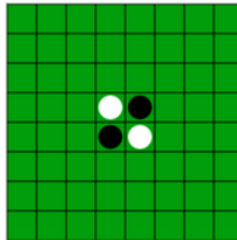# Othello   P18992_en

Othello (also known as Reversi) is a strategy game for two players on an 8×8 board with pieces that have a black side and a white side. The game starts with four pieces placed diagonally on the center of the board:

The game proceeds by turns, the black player to play first. He has to place a black piece on the board, so that exists at least one straight line (horizontal, vertical or diagonal) between this black piece and another black piece, with one or more white pieces among them. For example, in the initial situation, the shaded positions are playable:
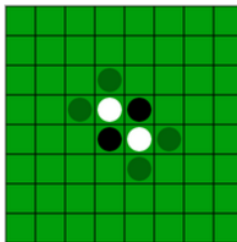
After placing a piece, the black player turns all the white pieces that are surrounded between his new piece and any other black piece, in the eight possible directions. All the turned pieces now show their black side. Thus, if the black player decides to place his piece in the highest position of the board, one piece is turned and we get the following board:
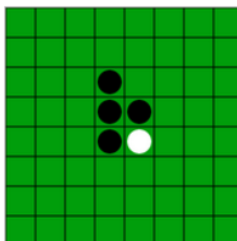
Now it is the turn of the white player. He must follow the same rules, with the roles of white and black interchanged. In the example, the white player has the following possibilities:
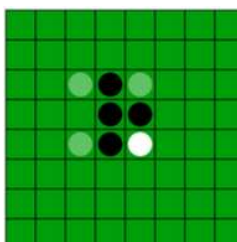
If the white player decides to play at the bottom-left possible position, he turns one piece and the position of the board is:
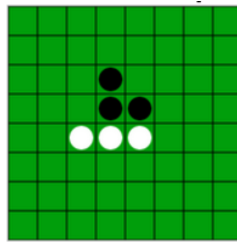
When a player cannot make any valid move, he loses his turn. When no player can make a valid move, the game is finished. This can happen when the whole board has been filled in, or when no player can place a piece in a free square. At the end of the game, the player with more pieces of his color wins the game.

Write a program that reads the movements of a (perhaps unfinished) game, and prints the several positions of the board.

Input

Input begins with the the size of the board $n \geq 4$, with n even. Follow the movements (all them legal) of a game. Each movement is described with a letter ('B' for white, or 'N' for black) to indicates the player who made it, and the row and column (between 1 and n) of the movement. When a player cannot play, his movement is not given.

Output

Print the board at the beginning of the game, and after every movement. Print the current number of black and white pieces after every board.

Sample input 1

```
6
N 2 3
B 4 2
N 5 4
B 2 4
N 3 2
```

Sample output 1

```
......
......
..BN..
..NB..
......
......
2:2

......
..N...
..NN..
..NB..
......
```

```
......
4:1

......
..N...
..NN..
.BBB..
......
......
3:3

......
..N...
..NN..
.BBN..
...N..
......
5:2

......
..NB..
..BN..
.BBN..
...N..
......
4:4

......
..NB..
.NNN..
.BNN..
...N..
......
7:2
```

Sample input 2

```
4
N 4 3
B 4 4
N 1 2
B 4 2
N 3 4
B 2 4
B 1 1
N 2 1
```

Sample output 2

```
....
.BN.
.NB.
....
2:2

....
.BN.
.NN.
..N.
4:1
```

```
....
.BN.
.NB.
..NB
3:3

.N..
.NN.
.NB.
..NB
5:2

.N..
.NN.
.NB.
.BBB
4:4

.N..
.NN.
.NNN
.BBB
6:3

.N..
.NNB
.NBB
.BBB
4:6

BN..
.BNB
.NBB
.BBB
3:8

BN..
NNNB
.NBB
.BBB
5:7
```

Problem information