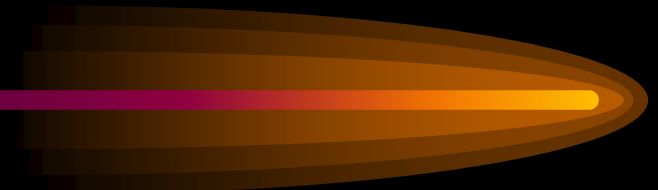


Greatest Common Divisor

1. Start with two numbers
2. If they're equal, they're the GCD
3. If not
 Subtract the smaller from the larger
4. Repeat from Step 2

48	18
30	
12	
	6
6	



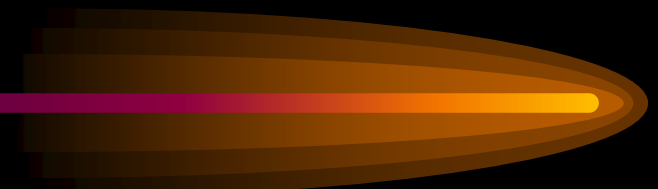
```

TOP   LOD   A       ;loop; if (A = B) then
      SUB   B       ;
      JZR   DONE    ;   exit;
      JNG   ELSE    ;if (A > B) then
      STO   A       ;   A = A - B
      JMP   TOP     ;
ELSE  LOD   B       ;else
      SUB   A       ;
      STO   B       ;   B = B - A
      JMP   TOP     ;endloop
DONE  STP                ;stop
      DAT   0       ;(filler, 3 memory cells)
      DAT   0       ;
      DAT   0       ;
A     DAT   18      ;A = 18
B     DAT   24      ;B = 24

```

```
TOP   LOD   A       ;loop; if (A = B) then
      SUB   B       ;
      JZR   DONE    ;    exit;
      JNG   ELSE    ;if (A > B) then
      STO   A       ;    A = A - B
      JMP   TOP     ;
ELSE  LOD   B       ;else
      SUB   A       ;
      STO   B       ;    B = B - A
      JMP   TOP     ;endloop
DONE  STP                ;stop
```

```
A     DAT   18      ;A = 18
B     DAT   24      ;B = 24
```



```

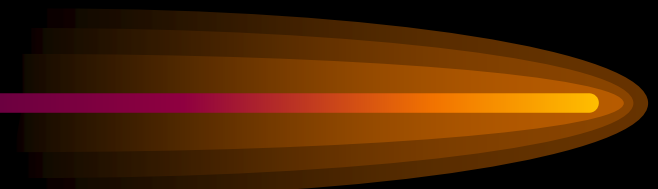
TOP   LOD   A       ;loop; if (A = B) then
      SUB   B       ;
      JZR   DONE    ;   exit;
      JNG   ELSE    ;if (A > B) then
      STO   A       ;   A = A - B
      JMP   TOP     ;
ELSE  LOD   B       ;else
      SUB   A       ;
      STO   B       ;   B = B - A
      JMP   TOP     ;endloop
DONE  STP                ;stop

```

```

A     DAT   18     ;A = 18
B     DAT   24     ;B = 24

```



```

TOP   LOD   A       ;loop; if (A = B) then
      SUB   B       ;
      JZR   DONE    ;   exit;
      JNG   ELSE    ;if (A > B) then
      STO   A       ;   A = A - B
      JMP   TOP     ;
ELSE  LOD   B       ;else
      SUB   A       ;
      STO   B       ;   B = B - A
      JMP   TOP     ;endloop
DONE  STP                ;stop

```

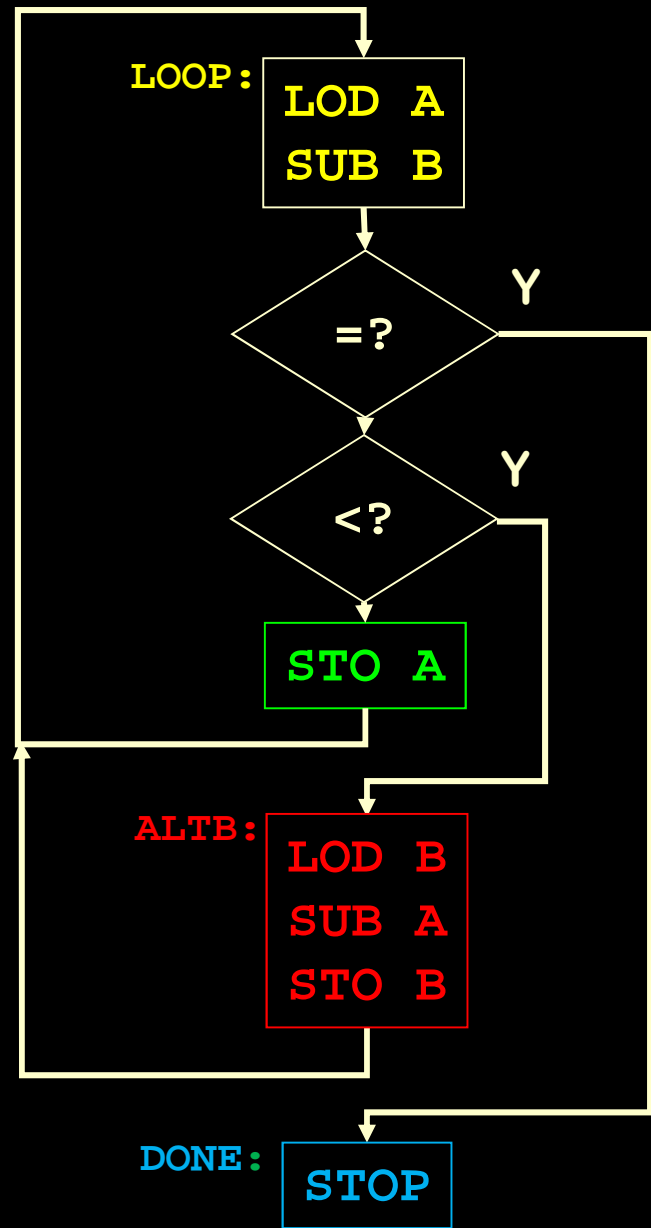
```

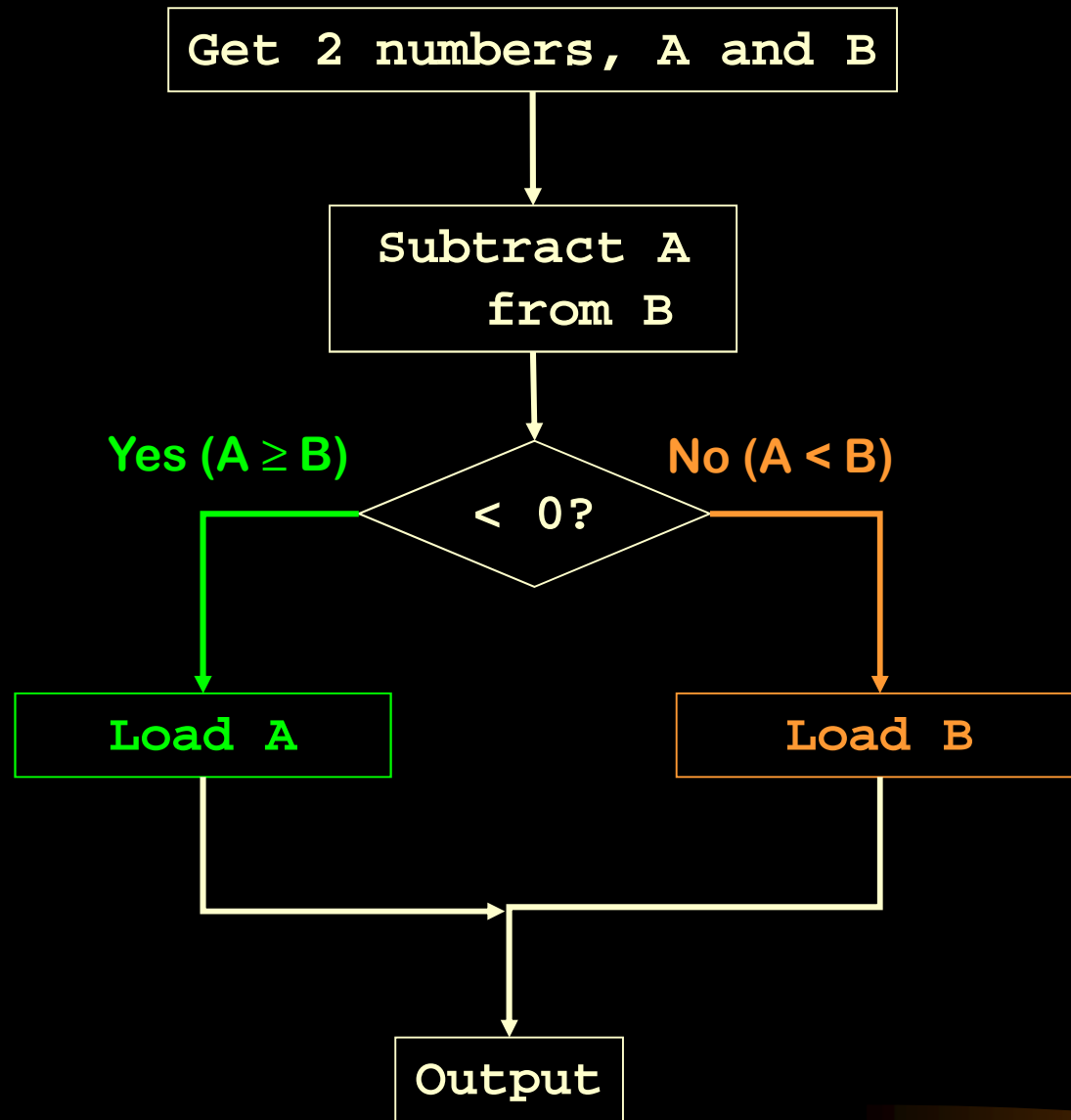
A     DAT   18     ;A = 18
B     DAT   24     ;B = 24

```

```
TOP   LOD   A       ;loop; if (A = B) then
      SUB   B       ;
      JZR   DONE    ;   exit;
      JNG   ELSE    ;if (A > B) then
      STO   A       ;   A = A - B
      JMP   TOP     ;
ELSE  LOD   B       ;else
      SUB   A       ;
      STO   B       ;   B = B - A
      JMP   TOP     ;endloop
DONE  STP                ;stop
```

```
A     DAT   18     ;A = 18
B     DAT   24     ;B = 24
```






```
      INP          ; get two inputs
      STO  A
      INP
      STO  B
      SUB  A      ; B-A
      JNG  ABIG   ; if < 0, A is bigger
      LOD  B      ; else B is bigger
      JMP  DONE
ABIG  LOD  A
DONE  OUT          ; output the bigger one
      STP

A     DAT
B     DAT
```

