Programming Assignment #3 (due 23:59:59 11/11, 2015)

Combinational Sum

In this assignment, you need to write a C++ program to pick up all possible combinational numbers whose sum equal to the target number from a given series.

Input format:

<Target number> <Limit> <Number of candidates>

<Candidates……>

*Limit: Times of negative numbers can be used at most in a solution

Check file format:

Number of solutions = n

<# Solution 1 > <Solution 1……>

<# Solution 2 > <Solution 2……>

……

<# Solution n > <Solution n……>

Example:

Input	**Input**
7 0 4	1 1 4
2 3 6 7	-4 -3 -1 5
Check file	**Check file**
Number of solutions = 2	Number of solutions = 1
3 2 2 3	2 -4 5
1 7	
	3 -3 -1 5 => wrong answer due to exceeding negative numbers

Provided files

(1) main.cpp (2) solve.h (3) solve.cpp (4) Testcase

main.cpp

It executes the function **find_solutions. calculate()**, and compares your answer with the correct answer.

Can be changed if necessary.

solve.cpp & solve.h

solve::calculate(int, int, int, vector<int>,vector<vector<int>>&){} is the function you need to program which takes **target number**, **limit times**, **# candidates**, **candidate array,** and **vector<vector<int>>&** as inputs, and you should store your answer in the **vector<vector<int>>&.**

Testcase

They are exemplary test cases accompanied with their answers, which can be used to verify your answer.

Constraints:

Input:

1. Target number will be an integer between ± 10000.
2. Limit will be no more than **2**.
3. Candidates will be integers between ± 1000 excluding 0.
4. The number of candidates will be no more than **300**.

Storage format in **vector<vector<int>>**:

1. Store your solutions of a case in a **vector<vector<int>>.**
2. You **do not** need to sort your answer.
3. We will check your answers by checking your **number of solutions** and comparing the **times all candidates appear** in your case and that in the correct answer.

Input
7 0 4
2 3 6 7
Answer
2 2 3
7
Check
Number of solutions = 2
Times all candidates appear
2 2
3 1
6 0
7 1

Language

C or C++

Platform

You may develop your software on UNIX/Linux.

Compile: $ g++ main.cpp -o hw3

Execution: $ ./hw3 <input file>

Submission

Please update the following materials to E3 website by the deadline.

(1) solve.h

(2) solve.cpp