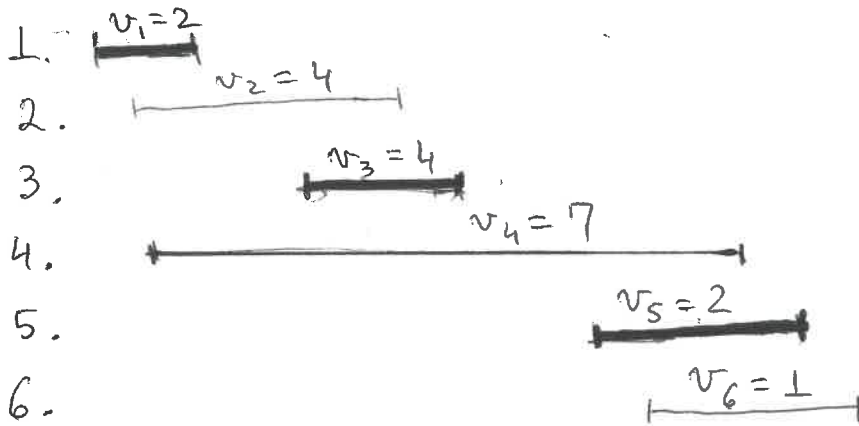


# Dynamic Programming

3.29.2017

## Weighted Interval Scheduling - Iterative approach

$n=6$



$$p(1) = 0$$

$$p(2) = 0$$

$$p(3) = 1$$

$$p(4) = 0$$

$$p(5) = 3$$

$$p(6) = 3$$

	0	1	2	3	4	5	6
M	0	2	4	6	7	8	8

$n=6$

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

$$M[1] = \max(2 + M[p(1)], M[0]) = 2$$

$$M[2] = \max(4 + M[p(2)], M[1]) = 4$$

$$M[3] = \max(4 + M[p(3)], M[2]) = 6$$

$$M[4] = \max(7 + M[p(4)], M[3]) = 7$$

$$M[5] = \max(2 + M[p(5)], M[4]) = 8$$

$$M[6] = \max(1 + M[p(6)], M[5]) = 8$$

$M[n] = M[6] = 8 \Rightarrow$  total max value for opt. sol. is 8

Find-Solution(6)

|

Find-Solution(5)

| Find-Solution(3) request 5

| Find-Solution(1) request 3

| Find-Solution(0) request 1

optimal solution is  $O = \{\text{request 1, request 3, request 5}\}$

optimal solution value =  $OPT = 8$