

Project 2: Logisim Hints

If Logisim is doing something weird, click [here](#).

Use. The. Keyboard.

Stop using the mouse for everything. The keyboard is so much faster.

On Windows/Linux these use **Ctrl**, but on macOS use **Cmd** instead.

Editing shortcuts

Ctrl+Z is Undo. If you haven't learned about undo yet, well, try it.

Ctrl+X/C/V are Cut/Copy/Paste. This works in virtually every program ever. *Stop right-clicking.*

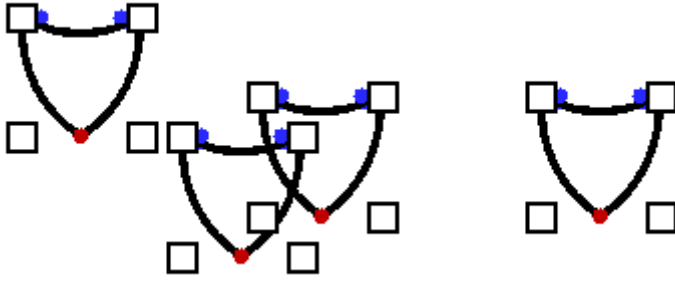
Ctrl+A selects everything. Good for moving a whole circuit around to make room on the top/left sides.

Ctrl+D duplicates the current selection. Quicker than doing **Ctrl+C** **Ctrl+V** and doesn't put anything in the clipboard.

Your keyboard's arrow keys let you change what direction a component is facing. **You can even do this with multiple components selected!** For example, I have these gates all facing different directions:



If I select them all and hit the **down arrow**:



Well, they're a little messy, but it's faster than doing it one by one in the properties.

Simulation Shortcuts

Ctrl+R resets the simulation. The contents of ROM will not be changed, but **the contents of RAM will be erased.**

Ctrl+E enables or disables simulation. Usually I only use this when things get weird as explained below.

Ctrl+K enables or disables the clock. You can change the speed of the clock with **Simulate > Tick Frequency.**

Ctrl+T ticks the clock once, if the clock is disabled.

Tips and tricks

Clocked components

For clocked components like registers, leave the "Trigger Event" on the default, "Rising edge." It's easiest to design clocked circuits by having everything use the same clock trigger.

Constants

If you want a constant value, use the constant component (under Wiring), not an input.

Probes

In the Wiring components, there's one called Probe. It's a great way of having a sort of "debug output." It lets you see what value a wire has, in any radix you want.

Tunnels (USE THEM MMMMMM)

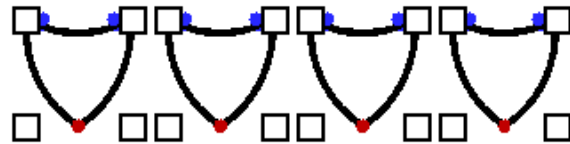
Tunnels are kind of like variables in programming languages. TUNNELS ARE GREAT.

Tunnels *can't* cross circuits though. You can't put a tunnel in the main circuit, and another in a sub-component, and have them connect. You have to use inputs/outputs of sub-components instead. On that note...

You can change the properties of multiple components at the same time

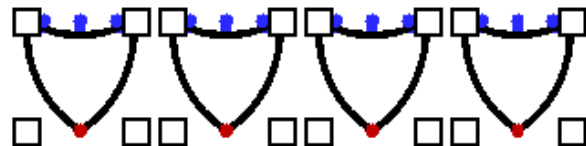
I have these four gates selected:

Selection: OR Gate × 4	
Facing	South
Data Bits	1
Gate Size	Narrow
Number Of Inputs	2
Output Value	0/1
Label	
Label Font	SansSerif Plain 12
Negate 1 (Left)	No
Negate 2 (Right)	No



If I change the number of inputs on the left to 3...

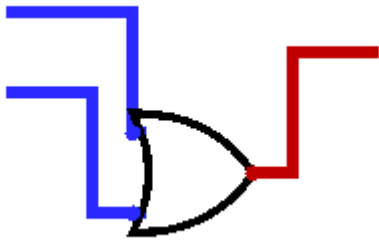
Selection: OR Gate × 4	
Facing	South
Data Bits	1
Gate Size	Narrow
Number Of Inputs	3
Output Value	0/1
Label	
Label Font	SansSerif Plain 12
Negate 1 (Left)	No
Negate 2	No
Negate 3 (Right)	No



You can even e.g. rename multiple tunnels this way.

You can drag components *without* the wires

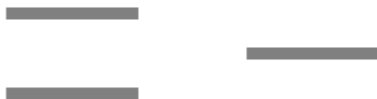
Many times, the wire-dragging is useful. But sometimes, you want to move a component and Logisim does really weird things with the wires...



If you want to drag without the wires, do this:

- Click and hold on the object.
- *Then* hold the shift key.
- *Then* start moving the object.

It will leave the wires behind.



If Logisim starts misbehaving...

I got a “simulation halted by internal error” message.

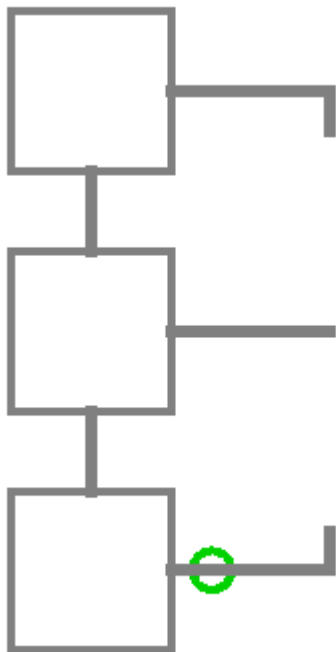
That’s fine, it’s just a little buggy (sometimes when dragging certain components).

Hit **Ctrl+R** to reset it and **Ctrl+E** to enable simulation again.

I see a bunch of blue wires on things that I know shouldn’t be blue.

The simulation probably halted without an error message. **Ctrl+R** and **Ctrl+E** to get it going again.

I dragged something, but now it’s gray, and I can’t click anything else.



Create a new object (like a tunnel or gate or something). This will un-grey the thing you dragged. Then you can undo placing the thing you created.

I can't click on any of the object properties on the bottom left.

Selection: OR Gate	
Facing	East
Data Bits	1
Gate Size	Medium
Number Of Inputs	5
Output Value	0/1
Label	
Label Font	SansSerif Plain 12
Negate 1 (Top)	No
Negate 2	No
Negate 3	No
Negate 4	No
Negate 5 (Bottom)	No

Switch to another component (in the top-left pane) and back.

The display isn't updating. What the hell??

Sometimes it does this. Just save and restart. I haven't lost any work when this happens, but it might be a good idea to make backup copies, or use git if you're familiar with it.

© 2016-2018 Jarrett Billingsley