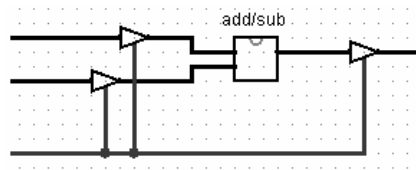# Introduction to Logisim

Adam Arbree

CS316 Section

28, 30 and 31 August 2007

Overview

- Logisim overview
  - 1-Bit Full Adder
  - 2-Bit Full Adder
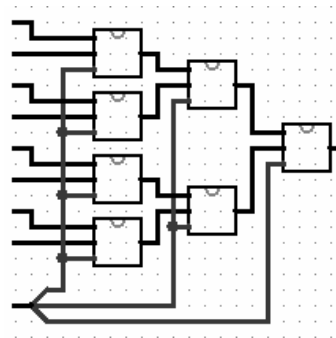- Logisim Don'ts

No Controlled Buffers

- Leave wires floating
  - Works in Logisim
  - Breaks in real life
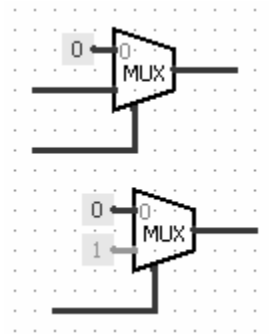- Use a multiplexor instead

Don't Build Your Own

- Building your own wastes time and is confusing to grade
- Almost every component customizable
  - Number of inputs
  - Bit depth
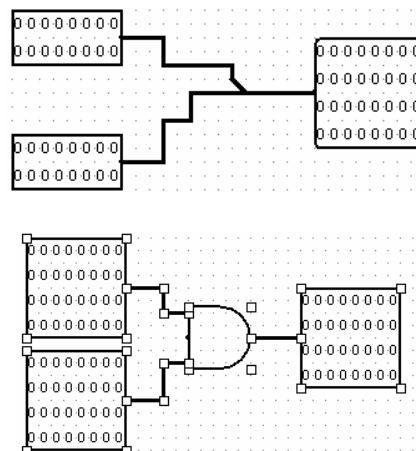
Building an 8-way
Mux the hard way

Don't Use Constants

- Constants are almost never necessary
  - Exception is supplying value to extra input
- Try to optimize away before using
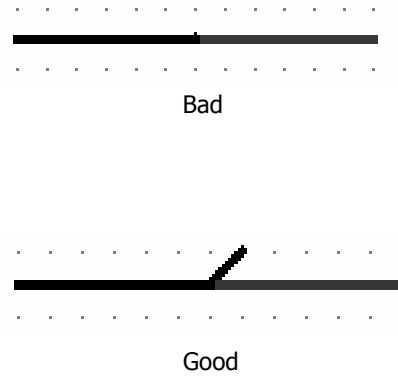 - Think truth tables

Don't Make Trivial Sub-circuits

- Try to build logical sub-circuits
- Problems
  - All sub-circuits look the same
  - Wastes time specifying inputs and outputs of small circuits
  - Big hierarchy harder to understand

Don't Use Invisible Splitters

- Please…
- Its really hard to see them when we grade

Bad

Good

Don't Work Right to Left

in

out

MUX   MUX   MUX

in

MUX   MUX   MUX

out