

Exercício Prático 05

ALUNO: GUSTAVO LORENZO CAMPOS

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Parte 1:

- 1)A. um arquivo de texto que contém instruções de linguagem de programação.
- 2)A. parte do sistema de computador que mantém o controle dos parâmetros do sistema.
- 3)A. #.
- 4)C. 32.
- 5)D. parte do processador que contém o endereço da próxima instrução de máquina para ser obtida.
- 6)C. 4.
- 7)D. uma declaração que diz o montador algo sobre o que o programador quer, mas não corresponde diretamente a uma instrução de máquina.
- 8)C. símbolo dado como argumento para uma directiva.
- 9)B. 0x00400000.
- 10)A. operando imediato.
- 11)A. operação lógica.
- 12)C. Ambos operandos devem que vir de registros.
- 13)C. Nada precisa ser feito.
- 14)C. ori \$5,\$0,48
- 15)A. Não.
- 16)D. andi \$8,\$8,0xFF.
- 17)A. Todos os bits em zero.
- 18)A. Não. Diferentes de instruções de máquina possuem campos diferentes.

#-----

Parte 2:

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #
4  #-----
5  #programa1
6  #-----
7  #inicio:
8  .text
9  .globl main
10 main:
11 addi $s0,$zero,2#a=2
12 addi $s1,$zero,3#b=3
13 addi $s2,$zero,4#c=4
14 addi $s3,$zero,5#d=5
15 add $t0,$s0,$s1#a+b
16 add $t1,$s2,$s3#c+d
17 sub $s4,$t0,$t1#x = a+b)-(c+d
18 add $t2,$s0,$s4#a+x
19 sub $s5,$t2,$s1#a-b+x
20 sub $s1,$s4,$s5#b=x-y
21 .data

```

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400000	0x20100002	addi \$f6,\$f0,2	11: addi \$s0,\$zero,2#a=2
<input type="checkbox"/>	0x00400004	0x20110003	addi \$f7,\$f0,3	12: addi \$s1,\$zero,3#b=3
<input type="checkbox"/>	0x00400008	0x20120004	addi \$f8,\$f0,4	13: addi \$s2,\$zero,4#c=4
<input type="checkbox"/>	0x0040000c	0x20130005	addi \$f9,\$f0,5	14: addi \$s3,\$zero,5#d=5
<input type="checkbox"/>	0x00400010	0x02114020	add \$f8,\$f6,\$f7	15: add \$t0,\$s0,\$s1#a+b
<input type="checkbox"/>	0x00400014	0x02534820	add \$f9,\$f8,\$f9	16: add \$t1,\$s2,\$s3#c+d
<input type="checkbox"/>	0x00400018	0x0109a022	sub \$f0,\$f8,\$f9	17: sub \$s4,\$t0,\$t1#x = a+b)-(c+d
<input type="checkbox"/>	0x0040001c	0x02145020	add \$f0,\$f6,\$f0	18: add \$t2,\$s0,\$s4#a+x
<input type="checkbox"/>	0x00400020	0x0151a822	sub \$f2,\$f0,\$f7	19: sub \$s5,\$t2,\$s1#a-b+x
<input type="checkbox"/>	0x00400024	0x02958822	sub \$f7,\$f0,\$f1	20: sub \$s1,\$s4,\$s5#b=x-y

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+22)
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	
0x1001...	0	0	0	0	0	0	0	

0x10010000 (.data)

☒ Hexadecimal Addresses☐ Hexadecimal Value

Coproc 1Coproc 0

Registers

Name	Num...	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	5
\$t1	9	9
\$t2	10	-2
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	2
\$s1	17	1
\$s2	18	4
\$s3	19	5
\$s4	20	-4
\$s5	21	-5
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194344
hi		0

Mars MessagesRun I/O

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

Clear

#.

EditExecute

mips1.asm

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #
4  #-----
5  #programa2
6  #-----
7  #inicio:
8  .text
9  .globl main
10 main:
11 addi $s0,$zero,1#x=1
12 add $t0,$s0,$s0
13 add $t0,$t0,$t0
14 add $t0,$t0,$s0
15 addi $s1,$t0,15#y=5x+15
16 .data

```

Line: 15 Column: 11

Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
	0x00400000	0x20100001	addi \$16,\$0,1	11: addi \$s0,\$zero,1#x=1
	0x00400004	0x02104020	add \$8,\$16,\$16	12: add \$t0,\$s0,\$s0
	0x00400008	0x01084020	add \$8,\$8,\$8	13: add \$t0,\$t0,\$t0
	0x0040000c	0x01104020	add \$8,\$8,\$16	14: add \$t0,\$t0,\$s0
	0x00400010	0x2111000f	addi \$17,\$8,15	15: addi \$s1,\$t0,15#y=5x+15

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (-)
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0

0x10010000 (.data)

Hexadecimal AddressesHexadecimal Value

Mars MessagesRun I/O

Clear

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

Coproc 1Coproc 0

Registers

Name	Num...	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	5
\$t1	9	0
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	1
\$s1	17	20
\$s2	18	0
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194324
hi		0

#-----

EditExecute

mips1.asm*

```

3  #-----
4  #programa3
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0,$zero,3#x=3
11 addi $s1,$zero,4#y=4
12 add $t0,$s0,$s0#2
13 add $t0,$t0,$t0#4
14 add $t0,$t0,$t0#8
15 add $t0,$t0,$t0#16
16 sub $t0,$t0,$s0
17 add $t1,$s1,$s1#2
18 add $t2,$t1,$t1#4
19 add $t2,$t2,$t2#8
20 add $t2,$t2,$t2#16
21 add $t2,$t2,$t2#32
22 add $t2,$t2,$t2#64
23 add $t2,$t2,$t1#66
24 add $t2,$t2,$s1#67
25 add $t1,$t2,$t0#15*x+67*y
26 add $t3,$t1,$t1#2
27 add $t3,$t1,$t1#4

```

Line: 2 Column: 24 ☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400000	0x20100003	addi \$t6,\$t0,3	10: addi \$s0,\$zero,3#x=3
<input type="checkbox"/>	0x00400004	0x20110004	addi \$t7,\$t0,4	11: addi \$s1,\$zero,4#y=4
<input type="checkbox"/>	0x00400008	0x00104100	sll \$t8,\$t6,4	12: sll \$t0,\$s0,4
<input type="checkbox"/>	0x0040000c	0x01104022	sub \$t8,\$t8,\$t6	13: sub \$t0,\$t0,\$s0#15*x
<input type="checkbox"/>	0x00400010	0x00114980	sll \$t9,\$t7,6	14: sll \$t1,\$s1,6
<input type="checkbox"/>	0x00400014	0x01314820	add \$t9,\$t9,\$t7	15: add \$t1,\$t1,\$s1
<input type="checkbox"/>	0x00400018	0x01314820	add \$t9,\$t9,\$t7	16: add \$t1,\$t1,\$s1
<input type="checkbox"/>	0x0040001c	0x01314820	add \$t9,\$t9,\$t7	17: add \$t1,\$t1,\$s1#67*y
<input type="checkbox"/>	0x00400020	0x01095020	add \$t0,\$t8,\$t9	18: add \$t2,\$t0,\$t1#15*x+67*y
<input type="checkbox"/>	0x00400024	0x000a9080	sll \$t18,\$t0,2	19: sll \$s2,\$t2,2

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0

0x10010000 (.data)

☒ Hexadecimal Addresses ☐ Hexadecimal Value

Mars Messages

Run I/O

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

Clear

Coproc 1

Coproc 0

Registers

Name	Num...	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	45
\$t1	9	268
\$t2	10	313
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	3
\$s1	17	4
\$s2	18	1252
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194344
hi		0

#-----

EditExecute

mips1.asm*

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa4
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0,$zero,3#x=3
11 addi $s1,$zero,4#y=4
12 sll $t0,$s0,4
13 sub $t0,$t0,$s0#15*x
14 sll $t1,$s1,6
15 add $t1,$t1,$s1
16 add $t1,$t1,$s1
17 add $t1,$t1,$s1#67*y
18 add $t2,$t0,$t1#15*x+67*y
19 sll $s2,$t2,2
20 .data

```

Line: 19 Column: 14

☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400000	0x20100003	addi \$t6,\$0,3	10: addi \$s0,\$zero,3#x=3
<input type="checkbox"/>	0x00400004	0x20110004	addi \$t7,\$0,4	11: addi \$s1,\$zero,4#y=4
<input type="checkbox"/>	0x00400008	0x00104100	sll \$t8,\$t6,4	12: sll \$t0,\$s0,4
<input type="checkbox"/>	0x0040000c	0x01104022	sub \$t8,\$t8,\$t6	13: sub \$t0,\$t0,\$s0#15*x
<input type="checkbox"/>	0x00400010	0x00114980	sll \$t9,\$t7,6	14: sll \$t1,\$s1,6
<input type="checkbox"/>	0x00400014	0x01314820	add \$t9,\$t9,\$t7	15: add \$t1,\$t1,\$s1
<input type="checkbox"/>	0x00400018	0x01314820	add \$t9,\$t9,\$t7	16: add \$t1,\$t1,\$s1
<input type="checkbox"/>	0x0040001c	0x01314820	add \$t9,\$t9,\$t7	17: add \$t1,\$t1,\$s1#67*y
<input type="checkbox"/>	0x00400020	0x01095020	add \$t0,\$t8,\$t9	18: add \$t2,\$t0,\$t1#15*x+67*y
<input type="checkbox"/>	0x00400024	0x000a9080	sll \$t10,\$t2,2	19: sll \$s2,\$t2,2

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (-)
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0

0x10010000 (.data)

☒ Hexadecimal Addresses ☐ Hexadecimal Value

Mars Messages

Run I/O

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

Clear

Coproc 1 Coproc 0

Registers

Name	Num.	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	45
\$t1	9	268
\$t2	10	313
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	3
\$s1	17	4
\$s2	18	1252
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194344
hi		0

#-----

EditExecute

mips1.asm

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa5
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0,$zero,0x186a
11 sll $s0, $s0,4#x=100.000
12 addi $s1,$zero,0x30d4
13 sll $s1, $s1,4#y=200.000
14 add $s2, $s1, $s0#z=x+y
15 .data

```

Line: 12 Column: 17

☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400000	0x2010186a	addi \$16,\$0,6250	10: addi \$s0,\$zero,0x186a
<input type="checkbox"/>	0x00400004	0x00108100	sll \$16,\$16,4	11: sll \$s0, \$s0,4#x=100.000
<input type="checkbox"/>	0x00400008	0x201130d4	addi \$17,\$0,12500	12: addi \$s1,\$zero,0x30d4
<input type="checkbox"/>	0x0040000c	0x00118900	sll \$17,\$17,4	13: sll \$s1, \$s1,4#y=200.000
<input type="checkbox"/>	0x00400010	0x02309020	add \$18,\$17,\$16	14: add \$s2, \$s1, \$s0#z=x+y

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (-)
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0

0x10010000 (.data)

☒ Hexadecimal Addresses ☐ Hexadecimal Value

Mars Messages

Run I/O

Clear

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

Coproc 1 Coproc 0

Registers

Name	Num...	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	0
\$t1	9	0
\$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	300000
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194324
hi		0

#-----

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa6
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0,$zero,0x7fff
11 sll $s0, $s0,16#x=7fffffff
12 ori $s0,$s0,0xffff
13 addi $s1,$zero,0x493e
14 sll $s1, $s1,4#y=300000
15 sll $t0,$s1,2#4y
16 sub $s2, $s0, $t0#z=x-4y
17 .data

```

Edit

Execute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400000	0x20107fff	addi \$16,\$0,0x000...	10: addi \$s0,\$zero,0x7fff
<input type="checkbox"/>	0x00400004	0x00108400	sll \$16,\$16,0x000...	11: sll \$s0, \$s0,16#x=7ffffff
<input type="checkbox"/>	0x00400008	0x3610ffff	ori \$16,\$16,0x000...	12: ori \$s0,\$s0,0xffff
<input type="checkbox"/>	0x0040000c	0x2011493e	addi \$17,\$0,0x000...	13: addi \$s1,\$zero,0x493e
<input type="checkbox"/>	0x00400010	0x00118900	sll \$17,\$17,0x000...	14: sll \$s1, \$s1,4#y=300000
<input type="checkbox"/>	0x00400014	0x00114080	sll \$8,\$17,0x000...	15: sll \$t0,\$s1,2#4y
<input type="checkbox"/>	0x00400018	0x02089022	sub \$18,\$16,\$8	16: sub \$s2, \$s0, \$t0#z=x-4y

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (-)
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000
0x1001...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000...	0x0000

☒ Hexadecimal Addresses
 ☒ Hexadecimal Value

Cproc 1

Cproc 10

Registers

Name	Num...	Value
\$zero	0	0x00000000
\$at	1	0x00000000
\$v0	2	0x00000000
\$v1	3	0x00000000
\$a0	4	0x00000000
\$a1	5	0x00000000
\$a2	6	0x00000000
\$a3	7	0x00000000
\$t0	8	0x00124f80
\$t1	9	0x00000000
\$t2	10	0x00000000
\$t3	11	0x00000000
\$t4	12	0x00000000
\$t5	13	0x00000000
\$t6	14	0x00000000
\$t7	15	0x00000000
\$s0	16	0x7fffffff
\$s1	17	0x000493e0
\$s2	18	0x7feab07f
\$s3	19	0x00000000
\$s4	20	0x00000000
\$s5	21	0x00000000
\$s6	22	0x00000000
\$s7	23	0x00000000
\$t8	24	0x00000000
\$t9	25	0x00000000
\$k0	26	0x00000000
\$k1	27	0x00000000
\$gp	28	0x10008000
\$sp	29	0x7fffffc0
\$fp	30	0x00000000
\$ra	31	0x00000000
pc		0x0040001c

Mars Messages

Run I/O

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

```
1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa7
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0,$zero,0x01
11 sll $s0,$s0,31
12 sra $s0,$s0,31
13 .data
```

[illegible]

#-----

EditExecute

mips1.asm

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa9
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0, $zero, 0x1001#A[] ->endereço base
11 sll $s0,$s0,16
12 lw $t0, 0($s0)
13 lw $t1, 4($s0)
14 lw $t2, 8($s0)
15 lw $t3, 12($s0)
16 add $t4, $t0,$t1
17 add $t4, $t4,$t2
18 add $t4, $t4,$t3
19 sw $t4,16($s0)
20
21
22 .data
23 x1: .word 15
24 x2: .word 25
25 x3: .word 13

```

Line: 19 Column: 14

☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Sou
<input type="checkbox"/>	0x00400000	0x20101001	addi \$16,\$0,4097	10: addi \$s0, \$zero, 0x1001#A[] ->
<input type="checkbox"/>	0x00400004	0x00108400	sll \$16,\$16,16	11: sll \$s0,\$s0,16
<input type="checkbox"/>	0x00400008	0x8e080000	lw \$8,0(\$16)	12: lw \$t0, 0(\$s0)
<input type="checkbox"/>	0x0040000c	0x8e090004	lw \$9,4(\$16)	13: lw \$t1, 4(\$s0)
<input type="checkbox"/>	0x00400010	0x8e0a0008	lw \$10,8(\$16)	14: lw \$t2, 8(\$s0)
<input type="checkbox"/>	0x00400014	0x8e0b000c	lw \$11,12(\$16)	15: lw \$t3, 12(\$s0)
<input type="checkbox"/>	0x00400018	0x01096020	add \$12,\$8,\$9	16: add \$t4, \$t0,\$t1
<input type="checkbox"/>	0x0040001c	0x018a6020	add \$12,\$12,\$10	17: add \$t4, \$t4,\$t2
<input type="checkbox"/>	0x00400020	0x018b6020	add \$12,\$12,\$11	18: add \$t4, \$t4,\$t3
<input type="checkbox"/>	0x00400024	0xae0c0010	sw \$12,16(\$16)	19: sw \$t4,16(\$s0)

Data Segment

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

0x10010000 (.data)

☒ Hexadecimal Addresses ☐ Hexade

Coproc 0

Registers

Na...	Nu...	Value
\$...	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	15
\$t1	9	25
\$t2	10	13
\$t3	11	17
\$t4	12	70
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	268500992
\$s1	17	0
\$s2	18	0
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	214747...
\$fp	30	0
\$ra	31	0
pc		4194344
hi		0

Mars Messages

Run I/O

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

Clear

#-----

EditExecute

mips1.asm*

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa10
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0, $zero, 0x1001
11 sll $s0,$s0,16#A[] ->endereço base
12 lw $s1, 0($s0)#x
13 lw $s2, 4($s0)#z
14 sll $t0,$s1,7
15 sub $t0,$t0,$s1#127x
16 sll $t1,$s2,6
17 add $t1,$t1,$s2#65z
18 sub $t2, $t0, $t1
19 addi, $s3,$t2,1#y=127x-65z+1
20 sw $t2,8($s0)
21 .data
22 x: .word 5
23 z: .word 7
24 y: .word 0
25

```

Line: 7 Column: 6 ☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Sou
<input type="checkbox"/>	0x00400000	0x20101001	addi \$16,\$0,4097	10: addi \$s0, \$zero, 0x1001
<input type="checkbox"/>	0x00400004	0x00108400	sll \$16,\$16,16	11: sll \$s0,\$s0,16#A[] ->endereço
<input type="checkbox"/>	0x00400008	0x8e110000	lw \$17,0(\$16)	12: lw \$s1, 0(\$s0)#x
<input type="checkbox"/>	0x0040000c	0x8e120004	lw \$18,4(\$16)	13: lw \$s2, 4(\$s0)#z
<input type="checkbox"/>	0x00400010	0x001141c0	sll \$8,\$17,7	14: sll \$t0,\$s1,7
<input type="checkbox"/>	0x00400014	0x01114022	sub \$8,\$8,\$17	15: sub \$t0,\$t0,\$s1#127x
<input type="checkbox"/>	0x00400018	0x00124980	sll \$9,\$18,6	16: sll \$t1,\$s2,6
<input type="checkbox"/>	0x0040001c	0x01324820	add \$9,\$9,\$18	17: add \$t1,\$t1,\$s2#65z
<input type="checkbox"/>	0x00400020	0x01095022	sub \$10,\$8,\$9	18: sub \$t2, \$t0, \$t1
<input type="checkbox"/>	0x00400024	0x21530001	addi \$19,\$10,1	19: addi, \$s3,\$t2,1#y=127x-65z+1
<input type="checkbox"/>	0x00400028	0xae0a0008	sw \$10,8(\$16)	20: sw \$t2,8(\$s0)

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value
0x10010000	5	7	180	0	0	
0x10010020	0	0	0	0	0	
0x10010040	0	0	0	0	0	
0x10010060	0	0	0	0	0	
0x10010080	0	0	0	0	0	
0x100100a0	0	0	0	0	0	
0x100100c0	0	0	0	0	0	
0x100100e0	0	0	0	0	0	
0x10010100	0	0	0	0	0	

Coproc 0

Registers

Coproc 1

Na...	Nu...	Value
\$...	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	635
\$t1	9	455
\$t2	10	180
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	268500992
\$s1	17	5
\$s2	18	7
\$s3	19	181
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	214747...
\$fp	30	0
\$ra	31	0
pc		4194348
hi		0

0x10010000 (.data)

☒ Hexadecimal Addresses ☐ Hexade

Mars Messages

Run I/O

Clear

#-----

EditExecute

mips1.asm

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa11
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0, $zero, 0x1001
11 sll $s0,$s0,16#A[] ->endereço base
12 lw $s1, 0($s0)#x
13 lw $s2, 4($s0)#z
14 add $t0,$s1,$s2#300000
15 sub $t1,$s1,$s2#x-z
16 add $s3,$t1,$t0#x-z+300000
17 sw $s3,8($s0)
18 .data
19 x: .word 100000
20 z: .word 200000
21 y: .word 0
22

```

Line: 16 Column: 27

☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
	0x00400000	0x20101001	addi \$16,\$0,4097	10: addi \$s0, \$zero, 0x1001
	0x00400004	0x00108400	sll \$16,\$16,16	11: sll \$s0,\$s0,16#A[] ->endereço
	0x00400008	0x8e110000	lw \$17,0(\$16)	12: lw \$s1, 0(\$s0)#x
	0x0040000c	0x8e120004	lw \$18,4(\$16)	13: lw \$s2, 4(\$s0)#z
	0x00400010	0x02324020	add \$8,\$17,\$18	14: add \$t0,\$s1,\$s2#300000
	0x00400014	0x02324822	sub \$9,\$17,\$18	15: sub \$t1,\$s1,\$s2#x-z
	0x00400018	0x01289820	add \$19,\$9,\$8	16: add \$s3,\$t1,\$t0#x-z+300000
	0x0040001c	0xae130008	sw \$19,8(\$16)	17: sw \$s3,8(\$s0)

Data Segment

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

0x10010000 (.data)

☒ Hexadecimal Addresses ☐ Hexade

Mars Messages

Run I/O

Clear

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

Coproc 0

Registers

Coproc 1

Na...	Nu...	Value
\$...	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	300000
\$t1	9	-100000
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	268500992
\$s1	17	100000
\$s2	18	200000
\$s3	19	200000
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	214747...
\$fp	30	0
\$ra	31	0
pc		4194336
hi		0

#-----

EditExecute

mips1.asm

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa12
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $s0, $zero, 0x1001
11 sll $s0,$s0,16#A[] ->endereço base
12 lw $s1, 0($s0)#x = *
13 lw $s2, 0($s1)#z = **
14 lw $s3, 0($s2)#n = ***
15 sll $s3, $s3,1
16 sw $s3,8($s0)
17 .data
18 x: .word 0x10010004#10010000
19 z: .word 0x10010008#10010004
20 y: .word 1#10010008
21

```

Line: 21 Column: 1

☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic
<input type="checkbox"/>	0x00400000	0x20101001	addi \$16,\$0,0x00001001 10: addi \$s0, \$zero, 0x1001
<input type="checkbox"/>	0x00400004	0x00109400	sll \$16,\$16,0x00000010 11: sll \$s0,\$s0,16#A[] ->endereço base
<input type="checkbox"/>	0x00400008	0x8e110000	lw \$17,0x00000000(\$16) 12: lw \$s1, 0(\$s0)#x = *
<input type="checkbox"/>	0x0040000c	0x8e320000	lw \$18,0x00000000(\$17) 13: lw \$s2, 0(\$s1)#z = **
<input type="checkbox"/>	0x00400010	0x8e530000	lw \$19,0x00000000(\$18) 14: lw \$s3, 0(\$s2)#n = ***
<input type="checkbox"/>	0x00400014	0x00139640	sll \$19,\$19,0x00000001 15: sll \$s3, \$s3,1
<input type="checkbox"/>	0x00400018	0xae130008	sw \$19,0x00000008(\$16) 16: sw \$s3,8(\$s0)

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)
0x10010000	0x10010004	0x10010008	0x00000002	0x00000000	0x00000000
0x10010020	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010040	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010060	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x10010080	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x100100a0	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x100100c0	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000
0x100100e0	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000

0x10010000 (.data)

☒ Hexadecimal Addresses ☒

Coproc 1Coproc 0

Registers

Name	Number	Value
\$zero	0	0x00000000
\$at	1	0x00000000
\$v0	2	0x00000000
\$v1	3	0x00000000
\$a0	4	0x00000000
\$a1	5	0x00000000
\$a2	6	0x00000000
\$a3	7	0x00000000
\$t0	8	0x00000000
\$t1	9	0x00000000
\$t2	10	0x00000000
\$t3	11	0x00000000
\$t4	12	0x00000000
\$t5	13	0x00000000
\$t6	14	0x00000000
\$t7	15	0x00000000
\$s0	16	0x10010000
\$s1	17	0x10010004
\$s2	18	0x10010008
\$s3	19	0x00000002
\$s4	20	0x00000000
\$s5	21	0x00000000
\$s6	22	0x00000000
\$s7	23	0x00000000
\$t8	24	0x00000000
\$t9	25	0x00000000
\$k0	26	0x00000000
\$k1	27	0x00000000
\$gp	28	0x10008000
\$fp	29	0x7ffffc
\$ra	30	0x00000000
\$pc	31	0x0040001c
hi		0x00000000

Mars MessagesRun I/O

Clear

Assemble: operation completed successfully.

#-----

EditExecute

mips1.asm*

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa13
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $t0, $zero, 0x1001
11 sll $t0, $t0, 16#$A[]
12 lw $s0, 0($t0)#A[0]
13 srl $t1,$s0,31#bit de sinal
14 beq $t1,$zero, prox#deve encontrar o modulo se for 1
15 sub $s0,$zero,$s0#$A[0] = 0 - A[0]
16 prox:
17 sw $s0,0($t0)
18 .data
19 x: .word -5
20

```

Line: 4 Column: 12

Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
	0x00400000	0x20081001	addi \$8,\$0,0x00001001	10: addi \$t0, \$zero, 0x1001
	0x00400004	0x00084400	sll \$8,\$8,0x00000010	11: sll \$t0, \$t0, 16#\$A[]
	0x00400008	0x8d100000	lw \$16,0x00000000(\$8)	12: lw \$s0, 0(\$t0)#A[0]
	0x0040000c	0x00104fc2	srl \$9,\$16,0x0000001f	13: srl \$t1,\$s0,31#bit de sinal
	0x00400010	0x11200001	beq \$9,\$0,0x00000001	14: beq \$t1,\$zero, prox#deve encon...
	0x00400014	0x00108022	sub \$16,\$0,\$16	15: sub \$s0,\$zero,\$s0#\$A[0] = 0 - A[0]
	0x00400018	0xad100000	sw \$16,0x00000000(\$8)	17: sw \$s0,0(\$t0)

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Va...
0x1001...	0x00000005	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	0x00000000	...

0x10010000 (.data)

Hexadecimal Addresses

Hexadecimal Values

Mars Messages

Run I/O

Clear

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

Coproc 0

Registers

Coproc 1

Name	Num...	Value
\$zero	0	0x00000000
\$at	1	0x00000000
\$v0	2	0x00000000
\$v1	3	0x00000000
\$a0	4	0x00000000
\$a1	5	0x00000000
\$a2	6	0x00000000
\$a3	7	0x00000000
\$t0	8	0x10010000
\$t1	9	0x00000001
\$t2	10	0x00000000
\$t3	11	0x00000000
\$t4	12	0x00000000
\$t5	13	0x00000000
\$t6	14	0x00000000
\$t7	15	0x00000000
\$s0	16	0x00000005
\$s1	17	0x00000000
\$s2	18	0x00000000
\$s3	19	0x00000000
\$s4	20	0x00000000
\$s5	21	0x00000000
\$s6	22	0x00000000
\$s7	23	0x00000000
\$s8	24	0x00000000
\$t9	25	0x00000000
\$k0	26	0x00000000
\$k1	27	0x00000000
\$gp	28	0x10008000
\$sp	29	0x7ffffc
\$fp	30	0x00000000
\$ra	31	0x00000000
pc		0x0040001c
hi		0x00000000

#-----

EditExecute

mips1.asm*

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #-----
4  #programa14
5  #-----
6  #inicio:
7  .text
8  .globl main
9  main:
10 addi $t0, $zero, 0x1001
11 sll $t0, $t0, 16#$A[]
12 lw $s0, 0($t0)#$A[0]
13 sll $t1, $s0, 31
14 srl $t1, $t1, 31# somente o ultimo bit
15 sw $t1, 4($t0)
16
17 prox:
18
19 .data
20 x: .word -5
21

```

Line: 20 Column: 11

☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
	0x00400000	0x20081001	addi \$s, \$0, 0x00001001	10: addi \$t0, \$zero, 0x1001
	0x00400004	0x00084400	sll \$s, \$s, 0x00000010	11: sll \$t0, \$t0, 16#\$A[]
	0x00400008	0x8d100000	lw \$t6, 0x00000000(\$s)	12: lw \$s0, 0(\$t0)#\$A[0]
	0x0040000c	0x00104fc0	sll \$s, \$t6, 0x0000001f	13: sll \$t1, \$s0, 31
	0x00400010	0x00094fc2	srl \$s, \$s, 0x0000001f	14: srl \$t1, \$t1, 31# somente o ul...
	0x00400014	0xad090004	sw \$s, 0x00000004(\$s)	15: sw \$t1, 4(\$t0)

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+...)	Value (+...)
0x1001...	0xffffffff	0x00000001	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...
0x1001...	0x00000000	0x00000000	0x00000000	0x00000000	0x0000...	0x0000...	0x00...	0x00...

0x10010000 (.data)

☒ Hexadecimal Addresses

☒ Hexadecimal Values

Mars Messages

Run I/O

Clear

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

Coproc 0

Registers

Coproc 1

Name	Num...	Value
\$zero	0	0x00000000
\$at	1	0x00000000
\$v0	2	0x00000000
\$v1	3	0x00000000
\$a0	4	0x00000000
\$a1	5	0x00000000
\$a2	6	0x00000000
\$a3	7	0x00000000
\$t0	8	0x10010000
\$t1	9	0x00000001
\$t2	10	0x00000000
\$t3	11	0x00000000
\$t4	12	0x00000000
\$t5	13	0x00000000
\$t6	14	0x00000000
\$t7	15	0x00000000
\$a0	16	0xffffffff
\$s1	17	0x00000000
\$s2	18	0x00000000
\$s3	19	0x00000000
\$s4	20	0x00000000
\$s5	21	0x00000000
\$s6	22	0x00000000
\$s7	23	0x00000000
\$t8	24	0x00000000
\$t9	25	0x00000000
\$k0	26	0x00000000
\$k1	27	0x00000000
\$gp	28	0x10008000
\$sp	29	0x7ffffcfc
\$fp	30	0x00000000
\$ra	31	0x00000000
pc		0x00400018
hi		0x00000000

#-----

EditExecute

mips1.asm*

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #programa18
4  #-----
5  .text
6  .globl main
7  main:
8  addi $t0, $zero, 0x1001
9  sll $t0, $t0, 16#A[]
10 lw $s0, 0($t0) #x
11 lw $s1, 4($t0) #y
12 func:
13 add $s2, $s2, $s0
14 addi $t2, $t2, 1
15 bne $t2, $s1, func#if(contador != y)
16 sw $s2, 8($t0)
17
18 .data
19 x: .word 0x3
20 y: .word 0x4

```

Line: 3 Column: 12

Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400000	0x20081001	addi \$8,\$0,4097	8: addi \$t0, \$zero, 0x1001
<input type="checkbox"/>	0x00400004	0x00084400	sll \$8,\$8,16	9: sll \$t0, \$t0, 16#A[]
<input type="checkbox"/>	0x00400008	0x8d100000	lw \$16,0(\$8)	10: lw \$s0, 0(\$t0) #x
<input type="checkbox"/>	0x0040000c	0x8d110004	lw \$17,4(\$8)	11: lw \$s1, 4(\$t0) #y
<input type="checkbox"/>	0x00400010	0x02509020	add \$18,\$18,\$16	13: add \$s2, \$s2, \$s0
<input type="checkbox"/>	0x00400014	0x214a0001	addi \$10,\$10,1	14: addi \$t2, \$t2, 1
<input type="checkbox"/>	0x00400018	0x1551ffff	bne \$10,\$17,-3	15: bne \$t2, \$s1, func#if(contador...
<input type="checkbox"/>	0x0040001c	0xad120008	sw \$18,8(\$8)	16: sw \$s2, 8(\$t0)

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)
0x1001...	3	4	12
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0

Instruction Statistics, Version 1.0 (Ingo Kofler)

Total: 17

ALU: 10 59%

Jump: 0 0%

Branch: 4 24%

Memory: 3 18%

Other: 0 0%

Tool Control

Disconnect from MIPS

Reset

Close

Coproc 0

Registers

Name	Num...	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	0
\$t2	10	4
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	3
\$s1	17	4
\$s2	18	12
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$s8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194336
hi		0

#-----

- 1)C. 64
- 2)B. hi e lo
- 3)A. mult
- 4)C. mflo \$8
- 5)B. 32
- 6)A.lo
- 7)D. div
- 8)A. 1110 0110
- 9)A. Se o inteiro for unsigned, o shift o divide por 2.Se o inteiro for signed, o shift o divide por 2.
- 10)A.
 - ori \$3,\$0,3
 - mult \$8,\$3
 - mflo \$9
 - addi \$9,\$9,7

#-----

EditExecute

mips1.asm*

```

3  #programa19
4  .text
5  .globl main
6  main:#mult $s0, $s1  ->Lo      div $d1, $d2  ->Lo      e resto no Hi(mod)
7  addi $t0, $zero, 0x1001#      mfhi $s1  ->s1 = Hi      mflo $s2  ->s2=Lo
8  sll $t0, $t0, 16#A[]
9  lw $s0, 0($t0)#x
10 lw $s1, 4($t0)#y
11 add $t1, $s0, $zero
12 parax:
13 srl $t1, $t1, 1
14 addi $t2, $t2, 1
15 bne $t1, $zero, parax
16 add $t1, $s1, $zero
17 paray:
18 srl $t1, $t1, 1
19 addi $t3, $t3, 1
20 bne $t1, $zero, paray
21 mult $t2, $t3#  RESPOSTAS EM T2 E T3 E A MULTIPLICACAO EM LO
22 mflo $t4
23 mult $s0, $s1# x*y
24 slti $t4, $t4, 32# menor que 32
25 bne $t4, $zero, prox#-----
26 mflo $s2#se for maior que 32 bits pegar do lo e hi
27 mfhi $s3
28 j fim
29 prox:
30 mflo $s2#se for menor que 32 bits pegar do lo
31 fim:

```

Line: 3 Column: 12 ☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400024	0x00094842	srl \$9,\$9,1	19: srl \$t1, \$t1, 1
<input type="checkbox"/>	0x00400028	0x216b0001	addi \$11,\$11,1	20: addi \$t3, \$t3, 1
<input type="checkbox"/>	0x0040002c	0x1520fffd	bne \$9,\$0,-3	21: bne \$t1, \$zero, paray
<input type="checkbox"/>	0x00400030	0x014b0019	mult \$10,\$11	22: mult \$t2, \$t3# RESPOSTAS EM ...
<input type="checkbox"/>	0x00400034	0x00006012	mflo \$12	23: mflo \$t4
<input type="checkbox"/>	0x00400038	0x02110018	mult \$16,\$17	24: mult \$s0, \$s1# x*y
<input type="checkbox"/>	0x0040003c	0x298c0020	slti \$12,\$12,32	25: slti \$t4, \$t4, 32# menor que 32
<input type="checkbox"/>	0x00400040	0x15800002	bne \$12,\$0,2	26: bne \$t4, \$zero, prox#-----
<input type="checkbox"/>	0x00400044	0x00009012	mflo \$18	27: mflo \$s2#se for maior que 32 b...
<input type="checkbox"/>	0x00400048	0x00009810	mfhi \$19	28: mfhi \$s3
<input type="checkbox"/>	0x0040004c	0x00009012	mflo \$18	30: mflo \$s2#se for menor que 32 b...

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+c)	Value (+10)	Value (+14)	Value (+18)	Value (+1c)
0x1001...	5	38	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0
0x1001...	0	0	0	0	0	0	0	0

☒ Hexadecimal Addresses
 ☐ Hexadecimal Values

☐ Labels

Coproc 0

Registers

Name	Num.	Value
\$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	0
\$t2	10	3
\$t3	11	6
\$t4	12	1
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	5
\$s1	17	38
\$s2	18	190
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194384
hi		0
lo		190

#-----

EditExecute

mips1.asm

```

7  main:#mult $s0, $s1  ->Lo      div $d1, $d2  ->Lo      e resto no Hi(mod)
8  addi $t0, $zero, 0x1001#      mfhi $s1  ->s1 = Hi      mflo $s2  ->s2=Lo
9  sll $t0, $t0, 16#A[]
10 lw $s0, 0($t0)#x
11 sll $t1, $s0, 31
12 srl $t1, $t1, 31
13 bne $t1, $zero, impar
14 par:
15 mult $s0, $s0
16 mflo $t2
17 mult $t2, $s0
18 mflo $t3
19 mult $t3, $s0
20 mflo $t4
21 add $t2, $t2, $t2#2x^2
22 sub $t3, $t3, $t2#x^3-2x^2
23 add $t4, $t4, $t3#x^4+x^3-2x^2
24 j fim
25 impar:
26 mult $s0, $s0#x^2
27 mflo $t2
28 mult $t2, $s0#x^3
29 mflo $t3
30 mult $t3, $t2#x^5
31 mflo $t4
32 sub $t4, $t4, $t2#x^5-x^3
33 addi $t4, $t4, 1#x^5-x^3+1
34 fim:
35 sw $t4, 4($t0)

```

Line: 31 Column: 9 ☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400038	0x018b6020	add \$t2,\$t2,\$t1	23: add \$t4, \$t4, \$t3#x^4+x^3-2x^2
<input type="checkbox"/>	0x0040003c	0x08100018	j 0x00400060	24: j fim
<input type="checkbox"/>	0x00400040	0x02100018	mult \$t6,\$t6	26: mult \$s0, \$s0#x^2
<input type="checkbox"/>	0x00400044	0x00005012	mflo \$t0	27: mflo \$t2
<input type="checkbox"/>	0x00400048	0x01500018	mult \$t0,\$t6	28: mult \$t2, \$s0#x^3
<input type="checkbox"/>	0x0040004c	0x00005812	mflo \$t1	29: mflo \$t3
<input type="checkbox"/>	0x00400050	0x016a0018	mult \$t1,\$t0	30: mult \$t3, \$t2#x^5
<input type="checkbox"/>	0x00400054	0x00006012	mflo \$t2	31: mflo \$t4
<input type="checkbox"/>	0x00400058	0x018a6022	sub \$t2,\$t2,\$t0	32: sub \$t4, \$t4, \$t2#x^5-x^3
<input type="checkbox"/>	0x0040005c	0x218c0001	addi \$t2,\$t2,1	33: addi \$t4, \$t4, 1#x^5-x^3+1
<input type="checkbox"/>	0x00400060	0xad0c0004	sw \$t2,4(\$t0)	35: sw \$t4, 4(\$t0)

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)
0x1001...	3	235	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0

Registers

Name	Num	Value
\$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	1
\$t2	10	9
\$t3	11	27
\$t4	12	235
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	3
\$s1	17	0
\$s2	18	0
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	0
\$s7	23	0
\$t8	24	0
\$t9	25	0
\$k0	26	0
\$k1	27	0
\$gp	28	268468224
\$sp	29	2147479548
\$fp	30	0
\$ra	31	0
pc		4194404
hi		0
lo		243

Instruction Statistics, Version 1.0 (Ingo Kofler)

Total:

15

ALU:

12

80%

Jump:

0

0%

Branch:

1

7%

Memory:

2

13%

Other:

0

0%

Tool Control

Disconnect from MIPS

Reset

Close

#-----

EditExecute

mips1.asm*

```

1  #EXERCICIO PRATICO 05
2  #Aluno: Gustavo Lorenzo
3  #programa21
4  #-----
5  .text
6  .globl main
7  main:#mult $s0, $s1  ->Lo      div $d1, $d2  ->Lo      e resto no Hi(mod)
8  addi $t0, $zero, 0x1001#      mfhi $s1  ->s1 = Hi      mflo $s2  ->s2=Lo
9  sll $t0, $t0, 16#A[]
10 lw $s0, 0($t0)#x
11
12 slt $t1, $zero, $s0#if(0<x){$t1 = 1}else{$t1 = 0} OBS: existe slti
13 bne $t1, $zero, prox#se for x>0 vai pro prox
14 mult $s0, $s0
15 mflo $t1
16 mult $t1, $t1
17 mflo $t1
18 addi $s1, $t1, -1
19 j fim
20 prox:
21 mult $s0, $s0
22 mflo $t1
23 mult $s0, $t1
24 mflo $t1#x^3
25 addi $s1, $t1, 1#x^3+1
26 fim:
27 sw $s1, 4($t0)
28 .data
29 x: .word -5

```

Line: 3 Column: 12

☒ Show Line Numbers

EditExecute

Text Segment

Bkpt	Address	Code	Basic	Source
<input type="checkbox"/>	0x00400018	0x00004812	mflo \$9	15: mflo \$t1
<input type="checkbox"/>	0x0040001c	0x01290018	mult \$9,\$9	16: mult \$t1, \$t1
<input type="checkbox"/>	0x00400020	0x00004812	mflo \$9	17: mflo \$t1
<input type="checkbox"/>	0x00400024	0x2131ffff	addi \$17,\$9,-1	18: addi \$s1, \$t1, -1
<input type="checkbox"/>	0x00400028	0x08100010	j 0x00400040	19: j fim
<input type="checkbox"/>	0x0040002c	0x02100018	mult \$16,\$16	21: mult \$s0, \$s0
<input type="checkbox"/>	0x00400030	0x00004812	mflo \$9	22: mflo \$t1
<input type="checkbox"/>	0x00400034	0x02090018	mult \$16,\$9	23: mult \$s0, \$t1
<input type="checkbox"/>	0x00400038	0x00004812	mflo \$9	24: mflo \$t1#x^3
<input type="checkbox"/>	0x0040003c	0x21310001	addi \$17,\$9,1	25: addi \$s1, \$t1, 1#x^3+1
<input type="checkbox"/>	0x00400040	0xad110004	sw \$17,4(\$9)	27: sw \$s1, 4(\$t0)

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)
0x1001...	-5	624	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0
0x1001...	0	0	0

Instruction Statistics, Version 1.0 (Ingo Kofler)

Total: 12

ALU: 7 58%

Jump: 1 8%

Branch: 1 8%

Memory: 2 17%

Other: 1 8%

Tool Control

Disconnect from MIPS

Reset

Close

Coproc 0

Registers

Name	Num	Value
\$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	625
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	-5
\$s1	17	624
\$s2	18	0
\$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		4194372
hi		0
lo		625

#-----