SPOJ Problem Set (classical)

3878. Rectangles Perimeter

Problem code: MMAXPER

English	Vietnamese

Given are n rectangles, numbered from 1 to n. We place them tightly on the axis OX, from left to right, according to rectangles' numbers. Each rectangle stays on the axis OX either by its shorter or by its longer side (see the picture below). Compute the length of the upper envelop line, i.e. perimeter's length of the obtained figure minus the length of the left, right and bottom straight line segments of the picture. Write program to find the maximum possible length of the upper envelop line.
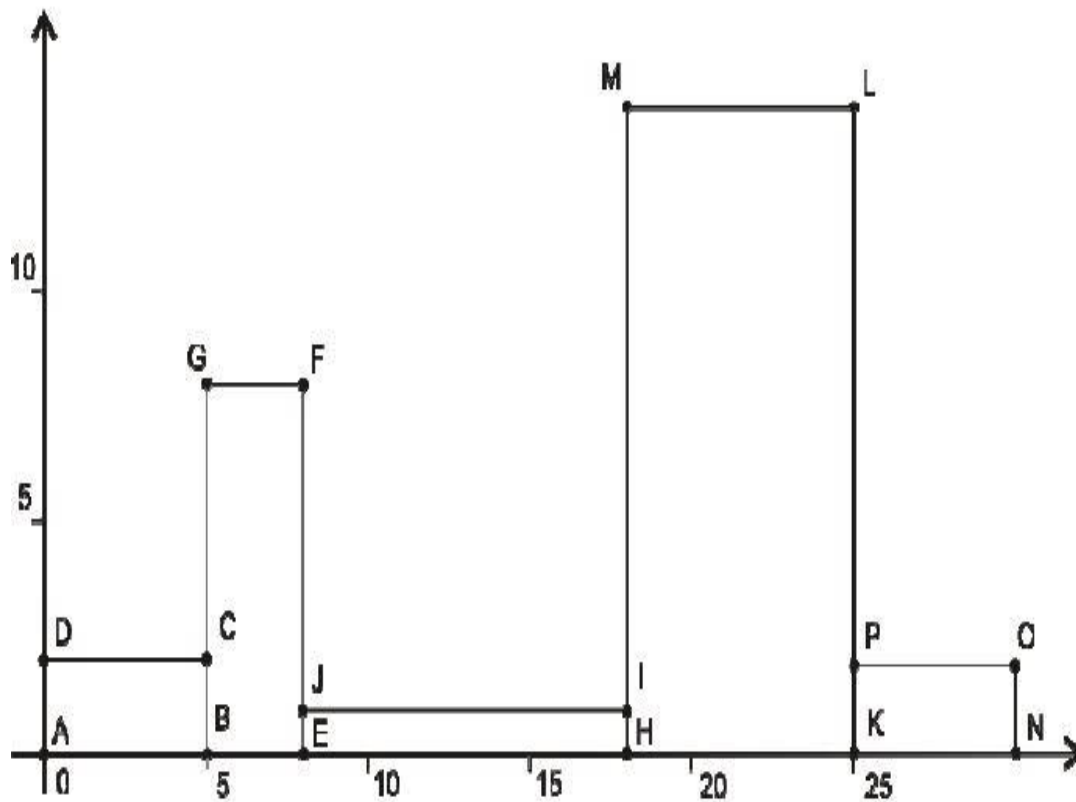
INPUT

On the first line of the standard input, the value of n is written. On each of the next n lines, two integers are given – a_i and b_i – the side lengths of the i_th rectangle.
Constraints: 0 < n < 1000; 0 < a_i < b_i < 1000, for each i = 1, 2, …, n.

```
SAMPLE INPUT:
5
2 5
3 8
1 10
7 14
2 5
```

OUTPUT

```
On a line of the standard output, your program should write the
result as a positive integer

SAMPLE OUTPUT

68
```

Explanation:
```
A configuration, that yields the maximum length of the upper envelop
line, is presented on the picture.
The  upper  envelop  line  consists  of  segments DC, CG, GF, FJ,  JI,   IM,
ML, LP,  and PO.
The  total length is 5 + 6 + 3 + 7 + 10 + 13 + 7 + 12 + 5 = 68
```
Problem for kid - Please, think like kid.

---

hide comments

2013-08-27 13:19:12 **tcp27**
Could anyone provide more test cases

2013-08-12 21:13:10 **rishabhshinghal**
good question for DP lovers

2013-08-09 09:55:26 **coding_express**
easy one and my 100th.

2013-07-30 18:48:55 **Himanshu Kumar Sahu**
my fifth DP problem....
thanks spoj for such a Dp's

2013-07-07 02:08:52 **tr4rex**
This problem made me a new look at the dynamic programming. Nice one.

2013-03-28 14:59:01 **Ankit kumar srivastava**
haule haule ..:)

Last edit: 2013-03-28 15:01:02

2013-03-16 01:26:48 **Abhishek Kumar**
anyone knows 11th test case?

2013-01-22 20:55:03 **looser**
i m getting wa in 10 case ,,any tricky test case plz

2012-12-26 10:22:11 **gourav**
:'(i can guess now that how strong my DP is.. :'(thanks spoj to tell me...

2012-01-03 21:32:24 **abhishek**
plz post some more test cases.