

UCF Local Contest (Final Round) — September 11, 2021

Caterpillar Walk

filename: pillar

Difficulty Level: Easy-Medium

Time Limit: 5 seconds

Consider a city where each building is a rectangle with its base on the positive x -axis, its two walls parallel to the positive y -axis, and its roof parallel to x -axis. The walls of two buildings can touch each other, i.e., the buildings can be right next to each other. The buildings do not, however, have any area in common, i.e., no two buildings intersect/overlap.

Lulu (our beloved caterpillar) lives at coordinates $(0,0)$ and works at coordinates $(100,0)$. Every morning, Lulu crawls from home to office. Without any buildings, this is a distance of 100 but, unfortunately, the buildings force Lulu to crawl up and down of the building walls and they add to the distance Lulu has to travel. Note that Lulu starts at home, ends at the office, and is always crawling on x -axis, side of a wall going up (parallel to y -axis), top of a building (parallel to x -axis), or side of a wall coming down (parallel to y -axis).

The Problem:

Given the description of all the buildings, compute the total distance travelled by Lulu.

The Input:

The first input line contains an integer, n ($1 \leq n \leq 50$), indicating the number of buildings. Each of the next n input lines describes a building. A building is described by three integers: s ($1 \leq s \leq 98$), indicating the lower-left corner of the building, w ($1 \leq w \leq 98$), indicating the width of the building, and h ($1 \leq h \leq 100$), indicating the height of the building. Assume $s + w \leq 99$, i.e., no building will end beyond $(99,0)$.

The Output:

Print the total distance travelled by Lulu.

Sample Input**Sample Output**

2 40 3 7 60 10 12	138
2 43 10 12 40 3 7	124
3 40 3 7 43 10 12 53 20 8	124
3 70 20 8 40 3 7 43 10 12	140
4 12 2 10 14 4 20 18 6 15 24 8 25	160

Picture illustrating the last Sample Input:

