

## Lab 4, Question 19

- Line 17

Pseudo instruction	la \$a0, string1			
Assembly instruction	lui \$1, 0x00001001			
Machine instruction (hex)	0x3C011001			
Machine instruction (binary)	001111	00000	00001	0001000000000001
Instruction field (decimal)	50	0	4	4097
Field function	opcode	rs	rt	imm

Pseudo instruction	la \$a0, string1			
Assembly instruction	ori \$4, \$1, 0x00000000			
Machine instruction (hex)	0x34240000			
Machine instruction (binary)	001101	00001	00100	0000000000000000
Instruction field (decimal)	13	1	3	0
Field function	opcode	rs	rt	imm

- Line 18

Pseudo instruction	li \$v0, 4			
Assembly instruction	addiu \$2, \$0, 0x00000004			
Machine instruction (hex)	0x24020004			
Machine instruction (binary)	001001	00000	00010	0000000000000100
Instruction field (decimal)	9	0	2	4
Field function	opcode	rs	rt	imm

- Line 29

Pseudo instruction	lw \$s2, quitVal			
Assembly instruction	lui \$1, 0x00001001			
Machine instruction (hex)	0x3c011001			
Machine instruction (binary)	001111	00000	00001	0001000000000001
Instruction field (decimal)	15	0	1	4097
Field function	opcode	rs	rt	imm

Pseudo instruction	lw \$s2, quitVal			
Assembly instruction	lw \$18, 0x0000005c(\$1)			
Machine instruction (hex)	0x8c32005c			
Machine instruction (binary)	100011	00001	10010	0000000001011100
Instruction field (decimal)	35	1	18	92
Field function	opcode	rs	rt	imm

- Line 30

Assembly instruction with label	beq \$s0, \$s2, exit			
Raw Assembly instruction	beq \$16, \$18, 0x00000018			
Machine instruction (hex)	0x12120018			
Machine instruction (binary)	000100	10000	10010	00000000000011000
Instruction field (decimal)	4	16	18	24
Field function	opcode	rs	rt	imm

- Line 41

Assembly instruction	syscall		
Machine instruction (hex)	0x0000000c		
Machine instruction (binary)	000000	00000	000000000000000000001100
Instruction field (decimal)	0	0	12
Field function	opcode	rs	rt

- Line 42

Pseudoinstruction	move \$s1, \$v0					
Assembly instruction	addu \$17, \$0, \$2					
Machine instruction (hex)	0x00028821					
Machine instruction (binary)	000000	00000	00010	10001	00000	100001
Instruction field (decimal)	0	0	2	17	0	33
Field function	opcode	rs	rt	rd	shamt	func

- Line 72

Assembly instruction with label	j main	
Actual assembly instruction	j 0x00400010	
Machine instruction (hex)	0x08100004	
Machine instruction (binary)	000010	0000010000000000000000000100
Field function	opcode	address

