Codility_

CodeCheck Report: trainingZD33NU-R6X

Test Name:

Check out Codility training tasks

Summary Timeline

Tasks summary

Task	Time spent	Score
CountFactors Python	2 min	100%

Total score

Tasks Details

1. **CountFactors**
Easy
Count factors of given number n.

Task Score	Correctness	Performance
100%	100%	100%

Task description

A positive integer D is a *factor* of a positive integer N if there exists an integer M such that N = D * M.

For example, 6 is a factor of 24, because M = 4 satisfies the above condition (24 = 6 * 4).

Write a function:

```
def solution(N)
```

that, given a positive integer N, returns the number of its factors.

For example, given N = 24, the function should return 8, because 24 has 8 factors, namely 1, 2, 3, 4, 6, 8, 12, 24. There are no other factors of 24.

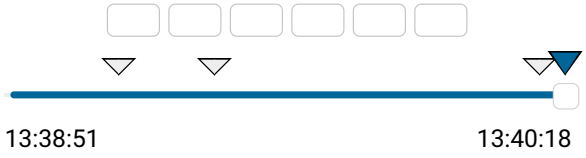
Write an **efficient** algorithm for the following assumptions:

- N is an integer within the range

Solution

Programming language used:	Python
Total time used:	2 minutes
Effective time used:	2 minutes
Notes:	*not defined yet*

Task timeline



[1..2,147,483,647].

Code: 13:40:18 UTC, py, final, score: **100** show code in pop-up

```python
# you can write to stdout for debugging
# print("this is a debug message")

def solution(N):
    # Implement your solution here
    # pass
    factors = []
    i = 1
    while i * i <= N:
        if N % i == 0:
            factors.append(i)
            if i != N // i:
                factors.append(N // i)
        i += 1
    return len(factors)

```

Analysis summary

The solution obtained perfect score.

Analysis

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

expand all	Example tests	
▶	example1 example test (N=24=4!)	✔ OK
expand all	**Correctness tests**	
▶	squares N=16, N=36	✔ OK
▶	tiny N <= 10	✔ OK
▶	simple1 N=41(prime), N=42	✔ OK
▶	simple2 N=69, N=64, N=120=5!	✔ OK
▶	simple3 N=720=6!, N=1111	✔ OK
▶	simple4 N=5,040=7!, N=12,345	✔ OK
▶	simple5 N=34,879, N=40,320=8!	✔ OK
▶	extreme_one N=1	✔ OK
expand all	**Performance tests**	
▶	medium1 N=362,880=9!, N=1,948,102	✔ OK
▶	medium2	✔ OK

	N=3,628,800=10!, N=5,621,892, N=4,999,696	
▶	big1 N=27,043,111, N=39,916,800=11!, N = 39,992,976	✔ OK
▶	big2 N=97,093,212, N=2^28	✔ OK
▶	big3 N=479,001,600=12!, N=780291637(prime), N=449,991,369	✔ OK
▶	extreme_maxint N=1,000,000,000, N=MAX_INT, N=2147,395,600	✔ OK