

5. (12 points) Consider the following MIPS program. For clarity the addresses have been written using only 4 hexadecimal digits. Leading hexadecimal digits are all zeroes (the real start address is 0x00003000).

0x3000	start:	addi	\$s0,	\$0,	4
0x3004		xor	\$s1,	\$s1,	\$s1
0x3008		addi	\$s2,	\$0,	24
0x300C		sw	\$s2,	0(\$s1)	
0x3010		addi	\$s2,	\$s2,	10
0x3014		add	\$s1,	\$s1,	\$s0
0x3018		sw	\$s2,	0(\$s1)	
0x301C		addi	\$a0,	\$0,	-9
0x3020		jal	func		
0x3024		sw	\$v0,	4(\$s1)	
0x3028		lw	\$a0,	0(\$0)	
0x302C		jal	func		
0x3030		lw	\$t2,	0(\$s0)	
0x3034		sub	\$t3,	\$t2,	\$v0
0x3038	done:	j	done		
0x303C	func:	add	\$t1,	\$a0,	\$0
0x3040		slt	\$t2,	\$t1,	\$0
0x3044		beq	\$t2,	\$0,	pos
0x3048		sub	\$t1,	\$0,	\$t1
0x304C	pos:	add	\$v0,	\$0,	\$t1
0x3050		jr	\$ra		

We are interested in determining the value of some registers at the end of the program execution when the program reaches line 0x3038. Fill in the following table, writing the value of the indicated registers at the end of the program, and at which line these values have been written into these registers.

As an example: at the end of execution the register \$s0 will have the value 4. This value has been written into the register while executing line 0x3000.

Register	Value	Assigned on line
\$s0	4	0x3000
\$s2	34	0x3010
\$t1	24	0x303C
\$t2	34	0x3030
\$t3	10	0x3034
\$ra	0x3030	0x302C