CSC258 Project

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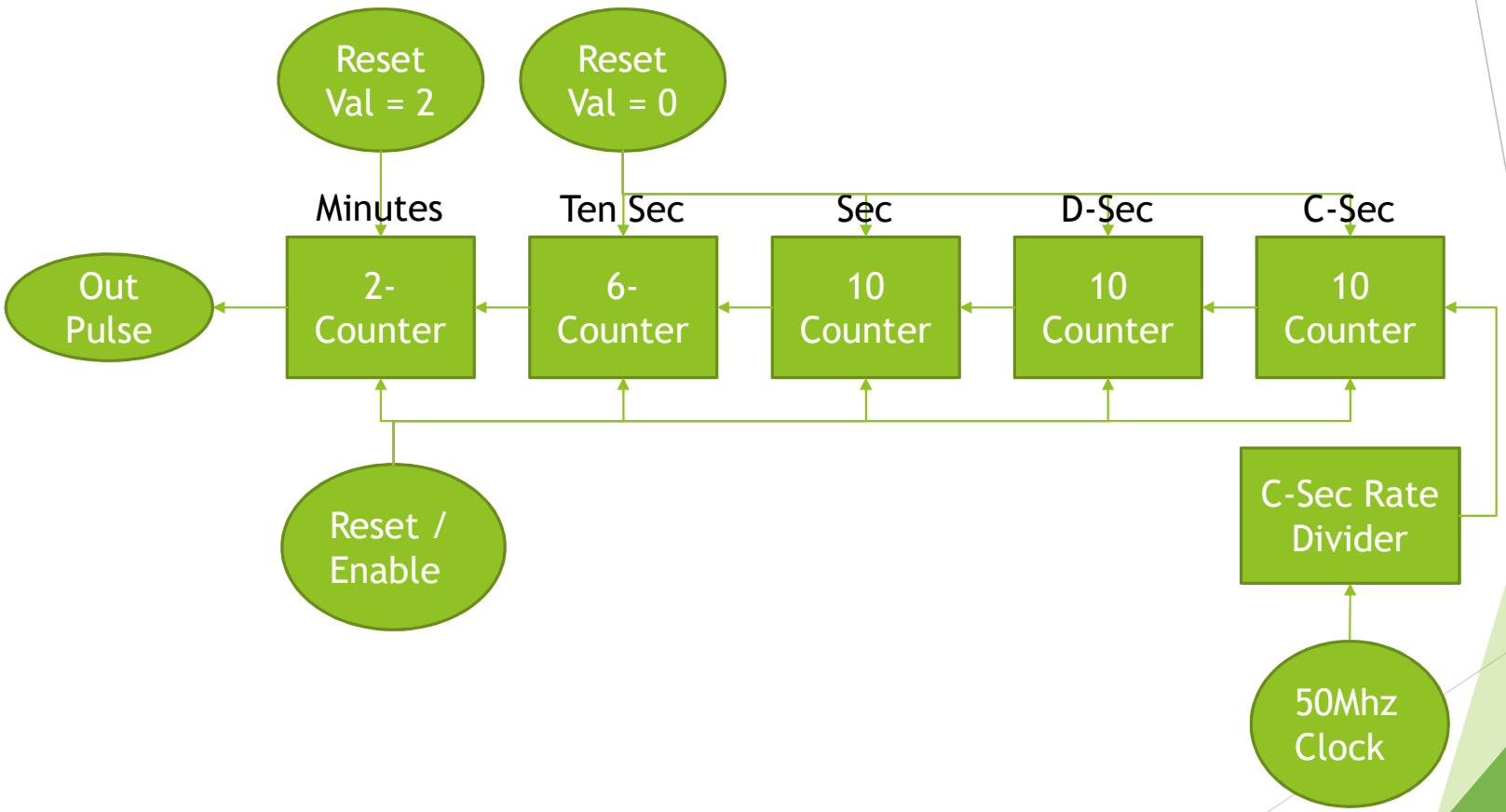
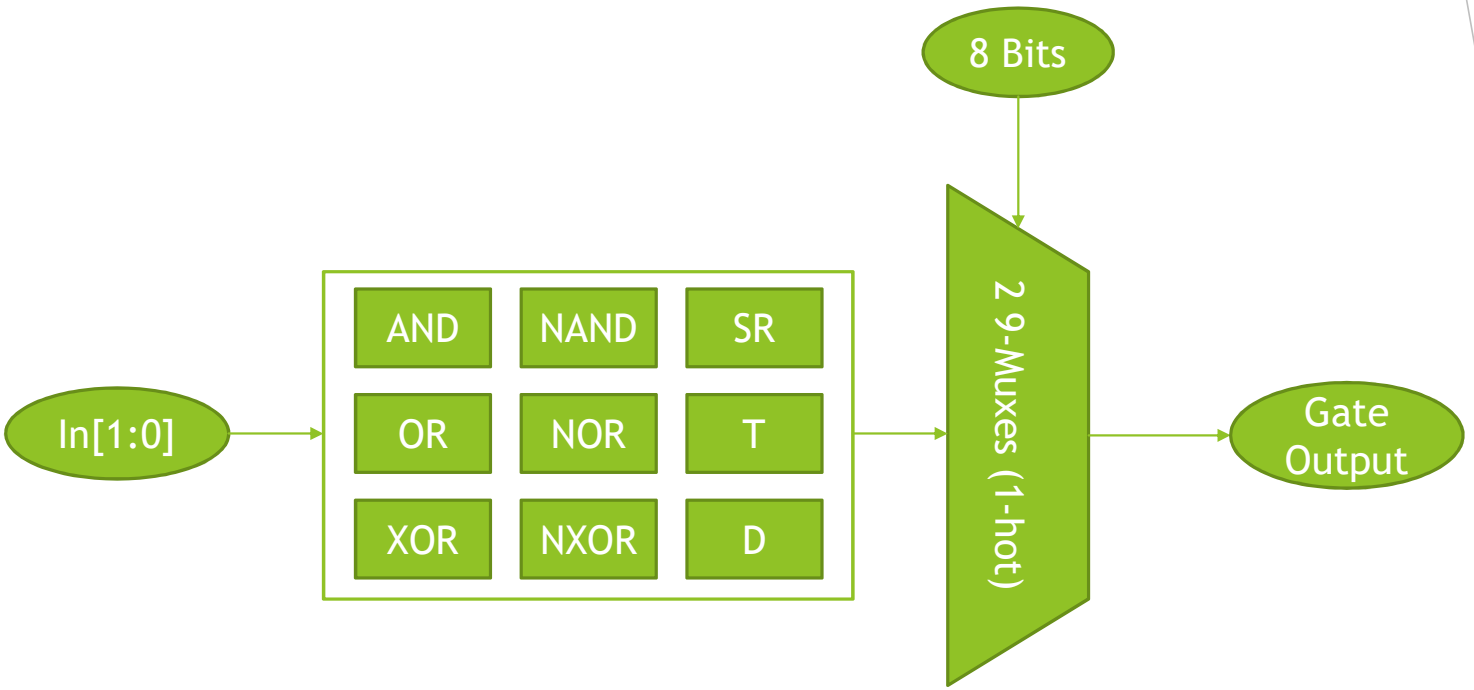
Project Description – Logic Gate Quiz

- Win Condition
  - Solve all 9 gates in 2 minutes
- Rules
  - Logic gates are given randomly
  - Player uses board switches to test the IO of the gate
  - Player inputs a number corresponding to the gate
  - Right number -> move on to next gate
  - Wrong number -> player must select another gate number (with no IO support!)

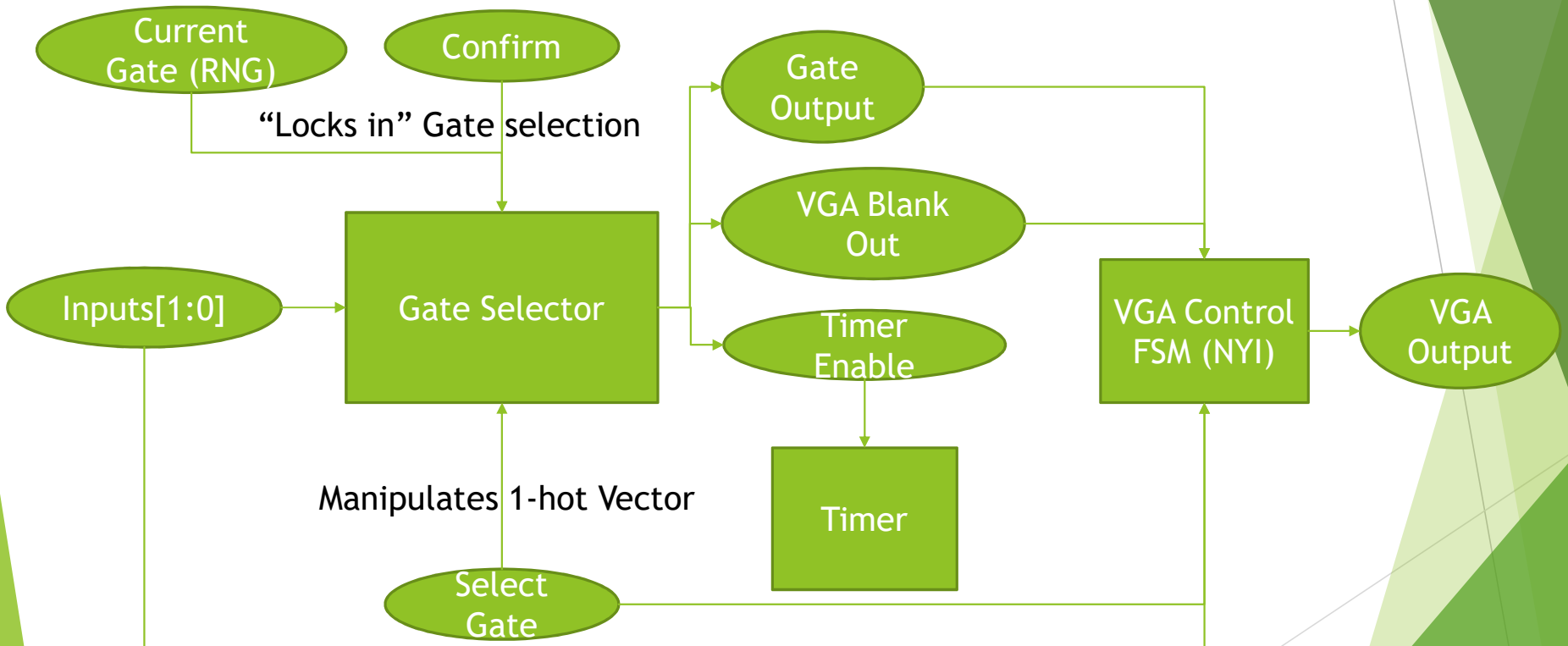
Block Diagram - Timer



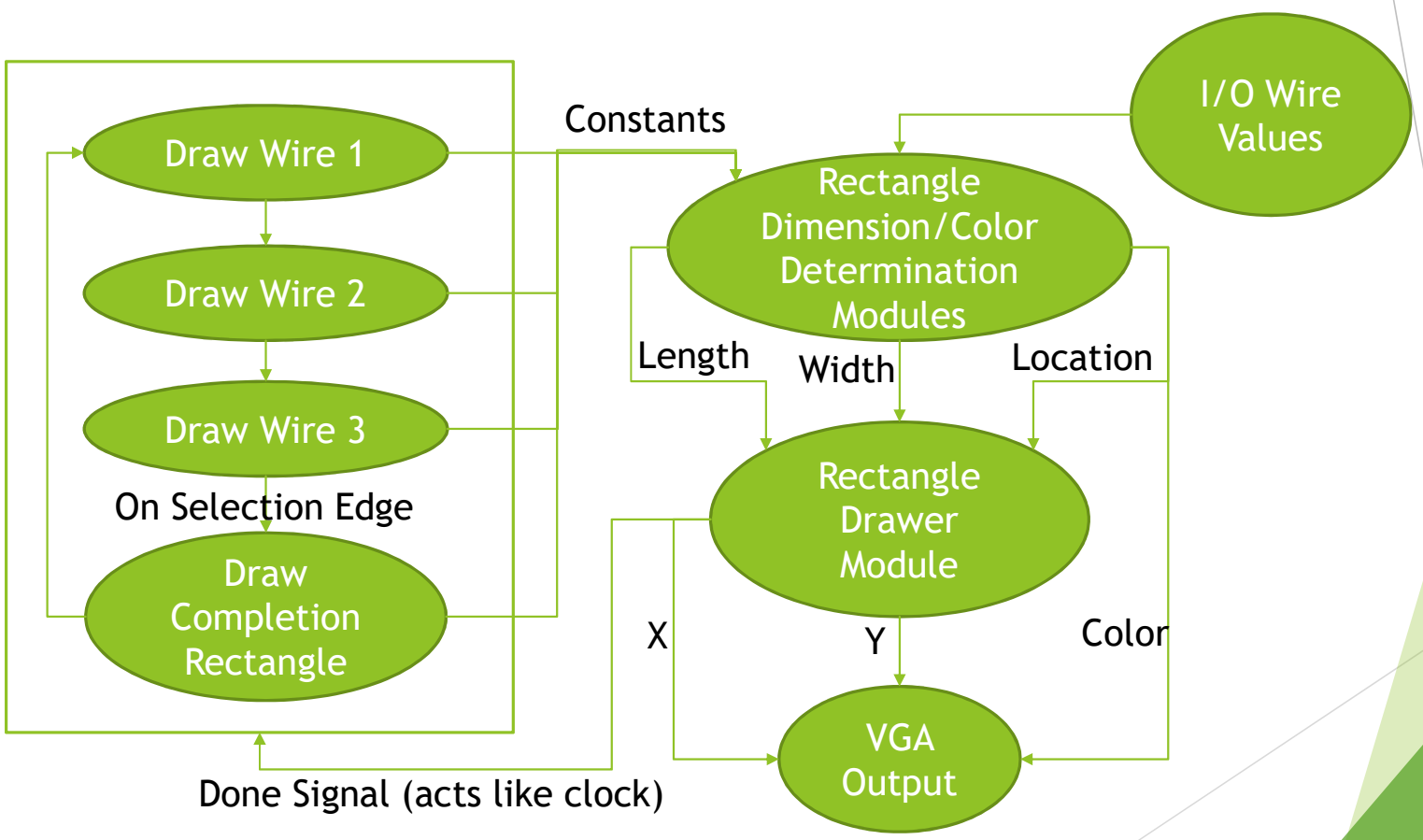
Block Diagram – Gate Selector



Block Diagram – Gate Control



Block Diagram – VGA FSM (NYI)



Interesting Aspects

- Two minute timer (not hex!)
  - Looks cool
  - Harder to get working than we thought
- Gate Selector
  - Works flawlessly
  - Easy to incorporate in the final design

Difficulties

- Board switches were inconsistent
- Timer odd-second skip issue (<= vs. = assignment)
- Getting our background on the VGA
- Having to edit code to work on QP even though it worked on MS
- Not being able to simulate certain things on MS
- Uncertain MS simulations that work fine on the board

Lessons Learned

- MS compiles differently than QP
- Things that work on MS may not work on QP and vice versa
- <= may not always be appropriate for an always block
- Sometimes the board is the source of your problems
- Sometimes uncertain things in ModelSim work on the board