

**UNIVERSIDAD NACIONAL DE SAN AGUSTÍN DE AREQUIPA**

**FACULTAD DE PRODUCCION Y SERVICIOS**

**ESCUELA PROFESIONAL DE INGENIERÍA DE SISTEMAS**



**Curso: Laboratorio Análisis y Diseño de Algoritmos**

## **Evidencias Ejercicios 9**

**Docente:** Florez Farfan, Alex Josue

**Estudiante:**

Neira Carrasco, Darwin Jesus

**Grupo - “B”**

Arequipa - Perú

# Tie Ropes

The ropes are shown in the figure below.

We can tie:

- rope 1 with rope 2 to produce a rope of length  $A[1] + A[2] = 3$ ;
- rope 4 with rope 5 with rope 6 to produce a rope of length  $A[4] + A[5] + A[6] = 11$ .

After that, there will be three ropes whose lengths are greater than or equal to  $K = 4$ . It is not possible to produce four such ropes.

Write a function:

```
class Solution { public int solution(int K, int[] A); }
```

that, given an integer  $K$  and a non-empty array  $A$  of  $N$  integers, returns the maximum number of ropes of length greater than or equal to  $K$  that can be created.

For example, given  $K = 4$  and array  $A$  such that:

```
A[0] = 1
A[1] = 2
A[2] = 3
A[3] = 4
A[4] = 1
A[5] = 1
A[6] = 3
```

the function should return 3, as explained above.

Write an efficient algorithm for the following assumptions:

- $N$  is an integer within the range  $[1..100,000]$ ;
- $K$  is an integer within the range  $[1..1,000,000,000]$ ;
- each element of array  $A$  is an integer within the range  $[1..1,000,000,000]$ .

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Code: 13:19:45 UTC, java, final, score: 100 [show code in pop-up](#)

```
1 // you can also use imports, for example:
2 // import java.util.*;
3
4 // you can write to stdout for debugging purposes, e.g.
5 // System.out.println("this is a debug message");
6
7 class Solution {
8     public int solution(int K, int[] A) {
9         int n = A.length;
10         for(int i = 0; i < A.length; i++){
11
12             if(A[i] >= K){
13                 n++;
14                 continue;
15             }
16             else{
17                 if(i + 1 != A.length){
18                     A[i+1] += A[i];
19                 }
20             }
21         }
22         return n;
23     }
24 }
25
26
27 }
```

**Analysis summary**

The solution obtained perfect score.

**Analysis**

Detected time complexity:  **$O(N)$**

Example tests	
▶ example	OK
Correctness tests	
▶ single	OK
▶ single element	OK
▶ double	OK
▶ two elements	OK
▶ small_functional	OK
▶ small_functional tests	OK
▶ small_random	OK
▶ small_random sequences length <= 100	OK
Performance tests	
▶ medium_random	OK
▶ chaotic medium sequences length <= 5000	OK
▶ large_range	OK
▶ large_range test, length <= 100,000	OK
▶ large_answer	OK
▶ test with large answer, length <= 100,000	OK
▶ small_answer	OK
▶ test with large answer, length <= 100,000	OK

# back queue

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## Submission

ID	DATE	PROBLEM	STATUS	CPU	LANG
8148052	14:11:48	Bank Queue	Accepted	0.89 s	Java

Submission contains 1 file: [download zip archive](#)

FILENAME	FILESIZE	SHA-1 SUM	
bankQueue.java	2948 bytes	2449e1ed89e9438a5a811c4f6bda65c77f58dca12	<a href="#">download</a>

[Edit and resubmit](#) this submission.

**bankQueue.java**

```
1 /*
2  * @Autor: Darwin Jesus Netra Carrasco
```

# MaxNonoverlappingSegments

app.codility.com/demo/results/trainingGYU42H-FZ9/

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Codility\_

CodeCheck Report: trainingGYU42H-FZ9

Test Name:

Check out Codility training tasks

Summary Timeline

Tasks summary

Task	Time spent	Score
MaxNonoverlappingSegments Java 8	2 min	100%

Total score

100%

# vicious Pikeman

open.kattis.com/submissions/8152194

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Submission

ID	DATE	PROBLEM	STATUS	CPU	LANG
TEST CASES					
8152194	13:26:22	A Vicious Pikeman (Easy)	Accepted	0.06 s	Python 3

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
FILENAME	FILESIZE	SHA-1 SUM	
viciousPikeman.py	703 bytes	61f2cdd68173d4355ac899f4fd74b4115790db26	download

Edit and resubmit this submission.

viciousPikeman.py

```
1 .....
2 @Autor: Darwin Jesus Neira Carrasco
3 @Email: dnestac@unsa.edu.pe
```

## Watering Grass



[PROBLEMS](#)
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DARWIN JESUS NEIRA...  
 Score: 7.7, Rank: 56960

## Submission

ID	DATE	PROBLEM	STATUS	CPU	LANG
	TEST CASES				
<a href="#">8153376</a>	00:37:10	<a href="#">Watering Grass</a>	✓ Accepted	0.31 s	Python 3
	<div> <div>✓</div> <div>✓</div> </div>				

Submission contains 1 file:

FILENAME	FILESIZE	SHA-1 SUM	
wateringGrass.py	2042 bytes	6e150979634d8a8f4cd4ba7bba226c9f2149515a	<input type="button" value="download"/>

[Edit and resubmit](#) this submission.

**wateringGrass.py**