

Directed Work N° 02 (continued)

Exercise 4 :

- 1- Complete the missing fields.
- 2- Give the effective address for the instructions in lines 2 and 3 (the address of the instruction 3 is 0x0040002c)

	Code	Instruction
1		div \$13, \$12
2		bne \$8, \$9, 41
3	0x110c0023	
4	0x24c90032	
5	0x0810001a	

Exercise 5:

The window below represents a part of the Text Segment after the program assembly in the Mars simulator.

- 1- Fill in the Address field for each line
- 2- What are the codes corresponding to lines 5, 14 and 20?
- 3- Give the addressing modes for the instructions in lines 4, 5, 9, 14 and 20
- 4- Give the effective address for the instructions in lines 10, 14 and 21

	Address	Code	Basic	Source
1		0x00024021	addu \$8,\$0,\$2	55: move \$t0,\$v0
2		0x24090001	addiu \$9,\$0,1	56: li \$t1,1
3		0x240a0000	addiu \$10,\$0,0	57: li \$t2,0
4		0x24020004	addiu \$2,\$0,4	58: li \$v0, 4
5			lui \$1,4097	59: la \$a0, message2
6		0x34240014	ori \$4,\$1,20	
7		0x0000000c	syscall	60: syscall
8		0x24020001	addiu \$2,\$0,1	61: li \$v0, 1
9		0x0109082a	slt \$1,\$8,\$9	62: for2 : ble \$t1,\$t0,fin
10		0x1020ffe0	beq \$1,\$0,-32	
11		0x000b2021	addu \$4,\$0,\$11	63: move \$a0,\$t3
12		0x0000000c	syscall	64: syscall
13		0x01483820	add \$7,\$10,\$8	66: add \$7,\$10,\$8
14			beq \$9,\$11,-6	67: beq \$9,\$11,for2
15		0x01495020	add \$10,\$10,\$9	72: add \$t2, \$t2, \$t1
16		0x21290001	addi \$9,\$9,1	73: add \$t1, \$t1, 1
17		0x00024021	addu \$8,\$0,\$2	74: move \$t0,\$v0
18		0x24090001	addiu \$9,\$0,1	75: li \$t1,1
19		0x240a0000	addiu \$10,\$0,0	76: li \$t2,0
20			j 0x00400100	77: j for2
21		0x15000002	bne \$8,\$0,2	78: fin2: div \$t5, \$t1,\$t0