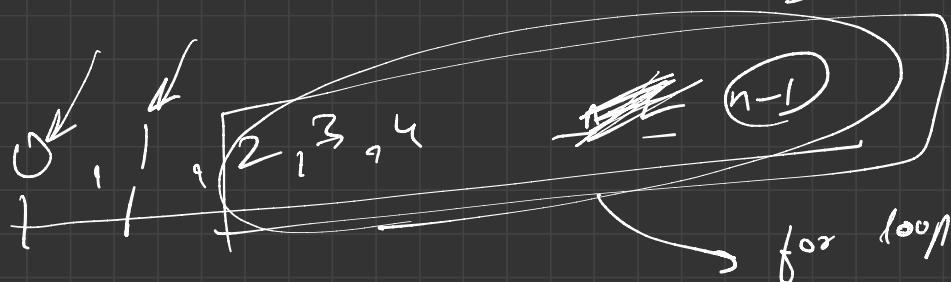
$$f(n) = \min (f(n-1), f(n-2))$$

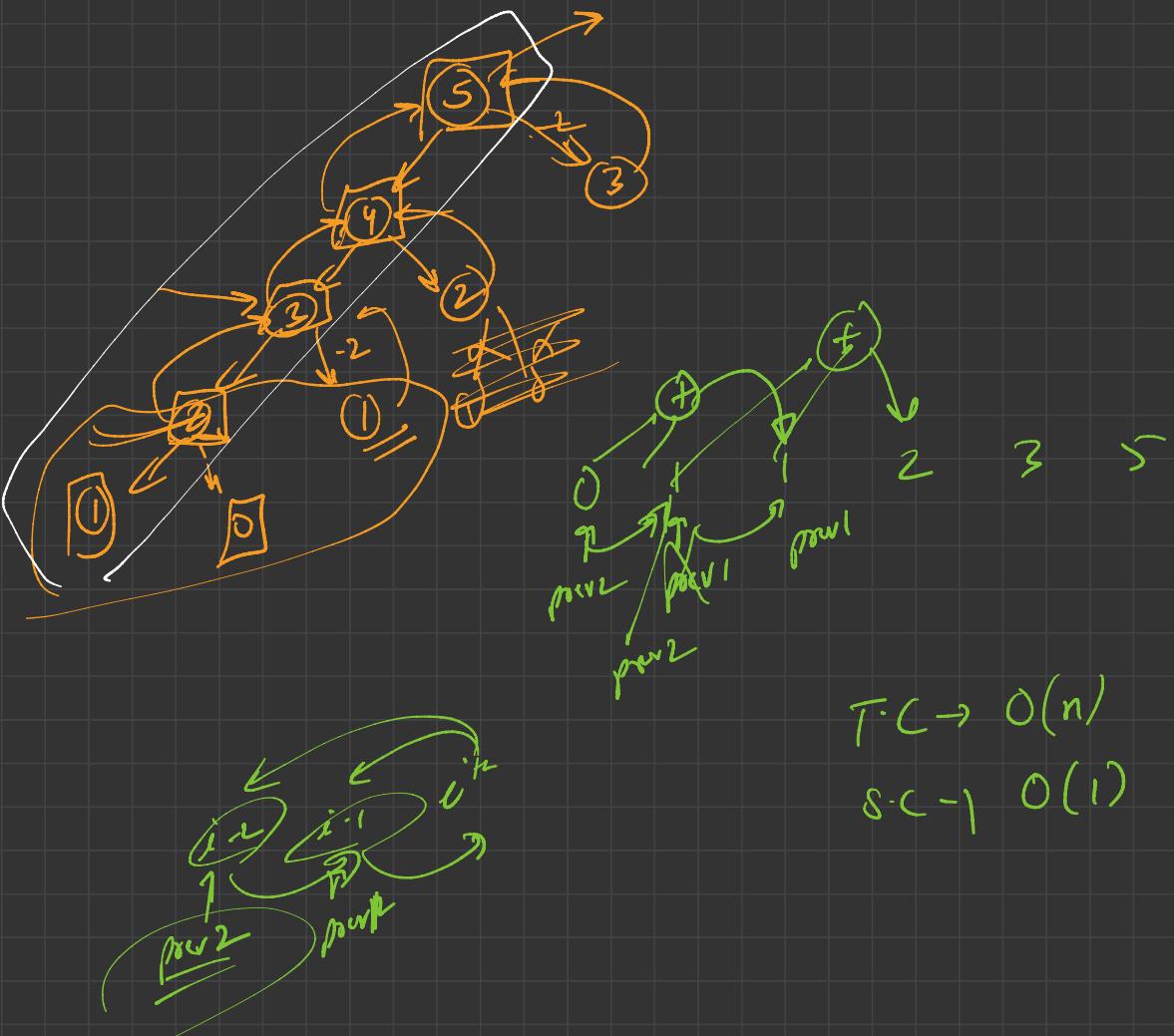
$$f(n-1) = \min (f(n-2), f(n-3) + \text{cost}[i])$$

$$f(k) \leftarrow \max(f(k-1), f(k-2)) + cost[k]$$

(1) Recursion + Memoization $\rightarrow O(n)$
 $O(n) + O(n)$

(3) Tabulation \rightarrow Bottom - Up $\rightarrow O(n)$
 $O(n) \rightarrow O(1)$





→ Recursion + Memoization → $T.C \rightarrow O(n)$

$S.C \rightarrow O(n) + O(n)$

→ Tabulation → $T.C \rightarrow O(n)$

$S.C \rightarrow O(n)$

→ Space Optimisation → $T.C \rightarrow O(n)$

$S.C \rightarrow O(1)$

