Apr 15

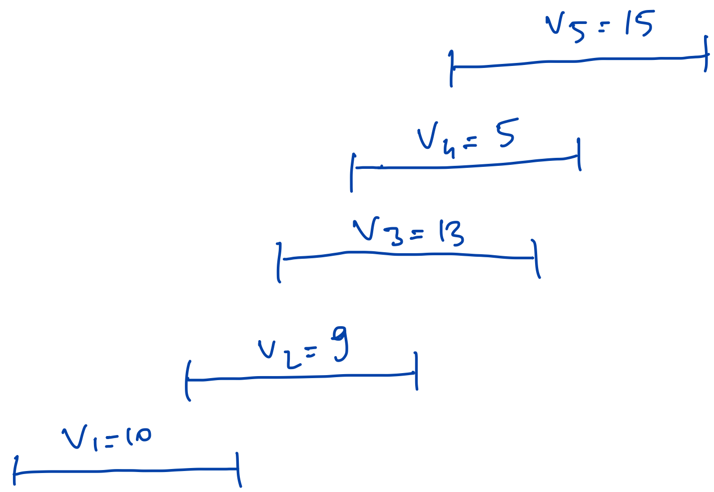
$M[0] = 0$

for $j = 1 \ldots n$

$$M[j] = \max\{v_j + M[p(j)],\ M[j-1]\}$$

- $M[0 \ldots n]$
- have access to $p(1) \ldots p(n)$

$n = 5$



$p(5) = 2$ //

$p(4) = 1$

$p(3) = 1$

$p(2) = 0$

$p(1) = 0$

$j = 0$

0	1	2	3	4	5
0					

$M[0] = 0$

$j = 1$

0	10				

$M[1] = \max\{v_1 + M[p(1)],\ M[0]\}$

$= \max\{10 + 0,\ 0\} = 10$ //

$j = 2$

0	10	10			

$M[2] = \max\{v_2 + M[0],\ M[1]\}$

$= \max\{9 + 0,\ 10\} = 10$ //

$j = 3$

0	10	10	23		

$M[3] = \max\{v_3 + M[1],\ M[2]\}$

$= \max\{13 + 10,\ 10\} = 23$ //

$j = 4$

0	10	10	23	23	

$M[4] = \max\{v_4 + M[1],\ M[3]\}$

$= \max\{5 + 10,\ 23\} = 23$ //

$j = 5$

0	10	10	23	23	25

$M[5] = \max\{v_5 + M[2],\ M[4]\}$

$= \max\{15 + 10,\ 23\} = 25$ //

Compute an optimal solution O_J : an optimal solution for $[J]$

$n=5$ $\quad 5 \overset{?}{\in} O_5$: $25 > 23 \Rightarrow 5 \in O_5$

$p(5)=2$: Consider $O_5 \setminus \{5\} = O_2 \subseteq [2]$. $2 \overset{?}{\in} O_2$: $9 < 10 \Rightarrow 2 \notin O_2$

Consider $O_2 = O_1 = [1] \Rightarrow 1 \in O_1 \Rightarrow \{1,5\}$ is an optimal solution

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M Schedule $(n; M, p)$

If $n=0$ return $\emptyset$

If $(V_n + M[p(n)]) > M[n-1]$

return $\{n\} \cup$ MSchedule $(p(n); M, p)$

else

return MSchedule $(n-1; M, p)$