Logisim simulations of the designed ALU.

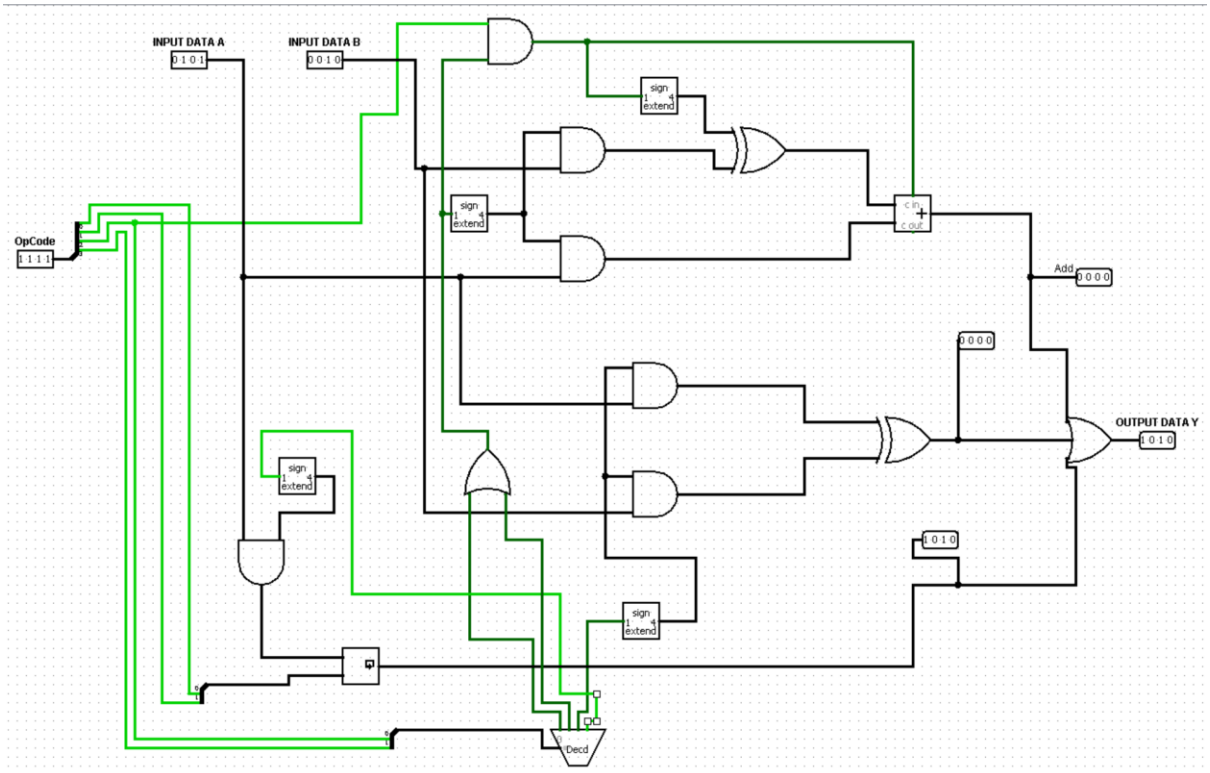
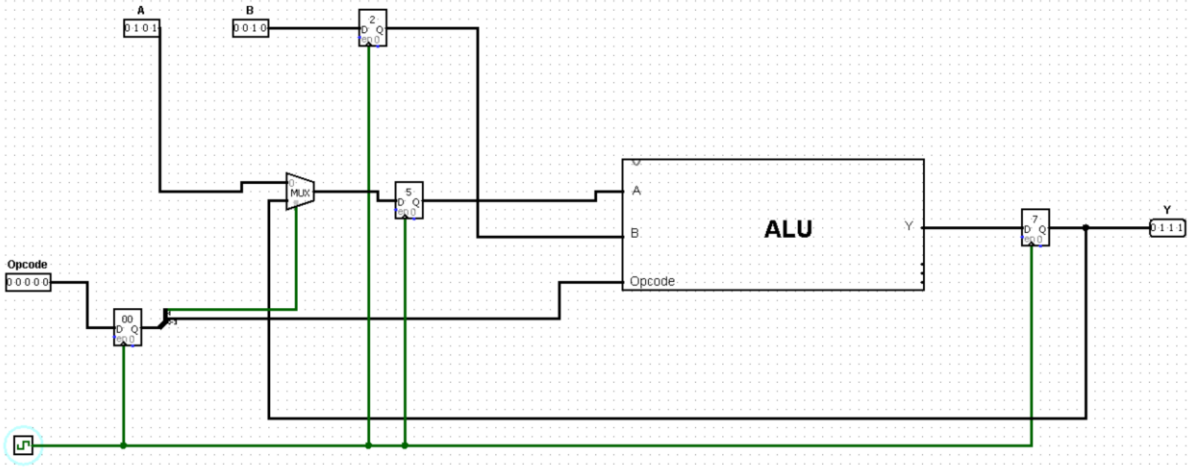
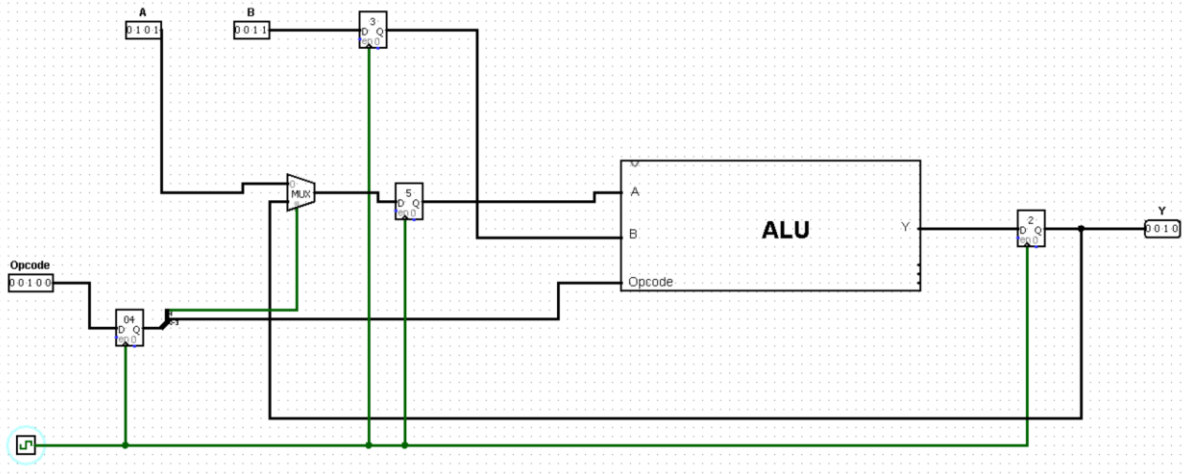


Figure 1 Overview of the ALU in Logisim

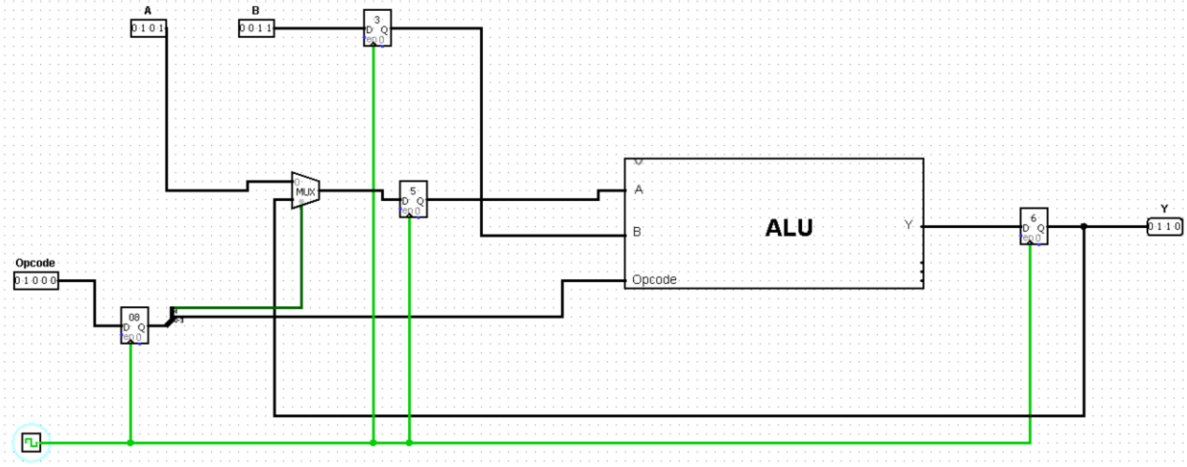
1. Addition (OPCODE 00000) no feedback



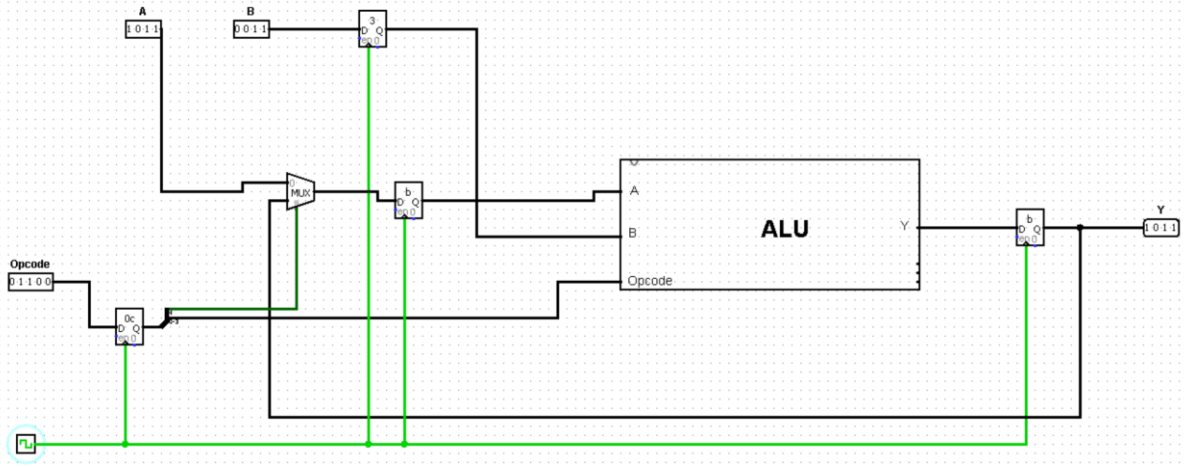
2. Subtraction (OPCODE 00100) no feedback



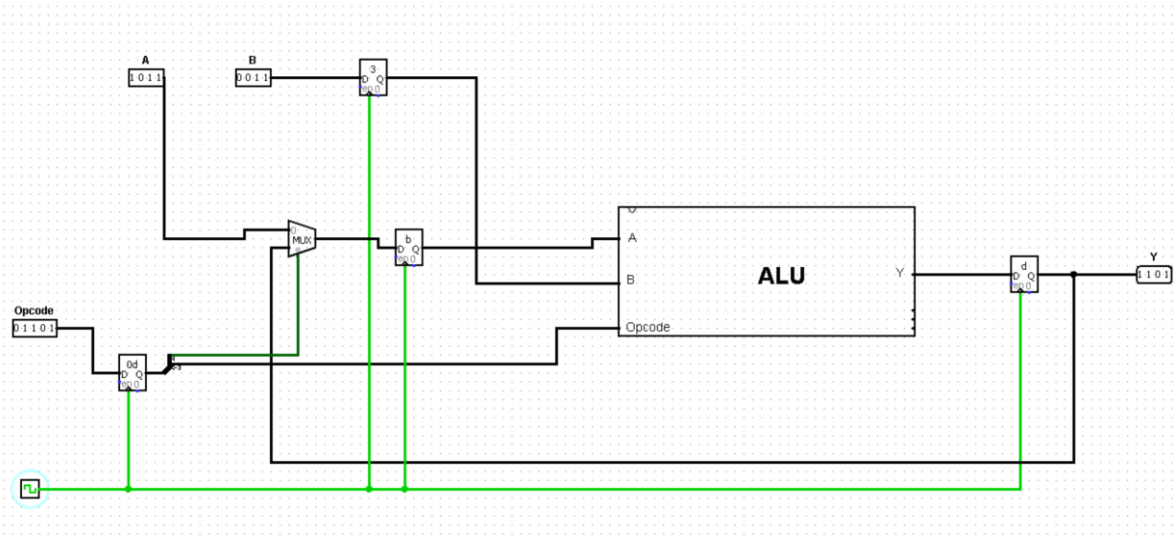
3. XOR (01000) no feedback



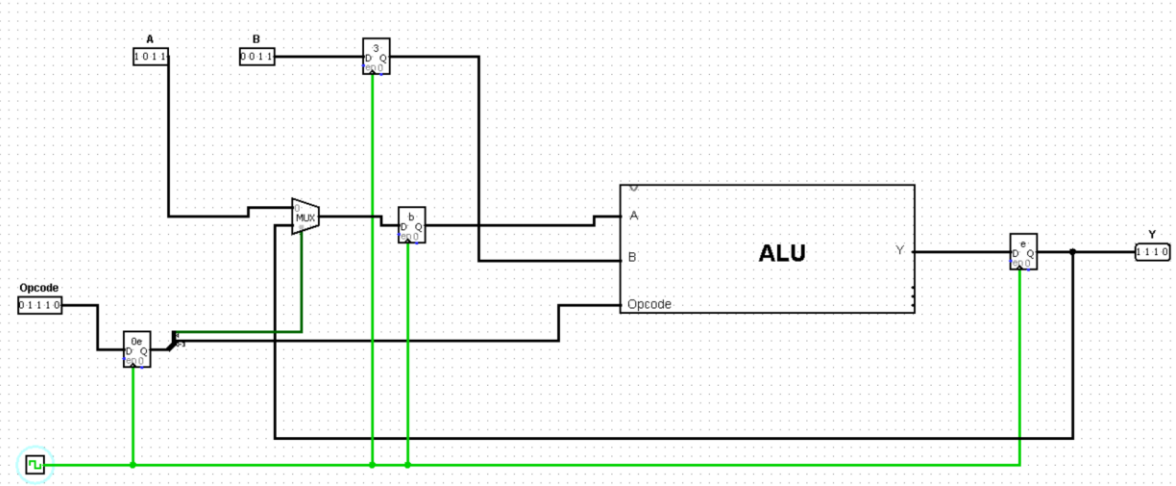
4. 4-shift of A (01100) no feedback



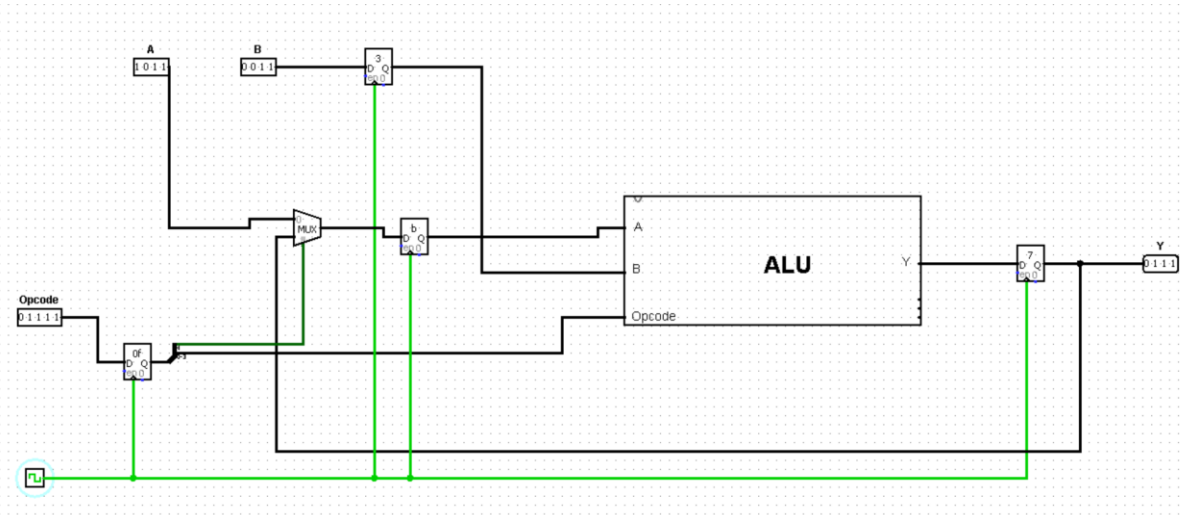
5. 1-shift of A (01101) no feedback



6. 2-shift of A (01110) no feedback

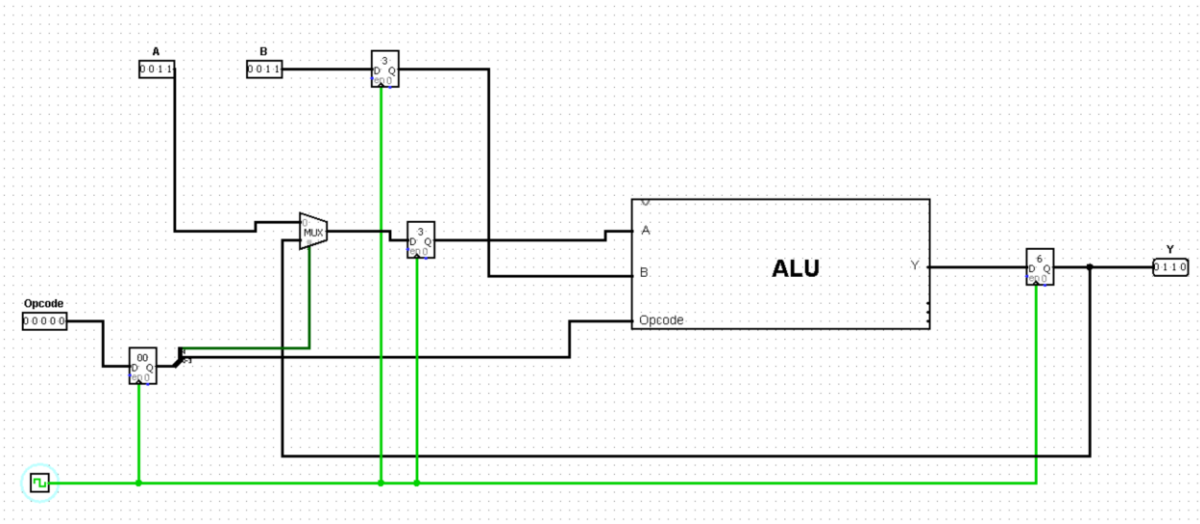


7. 3-shift of A (01111) no feedback



Elaborate demonstration of feedback

1. Set the output to 6 by adding 3 and 3



2. We then activate feedback and subtract 3 in the B register from 6 in the A register which gets its value from the Y register.