

# Lab 5

61C Summer 2023



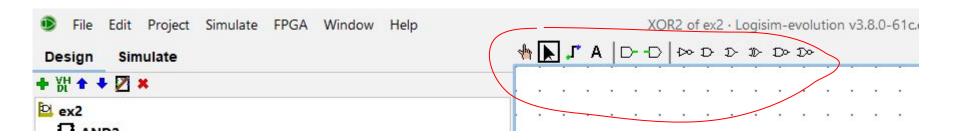
# Logisim

- We will be using logisim for these next two labs and proj 3
- In logisim, we can use logic gates, sub circuits, and state elements to build our circuits



# **Logisim components**

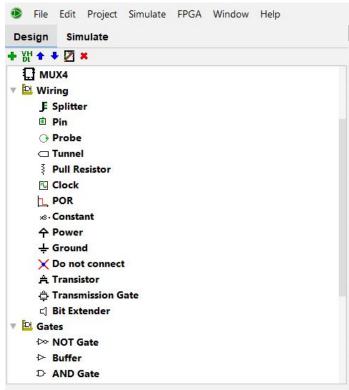
• Basic built in circuit components can be found here



### **Logisim components**

 Advanced components can be found here







## **Logisim components**

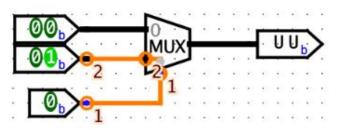
 Using Poke will allow you to check values of wires and toggle values of pins (useful for debugging)

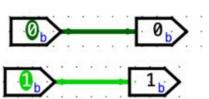


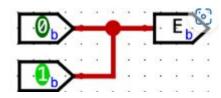
# CS 61C

#### Wire colors

- Dark green: 1 bit wire has value of 0
- Bright green: 1 bit wire has value of 1
- Black: multibit wire
- Red: Wire with multiple conflicting values
- Blue: Floating wire
- Orange: different bit width at the ends of the wire











### **Advanced Logisim Components**

Splitters (we can split multibit wires into individual bits or ranges of bits)

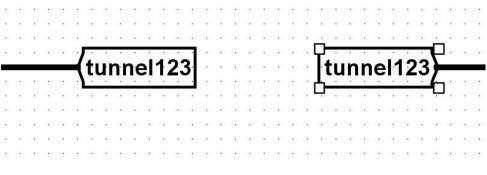
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FPGA su	pported:	Supported							v	v						
Facing		→ East								÷						
Fan Out		8								-				÷		
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Bit 3		1								ш	9-	8				
Bit 4		2								2	11	-10	)			
Bit 5		2				•			1		13	-12	2 📙			
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# **Advanced Logisim Components**

Tunnels: We can connect two places without having wires in between







## **Advanced Logisim Components**

• Extenders: We can change the width of wires with extenders (can be alternative to splitter)

Properties State				×			*			**				*	×					×	
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Θ.	×2.4	⊕,	$\mathbf{x}^{\prime}$	92			30	$\mathbf{x}$	*	$\mathbf{x}$	$\mathbf{x}_{i}$	$\mathbf{x}^{*}$	$\mathbf{x}^{\circ}$		$\mathbf{x}_{i}^{*}$	$\mathbf{x}^{\circ}$		$\times$	$\mathbf{x}$		× .



# **Live Demo**