

Curso > Week 2... > 4. Func... > Exercis...

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Exercise: gcd iter

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5.0/5.0 points (graded)

ESTIMATED TIME TO COMPLETE: 5 minutes

The greatest common divisor of two positive integers is the largest integer that divides each of them without remainder. For example,

- gcd(2, 12) = 2
- gcd(6, 12) = 6
- gcd(9, 12) = 3
- gcd(17, 12) = 1

Write an iterative function, gcdIter(a, b), that implements this idea. One easy way to do this is to begin with a test value equal to the smaller of the two input arguments, and iteratively reduce this test value by 1 until you either reach a case where the test divides both a and b without remainder, or you reach 1.

```
1 def gcdIter(a, b):
2
3
     a, b: positive integers
     returns: a positive integer, the greatest common divisor of a & b.
6
7
     # Your code here
8
     if a < b:
```

```
# Começa por a
10
          inicio = a
    else:
11
12
          # Começa por b
13
          inicio = b
14
      for mdc in range(inicio, 0, -1):
15
          if (a \% mdc == 0) and (b \% mdc == 0):
```

Press ESC then TAB or click outside of the code editor to exit

Correta

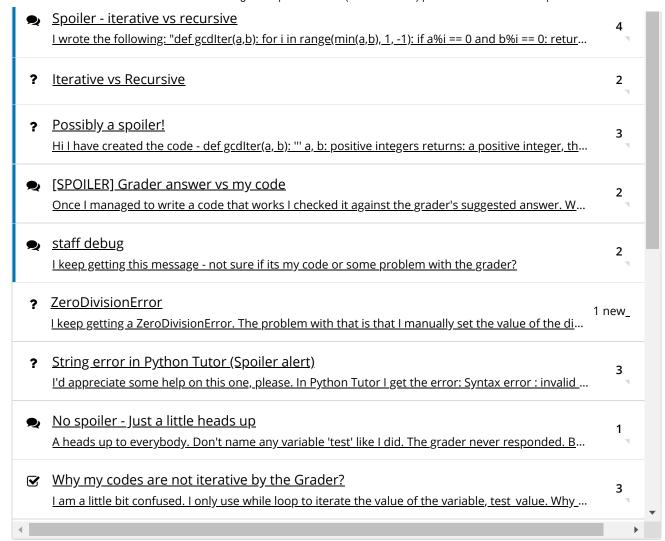
```
def gcdIter(a, b):
    a, b: positive integers
   returns: a positive integer, the greatest common divisor of a & b.
    testValue = min(a, b)
   # Keep looping until testValue divides both a & b evenly
    while a % testValue != 0 or b % testValue != 0:
        testValue -= 1
    return testValue
```

Test results

Test: gcdIter(190, 170) Output: 10 Test: gcdIter(228, 342)	
10	
Test: gcdIter(228, 342)	
Output:	
114	

Test: gcdIter(136, 170)
Output:
34
Test: gcdIter(126, 180)
Output:
18
Test: gcdIter(225, 81)
Output:
9
Test: gcdIter(42, 42)
Output:
42
Tools and Thom/414 224)
Test: gcdIter(414, 324)
Output
Output:
18
Test: gcdIter(160, 112)
Output:

		16	
Output: 18 Test: gcdIter(22, 44) Output: 22 Hide output: 22 Hide output: 22 Cultar discussão Cultar discussão Add a Po Show all posts Add a Po Show all posts Por atividade recente Spoiler: How Many Lines Did You Get? Last my. code down to 16 lines, including my function call I had fun with this problem and was c Spoiler: Fucifidian Algorithm used Euclidian Algorithm used Euclidian Algorithm function call I had fun with this problem and was c Code works in ide not in grader? So my. code works in ide not in grader? So my. code works in ithe ide but I get a staff debug in the grader (tam guessing infinite loop) I hav Add a Po Code works in ide not in grader? So my. code works in the ide but I get a staff debug in the grader (tam guessing infinite loop) I hav		Test: gcdIter(126, 288)	
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