

# Computing the GCD



## 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
```