EE314 Digital Circuits Laboratory

Experiment 3 Preliminary

1)

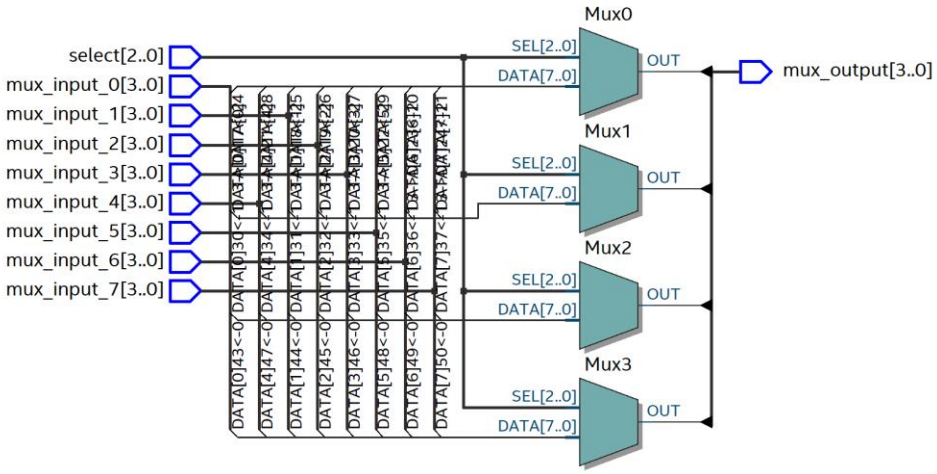

Figure 1: RTL Schematic for MUXx.v

2)

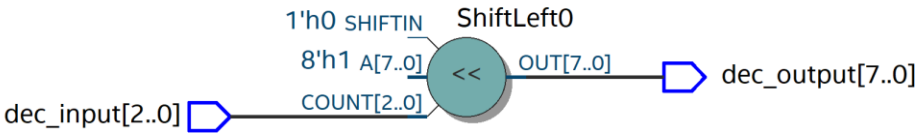

Figure 2: RTL Schematic for Decoder.v

3)

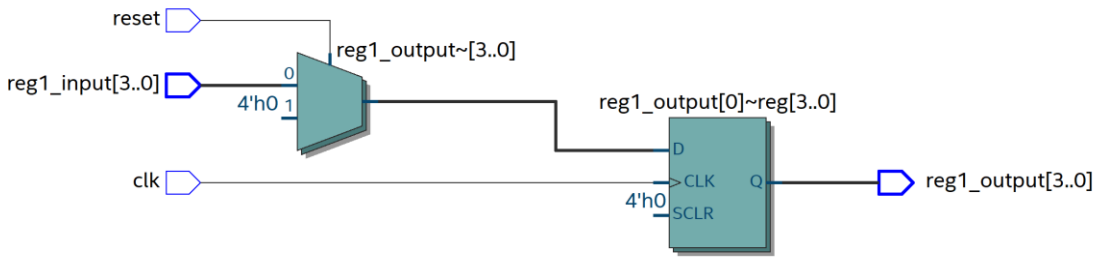

Figure 3: RTL Schematic for Reg1.v

4)

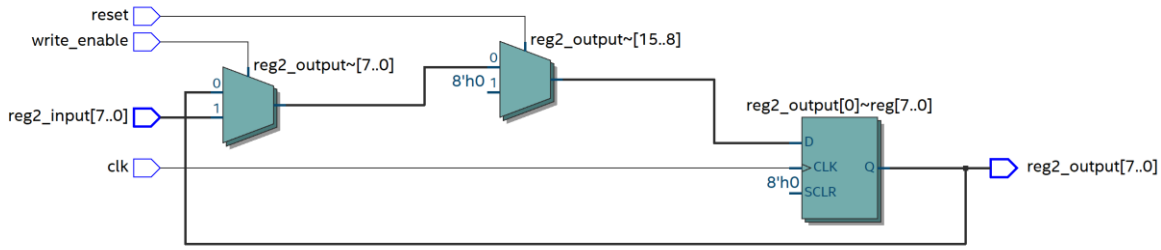

Figure 4: RTL Schematic for Reg2.v

5)

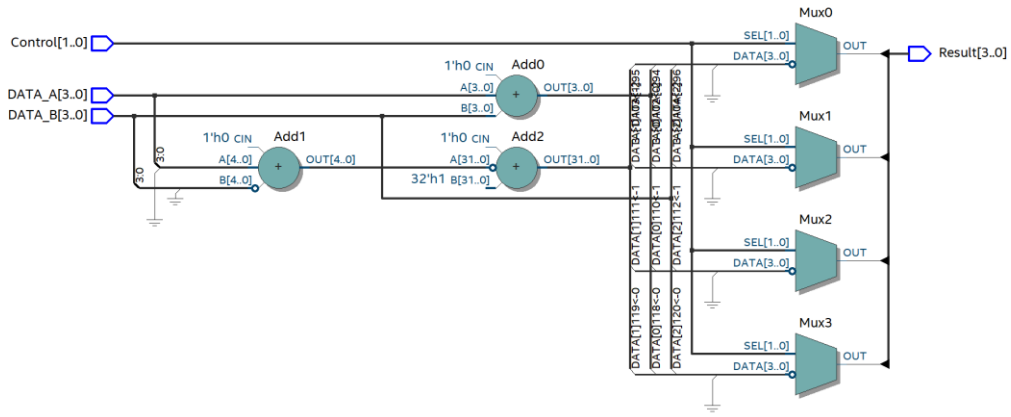

Figure 5: RTL Schematic for ALU.v

```
 85000.00ns INFO     cocotb.ALU                      PASS: Control=0b11, A=7'h7, B=11'hb | Result: 0'h0
 86000.00ns INFO     cocotb.ALU                      PASS: Control=0b11, A=4'h4, B=4'h4 | Result: 0'h0
 87000.00ns INFO     cocotb.ALU                      PASS: Control=0b11, A=6'h6, B=8'h8 | Result: 0'h0
 88000.00ns INFO     cocotb.ALU                      PASS: Control=0b11, A=8'h8, B=6'h6 | Result: 0'h0
 89000.00ns INFO     cocotb.ALU                      PASS: Control=0b11, A=9'h9, B=5'h5 | Result: 0'h0
 89000.00ns INFO     cocotb.ALU                      All ALU tests passed for W=4!
 90000.00ns INFO     cocotb.regression               test_alu_width_variations passed
 90000.00ns INFO     cocotb.regression               ****************************************************
************************************

(ns)  REAL TIME (s)  RATIO (ns/s) **                 ** TEST                                STATUS  SIM TIME

************************************                 ****************************************************

.00           0.03    3526304.40  **                 ** test_alu.test_alu_width_variations   PASS       90000

************************************                 ****************************************************

.00           0.19     482692.63  **                 ** TESTS=1 PASS=1 FAIL=0 SKIP=0                    90000

************************************                 ****************************************************

make[1]: Leaving directory '/d/METU-EE/EE-Sem-6/EE314/EXP3/ALUTest/Tests'

(base) D:\METU-EE\EE-Sem-6\EE314\EXP3\ALUTest\Tests>
```

Figure 6: Testbench Results for ALU.v

6)

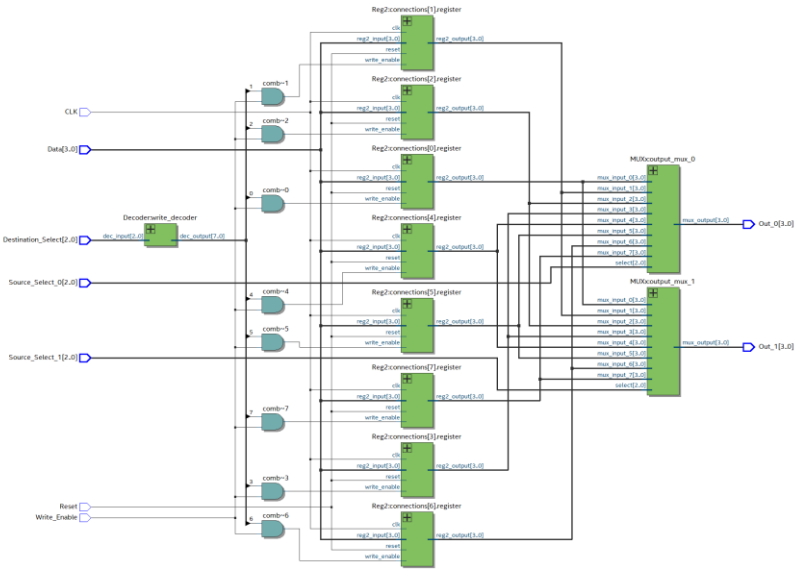

Figure 7: RTL Schematic for Register_File.v

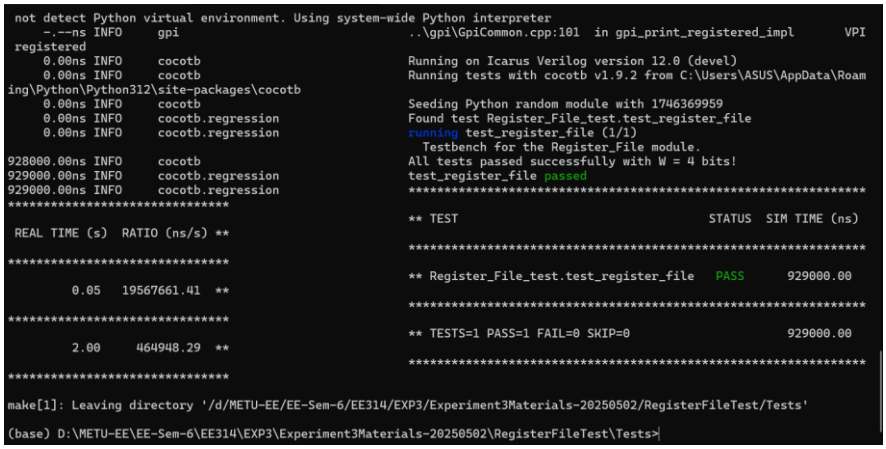

Figure 8: Testbench Results for Register_File.v