Worksheet – 9 Solution

From lecture given on 2/11/2019

Summarize the effect of the following MIPS instructions

```
la $a0, array        // Load address of "array" data segment into $a0
addi $t0, $a0, 4     // $t0 := $a0 + 4
lw $t1, 0($t0)       // Load contents of address $t0 into $t1
lw $t2, 4($t0)       // Load contents of address ($t0 + 4) into $t2
sw $t2, 0($t0)       // Store contents of $t2 into address
sw $t1, 4($t0)       // Store contents of $t1 into address ($t0 + 4)


array:
.word 5, 4, 3, 2, 1
```

la $a0, array
addi $t0, $a0, 4
lw $t1, 0($t0)
lw $t2, 4($t0)
sw $t2, 0($t0)
sw $t1, 4($t0)

array:
.word 5, 4, 3, 2, 1

WORD				Assuming Little Endian	
HALF		HALF			
BYTE	BYTE	BYTE	BYTE	Starting address	Word Value
+3	+2	+1	+0		
0x00	0x00	0x00	0x05	array	5
0x00	0x00	0x00	0x04	array+4	4
0x00	0x00	0x00	0x03	array+8	3
0x00	0x00	0x00	0x02	array+12	2
0x00	0x00	0x00	0x01	array+16	1

EFFECT of the given MIPS code :
Memory locations of 3 & 4 in the word array are switched.