

54m: 11s to test end



Maximum Difference in an Array

The maximum difference between elements in some array, a, is defined as the largest difference between any a[i] and a[i] where i < i and a[i] < a[i]. For example, if a = [4, 1, 1]2, 3], the maximum difference would be a[3] - a[1] = 3 - 1 = 2 because this is the largest difference between any two elements satisfying the aforementioned criteria.

Complete the maxDifference function in the editor below. It has 1 parameter: an array of integers, a. It must return an integer denoting the maximum difference between any pair of elements in a; if no such number exists (e.g., if a is in descending order and all a[i] < a[i]), return -1 instead.

Input Format

Locked stub code in the editor reads the following input from stdin and passes it to the function:

The first line contains a single integer, n, denoting the number of elements in array a. Each line i of the n subsequent lines (where $0 \le i < n$) contains a single integer describing element a[i].

Constraints

- $1 \le n \le 2 \times 10^5$
- $-10^6 \le a[i] \le 10^6 \ \forall i \in [0, n-1]$

Output Format

The function must return an integer denoting the maximum difference in a. This is printed to stdout by locked stub code in the editor.

Sample Input 0



Sample Output 0

8



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As a[2] = 10 is largest element in the array, we must find the smallest a[i] where $0 \le i < 2$. This ends up being 2 at index i = 0.

We then calculate the difference between the two elements: a[2] - a[0] = 10 - 2 = 8, and return the result (8).

Note: While the largest difference between any two numbers in this array is 9 (between a[2] = 10 and a[6] = 1), this cannot be the maximum difference because the element having the smaller value (a[6]) must be of a lesser index than the element having the higher value (a[2]). As j = 2 is not less than i = 6, these elements cannot be used to calculate the maximum difference.

Sample Input 1

```
6
7
9
5
6
3
2
```

Sample Output 1

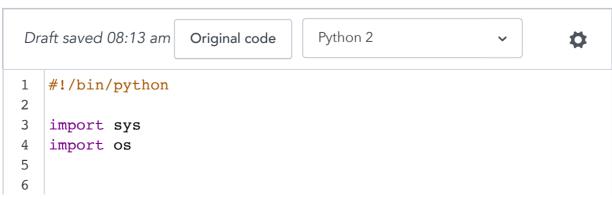
2

Explanation 1

$$n = 6$$
, $a = [7, 9, 5, 6, 3, 2]$

The maximum difference returned by the function is a[1] - a[0] = 9 - 7 = 2, because 2 is the largest difference between any a[i] and a[j] satisfying the conditions that a[i] < a[j] and i < j.

YOUR ANSWER





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```
d
```

```
"Aim": "To print of max difference in pairs"
10
             "Coded by": "Rishikesh Agrawani"
11
12
         }
    ....
13
14
15 ▼ def maxDifference(a):
        max diff = 0
16
        exists = False
17
18
        i = 0
19
20 🔻
        while i < len(a):
             j = i + 1
21
             while j < len(a):
22 ▼
                 diff = a[i] - a[j]
23
24 ~
                 if diff < 0:
25
                      exists = True
                      if abs(diff) > max diff:
26 ▼
                          max diff = abs(diff)
27
28
                 j = j + 1
             i = i + 1
29
30
31 ▼
        if exists:
32
             return max diff
33
34
        return -1
35
36
    f = open(os.environ['OUTPUT PATH'], 'w')
37
38
39
40
    a cnt = 0
41
    _a_cnt = int(raw_input())
42
    a i=0
    a = []
43
44 \checkmark while _a_i < _a_cnt:
        _a_item = int(raw_input());
45
46
        _a.append(_a_item)
47
        _a_i+=1
48
49
50
    res = maxDifference( a)
51
    f.write(str(res) + "\n")
52
                                               (1)
53
    f.close()
54
                                                     Line: 18 Col: 5
```

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▲ Download sample test cases The input/output files have Unix line endings. Do not use 2 Notepad to edit them on windows. 3 Compiled successfully. 7/14 test cases passed. 4 Tip: Debug your code against 5 custom input 6 Test Case #1: 7 Test Case #2: Test Case #3: 8 Test Case #4: Test Case #5: 9 Test Case #6: Test Case #7: 10 Test Case #8: 11 Test Case #9: Test Case #10: 12 Test Case #11: Test Case #12: 13 Test Case #13: (1) Terminated due to timeout Test Case #14: 14 Testcase 1: Success Input [Download] 7 2 3 10 2 4 8 1

8

Your Output



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input [🗻 D	ownload]			
6				
7				
9				
5				
6				
2				
Your Outp	.+			
2				
Expected (Output [& Do	wnload]		
2				
Testcase :	3: Success			
Input [基 D	ownload]			
5				
10				
8				
7				
6				
5				
Your Outp	ut			
-1				
Expected (Output [Ł Do v	wnload]		
-1				
Testcase 4	4: Success			
Your Outp	ut			
Output H	nidden			
•				



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Testcase 6: Success **Your Output** Output hidden Testcase 7: Success **Your Output** Output hidden Testcase 8: Terminated due to timeout **Your Output** Output hidden Testcase 9: Terminated due to timeout **Your Output** Output hidden Testcase 10: Terminated due to timeout **Your Output** Output hidden Testcase 11: Terminated due to timeout **Your Output** Output hidden Testcase 12: Terminated due to timeout **Your Output** Output hidden

Testcase 13: Terminated due to timeout

Your Output



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Testcase 14: Terminated due to timeout

Your Output

Output hidden

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