

#15 Days of Coding Challenge

#Day 11

Coin change

#Leetcode 322

Solution:

```
class Solution {
public:
    vector<int> dp;
    int f(vector<int>& v , int sum)
    {
        if(sum == 0) return 0;
        if(dp[sum] != -1) return dp[sum];
        int ans = INT_MAX;
        for(int i = 0; i < v.size(); i++)
        {
            if(v[i] <= sum && f(v, sum-v[i]) != INT_MAX) ans = min(ans , 1 +
f(v, sum-v[i]));
        }
        return dp[sum] = ans;
    }

    int coinChange(vector<int>& coins, int amount) {
        dp.clear();
        dp.resize(amount +1 , -1);
        int result = f(coins , amount);
        if(result == INT_MAX) return -1;
        else return result;
    }
};
```

Time Complexity: $O(n*m)$

Space Complexity: $O(m)$