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Assignment:

Knapsack problem using dynamic programming

Dynamic programming array:

	0	1	2	3	4	5	6	7	8	9	10
0	0	0	0	0	0	0	0	0	0	0	0
1	0	0	0	30	30	30	30	30	30	30	30
2	0	0	0	30	45	45	45	75	75	75	75
3	0	0	25	30	45	55	70	75	75	100	100
4	0	0	25	36	45	61	70	81	91	106	111

when $i=0$; $v[0,0], v[0,1], v[0,2], v[0,3], v[0,4], v[0,5], v[0,6], v[0,7], v[0,8], v[0,9], v[0,10] = 0$

$j=0$; $v[0,0], v[1,0], v[2,0], v[3,0], v[4,0] = 0$

1. $i=1, w_1=3, p_1=30$

$j=1 \Rightarrow v[1,1] = v[0,1] = 0$

$j=2 \Rightarrow v[1,2] = v[0,2] = 0$

$j=3 \Rightarrow v[1,3] = \max\{v[0,3], v[0,0]+30\} = 30$

$j=4 \Rightarrow v[1,4] = \max\{v[0,4], v[0,1]+30\} = 30$

$j=5 = v[1,5] = \max\{v[0,5], v[0,2]+30\} = 30$

$j=6 = v[1,6] = \max\{v[0,6], v[0,3]+30\} = 30$