

377. Combination Sum IV

题目描述: <https://leetcode.com/problems/combination-sum-iv/>

给定一个数组，数组中元素均为非负而且不重复，要求以数组中元素组成target，每个元素可用多次，且结果为有序的，即 (1, 2, 1) 和 (1, 1, 2) 是不同的种类。求结果的种数。

例如：

```
nums = [1, 2, 3]
target = 4
The possible combination ways are:
(1, 1, 1, 1)
(1, 1, 2)
(1, 2, 1)
(1, 3)
(2, 1, 1)
(2, 2)
(3, 1)

Note that different sequences are counted as different combinations.
Therefore the output is 7.
```

解题思路：

dp

f[i]的意思是组成i的结果类数。

$f[i] = \sum(f[i - \text{item}])$

代码：

```
class Solution {
public:
    int combinationSum4(vector<int>& nums, int target) {
        vector<int> f(target+1, 0);
        for(auto item : nums) {
            if(item <= target)
                f[item] = 1;
        }
        for(int i = 0; i <= target; i++) {
            for(auto item: nums) {
                if(item < i)
                    f[i] += f[i - item];
            }
        }
        return f[target];
    }
};
```