EEC 180 Lab 3
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Objective and Introduction:

      The objective of this lab is to implement the full adder module from *Lab 2* and compare it with a golden reference program using a specialized testbench program.
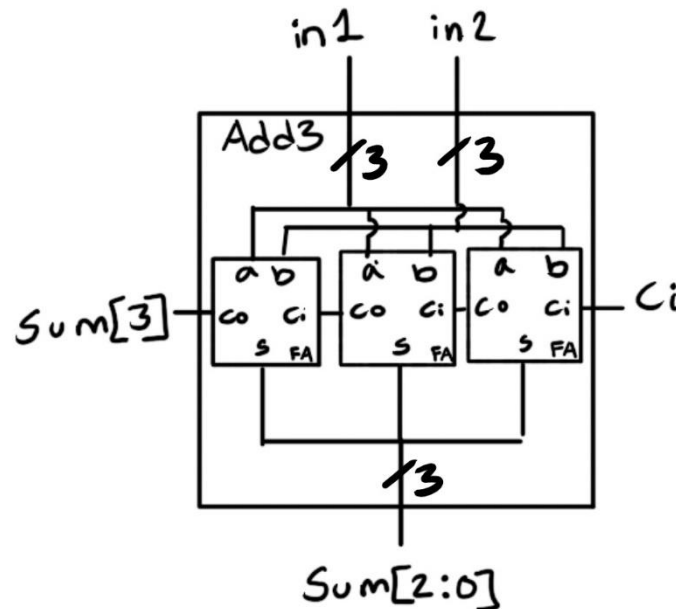
Results:
Part II. Three 3-bit adder modules:
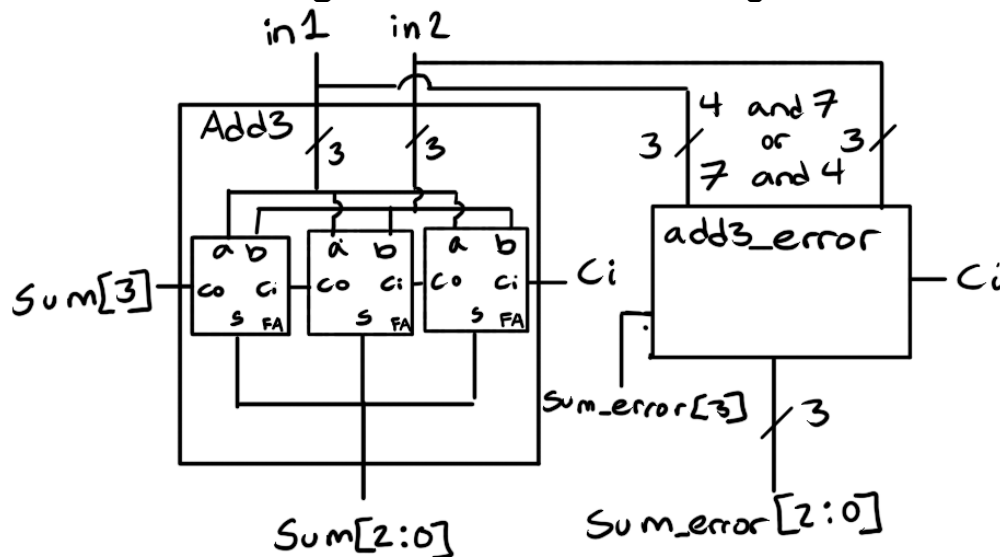

Figure 1: Add3 Circuit Diagram

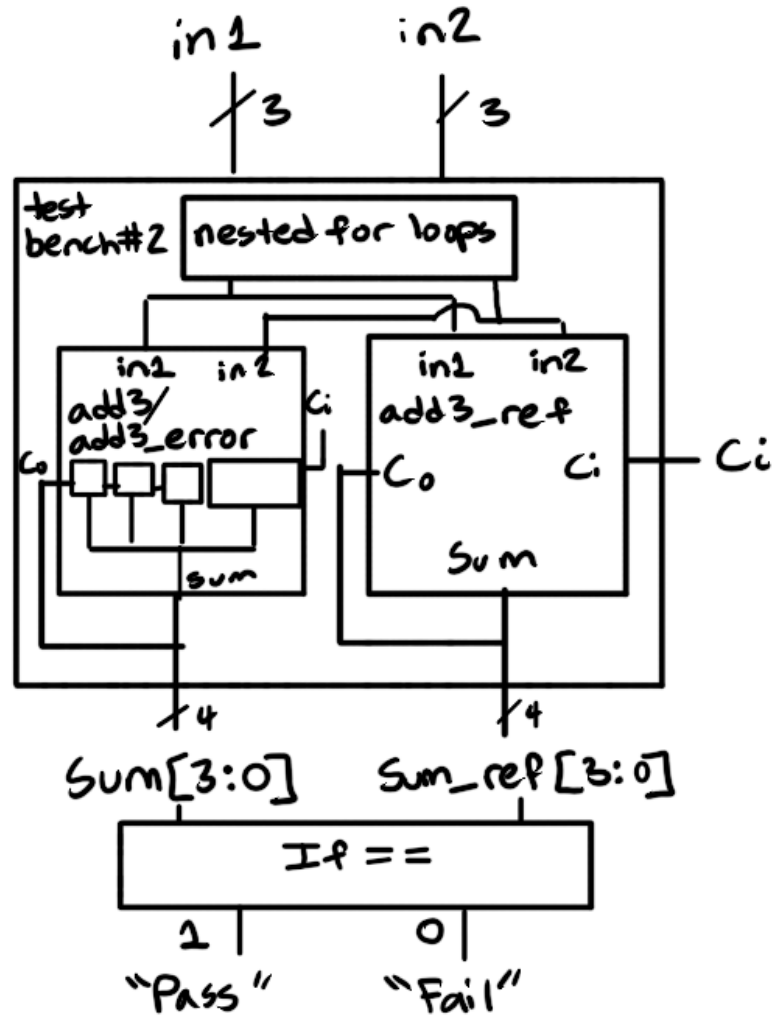**Figure 2:** Add3_error Circuit Diagram

Figure 3: Testbench #2 Circuit Diagram

Part III. Testbench #1:

```
VSIM 8> run -all
# in1 = 0, in2 = 0, sum =  0
# in1 = 0, in2 = 1, sum =  1
# in1 = 1, in2 = 0, sum =  1
# in1 = 5, in2 = 5, sum = 10
# in1 = 7, in2 = 0, sum =  7
# in1 = 0, in2 = 7, sum =  7
# in1 = 7, in2 = 7, sum = 14
# in1 = 6, in2 = 2, sum =  8
# in1 = 3, in2 = 4, sum =  7
# in1 = 3, in2 = 1, sum =  4
# in1 = 7, in2 = 2, sum =  9
# in1 = 3, in2 = 3, sum =  6
# in1 = 3, in2 = 6, sum =  9
# in1 = 7, in2 = 2, sum =  9
# in1 = 3, in2 = 3, sum =  6
```
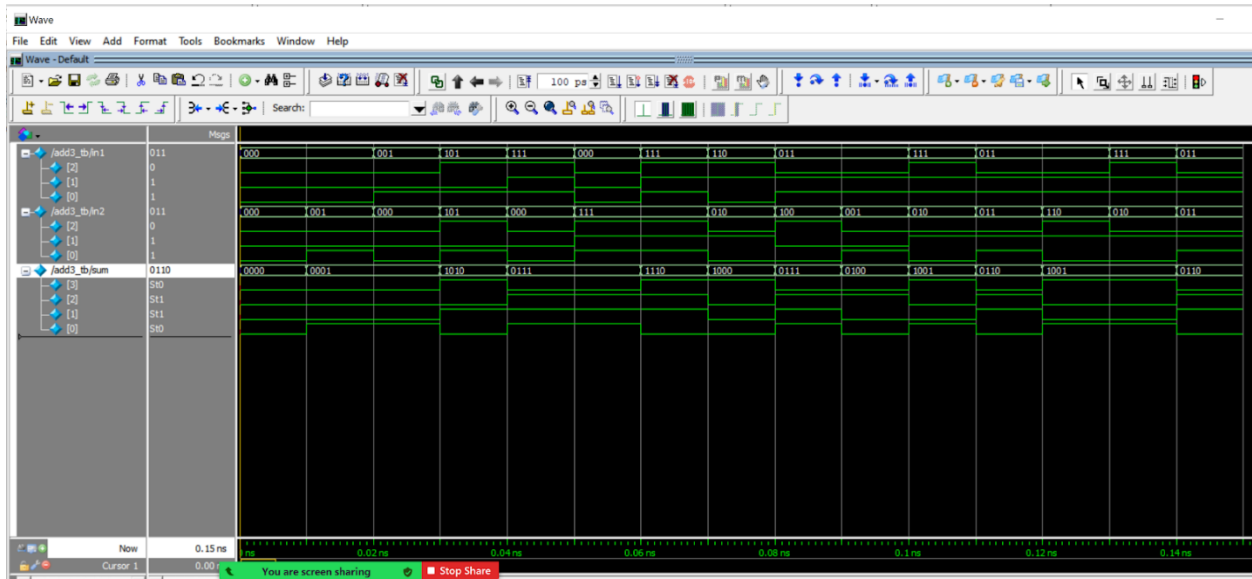
Figure 4: Text Printout from Part III A

Figure 5: Waveform Printout from Part III B

Part IV. Testbench #2:

Figure 6: Text Printout from Part IV A

Figure 7: Text Printout from Part IV B

Conclusion:

After completing lab 3, I feel I have gained a greater understanding of a golden reference's importance with testing a circuit, and I feel I am now prepared to design more competent testbenches and golden references for future labs.