

Homework #2

For Section 2 (due: 9 September 2009, 09:00)

Objective

- The student must be able to generate constrained combination

Homework

In this homework, you are given a positive integer N , your task is to generate all possible set of positive integers $\{a_1, a_2, a_3, \dots, a_k\}$ such that $a_1 + a_2 + a_3 + \dots + a_k = N$. For example, if N equals to 3. All possible sets are $\{1,1,1\}$, $\{1,2\}$ and $\{3\}$. A simple way to generate all distinct sets is to generate all non-decreasing sequences whose summation equals to N .

Submission

You have to email me your source code in C or C++. In your email, also put your name and ID as well. The email must hit my inbox before 9.00 of the next Wednesday. The subject line of the email must contain the word "algorithm" and "homework2".

The Input

The input number N is given via keyboard.

The Output

The output is to be printed on the screen. You can print the output in any order.

Example

Input

<-- the number N

Output

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1 + 1 + 1 + 1 + 1
1 + 1 + 1 + 2
1 + 1 + 3
1 + 2 + 2
1 + 4
2 + 3
5
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The Starting Code

There is no starting code!!!