Task: PAR
Water Park

ORGANIZAÇÃO EDUCACIONAL FARIAS BRITO

Farias Brito High School Programming Camp, Day 1. Available memory: 256 MB. *25.07.2016*

The Aquabyte Water Park has entered a competition for the largest swimming pool. The park's grounds, where the pools are located, is a square of side length n, partitioned into n^2 unit squares, each of side length 1. Each unit square can either be a swimming pool block or an alley. Swimming pool blocks that are adjacent, i.e., share an edge of a unit square, combine and form a larger pool block together. A swimming pool is a maximal pool block, i.e., one that cannot be combined with any other block. Currently, all the swimming pools in the park are rectangular.

The Aquabyte's Board of Directors has decided to increase their chance of winning the competition by remodeling the park. As there is little time and money for such works, they have settled for transforming at most two alleys into pool blocks. Help the board in determining which unit squares should be transformed so that the largest swimming pool's area is maximized. Note that such pool no longer has to be rectangular.

Input

The first line of the input contains a single positive integer n, which specifies the side length of the water park.

The n lines that follow form a two-dimensional diagram of the park: Each such line contains a single word, consisting of exactly n letters. Each letter is either `A`, which stands for an alley, or `B`, which stands for a pool block. You may assume that there is at least one letter `B` in these lines.

Output

The first and only line of the output should contain a single integer, namely the area of the largest swimming pool that can be formed.

Example

For the input data:	the correct result is:

`5`
`BBBAB`
`BBBAB`
`AAAAA`
`BBABA`
`BBAAB`
	`14`

Grading

Subset	Constraints	Score
1	$n \leq 10$	11
2	$n \leq 50$, at most 80 swimming pools initially	11
3	$n \leq 60$	22
4	$n \leq 1000$, initially each swimming pool is a unit square	22
5	$n \leq 1000$	34