

7. (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,	10
0x300C		sw	\$s2,	0(\$s1)	
0x3010		addi	\$s2,	\$s2,	6
0x3014		add	\$s1,	\$s1,	\$s0
0x3018		sw	\$s2,	0(\$s1)	
0x301C		addi	\$a0,	\$0,	11
0x3020		sll	\$t1,	\$a0,	1
0x3024		and	\$a1,	\$a0,	\$t1
0x3028		jal	absdiff		
0x302C		sw	\$v0,	4(\$s1)	
0x3030		lw	\$a0,	0(\$0)	
0x3034		lw	\$a1,	0(\$s0)	
0x3038		jal	absdiff		
0x303C		lw	\$t3,	8(\$0)	
0x3040		sub	\$t2,	\$t3,	\$v0
0x3044	done:	j	done		
0x3048	absdiff:	sub	\$t1,	\$a0,	\$a1
0x304C		slt	\$t2,	\$t1,	\$0
0x3050		beq	\$t2,	\$0,	pos
0x3054		sub	\$t1,	\$a1,	\$a0
0x3058	pos:	add	\$v0,	\$0,	\$t1
0x305C		jr	\$ra		

We are interested in determining the value of some registers at the end of the program execution when the program reaches line 0x3044. 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	16	0x3010
\$t1	6	0x3054
\$t2	3	0x3040
\$t3	9	0x303C
\$ra	0x303c	0x3038