

# Computing the GCD ★

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Problem

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Leaderboard

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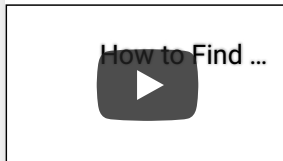


### Objective

In this challenge, we learn how to compute GCD using the Euclidean algorithm.

### Resources

Here's a helpful video on the topic:



Given two integers,  $x$  and  $y$ , a recursive technique to find their GCD is the [Euclidean Algorithm](#).

The algorithm states that, for computing the GCD of two positive integers  $x$  and  $y$ , if  $x$  and  $y$  are equal,  $GCD(x, y) = x$ . Otherwise  $GCD(x, y) = GCD(x - y, y)$  if  $x > y$ . There are a few optimizations that can be made to the above logic to arrive at a more efficient implementation.

### Task

Given the starter code, you need to complete a function body that returns the GCD of two given integers  $x$  and  $y$ .

The task of reading in input and printing the output will be handled by us.

### Programming Language Support

At this point of time, we have a template for Scala. This means that we provide the code required to accept the input and display the output.

### Input Format

One line of input containing **2** space separated integers.

### Constraints

$$1 \leq a, b \leq 10^6$$

### Output Format

Output one integer, the GCD of the two given numbers.



**Sample Input**

```
1 5
```

**Sample Output**

```
1
```

**Explanation****Sample Return Values:**

```
GCD(1,5) = 1
GCD(10,100) = 10
GCD(22,131) = 1
```

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Language

Haskell



```
1  module Main where
2
3
4  gcd' :: Integral a => a -> a -> a
5  gcd' a 0 = a
6  gcd' a b = let c = a `mod` b
7              in gcd' b c
8
9
10 -- This part is related to the Input/Output and can be used as it is
11 -- Do not modify it
12 main = do
13     input <- getLine
14     print . uncurry gcd' . listToTuple . convertToInt . words $ input
15     where
16         listToTuple (x:xs:_) = (x,xs)
17         convertToInt = map (read :: String -> Int)
18
```

Line: 18 Col: 1

Upload Code as File

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