ECE30018 Problem Solving Studio, Fall 2023

C5. Ski Trail

| Submission due: 1:00 PM, 12 Oct Thur

Ski Trail

Korea Olympic Committee (KOC) is constructing a new ski resort on Mt. Pyeongchang. To design ski trails, the KOC engineers modeled the shape of the mountain as a $n \times n$ grid where each cell represents a region of the mountain and the value at the cell represents the altitude of the region. In this model, a ski trail is represented as a sequence of cells, $(s_1, s_2, \ldots, s_n)$, where the following two conditions hold at the same time:

1. s_i and s_{i+1} are adjacent cells in the mountain model.
2. The altitude of s_i is higher than that of s_{i+1}.

The difficulty of the ski trail is determined as the sum of the altitude differences between two adjacent cells. To challenge ski players, KOC wants to construct a ski trail to maximize its difficulty.

Write a program that finds the highest difficulty among all possible ski trails for a given mountain model.

Requirements

- **Input data**
  - The first line from the standard input has one integer n, which represents that the size of the model is $n \times n$ for $1 \leq n \leq 500$.
  - From the second to the $n+1$-th lines, the model of the mountain is given. Each line has n positive integers. The j-th value of the $i+1$-th line is the altitude at the (i, j) cell. An altitude is an integer between 0 to 10^8.
- **Output data**
  - Print out one integer, that is, the highest value of ski trail difficulty to the standard output within 0.5 second.
- **Example**

input

```
4
1 6 10 3
5 5 6 1
5 7 2 3
11 5 7 4
```

output

```
9
```

C5 Teams

Team No.	Members
501	이원빈, 백하현
502	백건하, 전혜림
503	강하림, 소병찬
504	최소미, 나보림
505	유건민, 최혜림
506	박민지, 이신원
507	박세찬, 오인혁
508	최정겸, 이준혁