

A. Bizzare adventure in a grocery store

time limit per test: 1 s.
 memory limit per test: 256 MB
 input: standard input
 output: standard output

(34 points) You have decided to buy some groceries at a nearby grocery store. Unfortunately, you left your wallet at home. The only thing that you can pay with is a c CHF banknote that you found in your pocket. On top of that, the salesman has run out of change. As a result, you can choose to buy no goods or goods totaling **exactly** c CHF.

In addition, you are on a strict diet, where you eat exactly e calories per day. Hence you planned to buy goods with a total caloric value of **exactly** e . Can you achieve that with your current budget restrictions, or will you have to go home for your wallet?

Input

The first line contains 3 integers: n, c, e , $1 \leq n \leq 500$, $1 \leq c \leq 100$, $1 \leq e \leq 100$ — the number of products in the store, the denomination of your banknote and the target caloric value.

The next n lines contain product descriptions: the line $i + 1$ contains a_i, b_i , $1 \leq a_i \leq 100$, $1 \leq b_i \leq 100$ — the cost and caloric value of product i .

Output

Output "Yes", if you are able to buy a set of products such that their total cost is exactly c and their total caloric value is exactly e or "No" otherwise.

Hint: you can use the following formula to compute the answer. Let $d_{i,j,k}$ be an integer value equal to 1 if you can choose a subset of products among the first i such that their total cost is j and their total caloric value is k , and 0 otherwise. Then the following recursive formula holds for all $1 \leq i \leq n$, $1 \leq j \leq c$ and $1 \leq k \leq e$:

$$d_{i,j,k} = \max(d_{i-1,j,k}, d_{i-1,j-a_i,k-b_i})$$

On top of that, for $i = 0$, $d_{0,j,k} = 1$ iff $j = k = 0$.

Examples

input	Copy
2 2 2 1 2 2 1	
output	Copy
No	

input	Copy
4 5 6 1 1 1 3 5 5 4 3	
output	Copy
Yes	

EPFL Algorithms Fall 2021

Private

Participant



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Implementation assignment 2021

Contest is running

20:28:20

Contestant



→ Submit?

Language: PyPy 3.8 (7.3.7, 64bit)

Choose file: Choose File no file selected

Submit

→ Last submissions

Submission	Time	Verdict
138543032	Dec/09/2021 16:36	Accepted
138542943	Dec/09/2021 16:35	Accepted
138542821	Dec/09/2021 16:34	Accepted
138541755	Dec/09/2021 16:23	Accepted
138541705	Dec/09/2021 16:22	Wrong answer on test 1
138540914	Dec/09/2021 16:13	Wrong answer on test 13
138540754	Dec/09/2021 16:11	Wrong answer on test 21
138539643	Dec/09/2021 15:59	Wrong answer on test 21