COMBINATIONAL LOGIC DESIGN

Lesson 8

Digital Logic

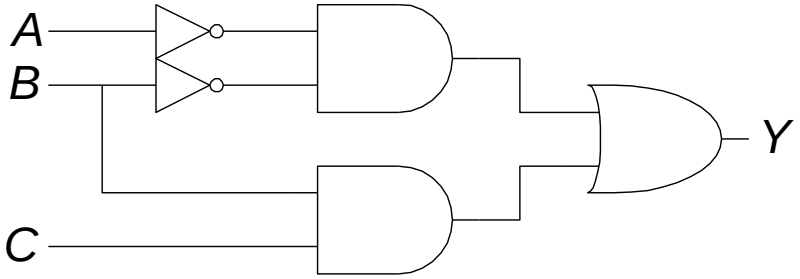
Junying Chen

Glitches

- When a single input change causes an output to change multiple times

Glitch Example

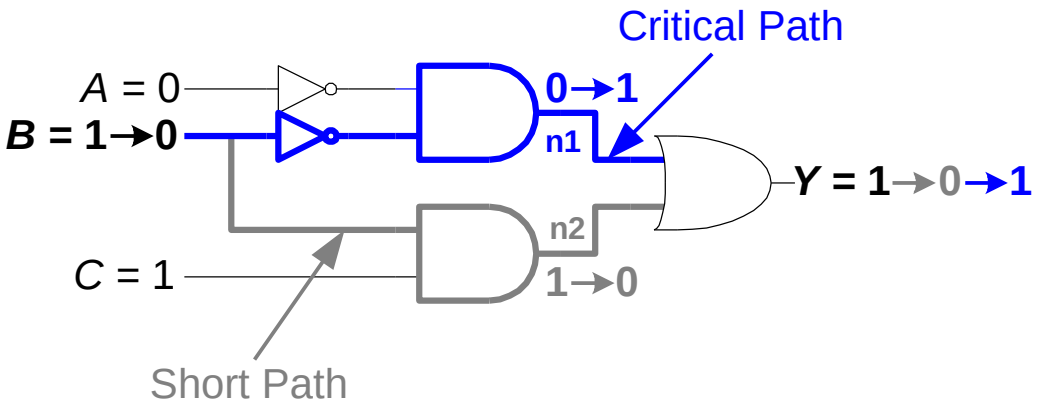
- What happens when A = 0, C = 1, B falls?

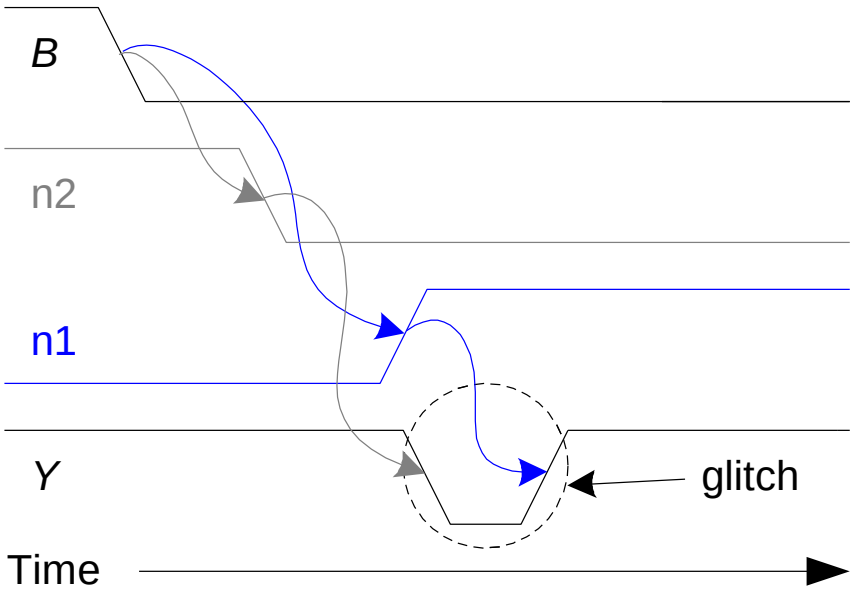


Y	AB = 00	01	11	10
C = 0	1	0	0	0
1	1	1	1	0

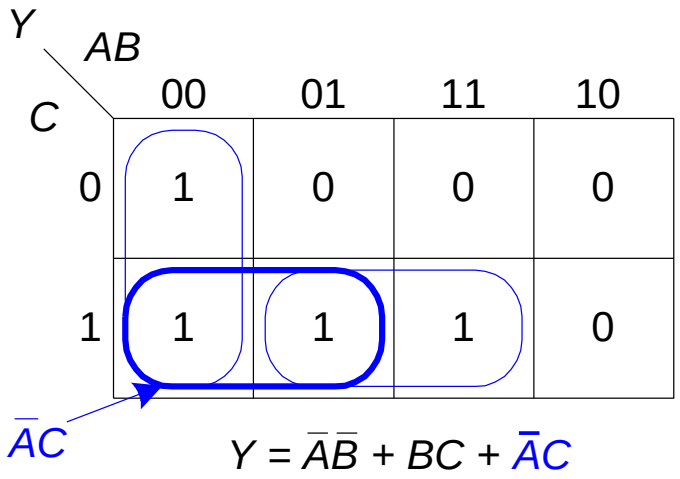
$$Y = \bar{A}\bar{B} + BC$$

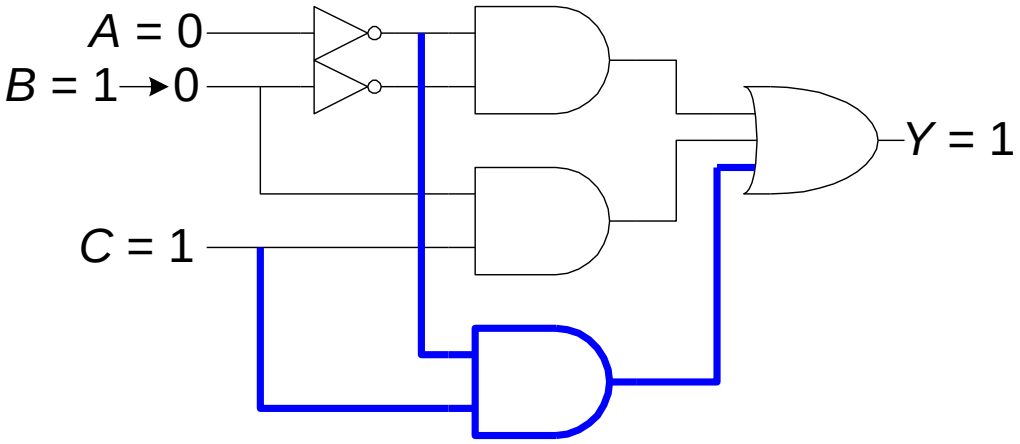
Glitch Example (cont.)





Fixing the Glitch





Why Understand Glitches?

- Glitches don't cause problems because of **synchronous design** conventions (see Chapter 3)
- It's important to **recognize** a glitch: in simulations or on oscilloscope
- Can't get rid of all glitches – simultaneous transitions on multiple inputs can also cause glitches