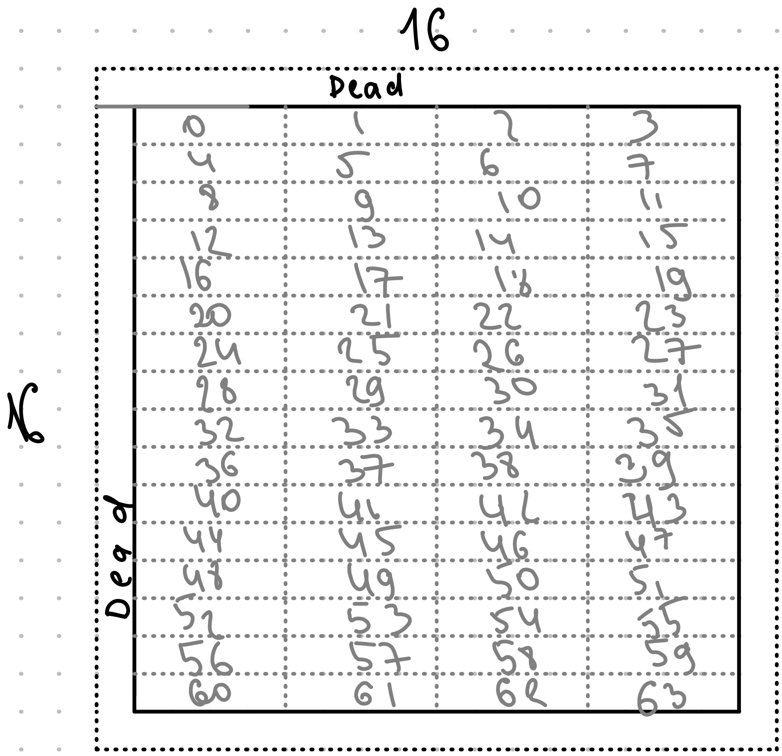
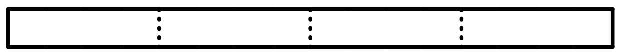
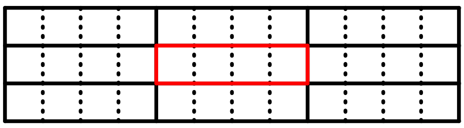


поле -
64xint16 +
4+4 (верх, низ)

int:
(16)



4 клетки в 16бит



N = M[(i-1)%4]

S = M[(i+1)%4]

W = M[i]>>4 | (0b1111 0000 0000 0000 & M[i-

E = M[i]<<4 | (0b0000 0000 0000 1111 & M[i+

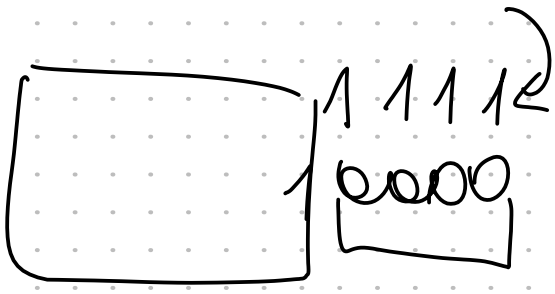
f(ceil:1 , count:3)

	a	b	c	d	count
dead	0	0	0	0	
	0	0	0	1	
	0	0	1	0	
	0	0	1	1	1
	0	1	0	0	
	0	1	0	1	
	0	1	1	0	
	0	1	1	1	
	1	0	0	0	
	1	0	0	1	
	1	0	1	0	1
	1	0	1	1	1
	1	1	0	0	
	1	1	0	1	
	1	1	1	0	
	1	1	1	1	

Dead and $011_2 = 3_{10}$ neighbours

Alive and $010_2 = 2_{10}$ neighbours
$011_2 = 3_{10}$ neighbours

$$f(a,b,c,d) = (\bar{a} \& \bar{b} \overset{①}{\&} c \& d) \vee (a \& b \overset{②}{\&} c \& \bar{d}) \vee (a \& \bar{b} \overset{③}{\&} c \& d)$$



минимизация

① и ③ $\bar{b}cd(\bar{a} \vee a) = \bar{b}cd$ ④

② и ④ $\bar{b}cd \vee abc\bar{d} = \bar{b}c(d \vee ad) \overset{(*)}{=} \bar{b}c(d \vee a)$

$$f(a,b,c,d) = \bar{b}c(d \vee a)$$

$A + \bar{A}B = A + B$ (*)

A	B	$A + \bar{A}B$	$A + B$
0	0	0	0
0	1	1	1
1	0	1	1
1	1	1	1

$N = \overline{abcd}_2 = (!(N \& 0b0100)) \& N \& 0b0010 \&$

$(N \& 0b0001 \mid N \& 0b1000)$

```
int countNeighbours_4(int word) {
    return (((word & 0b0100010001000100) ^ 0b0100010001000100) >> 2) &
    ((word & 0b0010001000100010) >> 1) &
    ((word & 0b0001000100010001) | (word & 0b1000100010001000) >> 3);
}
```

тесты ✓