Codility_

CodeCheck Report: trainingV2PN88-64E

Test Name:

Summary   Timeline

Tasks summary

Task		Time spent	Score
ChocolatesByNumbers Python	⚠️	6 min	100%

Total score

100%

Tasks Details

1.
ChocolatesByNumbers
There are N chocolates in a circle. Count the number of chocolates you will eat.

Easy

Task Score		Correctness		Performance	
	100%		100%		100%

Task description

Two positive integers N and M are given. Integer N represents the number of chocolates arranged in a circle, numbered from 0 to N − 1.

You start to eat the chocolates. After eating a chocolate you leave only a wrapper.

You begin with eating chocolate number 0. Then you omit the next M − 1 chocolates or wrappers on the circle, and eat the following one.

More precisely, if you ate chocolate number X, then you will next eat the chocolate with number (X + M) modulo N (remainder of division).

You stop eating when you encounter an empty wrapper.

For example, given integers N = 10 and M = 4. You will eat the following chocolates: 0, 4, 8, 2, 6.

The goal is to count the number of chocolates that you will eat, following the above rules.
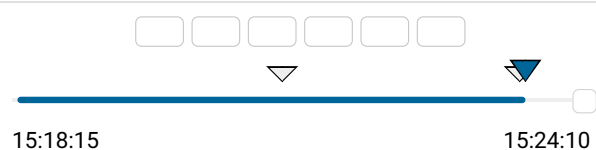
Write a function:

Solution

Programming language used:	Python
Total time used:	6 minutes ❓
Effective time used:	6 minutes ❓
Notes:	*not defined yet*

Task timeline ❓

15:18:15   15:24:10

Code: 15:24:10 UTC, py, final, score: **100**   show code in pop-up

```
1   # you can write to stdout for debugging purpo
```

```
def solution(N, M)
```

that, given two positive integers N and M, returns the number of chocolates that you will eat.

For example, given integers N = 10 and M = 4. the function should return 5, as explained above.

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

- N and M are integers within the range [1..1,000,000,000].

```python
2    # print("this is a debug message")
3
4    def solution(N, M):
5        # Implement your solution here
6        # pass
7
8        def gcd(a, b):
9            if b == 0:
10               return a
11
12           return gcd(b, a % b)
13
14       # Find the greatest common divisor
15       gcd_value = gcd(N, M)
16
17       # Calculate the number of chocolates
18       number_of_chocolates = N // gcd_value
19
20       return number_of_chocolates
21
```

Analysis summary

The solution obtained perfect score.

Analysis

Detected time complexity:

$O(\log(N + M))$

expand all	Example tests	
▶ example		✔ OK
example test		
expand all	Correctness tests	
▶ extreme_small		✔ OK
very small N and M		
▶ simple		✔ OK
simple test, N = 24, M = 18		
▶ small1		✔ OK
small tests		
▶ small2		✔ OK
small tests		
expand all	Performance tests	
▶ medium		✔ OK
medium tests		
▶ large		✔ OK
large tests		
▶ large2		✔ OK
N = (3**9)*(2**14), M=(2**14)*(2**14)		
▶ extreme_large		✔ OK
maximal and minimal values		