

1:

The screenshot shows a MIPS assembler interface with the following components:

- Assembly Code (mips1.asm):**

```

1  # a - s0
2  # b - s1
3  # c - s2
4  # d - s3
5  # x - s4
6  # y - s5
7  addi $s0, $zero, 2 # a = 2
8  addi $s1, $zero, 3 # b = 3
9  addi $s2, $zero, 4 # c = 4
10 addi $s3, $zero, 5 # d = 5
11 add $t0, $s0, $s1 # t0 = a+b
12 add $t1, $s2, $s3 # t1 = c+d
13 sub $s4, $t0, $t1 # x = (a+b) - (c+d)
14 sub $t0, $s0, $s1 # t0 = a-b
15 add $s5, $t0, $s4 # y = a-b+x
16 sub $s1, $s4, $s5 # b = x-y
17

```
- Register File:**

| 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 | 0xffffffff |
| \$t1 | 9 | 0x00000009 |
| \$t2 | 10 | 0x00000000 |
| \$t3 | 11 | 0x00000000 |
| \$t4 | 12 | 0x00000000 |
| \$t5 | 13 | 0x00000000 |
| \$t6 | 14 | 0x00000000 |
| \$t7 | 15 | 0x00000000 |
| \$s0 | 16 | 0x00000002 |
| \$s1 | 17 | 0x00000003 |
| \$s2 | 18 | 0x00000004 |
| \$s3 | 19 | 0x00000005 |
| \$s4 | 20 | 0xffffffffc |
| \$s5 | 21 | 0xffffffffb |
| \$s6 | 22 | 0x00000000 |
| \$s7 | 23 | 0x00000000 |
| \$t8 | 24 | 0x00000000 |
| \$t9 | 25 | 0x00000000 |
| \$k0 | 26 | 0x00000000 |
| \$k1 | 27 | 0x00000000 |
| \$gp | 28 | 0x10008000 |
| \$sp | 29 | 0x7fffffc |
| \$fp | 30 | 0x00000000 |
| \$ra | 31 | 0x00000000 |
| pc | | 0x00400028 |
| hi | | 0x00000000 |
| lo | | 0x00000000 |

2:

The screenshot shows a MIPS assembler interface with the following components:

- Assembly Code (mips2.asm):**

```

1  # x - s0
2  # y - s1
3  addi $s0, $zero, 1 # x = 1
4  add $t0, $s0, $s0 # t0 = 2x
5  add $t0, $t0, $t0 # t0 = 2x + 2x
6  add $t0, $t0, $s0 # t0 = 4x + x
7  addi $s1, $t0, 15 # y = 5x+15
8

```
- Register File:**

| 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 | 0x00000005 |
| \$t1 | 9 | 0x00000000 |
| \$t2 | 10 | 0x00000000 |
| \$t3 | 11 | 0x00000000 |
| \$t4 | 12 | 0x00000000 |
| \$t5 | 13 | 0x00000000 |
| \$t6 | 14 | 0x00000000 |
| \$t7 | 15 | 0x00000000 |
| \$s0 | 16 | 0x00000001 |
| \$s1 | 17 | 0x00000014 |
| \$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 | 0x7fffffc |
| \$fp | 30 | 0x00000000 |
| \$ra | 31 | 0x00000000 |
| pc | | 0x00400014 |
| hi | | 0x00000000 |
| lo | | 0x00000000 |

Line: 8 Column: 1 ☒ Show Line Numbers

3:

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 | 626 |
| \$t1 | 9 | 268 |
| \$t2 | 10 | 0 |
| \$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 | | 4194380 |
| hi | | 0 |
| lo | | 0 |

4:

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 | 626 |
| \$t1 | 9 | 268 |
| \$t2 | 10 | 0 |
| \$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 | | 4194348 |
| hi | | 0 |
| lo | | 0 |

5:

The screenshot shows a MIPS assembler interface with a toolbar at the top. The main window displays assembly code for `mips5.asm`. The code is as follows:

```

1  # x - s0
2  # y - s1
3  # z - s2
4  addi $t0, $zero, 0x186a # t0 = 0x186a
5  sll  $s0, $t0, 4        # x = 0x186a0 = 100000
6  addi $t0, $zero, 0x30d4 # t0 = 0x30d4
7  sll  $s1, $t0, 4        # y = 0x30d40 = 200000
8  add  $s2, $s0, $s1      # y = x+y
9

```

At the bottom, the status bar indicates "Line: 9 Column: 1" and "Show Line Numbers" is checked.

On the right, the "Registers" window shows the state of the processor registers. The registers are organized into two columns: Coproc 1 and Coproc 0. The registers are listed with their names, numbers, and current values.

| 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 | 12500 |
| \$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 |
| lo | | 0 |

6:

The screenshot shows a MIPS assembler interface with a toolbar at the top. The main window displays assembly code for `mips6.asm`. The code is as follows:

```

1  # x - s0
2  # y - s1
3  # z - s2
4  addi $t0, $zero, 0x7fff # t0 = 0x7fff
5  sll  $t0, $t0, 16       # t0 = 0x7ffff
6  ori  $s0, $t0, 0xffff  # x = 0x7ffff = maior n
7  addi $t0, $zero, 0x493e # t0 = 0x493e
8  sll  $s1, $t0, 4        # y = 0x493e0 = 300000
9  sll  $t0, $s1, 2        # t0 = 4y
10 sub  $s2, $s0, $t0      # z = x-t0 = x-4y
11

```

At the bottom, the status bar indicates "Line: 11 Column: 1" and "Show Line Numbers" is checked.

On the right, the "Registers" window shows the state of the processor registers. The registers are organized into two columns: Coproc 1 and Coproc 0. The registers are listed with their names, numbers, and current values.

| 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 | 1200000 |
| \$t1 | 9 | 0 |
| \$t2 | 10 | 0 |
| \$t3 | 11 | 0 |
| \$t4 | 12 | 0 |
| \$t5 | 13 | 0 |
| \$t6 | 14 | 0 |
| \$t7 | 15 | 0 |
| \$s0 | 16 | 2147483647 |
| \$s1 | 17 | 300000 |
| \$s2 | 18 | 2146283647 |
| \$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 | | 4194332 |
| hi | | 0 |
| lo | | 0 |

7:

Run speed at max (no interaction)

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 | -1 |
| \$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 | 2147479548 |
| \$fp | 30 | 0 |
| \$ra | 31 | 0 |
| pc | | 4194320 |
| hi | | 0 |
| lo | | 0 |

Line: 5 Column: 1 ☒ Show Line Numbers

8:

Run speed at max (no interaction)

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 | 0x12345678 |
| \$t1 | 9 | 0x00000012 |
| \$t2 | 10 | 0x00000034 |
| \$t3 | 11 | 0x00000056 |
| \$t4 | 12 | 0x00000078 |
| \$t5 | 13 | 0x00000000 |
| \$t6 | 14 | 0x00000000 |
| \$t7 | 15 | 0x00000000 |
| \$s0 | 16 | 0x00000000 |
| \$s1 | 17 | 0x00000000 |
| \$s2 | 18 | 0x00000000 |
| \$s3 | 19 | 0x00000000 |
| \$s4 | 20 | 0x00000000 |
| \$s5 | 21 | 0x00000000 |
| \$s6 | 22 | 0x00000000 |
| \$s7 | 23 | 0x00000000 |
| \$s8 | 24 | 0x00000000 |
| \$s9 | 25 | 0x00000000 |
| \$k0 | 26 | 0x00000000 |
| \$k1 | 27 | 0x00000000 |
| \$gp | 28 | 0x10008000 |
| \$sp | 29 | 0x7fffffc0 |
| \$fp | 30 | 0x00000000 |
| \$ra | 31 | 0x00000000 |
| pc | | 0x00400024 |
| hi | | 0x00000000 |
| lo | | 0x00000000 |

Line: 10 Column: 1 ☒ Show Line Numbers