(sgnirts)

SEASON 9 – SECOND ROUND

Bilyana has a sequence consisting of the numbers from 1 to **N** in this order and some brackets. She removes the brackets by inverting the order of the numbers between them. She does so until only a permutation of the numbers from 1 to **N** is left.

For example: ((1 2) 3 4) = (2 1 3 4) = 4 3 1 2.

Your task is to find the original sequence, given the final permutation.

Input

From the first line of the input file `sgnirts.in` **N** is entered.

On the next line a permutation of the numbers from 1 to **N** is entered.

Output

In the output file `sgnirts.out` print the original sequence, but with the numbers replaced by "`x`" (without the quotation marks). **There should be no spaces between the characters.**

If there are several valid answers, print the one with the least number of characters.

If there is no sequence that satisfies the statement, print "Impossible" (without the quotation marks)

Constraints

$1 \leq N \leq 1000$

Time limit: 0.5 seconds
Memory limit: 256 MB

Example

Input (sgnirts.in)	Output (sgnirts.out)	Explanation
4 4 3 1 2	((xx)xx)	((12)34)=(2134)=4312
4 2 1 4 3	(xx)(xx)	(12)(34)=2143
4 3 1 4 2	Impossible	There is no sequence that can be reduced to 3142