

Programming Tutorial with Minecraft
Turtles -- Ep. 2: Variables and Boolean
Logic



<https://www.youtube.com/watch?v=bKGw7MfO1gw>

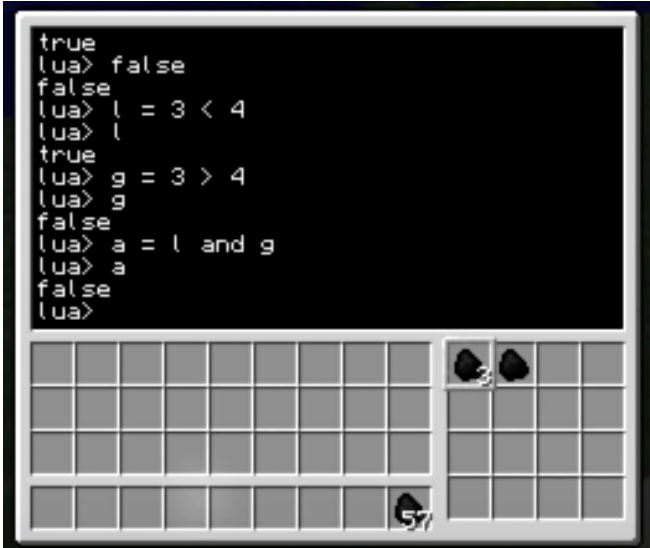
CONCATINATOR

```
lua> h = "hello"
lua> h
hello
lua> w = "world"
lua> w
world
lua> hw = h .. w
lua> hw
helloworld
lua> hw = h .. " " .. w
lua> hw
hello world
lua> _
```

JAVA: +

A concatenator "adds" strings together

BOOLEAN Variables

A screenshot of a Lua interpreter window. The window has a black background with white text. The text shows a series of commands and their outputs: 'true', 'lua> false', 'false', 'lua> l = 3 < 4', 'lua> l', 'true', 'lua> g = 3 > 4', 'lua> g', 'false', 'lua> a = l and g', 'lua> a', 'false', and 'lua>'. Below the text is a white keyboard area with black keys. The number '57' is visible in the bottom right corner of the keyboard area.

```
true
lua> false
false
lua> l = 3 < 4
lua> l
true
lua> g = 3 > 4
lua> g
false
lua> a = l and g
lua> a
false
lua>
```

Variables
with True
or False
vales

and

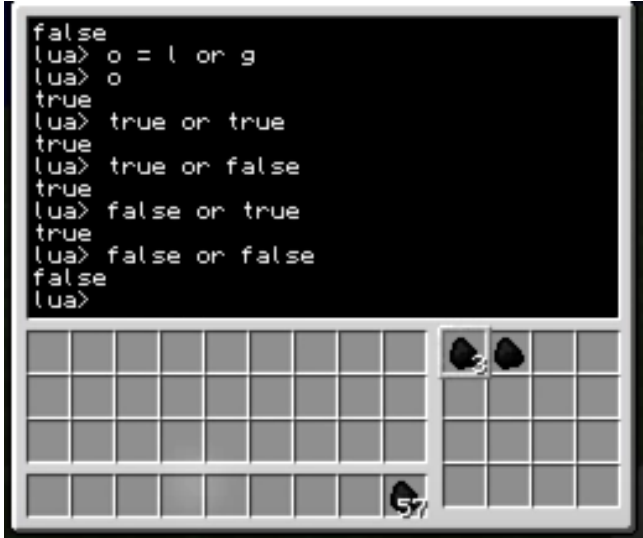
```
false
lua> a = l and g
lua> a
false
lua> true and true
true
lua> true and false
false
lua> false and true
false
lua> false and false
false
lua>
```

JAVA: &&

Bool1	and	Bool2	Returns
T	&&	T	T
T	&&	F	F
F	&&	T	F
F	&&	F	F

or

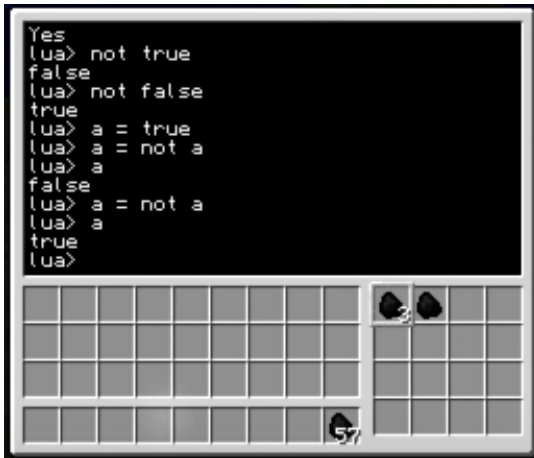
```
false
lua> o = l or g
lua> o
true
lua> true or true
true
lua> true or false
true
lua> false or true
true
lua> false or false
false
lua>
```



JAVA: ||

Bool1	Or	Bool2	Returns
T		T	T
T		F	T
F		T	T
F		F	F

not



```
Yes
lua> not true
false
lua> not false
true
lua> a = true
lua> a = not a
lua> a
false
lua> a = not a
lua> a
true
lua>
```

JAVA: !

not	Bool	Returns
!	T	F
!	F	T

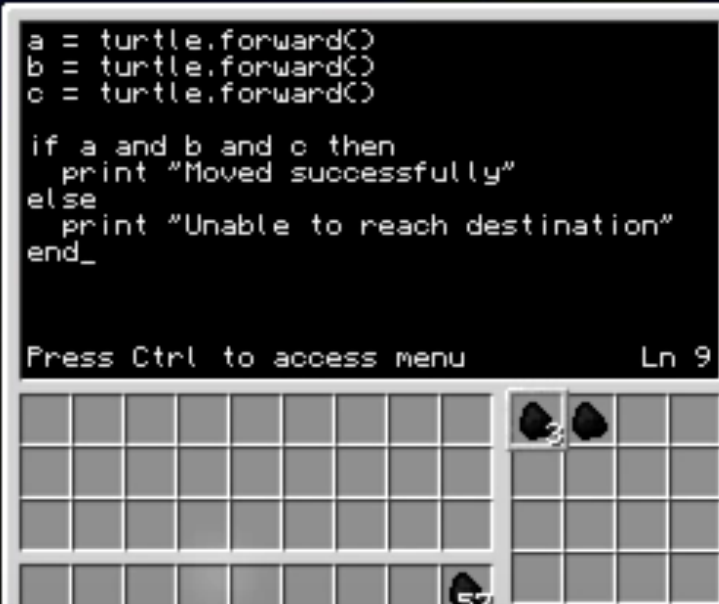
Write a program!

edit move3

```
a = turtle.forward()
b = turtle.forward()
c = turtle.forward()

if a and b and c then
  print "Moved successfully"
else
  print "Unable to reach destination"
end_
```

Press Ctrl to access menu Ln 9



edit movetest

```
fuelStart = turtle.getFuelLevel()
turtle.forward()
turtle.forward()
fuelEnd = turtle.getFuelLevel()
print("Used " .. fuelEnd-fuelStart .. "
```

Press Ctrl to access menu Ln 6

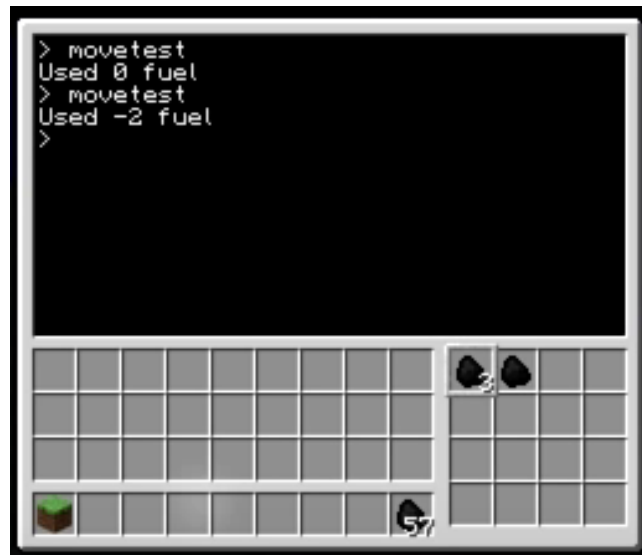


```
t = turtle.getFuelLevel()
onward()
onward()
= turtle.getFuelLevel()
sed " .. fuelEnd-fuelStart .. " fuel")
```

Press Ctrl to access menu Ln 6



What went wrong?



Thats better!



*That's called DEBUGGING code

You Try!

Write a program that will tell your turtle to move forward 5 spaces and move over objects **IF** there is something in their way.

Write a program that will move forward 5 spaces and move backward **IF** something is in its way.