



Day 11: 2D Arrays ☆

4 more challenges to get your next star!

Points: 11/15



Problem

Submissions

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Tutorial

Objective

Today, we're building on our knowledge of Arrays by adding another dimension. Check out the [Tutorial](#) tab for learning materials and an instructional video!

Context

Given a 6×6 2D Array, A :

```
1 1 1 0 0 0
0 1 0 0 0 0
1 1 1 0 0 0
0 0 0 0 0 0
0 0 0 0 0 0
0 0 0 0 0 0
```

We define an hourglass in A to be a subset of values with indices falling in this pattern in A 's graphical representation:

```
a b c
  d
e f g
```

There are **16** hourglasses in A , and an hourglass sum is the sum of an hourglass' values.

Task

Calculate the hourglass sum for every hourglass in A , then print the maximum hourglass sum.

Input Format

There are **6** lines of input, where each line contains **6** space-separated integers describing 2D Array A ; every value in A will be in the inclusive range of -9 to 9 .

Constraints

- $-9 \leq A[i][j] \leq 9$
- $0 \leq i, j \leq 5$

Output Format

Print the largest (maximum) hourglass sum found in A .

Sample Input

```
1 1 1 0 0 0
0 1 0 0 0 0
1 1 1 0 0 0
0 0 2 4 4 0
0 0 0 2 0 0
0 0 1 2 4 0
```

Sample Output



19

Explanation

A contains the following hourglasses:

```

1 1 1   1 1 0   1 0 0   0 0 0
  1     0     0     0
1 1 1   1 1 0   1 0 0   0 0 0

0 1 0   1 0 0   0 0 0   0 0 0
  1     1     0     0
0 0 2   0 2 4   2 4 4   4 4 0

1 1 1   1 1 0   1 0 0   0 0 0
  0     2     4     4
0 0 0   0 0 2   0 2 0   2 0 0

0 0 2   0 2 4   2 4 4   4 4 0
  0     0     2     0
0 0 1   0 1 2   1 2 4   2 4 0

```

The hourglass with the maximum sum (**19**) is:

```

2 4 4
  2
1 2 4

```

Java 8



```

1  import java.io.*;
2  import java.math.*;
3  import java.security.*;
4  import java.text.*;
5  import java.util.*;
6  import java.util.concurrent.*;
7  import java.util.regex.*;
8
9  public class Solution {
10
11
12
13      private static final Scanner scanner = new Scanner(System.in);
14
15      public static void main(String[] args) {
16          int[][] arr = new int[6][6];
17
18          for (int i = 0; i < 6; i++) {
19              String[] arrRowItems = scanner.nextLine().split(" ");
20              scanner.skip("(\\r\\n|[\\n\\r\\u2028\\u2029\\u0085])?");
21
22              for (int j = 0; j < 6; j++) {
23                  int arrItem = Integer.parseInt(arrRowItems[j]);
24                  arr[i][j] = arrItem;

```



Line: 1 Col: 1

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