Instructional Processor (Chapter 9a)

9a.7 Determine the register transfer notation sequence necessary to execute the following instructions.

(iv) INV Rs, Rd
(v) AND [Value], Rd

9a.8 For each of the instructions in Problem 9a.7, determine the control signals necessary to implement the register transfers.

9a.9 For each of the instructions in Problem 9a.7, write a simple test program to demonstrate execution of the new instruction. Assemble the program into binary machine code.

BONUS:

9a.10 For each of the instructions in Problem 9a.8, modify processor.vhd to add the new instruction to the appropriate decoder slot in the control unit.

9a.11 For each test program in Problem 9a.9, modify program.bin with the new machine code and simulate the VHDL model from Problem 9a.10 to verify correct operation of the new instruction.