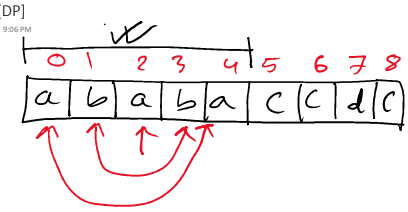
Coin Change [DP]

Sunday, March 3, 2024 9:06 PM



Max Pal Len = ~~0~~ ~~1~~ ~~3~~ 5

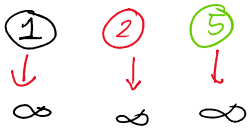
Max Pal Start Idx = ~~-1~~ ~~0~~ ~~0~~ 0

Coin Change

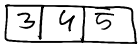
is possible / How many ways

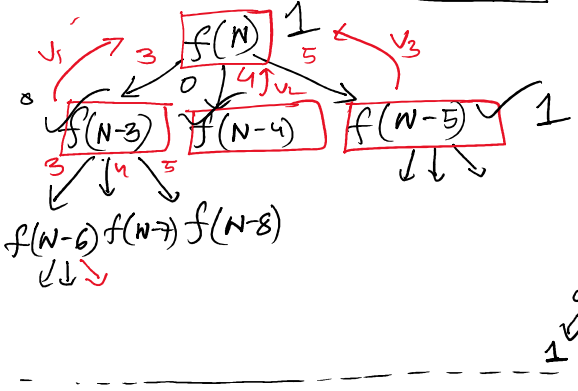
370

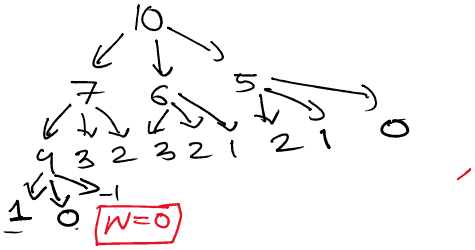
100



Variant 1: You have N Taka and you want to make change with K types of coin. Assuming that number of K coins are infinite. Is it possible to change N taka with the coins?
[Constrains: 1 < N, K < 10^3]







Step1: Giving Definition of recursive function ✓

Step2: Finding Recursive Relation ✓

Step3: Define Base cases ✓

Step4: Add memorization

Variant 2: You have N taka and you want to make change with K coins. Assuming that number of K coins are infinite. How many ways it is possible to change N taka with the coins?
[constrains: 1 <= n, k < 10^3

3, 5, 7

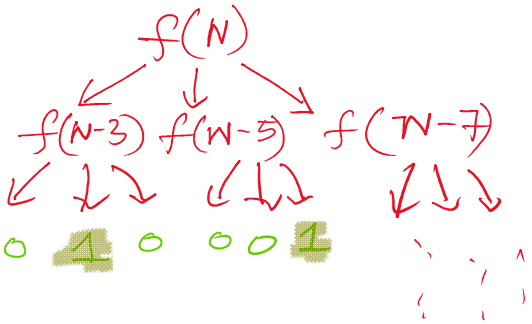
Step1: Giving Definition of recursive function

Step2: Finding Recursive Relation

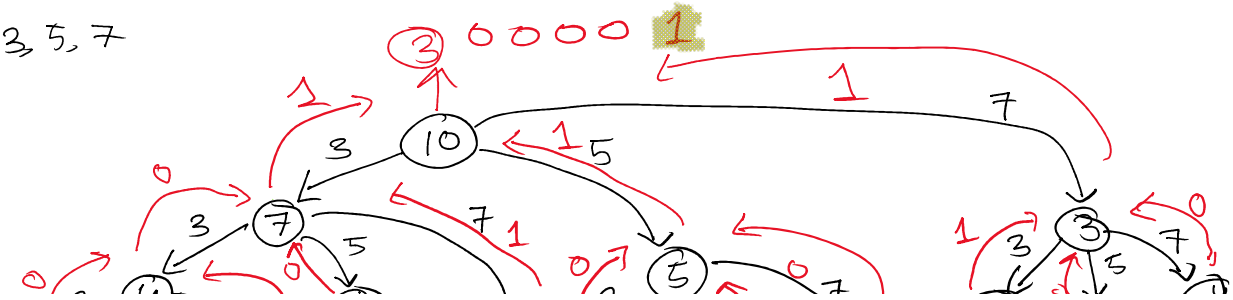
Step3: Define Base cases

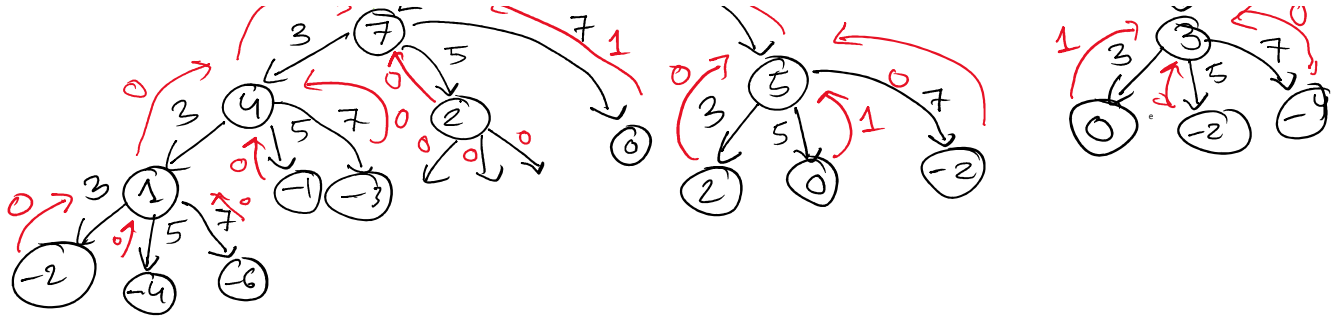
Step4: Add memorization

f(N) → ~~total~~ number of ways



N=10 3, 5, 7





Variant 3: You have N taka and you want to make change with K coins. Now, you can take a coin only once. Is it possible to change N taka with the coins?

[constrains: 1 <= n, k < 10^3]

K = 5

0/1-Knapsack

N = 17

2, 7, 3, 5, 1

Variant 4: You have N taka and you want to make change with K coins. Now, you can take a coin only once. How many ways it is possible to change N taka with the coins?

[constrains: 1 <= n, k < 10^3]