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Day 14: Scope

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Problem | Submissions | Leaderboard | Discussions | Editorial | Tutorial

Objective

Today we're discussing *scope*. Check out the Tutorial tab for learning materials and an instructional video!

The *absolute difference* between two integers, a and b, is written as $|a - b|$. The *maximum absolute difference* between two integers in a set of positive integers, $elements$, is the largest absolute difference between any two integers in $elements$.

The *Difference* class is started for you in the editor. It has a private integer array ($elements$) for storing N non-negative integers, and a public integer ($maximumDifference$) for storing the maximum absolute difference.

Task

Complete the *Difference* class by writing the following:

- A class constructor that takes an array of integers as a parameter and saves it to the $elements$ instance variable.
- A *computeDifference* method that finds the maximum absolute difference between any 2 numbers in N and stores it in the $maximumDifference$ instance variable.

Input Format

You are not responsible for reading any input from stdin. The locked *Solution* class in your editor reads in 2 lines of input; the first line contains N, and the second line describes the $elements$ array.

Constraints

- $1 \leq N \leq 10$
- $1 \leq elements[i] \leq 100$, where $0 \leq i \leq N - 1$

Output Format

You are not responsible for printing any output; the *Solution* class will print the value of the $maximumDifference$ instance variable.

Sample Input

```
3
1 2 5
```

Sample Output

```
4
```

Explanation

The scope of the $elements$ array and $maximumDifference$ integer is the entire class instance. The class constructor saves the argument passed to

the constructor as the ***elements*** instance variable (where the *computeDifference* method can access it).

To find the maximum difference, *computeDifference* checks each element in the array and finds the maximum difference between any **2** elements:
$|1-2|=1$
$|1-5|=4$
$|2-5|=3$

The maximum of these differences is **4**, so it saves the value **4** as the ***maximumDifference*** instance variable. The locked stub code in the editor then prints the value stored as ***maximumDifference***, which is **4**.

Submissions: 7035
Max Score: 30
Difficulty: Easy

More

Current Buffer (saved locally, editable) Python 2

```
1  class Difference:
2      def __init__(self, a):
3          self.__elements = a
4
5      # Add your code here
6      def computeDifference(self):
7          m=max(self.__elements)
8          n=min(self.__elements)
9          self.maximumDifference=m-n
10         return self.maximumDifference
11
12 # End of Difference class
13
14 _ = raw_input()
15 a = [int(e) for e in raw_input().split(' ')]
16
17 d = Difference(a)
18 d.computeDifference()
19
20 print d.maximumDifference
```

Line: 9 Col: 35

Upload Code as File Test against custom input Run Code Submit Code

Congrats, you solved this challenge!

- ✔ Test Case #0
- ✔ Test Case #1
- ✔ Test Case #2
- ✔ Test Case #3
- ✔ Test Case #4
- ✔ Test Case #5
- ✔ Test Case #6

Next Challenge