The Hurdle Race

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Problem Solving ★★★★

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A video player plays a game in which the character competes in a hurdle race. Hurdles are of varying heights, and the characters have a maximum height they can jump. There is a magic potion they can take that will increase their maximum jump height by 1 unit for each dose. How many doses of the potion must the character take to be able to jump all of the hurdles. If the character can already clear all of the hurdles, return 0.

Example

$height = [1, 2, 3, 3, 2]$

$k = 1$

The character can jump 1 unit high initially and must take $3 - 1 = 2$ doses of potion to be able to jump all of the hurdles.

Function Description

Complete the hurdleRace function in the editor below.

hurdleRace has the following parameter(s):

- int k: the height the character can jump naturally
- int height[n]: the heights of each hurdle

Returns

- int: the minimum number of doses required, always 0 or more

Input Format

The first line contains two space-separated integers n and k, the number of hurdles and the maximum height the character can jump naturally.

The second line contains n space-separated integers $height[i]$ where $0 \leq i < n$.

Constraints

- $1 \leq n, k \leq 100$
- $1 \leq height[i] \leq 100$

Sample Input 0

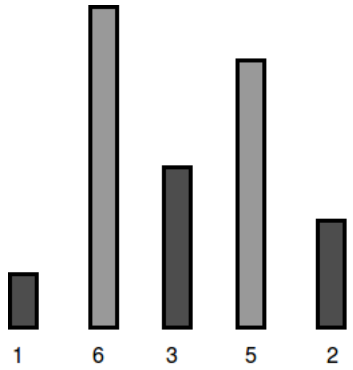
```
5 4
1 6 3 5 2
```

Sample Output 0

```
2
```

Explanation 0

Dan's character can jump a maximum of $k = 4$ units, but the tallest hurdle has a height of $h_1 = 6$:



To be able to jump all the hurdles, Dan must drink $6 - 4 = 2$ doses.

Sample Input 1

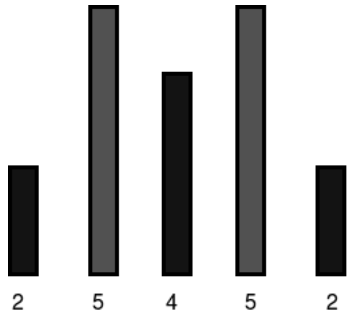
```
5 7
2 5 4 5 2
```

Sample Output 1

```
0
```

Explanation 1

Dan's character can jump a maximum of $k = 7$ units, which is enough to cross all the hurdles:



Because he can already jump all the hurdles, Dan needs to drink 0 doses.

Change Theme Language Python 3

```
4  import os
5  import random
6  import re
7  import sys
8
9  #
10 # Complete the 'hurdleRace' function below.
11 #
12 # The function is expected to return an INTEGER.
13 # The function accepts following parameters:
14 #  1. INTEGER k
15 #  2. INTEGER_ARRAY height
16 #
```

```
17
18  def hurdleRace(k, height):
19      # Write your code here
20      max_height = max(height)
21      if k >= max_height:
22          return 0
23      else:
24          return max_height - k
25
26
27  if __name__ == '__main__':
28      fptr = open(os.environ['OUTPUT_PATH'], 'w')
29
30      first_multiple_input = input().rstrip().split()
31
32      n = int(first_multiple_input[0])
33
34      k = int(first_multiple_input[1])
35
36      height = list(map(int, input().rstrip().split()))
37
```

EMACS Line: 26 Col: 9

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

You have earned 15.00 points!

You are now 49.8 points away from the gold level for your problem solving badge.

87% 800.2/850

Congratulations

You solved this challenge. Would you like to challenge your friends?

Next Challenge

- Test case 0
- Test case 1
- Test case 2
- Test case 3
- Test case 4

Compiler Message

Success

Input (stdin) Download

```
5 4
1 6 3 5 2
```

Expected Output Download

```
2
```