# Problem A. 77034.Bits

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

Alan as a good programmer hates zeros. And he has a sequence of 1 and 0. He can delete zeros when two consecutive elements are zeros. Alan haven't time and needs help. You have to write a program using stack which outputs final sequence.

## Input

In the first line of the input given $n$,$(1 \leq n \leq 10^6)$. In the second line input sequence with size $n$.

## Output

Print final sequence.

## Examples

| standard input | standard output |
|---|---|
| 9<br>0 1 0 0 0 1 0 0 1 | 0 1 0 1 1 |
| 5<br>0 0 0 0 1 | 1 |

# Problem B. 77039. Duplicate number

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

Given array of (n + 1) numbers, where each integer is between 1 and n (inclusive). Assume that there is only one duplicate number, find the duplicate one. Solve this problem by using a set.

## Input

In the first line input $n$, $(1 \leq n \leq 1000)$ . In the second line input numbers of the array $a$, $(1 \leq a_i \leq n)$ .

## Output

Output the duplicate number.

## Example

| standard input | standard output |
|---|---|
| 6<br>2 5 6 3 2 1 4 | 2 |

# Problem C. 77282.Line

| | |
|---|---|
| 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 line if x coordinates of two points are equal or y coordinates of two points are equal. Your task is to find out the maximum number of points located on the same line.

## 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<br>1 2<br>2 2<br>3 3<br>5 1<br>1 1 | 2 |
| 3<br>0 0<br>-1 -2<br>-2 -3 | 1 |

# Problem D. 77285. Chars.

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

You are given N characters. Your task is to separate characters to the following categories letters, digits and others.

## Input

In the first line of the input line you are given $N$ —- the number of characters ($1 \leq N \leq 300000$). The second line contains characters.

## Output

In the first line print all letters In the second line print all the digits In the third line print all other characters. Print them in the order of input.

## Examples

| standard input | standard output |
|---|---|
| 6<br>Aa32!? | Aa<br>32<br>!? |
| 6<br>fgsdfa | fgsdfa |

# Problem E. 77244. Deque

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

Akniet lost her cartoon discs. Her brother Askat bought many discs and put those discs to her shelf. He put discs to the shelf or take at the shelf. Operation of putting the disc on the shelf is described by a pair of numbers. Number 1 mean - putting to the shelf and after followed the name of the disc, 2 - taking at the shelf. At the beginning the shelf is empty.Your task is to find what discs Askat took.

## Input

You are given N integer number, then the number of operations that Askat performed.

## Output

Print the name of discs that Askat took.

## Examples

| standard input | standard output |
|---|---|
| 5<br>1 discovery<br>1 TomandJerry<br>2<br>1 comedy<br>2 | discovery TomandJerry |
| 2<br>1 disney<br>2 | disney |

# Problem F. 77169. Set

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

You are given two lines. Write a program that print of the common characters. If there is no any common characters, print "NO".

## Input

You are given two lines by lower characters.

## Output

Print the answer of the problem.

## Examples

| standard input | standard output |
|---|---|
| programming<br>interesting | ginr |
| kbtu<br>111 | NO |