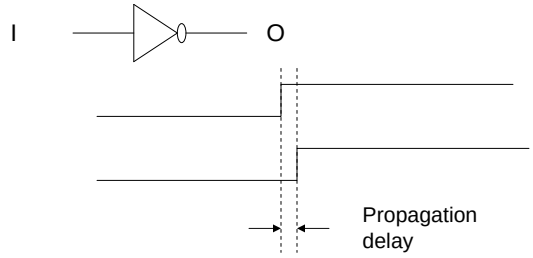
Digital Logic Design

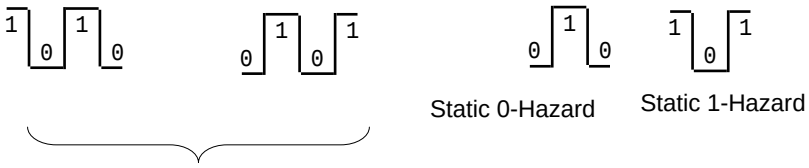
Hazards and Glitches

Hazards and Glitches

- Gates do not change their outputs instantaneously after changing the input.
- A propagation delay that depends on the gate, Vdd, …

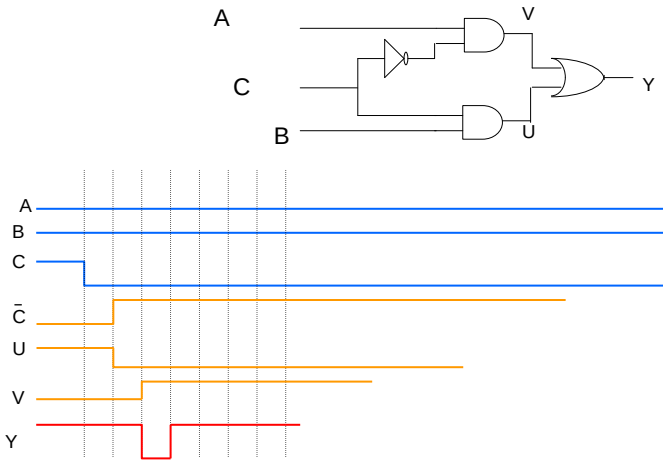


Hazards



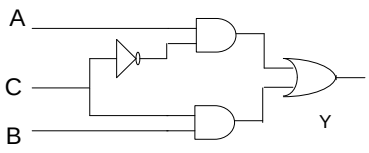
Dynamic Hazards

Static Hazards -- Example

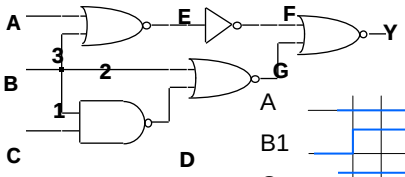


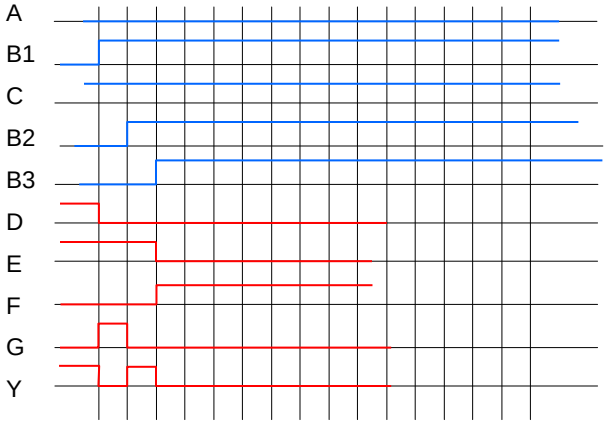
Static Hazard -- Example

C \ AB	00	01	11	10
0	0	0	1	1
1	0	1	1	0



Dynamic Hazard





Hazards Free Circuits

- For static hazards, we can use K-map and be sure that adjacent 1's are covered by a minterm.
- Not minimum anymore
- No static hazards does not mean no dynamic hazards.
- Best is to design the circuit as a 2-level circuit