

# Laboratório de Arquitetura de Computadores

## Relatório 08

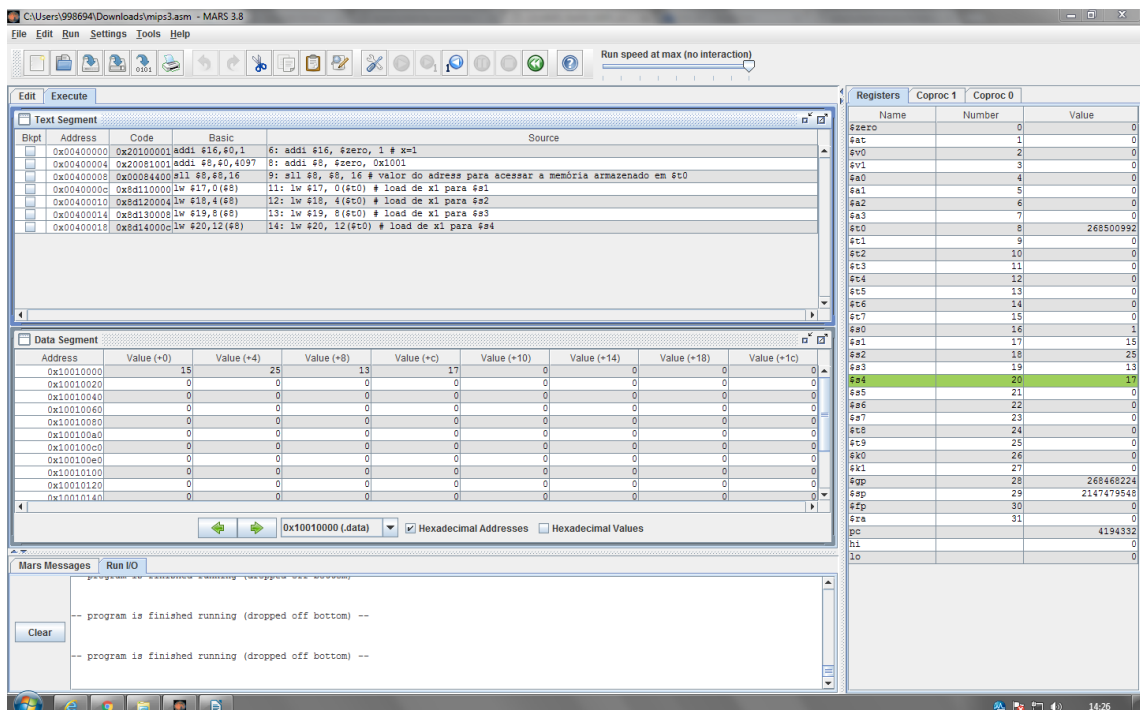
Rithie Natan Carvalhaes Prado

Prof. Romanelli

## Programas

### Programa 9

x1 em 0x10010000 | x2 em 0x10010004 | x3 em 0x10010008 | x4 em 0x1001000C



Programa 10

C:\Users\998694\Downloads\mips4.asm - MARS 3.8

File Edit Run Settings Tools Help

Run speed at max (no interaction)

Edit Execute

Text Segment

Byte	Address	Code	Basic	Source
0x00400000	0x20081001	addi \$8,\$0,4097	6: addi \$8, \$zero, 0x1001	
0x00400004	0x00084400	ll \$8,\$8,16	7: ll \$8, \$8, 16 # valor do endereço para acessar a memória armazenado em \$t0	
0x00400008	0x00100000	lw \$16,0(\$8)	9: lw \$16, 0(\$8) # load de x1 para \$s0	
0x0040000c	0x0d110004	lw \$17,4(\$8)	10: lw \$17, 4(\$8) # load de x2 para \$s1	
0x00400010	0x0d120008	lw \$18,8(\$8)	11: lw \$18, 8(\$8) # load de x3 para \$s2	
0x00400014	0x0d13000c	lw \$19,12(\$8)	12: lw \$19, 12(\$8) # load de x4 para \$s3	
0x00400018	0x00000000	nop	14: nop # all \$zero, \$zero, 0	
0x0040001c	0x02114820	add \$9,\$16,\$17	16: add \$9, \$16, \$17 # \$t1 = \$s0 + \$s1	
0x00400020	0x02494820	add \$9,\$18,\$9	17: add \$9, \$18, \$9 # \$t1 = \$s2 + \$t1	
0x00400024	0x02694820	add \$9,\$19,\$9	18: add \$9, \$19, \$9 # \$t1 = \$s3 + \$t1	
0x00400028	0xad90010	sw \$8,\$16(\$8)	20: sw \$8, 16(\$8) # salva o resultado de \$t1 em soma	

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	15	25	13	17	70	0	0	0
0x10010020	0	0	0	0	0	0	0	0
0x10010040	0	0	0	0	0	0	0	0
0x10010060	0	0	0	0	0	0	0	0
0x10010080	0	0	0	0	0	0	0	0
0x100100a0	0	0	0	0	0	0	0	0
0x100100c0	0	0	0	0	0	0	0	0
0x100100e0	0	0	0	0	0	0	0	0
0x10010100	0	0	0	0	0	0	0	0
0x10010120	0	0	0	0	0	0	0	0
0x10010140	0	0	0	0	0	0	0	0

Mars Messages Run IO

Clear

-- program is finished running (dropped off bottom) --

-- program is finished running (dropped off bottom) --

Registers Coproc 1 Coproc 0

Name	Number	Value
\$zero	0	0
\$at	1	0
\$v0	2	0
\$v1	3	0
\$a0	4	0
\$a1	5	0
\$a2	6	0
\$a3	7	0
\$t0	8	268500992
\$t1	9	70
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	15
\$s1	17	25
\$s2	18	13
\$s3	19	17
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$s8	24	0
\$s9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194348
hi		0
lo		0

Programa 11

C:\Users\998694\Downloads\mips5.asm - MARS 3.8

File Edit Run Settings Tools Help

Run speed at max (no interaction)

Edit Execute

Text Segment

Byte	Address	Code	Basic	Source
0x00400000	0x20081001	addi \$8,\$0,4097	6: addi \$8, \$zero, 0x1001	
0x00400004	0x00084400	ll \$8,\$8,16	7: ll \$8, \$8, 16 # valor do endereço para acessar a memória armazenado em \$t0	
0x00400008	0x00100000	lw \$16,0(\$8)	9: lw \$16, 0(\$8) # load de x para \$s0	
0x0040000c	0x0d110004	lw \$17,4(\$8)	10: lw \$17, 4(\$8) # load de x para \$s1	
0x00400010	0x00000000	nop	12: nop # all \$zero, \$zero, 0	
0x00400014	0x001048c0	ll \$9,\$16,7	14: ll \$9, \$16, 7 # \$t1 = \$s0 * 128	
0x00400018	0x01304822	sub \$9,\$9,\$16	15: sub \$9, \$9, \$16 # \$t1 = \$t1 - \$s0	
0x0040001c	0x0115180	ll \$10,\$17,6	16: ll \$10, \$17, 6 # \$t2 = \$s1 * 64	
0x00400020	0x01915020	add \$10,\$10,\$17	17: add \$10, \$10, \$17 # \$t2 = \$t2 + \$s1	
0x00400024	0x011a9022	sub \$18,\$9,\$10	18: sub \$18, \$9, \$10 # \$s2 = \$t1 - \$t2	
0x00400028	0x22520001	addi \$18,\$18,1	19: addi \$18, \$18, 1 # \$s2 = \$s2 + 1	
0x0040002c	0xad120008	sw \$18,\$8(\$8)	21: sw \$18, 8(\$8) # salva o resultado de \$s2 em y	

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	5	7	181	0	0	0	0	0
0x10010020	0	0	0	0	0	0	0	0
0x10010040	0	0	0	0	0	0	0	0
0x10010060	0	0	0	0	0	0	0	0
0x10010080	0	0	0	0	0	0	0	0
0x100100a0	0	0	0	0	0	0	0	0
0x100100c0	0	0	0	0	0	0	0	0
0x100100e0	0	0	0	0	0	0	0	0
0x10010100	0	0	0	0	0	0	0	0
0x10010120	0	0	0	0	0	0	0	0
0x10010140	0	0	0	0	0	0	0	0

Mars Messages Run IO

Clear

-- program is finished running (dropped off bottom) --

-- program is finished running (dropped off bottom) --

Registers Coproc 1 Coproc 0

Name	Number	Value
\$zero	0	0
\$at	1	0
\$v0	2	0
\$v1	3	0
\$a0	4	0
\$a1	5	0
\$a2	6	0
\$a3	7	0
\$t0	8	268500992
\$t1	9	635
\$t2	10	455
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	5
\$s1	17	7
\$s2	18	181
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$s8	24	0
\$s9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194352
hi		0
lo		0

Programa 12

C:\Users\998694\Downloads\mips6.asm - MARS 3.8

File Edit Run Settings Tools Help

Run speed at max (no interaction)

Edit Execute

Text Segment

Expt	Address	Code	Basic	Source
	0x00400000	0x20081001	addi \$s,\$0,4097	6: addi \$s, \$zero, 0x1001
	0x00400004	0x00084400	ll \$s,\$s,16	7: ll \$s, \$s, 16 # valor do address para acessar a memória armazenado em \$t0
	0x00400008	0x8d100000	lw \$t6,0(\$s)	9: lw \$t6, 0(\$s) # load de x para \$s0
	0x0040000c	0x8d100004	lw \$t7,4(\$s)	10: lw \$t7, 4(\$s) # load de z para \$s1
	0x00400010	0x00000000	nop	12: nop # ll \$zero, \$zero, 0
	0x00400014	0x20090003	addi \$s,\$0,3	14: add \$s, \$zero, 3 # \$t1 = 0 + 3
	0x00400018	0x00094c00	ll \$s,\$s,16	15: ll \$s, \$s, 16
	0x0040001c	0x3c010001	lui \$t1,1	16: add \$s, \$s, 103392 # \$s = 300000
	0x00400020	0x342193e0	ori \$t1,\$t1,37856	
	0x00400024	0x01214520	add \$s,\$s,\$t1	
	0x00400028	0x02119022	sub \$t8,\$t6,\$t7	18: sub \$t8, \$t6, \$t7 # \$s2 = 100000 - 200000
	0x0040002c	0x02499022	add \$t8,\$t8,\$s	19: add \$t8, \$t8, \$s # \$s2 = \$s2 + 300000
	0x00400030	0xad120008	sw \$t8,0(\$s)	21: sw \$t8, 8(\$s) # salva o resultado de \$s2 em y

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x10010000	100000	200000	200000	0	0	0	0	0
0x10010020	0	0	0	0	0	0	0	0
0x10010040	0	0	0	0	0	0	0	0
0x10010060	0	0	0	0	0	0	0	0
0x10010080	0	0	0	0	0	0	0	0
0x100100a0	0	0	0	0	0	0	0	0
0x100100c0	0	0	0	0	0	0	0	0
0x100100e0	0	0	0	0	0	0	0	0
0x10010100	0	0	0	0	0	0	0	0
0x10010120	0	0	0	0	0	0	0	0
0x10010140	0	0	0	0	0	0	0	0

Mars Messages Run I/O

program is finished running (dropped off bottom) --

Clear

program is finished running (dropped off bottom) --

Registers Coproc 1 Coproc 0

Name	Number	Value
\$zero	0	0
\$at	1	103392
\$v0	2	0
\$v1	3	0
\$a0	4	0
\$a1	5	0
\$a2	6	0
\$a3	7	0
\$t0	8	268500992
\$t1	9	300000
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	100000
\$s1	17	200000
\$s2	18	200000
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$s8	24	0
\$s9	25	0
\$d0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
\$pc		4194356
\$hi		0
\$lo		0

14:30