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Snowmen

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Snowmen

2.0/2.0 points (graded)

Input file:	snowmen.in
Output file:	snowmen.out
Time limit:	2 seconds
Memory limit:	256 megabytes

In the winter of 2012, due to vast amount of news about Apocalypsis and the end of the world, one thing came completely unnoticed. It as a breakthrough in the areas of snowmen and cloning: snowmen cloning. You surely know, but we nevertheless remind, that a *snowmen* consists of zero or more snowballs put one atop another, and *cloning* is a procedure of creating an identical copy, which is called a *clone*.

In a little city Littlecity, a school teacher A. Schoolteacher bought a snowmen cloning device in the “Snowmen Cloning Device Online Store” online store. Now the schoolgirls, as well as schoolboys, can play, and do indeed play, the following game. At a certain moment of time, some of the children chooses an existing snowman, clones it, and performs one of the actions with the clone:

- adds a new snowball atop, or
- removes the topmost snowball.

The school teacher A. Schoolteacher has written the sequence of actions performed by the children and now wants to know the total mass of all the created snowmen.

Input

The first line contains a number N ($1 \leq N \leq 10^6$), the number of actions performed by the children. The following N lines contain descriptions of these actions. An (i + 1)-st line of the input file contains a description of the i-th action, which can be one of the following:

- t m: clone the t-th snowman ($0 \leq t < i$) and add a snowball with a mass of m ($1 \leq m \leq 1000$) atop it;
- t 0: clone the t-th snowman ($0 \leq t < i$) and remove the topmost snowball. It is guaranteed that the t-th snowman is not empty.

Initially, there is an empty snowman with the number of 0. As a result of the i-th action, a snowman with the number of i is created. All numbers in the input file are integers.

Output
Output the total mass of all the snowmen which were built.

Example

snowmen.in	snowmen.out
8 0 1 1 5 2 4 3 2 4 3 5 0 6 6 1 0	74
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Discussion
Topic: 04: 2nd Week Problems / Snowmen

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