Palin Square

Kids just learnt about palindrome strings yesterday. Today, the teacher today was going to teach them about square shapes. But kids were still excited about palindrome strings. Therefore, the teacher came up with an idea combining square and palindrome in a game.

The teacher gave to kids a square board size of n, which is n row(s) * n column(s). Each row is a string of n character(s). Then, the teacher asked them to find the palindrome sub-square, which has maximum size. A palindrome sub-square is a sub square in board such that characters in each row of the sub square give out a palindrome string, and characters in each column of the sub square also give out a palindrome string.

Remember: A palindrome string is a string that has the property of reading the same in either direction, e.g. 'racecar', 'solos'.

When the teacher comes out from toilet, he was too happy and forgot the sub square in solution… Your task now is to help him to find out the maximum size of the palindrome sub square in the given board.

Input:

The first row contains an integer n, which is the size of the board. n<=200.

Each row in next n rows is a string contains only n lowercase characters, which describes the board.

Output:

Only 1 integer which is the maximum size of palindrome sub square in the board.

Example:

Input 1:
4

babb

acaz

babx

fdhk

Output 1:
3

Input 2:

1

a

Output 2:

1