Tutorial Exercise in Week 10

Question 1：Given the following knapsack problem:

Item	**Value**	**Weight**
1	**1**	**1**
2	**3**	**2**
3	**2**	**1**
4	**4**	**3**

The capacity of the knapsack is 5

Use the DP algorithm to solve it.

Solution:

			w					
			0	1	2	3	4	5
i	0	∅	0	0	0	0	0	0
	1	{1}	0	1	1	1	1	1
	2	{1,2}	0	1	3	4	4	4
	3	{1,2,3}	0	2	3	5	6	6
	4	{1,2,3,4}	0	2	3	5	6	7

The optimal value = 7
Backtracking: {4, 3, 1}