

Geraldo Braho
Comp 5327 Advanced Algorithm

Please solve the following questions:

- <https://www.hackerrank.com/challenges/angry-professor>
- <https://www.hackerrank.com/challenges/sherlock-and-squares>
- <https://www.hackerrank.com/challenges/utopian-tree>

Question 1 <https://www.hackerrank.com/challenges/angry-professor>

The screenshot displays the Hackerrank interface for the 'Angry Professor' challenge. The top navigation bar includes links for PRACTICE, COMPETE, JOBS, and LEADERBOARD. The user's profile 'geraldo' is visible in the top right. The challenge title 'Angry Professor' is prominently displayed, along with a progress bar indicating '1163 more points to get your next star!' and the user's current rank of 60836 and points of 1037/2200.

The main content area is divided into several tabs: Problem, Submissions, Leaderboard, Discussions, Editorial, and Topics. The 'Problem' tab is active, showing the following details:

- Problem:** A Discrete Mathematics professor has a class of students. Frustrated with their lack of discipline, he decides to cancel class if fewer than some number of students are present when class starts. Arrival times go from on time ($arrivalTime \leq 0$) to arrived late ($arrivalTime > 0$).
- Input Format:** The first line of input contains t , the number of test cases. Each test case consists of two lines. The first line has two space-separated integers, n and k , the number of students (size of a) and the cancellation threshold. The second line contains n space-separated integers ($a[1], a[2], \dots, a[n]$) describing the arrival times for each student.
- Note:** Non-positive arrival times ($a[i] \leq 0$) indicate the student arrived early or on time; positive arrival times ($a[i] > 0$) indicate the student arrived $a[i]$ minutes late.
- Function Description:** Complete the `angryProfessor` function in the editor below. It must return YES if class is cancelled, or NO otherwise. `angryProfessor` has the following parameter(s):
 - k : the threshold number of students
 - a : an array of integers representing arrival times
- Constraints:**
 - $1 \leq t \leq 10$

The right sidebar provides additional information and resources:

- Author:** devuy11
- Difficulty:** Easy
- Max Score:** 20
- Submitted By:** 178682
- NEED HELP?** Links to View discussions, View editorial, and View top submissions.
- RESOURCES:** Link to If - Else statements.
- RATE THIS CHALLENGE:** Five stars rating system.
- MORE DETAILS:** Links to Download problem statement, Download sample test cases, and Suggest Edits.
- CHOOSE A TRANSLATION:** A dropdown menu currently set to Chinese.
- Social Media:** Icons for Facebook, Twitter, and LinkedIn.

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- $1 \leq t \leq 10$
- $1 \leq n \leq 1000$
- $1 \leq k \leq n$
- $-100 \leq a[i] \leq 100$, where $i \in [1, \dots, n]$

Output Format

For each test case, print the word YES if the class is canceled or NO if it is not.

Note

If a student arrives exactly on time ($a_i = 0$), the student is considered to have entered before the class started.

Sample Input

```
2
4 3
-1 -3 4 2
4 2
0 -1 2 1
```

Sample Output

```
YES
NO
```

Explanation

For the first test case, $k = 3$. The professor wants at least 3 students in attendance, but only 2 have arrived on time (-3 and -1) so the class is cancelled.

For the second test case, $k = 2$. The professor wants at least 2 students in attendance, and there are 2 who have arrived on time (0 and -1) so the class is not cancelled.

Python 2

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Python 2

```
1 #!/bin/python
2 #Geraldo Braho
3
4 if __name__ == '__main__':
5
6     #Here We get the input from the user
7     t = input()
8     #Using a for loop to iterate through the input
9     for _ in xrange(t):
10
11
12         # Using map function to get the input from the user and treat it as a list.map()
13         # function returns a list of the results after applying the given function to
14         # each item of a given iterable
15         n, m = map(int, raw_input().split())
16         #split() method returns a list of strings after breaking the given string by
17         # the specified separator.
18         A = map(int, raw_input().split())
19         for x in A:
20             if x <= 0:
21                 m -= 1
22
23         #if the students came in class in time or before
24         if m <= 0:
25             #We are printing no so the class is not canceled.
26             print "NO"
27         else:
28             #Now for all the students who are late the class will be canceled. Basically
29             #I just counted the students who were in time or before
30             print "YES"
```

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18
19
20
21
22
23
24
25
26
27
28

```
19  
20     #if the students came in class in time or before  
21     if m <= 0:  
22         #We are printing no so the class in not canceled.  
23         print "NO"  
24     else:  
25         #Now for all the students who are late the class will be canceled. Basicilly  
26         I just counted the students who were in time or before  
27         print "YES"  
28
```

Line: 14 Col: 110

Upload Code as File




☐ Test against custom input

Run Code


Submit Code


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 

Test case 5 

Compiler Message

Success

Input (stdin)

Download

```
2  
4 3  
-1 -3 4 2  
4 2  
0 -1 2 1
```

Expected Output

Download

Question 2 <https://www.hackerrank.com/challenges/sherlock-and-squares>

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PRACTICE COMPETE JOBS LEADERBOARD

Search


geraldo

Practice > Algorithms > Implementation > Sherlock and Squares

Sherlock and Squares

1143 more points to get your next star!

Rank: 59105 | Points: 1057/2200



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Course: C Sherlock an... Untitled doc... HackerRank...

Download sample test cases

1 ≤ a ≤ b ≤ 10⁹

Output Format

For each test case, print the number of square integers in the range on a new line.

Sample Input

2
3 9
17 24

Sample Output

2
0

Explanation

Test Case #00: In range [3, 9], 4 and 9 are the two square integers.
Test Case #01: In range [17, 24], there are no square integers.

Suggest Edits

CHOOSE A TRANSLATION

Chinese

f

t

in

Python 2

1

#!/usr/bin/py

2

#Geraldo Braho

3

4

5

#Here I am importing everyting from the math library alredy build in python

6

from math import *

7

8

if __name__ == '__main__':

9

#Getting the input from the user

10

t = input()

11

#Iteraring through the input with a for loop

12

for _ in range(t):

13


#Using map function and Split to get the input as a list and clean it

```
1 #!/usr/bin/py
2 #Geraldo Braho
3
4
5 #Here I am importing everything from the math library already build in python
6 from math import *
7
8 if __name__ == '__main__':
9     #Getting the input from the user
10    t = input()
11    #Iteraring through the input with a for loop
12    for _ in range(t):
13        #Using map function and Split to get the input as a list and clean it
14        a, b = map(int, raw_input().split())
15        #The ceil() method returns the ceiling value of x i.e. the smallest integer not
less than x.
16        a = ceil(sqrt(a))
17        #floor() method in Python returns floor of x i.e., the largest integer not
greater than x.
18        b = floor(sqrt(b))
19        #Just compute the difference between the square of the low end and the high end.
20        print int(b - a) + 1
```

Line: 18 Col: 9

Line: 18 Col: 9

☐ Upload Code as File ☐ Test against custom input

 You have earned 20.00 points!
You are now 1143 points away from the 6th star for your problem solving badge.

15% 1057/2200

Congratulations

You solved this challenge. Would you like to challenge your friends? [f](#) [t](#) [in](#)

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Compiler Message

Success

Input (stdin) [Download](#)

```
100
11 734
228 919
71 188
270 303
312 701
251 325
418 954
407 597
4 4
248 583
210 026
```

Question 3 - <https://www.hackerrank.com/challenges/utopian-tree>

The screenshot shows the HackerRank interface for the 'Utopian Tree' challenge. A notification banner at the top states: 'Your Utopian Tree submission got 20.00 points. You are now 1123 points away from the 6th star for your problem solving badge. Try the next challenge | Try a Random Challenge'. Below this, the 'Problem' tab is selected, displaying the challenge description and a table of growth cycles.

Problem | Submissions | Leaderboard | Discussions | Editorial | Topics

The Utopian Tree goes through 2 cycles of growth every year. Each spring, it doubles in height. Each summer, its height increases by 1 meter.

Laura plants a Utopian Tree sapling with a height of 1 meter at the onset of spring. How tall will her tree be after n growth cycles?

For example, if the number of growth cycles is $n = 5$, the calculations are as follows:

Period	Height
0	1
1	2
2	3
3	6
4	7
5	14

Function Description

Complete the `utopianTree` function in the editor below. It should return the integer height of the tree after the input number of growth cycles.

`utopianTree` has the following parameter(s):

- n : an integer, the number of growth cycles to simulate

Metadata:

- Author: dheeraj
- Difficulty: Easy
- Max Score: 20
- Submitted By: 198881

NEED HELP?

- View discussions
- View editorial
- View top submissions

RESOURCES

- If - Else statements
- Closed Form

RATE THIS CHALLENGE

☆☆☆☆☆

MORE DETAILS

- Download problem statement

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Line: 7 Col: 1

Upload Code as File

Test against custom input

Run Code

Submit Code



You have earned 20.00 points!

You are now 1123 points away from the 6th star for your problem solving badge.

17%

1077/2200

Congratulations

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

[f](#)[t](#)[in](#)

Next Challenge

Test case 0

Test case 1

Test case 2

Test case 3

Test case 4

Test case 5

Test case 6

Compiler Message

Success

Input (stdin)

Download

2
0
1

Expected Output

Download

1
2

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