

Problem A. 77284.Diagonal

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

You are given a set of points on the Cartesian coordinate system. Two points are on the same diagonal if the difference between x coordinates and the difference between y coordinates are equal. Your task is to find out the maximum number of points located on the same diagonal.

Input

In the first line of the input line you are given N — the number of points ($1 \leq N \leq 1000$). Each of the next N lines contains integer X and Y ($-10^9 \leq X, Y \leq 10^9$) — coordinates of the points.

Output

Print the answer

Examples

standard input	standard output
5 1 1 5 5 3 3 1 2 2 3	3
3 0 0 5 1 2 3	1

Problem B. 77274.Interview

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

You are given an array and a target number. Your task is to find out are there two elements in the array such that the sum of this two elements equal to the target number.

Input

The first line of the input contains an integer N ($1 \leq N \leq 10^5$) the size of the array and an integer number t ($-10^9 \leq t \leq 10^9$) our target number.

The second line of the input contains N integers a_i ($-10^9 \leq a_i \leq 10^9$).

Output

Print 'YES' if such two elements exist otherwise print 'NO'

Examples

standard input	standard output
4 -10 -20 4 2 10	YES
3 2 1 2 1	YES

Note

Please pay attention to the restrictions

Problem C. 77808.Aida and binary numbers

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 256 megabytes

Aida loves binary numbers and she loves to play with them. Aida in queue order puts zeros and ones in a row. Aida like Aidar hates ones, but instead of removing, she wants to replace ones to zero. If two ones are located beside then she replaces to 1 zero.

Input

Given a row of "0" or "1" digits.

Output

Your task is to find and print the final row.

Examples

standard input	standard output
0011100	000100
01100000111101110	00000000000010

Problem D. 77792. Aida and an essay

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 256 megabytes

Aida is a "good" girl. She has an essay, and she wants to write it perfectly. She needs to write essay without duplicate (1 word 1 time). Your output must be words that she needs to paraphrase. Note1: "dream," and "dream" are words. Note: output needs to be unique and in lexicographical order.

Input

Given sentence (strings that are located in 1 line).

Output

Print words that she needs to paraphrase.

Examples

standard input	standard output
Beka always hates, so I think Beka is a bad person, but I never listen to him.	Beka I
Why always me? Thinks Aida, after holidays, when Beka asks her to help him. Why always me?	Why always me?

Problem E. 77811. Aida and her "knowledge"

Input file: standard input
Output file: standard output
Time limit: 1 second
Memory limit: 256 megabytes

Aida good at string, but when time goes to STL, she is lost. Task is simple you have an array of vectors with N elements and K – index in vector. Your task is to sort until K – index by increasing order and decreasing order after K – index.

Input

In the first line given ($1 \leq n \leq 10000$), number of her books and ($1 \leq k \leq n$). index in the vector. Next line contains elements of this array.

Output

Print the final array after changing.

Examples

standard input	standard output
5 3 2 1 5 4 5	1 2 5 5 4
10 5 5 4 3 2 1 10 9 8 7 6	2 3 4 5 1 10 9 8 7 6

Note

You don't change element at K position.

Problem F. 77223. Deque

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

Zhansaya wants to find the sum of first and the last number of her deque. If she tired she shows the character '!' , if she wants to add a number to the begin she shows '+', and if she wants to add to the back , shows character '-' and if she shows '*', you have to find the sum of first and last elements and delete elements. Help her to solve this problem.

Input

You are given characters '+', '-', '!', '*', and numbers.

Output

For '*' query print the answer to the problem. Note that if deque is empty print "error".

Examples

standard input	standard output
+ 1 - 9 + 2 * + 2 - 6 + 3 - 9 * * * * !	11 12 8 2 error
+ 1 + 2 - 9 - 2 * !	4