

Isac Martins - 21203361

1 - Antes da operação

Text Segment

Bkpt	Address	Code	Basic	Source
4194304	0x20010010	addi \$t0, \$s0, 16	11: LOOP2: beq \$s2, 16, CODIGO #Loop principal, ele itera para cada coluna	
4194308	0x10320014	beq \$t0, \$s0, 20		
4194312	0x30011001	lui \$t0, 4097	12: la \$s0, matriztransposta # Carrega Memoria matriz principal	
4194316	0x34300040	ori \$t0, \$s0, 16		
4194320	0x30011001	lui \$t0, 4097	13: la \$t0, matriz #Carrega memoria matriz transposta	
4194324	0x34280000	ori \$t0, \$s0, 16		
4194328	0x21280200	add \$t0, \$s0, \$s2	14: add \$s0, \$s0, \$s2 #Move o ponteiro da matriz transposta para proxima coluna	
4194332	0x01124020	add \$t0, \$s0, \$s2	15: add \$t0, \$t0, \$s2 #Move o ponteiro da matriz principal para proxima linha	
4194336	0x01124020	add \$t0, \$s0, \$s2	16: add \$t0, \$t0, \$s2	
4194340	0x01124020	add \$t0, \$s0, \$s2	17: add \$t0, \$t0, \$s2	
4194344	0x01124020	add \$t0, \$s0, \$s2	18: add \$t0, \$t0, \$s2 #fim do move ponteiro	
4194348	0x20010004	addi \$t0, \$s0, 4	19: LOOP: beq \$s1, 4, ADD #Loop secundario, ele itera para cada linha	
4194352	0x10310006	beq \$t0, \$s0, 6		

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+12)	Value (+16)	Value (+20)	Value (+24)	Value (+28)
26850092	1	2	0	1	-1	-3	0	1
26850104	3	6	1	3	2	4	0	3
26850106	0	0	0	0	0	0	0	0
26850108	0	0	0	0	0	0	0	0
26850112	1953719668	779384175	7627108	0	0	0	0	0
26850114	0	0	0	0	0	0	0	0
26850116	0	0	0	0	0	0	0	0
26850118	0	0	0	0	0	0	0	0
26850120	0	0	0	0	0	0	0	0
26850122	0	0	0	0	0	0	0	0
26850124	0	0	0	0	0	0	0	0
26850126	0	0	0	0	0	0	0	0
26850128	0	0	0	0	0	0	0	0
26850130	0	0	0	0	0	0	0	0

Registers

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	0
\$t1	9	0
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	0
\$s1	17	0
\$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	2147479540
\$fp	30	0
\$ra	31	0
\$pc		4194304
\$hi		0
\$lo		0

Mars Messages

Assembly: assembling C:\Users\06041081922\Desktop\mips1.asm
Assembly: operation completed successfully.

Após Transposição

Text Segment

Bkpt	Address	Code	Basic	Source
4194304	0x20010010	addi \$t0, \$s0, 16	11: LOOP2: beq \$s2, 16, CODIGO #Loop principal, ele itera para cada coluna	
4194308	0x10320014	beq \$t0, \$s0, 20		
4194312	0x30011001	lui \$t0, 4097	12: la \$s0, matriztransposta # Carrega Memoria matriz principal	
4194316	0x34300040	ori \$t0, \$s0, 16		
4194320	0x30011001	lui \$t0, 4097	13: la \$t0, matriz #Carrega memoria matriz transposta	
4194324	0x34280000	ori \$t0, \$s0, 16		
4194328	0x21280200	add \$t0, \$s0, \$s2	14: add \$s0, \$s0, \$s2 #Move o ponteiro da matriz transposta para proxima coluna	
4194332	0x01124020	add \$t0, \$s0, \$s2	15: add \$t0, \$t0, \$s2 #Move o ponteiro da matriz principal para proxima linha	
4194336	0x01124020	add \$t0, \$s0, \$s2	16: add \$t0, \$t0, \$s2	
4194340	0x01124020	add \$t0, \$s0, \$s2	17: add \$t0, \$t0, \$s2	
4194344	0x01124020	add \$t0, \$s0, \$s2	18: add \$t0, \$t0, \$s2 #fim do move ponteiro	
4194348	0x20010004	addi \$t0, \$s0, 4	19: LOOP: beq \$s1, 4, ADD #Loop secundario, ele itera para cada linha	
4194352	0x10310006	beq \$t0, \$s0, 6		

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+12)	Value (+16)	Value (+20)	Value (+24)	Value (+28)
26850092	1	2	0	1	-1	-3	0	1
26850104	3	6	1	3	2	4	0	3
26850106	1	-1	3	2	2	-3	6	4
26850108	0	0	1	0	1	1	3	3
26850112	1953719668	779384175	7627108	0	0	0	0	0
26850114	0	0	0	0	0	0	0	0
26850116	0	0	0	0	0	0	0	0
26850118	0	0	0	0	0	0	0	0
26850120	0	0	0	0	0	0	0	0
26850122	0	0	0	0	0	0	0	0
26850124	0	0	0	0	0	0	0	0
26850126	0	0	0	0	0	0	0	0
26850128	0	0	0	0	0	0	0	0
26850130	0	0	0	0	0	0	0	0

Registers

Name	Number	Value
\$zero	0	0
\$at	1	268500992
\$v0	2	16
\$v1	3	0
\$a0	4	3
\$a1	5	268501056
\$a2	6	16
\$a3	7	0
\$t0	8	268501056
\$t1	9	3
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	268501182
\$s1	17	0
\$s2	18	16
\$s3	19	0
\$s4	20	0
\$s5	21	0
\$s6	22	3
\$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		4194456
\$hi		0
\$lo		0

Mars Messages

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

2 - Anterior a multiplicação

Text Segment

Bkpt	Address	Code	Basic	Source
4194304	0x3c011001	lui	\$1,4097	19: la \$s0, matA
4194308	0x34300000	ori	\$16,\$1,0	20: la \$s1, matB
4194312	0x3c011001	lui	\$1,4097	21: la \$s2, matRes
4194316	0x34310024	ori	\$17,\$1,36	
4194320	0x3c011001	lui	\$1,4097	
4194324	0x34320048	ori	\$18,\$1,72	
4194328	0x00004020	add	\$s0,\$s0,\$s0	
4194332	0x00004020	add	\$s0,\$s0,\$s0	
4194336	0x20010024	addi	\$1,\$s0,36	LOOP1: beq \$t0, 36, LOOP1EXIT
4194340	0x10280019	beq	\$1,\$s,25	
4194344	0x2001000c	addi	\$1,\$s0,12	LOOP2: beq \$t1, 12, LOOP2EXIT
4194348	0x10290014	beq	\$1,\$s,20	
4194352	0x00005020	add	\$t2,\$s0,\$s0 # zero soma	

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+12)	Value (+16)	Value (+20)	Value (+24)	Value (+28)
268500992	1	2	3	0	1	4	0	0
268501024	1	1	-2	5	0	1	-4	0
268501056	0	1	0	0	0	0	0	0
268501088	0	0	0	0	0	0	0	0
268501120	0	0	0	0	0	0	0	0
268501152	0	0	0	0	0	0	0	0
268501184	0	0	0	0	0	0	0	0
268501216	0	0	0	0	0	0	0	0
268501248	0	0	0	0	0	0	0	0
268501280	0	0	0	0	0	0	0	0
268501312	0	0	0	0	0	0	0	0

Registers

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	0
\$t1	9	0
\$t2	10	0
\$t3	11	0
\$t4	12	0
\$t5	13	0
\$t6	14	0
\$t7	15	0
\$s0	16	16
\$s1	17	17
\$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		4194304
hi		0
lo		0

Mars Messages

Go: execution terminated by null instruction.

Assembly: assembling C:\Users\06041081922\Desktop\mips2.asm

Assembly: operation completed successfully.

Após a multiplicação

Text Segment

Bkpt	Address	Code	Basic	Source
4194304	0x3c011001	lui	\$1,4097	19: la \$s0, matA
4194308	0x34300000	ori	\$16,\$1,0	20: la \$s1, matB
4194312	0x3c011001	lui	\$1,4097	21: la \$s2, matRes
4194316	0x34310024	ori	\$17,\$1,36	
4194320	0x3c011001	lui	\$1,4097	
4194324	0x34320048	ori	\$18,\$1,72	
4194328	0x00004020	add	\$s0,\$s0,\$s0	
4194332	0x00004020	add	\$s0,\$s0,\$s0	
4194336	0x20010024	addi	\$1,\$s0,36	LOOP1: beq \$t0, 36, LOOP1EXIT
4194340	0x10280019	beq	\$1,\$s,25	
4194344	0x2001000c	addi	\$1,\$s0,12	LOOP2: beq \$t1, 12, LOOP2EXIT
4194348	0x10290014	beq	\$1,\$s,20	
4194352	0x00005020	add	\$t2,\$s0,\$s0 # zero soma	

Data Segment

Address	Value (+0)	Value (+4)	Value (+8)	Value (+12)	Value (+16)	Value (+20)	Value (+24)	Value (+28)
268500992	1	2	3	0	1	4	0	0
268501024	1	1	-2	5	0	1	-4	0
268501056	0	1	0	0	0	0	0	0
268501088	0	0	0	0	0	0	0	0
268501120	0	0	0	0	0	0	0	0
268501152	0	0	0	0	0	0	0	0
268501184	0	0	0	0	0	0	0	0
268501216	0	0	0	0	0	0	0	0
268501248	0	0	0	0	0	0	0	0
268501280	0	0	0	0	0	0	0	0
268501312	0	0	0	0	0	0	0	0

Registers

Name	Number	Value
\$zero	0	0
\$at	1	36
\$v0	2	0
\$v1	3	0
\$a0	4	0
\$a1	5	0
\$a2	6	0
\$a3	7	0
\$t0	8	36
\$t1	9	0
\$t2	10	1
\$t3	11	1
\$t4	12	268501096
\$t5	13	268501036
\$t6	14	0
\$t7	15	0
\$s0	16	268500992
\$s1	17	268501028
\$s2	18	268501064
\$s3	19	1
\$s4	20	1
\$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		4194444
hi		0
lo		1

Mars Messages

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

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