

## Final Example: GCD

GCD: greatest common divider

– The largest # that divides both value

We'll build a control circuit to calculate this, using this algorithm:

```
GCD (x,y):
  while x > 0:
    if x < y:
      swap x <-> y
    x <- x-y
  return y
```

a modification of Euclid algorithm coming up with the algorithm is out of this course.

## DIAGRAM

Test ( of original diagram)

State	X	Y
idle	24	15
GCD0		
GCD1	9	15
GCD0	15	9
GCD1	6	9
GCD0	9	6
GCD1	3	6
GCD0	6	3
GCD1	3	3
GCD0	0	3
GCD		