Little Greedy got a board for his birthday. The board has *N* rows and *M* columns, and has a **lowercase letter of the English alphabet** in each field. During his birthday party, everyone got bored so they decided to play a simple board game.

The game begins with placing a chip on the **upper left** field labeled with coordinates (1, 1). In each turn, we **must** move the chip one field to the right or down, given the constraint that it remains on the board. The game ends with moving the chip to the **lower right** field of the board labeled with coordinates (*N*, *M*). During the game, we take note of the array of characters we form by moving the chip and therefore constructing a word. The goal of the game is to find the lexicographically smallest word.

The player(s) that will suceed in constructing the lexicographically smallest word get a bag of candy as a prize. Greedy wants to win the candy at any price, so he is asking you to write a programme that will find the lexicographically **smallest** possible word.

Please note: The lexicographic order of words is the one in which the words appear in a dictionary. If we have two words, and the words differ in the first letter, then the smaller word is the one with the letter that comes first in the alphabet.

INPUT

The first line of input contains integers *N* and *M*, separated by space (1 ≤ *N*, *M* ≤ 2000). The following *N* lines contains *M* lowercase letters of the English alphabet that represent the board.

OUTPUT

You must output the lexicographically smallest word.

SCORING

In test cases worth 40 points total, it will hold that, for each field, the letters located to the right and below will be different.

SAMPLE TESTS

input	input	input
4 5	4 5	2 5
ponoc	bbbbb	qwert
ohoho	bbbbb	yuiop
hlepo	bbabb	
mirko	bbbbb	

output	output	output
pohlepko	bbbbabbb	qweiop

Clarification of the first test case:

One way of constructing the smallest word is illustrated in the following image: