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Exercise: gcd iter

Finger Exercises due Aug 5, 2020 20:30 -03 *Completo*

Exercise: gcd iter

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.

```
def gcdIter(a, b):
    '''
    a, b: positive integers

    returns: a positive integer, the greatest common divisor of a & b.
    '''
    # Your code here
    if a < b:
        # Começa por a
```

```
        inicio = a
    else:
        # Começa por b
        inicio = b
    for mdc in range(inicio, 0, -1):
        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

Hide output

CORRECT

Test: gcdIter(190, 170)

Output:

```
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

Test: gcdIter(414, 324)

Output:

18

Test: gcdIter(160, 112)

Output:

16

Test: gcdIter(126, 288)

Output:

18

Test: gcdIter(22, 44)

Output:

22

Hide output

Enviar

Answers are displayed within the problem

Exercise: gcd iter

Ocultar discussão

Topic: Lecture 4 / Exercise: gcd iter

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About min and max and a>b and b>a There is no point in them. Just set your other variable that is going to be the gcd to just be a or b. ...	1
1 Thing i learned today :Read the output Carefully its safes time and nerves thats all i have to say after 20 min of anger and frustration	3
HINTS! Where to start... 1) define a variable (factor) as either a or b depending on which is the biggest (eg: if a>b factor = b...	4
How do I initialize variable a ???? This is the error in my code: NameError: name 'a' is not defined	2
NameError: name 'a' is not defined DON'T KNOW HOW TO FIX THIS	4

Traceback (most recent call last): File "submission.py", line 10, in <module> x=min(a,b) NameError...

? Spoiler — 1
This my code but if the numbers are not equal I always have the value zero def gcdIter(a, b): ''' a, ...

staff debug — 3
I keep getting this message - not sure if its my code or some problem with the grader?

OR vs AND — 1
why do they use b%gcd != 0 or a%gcd != 0 Isn't the gcd supposed to divide both of them?

IF ELSE code, how to decide where to indent? And this code works with **OR**but not **AND**why? — 1
gcd = 1 if a < b: gcd = a while b % gcd != 0 or a % gcd != 0: gcd -= 1 return gcd elif b < a: gcd = b whi...

Is this "recursive" ? — 6
I didn't call the main function. I don't understand. def gcdIter(a, b): smallest=a+b while smallest >...

Possible solutions — 1
I used a similar solution to the one used in the third problem set of the first question and was ab...

Spoiler: How Many Lines Did You Get? — 19 new
I got my code down to 16 lines, including my function call.... I had fun with this problem and was c...