

518. Coin Change 2

Description Hints Submissions Solutions

- Total Accepted: **4369**
- Total Submissions: **14272**
- Difficulty: **Medium**
- Contributors: [vchernoy](#)

You are given coins of different denominations and a total amount of money. Write a function to compute the number of combinations that make up that amount. You may assume that you have infinite number of each kind of coin.

Note: You can assume that

- $0 \leq \text{amount} \leq 5000$
- $1 \leq \text{coin} \leq 5000$
- the number of coins is less than 500
- the answer is guaranteed to fit into signed 32-bit integer

Example 1:

Input: amount = 5, coins = [1, 2, 5] **Output:** 4 **Explanation:** there are four ways to make up the amount:

5=5

5=2+2+1

5=2+1+1+1

5=1+1+1+1+1

Example 2:

Input: amount = 3, coins = [2] **Output:** 0 **Explanation:** the amount of 3 cannot be made up just with coins of 2.

Example 3:

Input: amount = 10, coins = [10] **Output:** 1

[Subscribe](#) to see which companies asked this question.

```
class Solution {
public:
    int change(int amount, vector<int>& coins) {
        if (amount==0) return 1;
        if(coins.size()==0) return 0;
        int dp[amount+1];

        memset(dp,0,sizeof(dp));
        dp[0]=1;
        for(int i=0;i<coins.size();i++)
        {
            for(int j=coins[i];j<=amount;j++)
            {
                dp[j] = dp[j-coins[i]]+dp[j];
            }
        }
        return dp[amount];
    }
};
```