Find the number of occurrences

Chef's has a huge integer array A

, and would like to find the number of occurrences of x for a given integer x

.

The array is so huge that it takes time to find out the value of the array at a given index i

, fortunately Chef has stored the array in sorted order so that it helps in getting information efficiently later.

You are not explicitly given the array, however you can use the function $find\_pos(x)$

to find the value of $A[x]$

.

You are given an integer n

($1 \leq n \leq 105$), the size of the array (indexed from 0 to $n-1$) and an integer x

.

You are **not** given the array A, you can however figure out the value of $A[x]$

by calling the function $find\_pos(x)$

.

Find the number of occurrences of x

in the array A

.

Since $find\_pos$

is an expensive operation (since Chef's array is huge), you cannot use the $find\_pos$ function more than 40

times.

You are given a [solution template](#) in which the input and output part is taken care of.

Fill the $count(n,x)$

function which takes as input the size of the integer array A and the value for which the number of occurrences is to be calculated and returns the number of occurrences of x in the array A

.

You can use the function $find\_pos(i)$

which returns the value of $A[i]$

.

Use the fact that the hidden array A

is in sorted order to solve the problem.

Instructions

Refer the following solution_template in order to solve the problem.

Complete the function $count(n,x)$

defined in the above solution template. The input and output required for this problem is taken care of in the solution template.

You only need to fill the function given.

Judging

If your program attempts to read an index less than 0 or greater than n

, then you will receive a Wrong Answer verdict.

If your program calls $find\_pos()$

more than 40 times, then you will receive a Wrong Answer verdict.

If your program correctly returns the number of occurrences of the given number x

while calling the function $find\_pos()$

less than or equal to 40 times, then your program is considered correct.

Local Testing

Local Tester is a python program that you can use to test your solution. The given program generates random arrays and random values of x

for the given array.

You can add test cases or use other methods to generate test cases by modifying the code.

Constraints

$1 \le n \le 105$

$-109 \le x \le 109$

All elements of the array are between -109

and 109

(inclusive)

Sample solution

sample solution

Explanation

The sample code obtains all the elements of the array A

, and directly prints the answer, however when the length of the array is greater than 40, the function $find\_pos()$

is called more than 40 times and hence this solution receives Wrong Answer verdict.

You should write a function that does not take more than 40 calls of $find\_pos$

in order to find the answer.