CAO Project Summary

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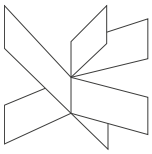
Software Engineering

3rd Semester

10/10/18



Summary:

During the execution of the project, we started by drawing the switch between the operations in simulator.io, afterwards, we designed the full adder. We have used a bitwise-OR operator alongside the full adder.

Based on the concept of the multiplexor, there is the possibility to control which operation to output using a switch. The assembly of the logic circuit is made so that the operations from the full adder and the bitwise-OR are performed simultaneously. Depending on the value of a switch that is connected to a NOT gate, which controls which of two AND gates allow output to go through them, the toggled output is displayed in the form of LEDs. The ALU displays overflow by taking the carry from the last half adder and directing it to an LED. To compact the size of the circuitry on the breadboard, we have taken input from the pin of other gates that take the same input. All breadboards are using +5V for power. The circuitry has been split into eight breadboards all of which are powered and are not passive.

Bill of materials:

15x AND Gates

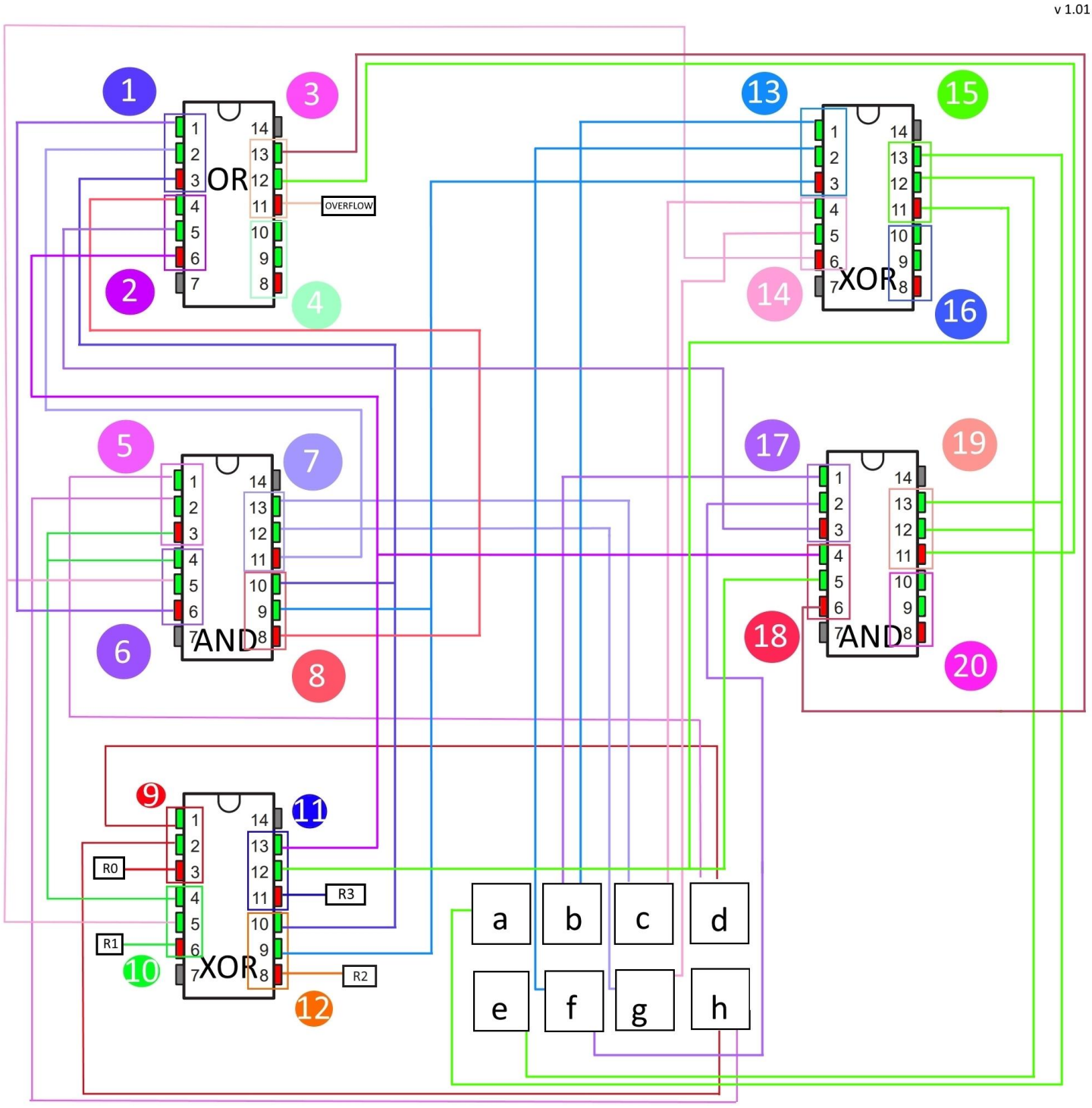
11x OR Gates

7x xOR Gates

1x NOT Gate

Appendices

Full Adder layout Diagram:



Simulatior.io Circuit:

https://simulator.io/board/abug3dl1Rg/1