

Comp 411 Computer Organization

Fall 2009

Problem Set #6

Issued Wednesday, 11/11/09; Due Monday, 11/16/09 (beginning of class)

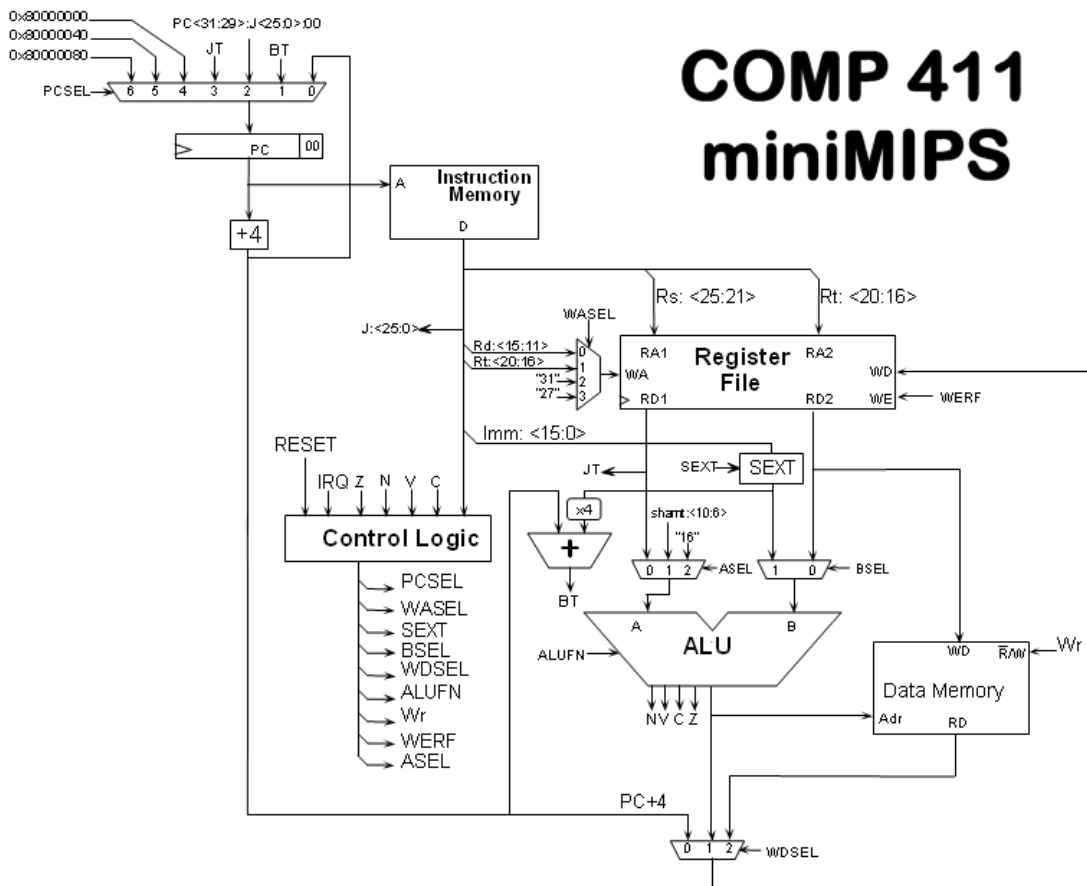
Problem 1. Complete the following exercises from the textbook (60 points)

Exercises #: 1.3.1, 1.3.2, 1.3.3, 1.4.1, 1.4.4, and 1.5.4.

[You will find these exercises on pages 59–61 of the textbook (Patterson/Hennessy 4th ed.)]

Problem 2. “Out of Control” (40 points)

Refer to the following picture of a MIPS implementation and answer the question that appears below.



**COMP 411
miniMIPS**

Fill in the missing entries of the Control Logic ROM in the table below, based on the data path shown above. All of the information you need to answer this question can be found in the slides from Lecture #15.

<i>Opcode</i>	PCSEL	WASEL	SEXT	BSEL	WDSEL	ALUFN				Wr	WERF	ASEL
						Sub	Bool	Shft	Math			
sub	0	0	X	0	1	1	XX	0	1	0	1	0
xor	0	0								0		
addi	0	1										
sll	0	0	X	0	1					0	1	
andi	0									0		
lw					2					0		
sw										1		
j						X	XX	X	X	0		
jal						X	XX	X	X	0		
lui										0		