Name: Hassam Ud-Din

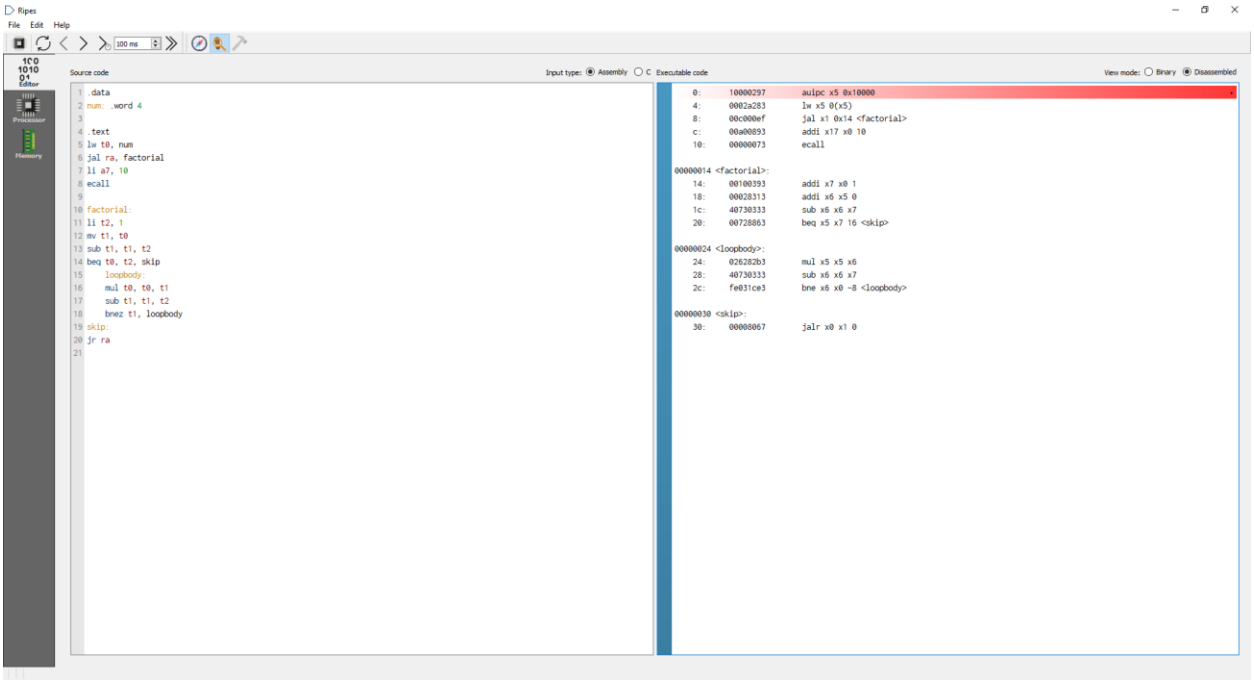
Roll No: 19P-0029

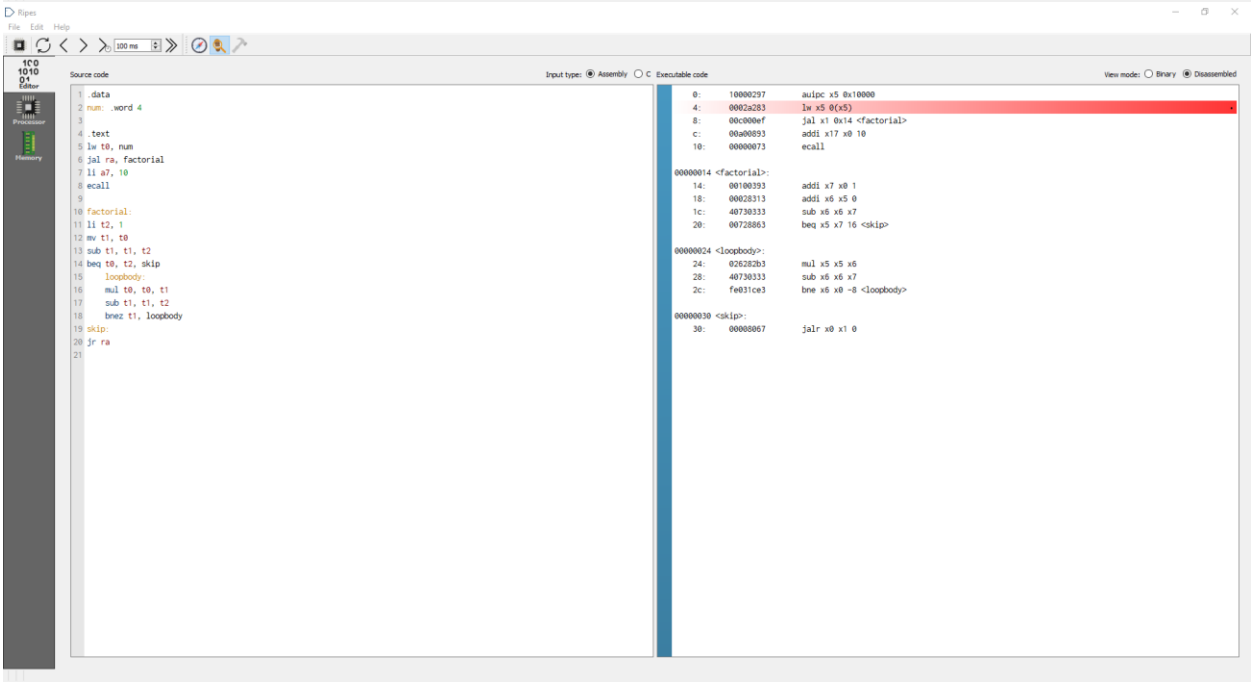
Section: BCS 3-A

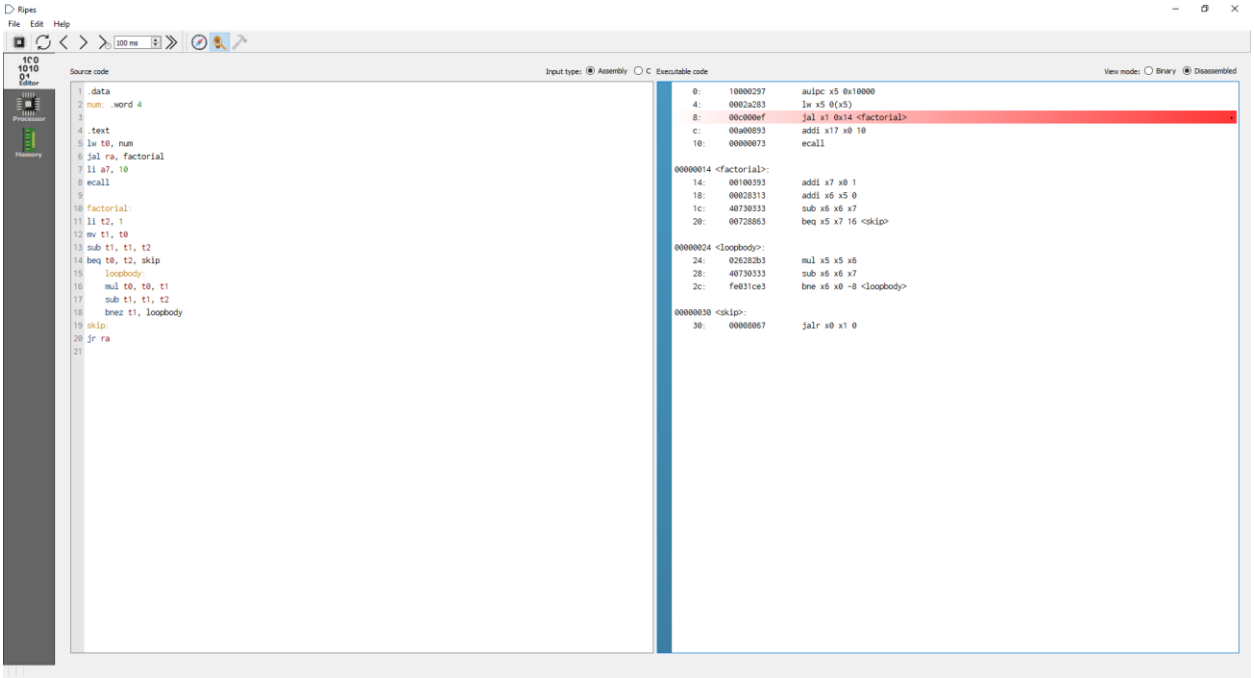
CODE:

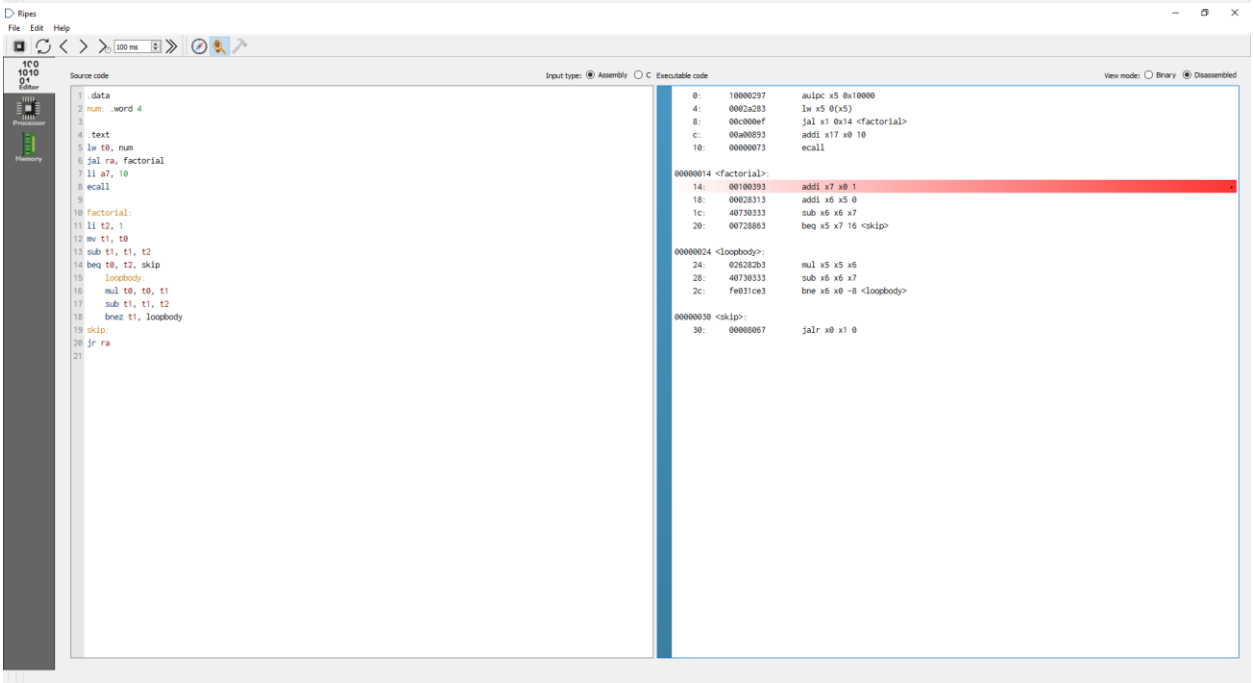
```
.data
num: .word 4

.text
lw t0, num
jal ra, factorial
li a7, 10
ecall

factorial:
li t2, 1
mv t1, t0
sub t1, t1, t2
beq t0, t2, skip
        loopbody:
        mul t0, t0, t1
        sub t1, t1, t2
        bnez t1, loopbody
skip:
jr ra
```

SINGLE STAGE PROCESSOR:






Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0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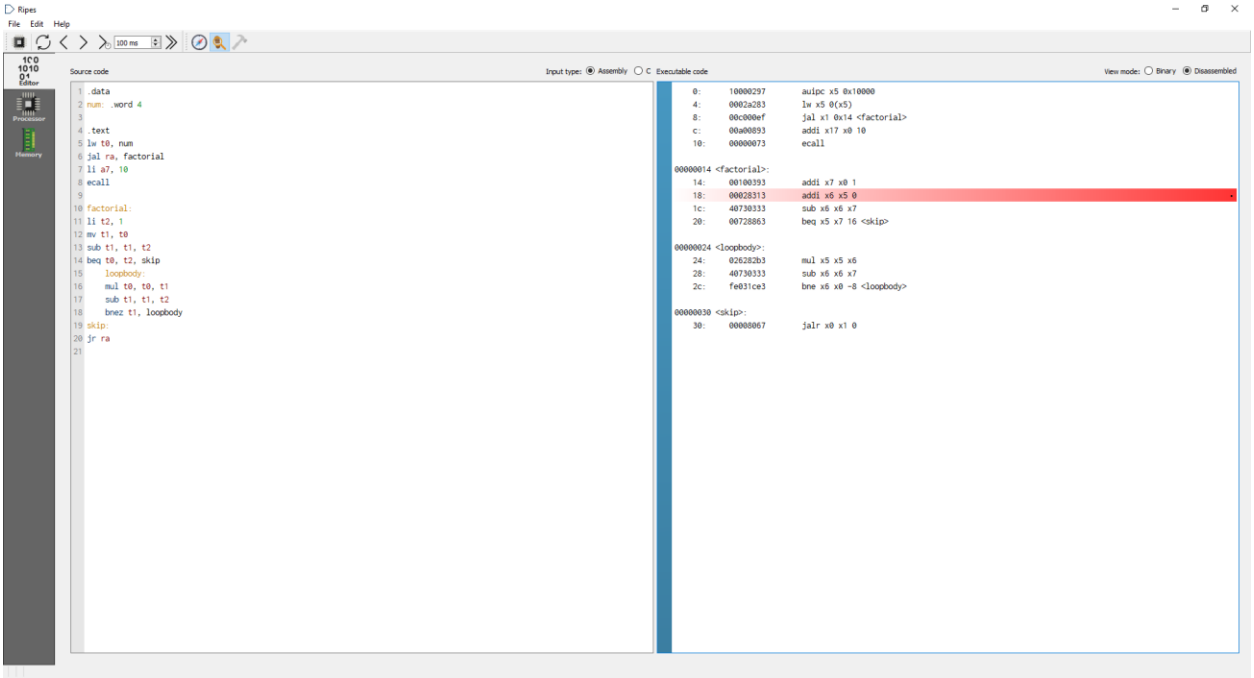
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14 beq t0, t2, skip
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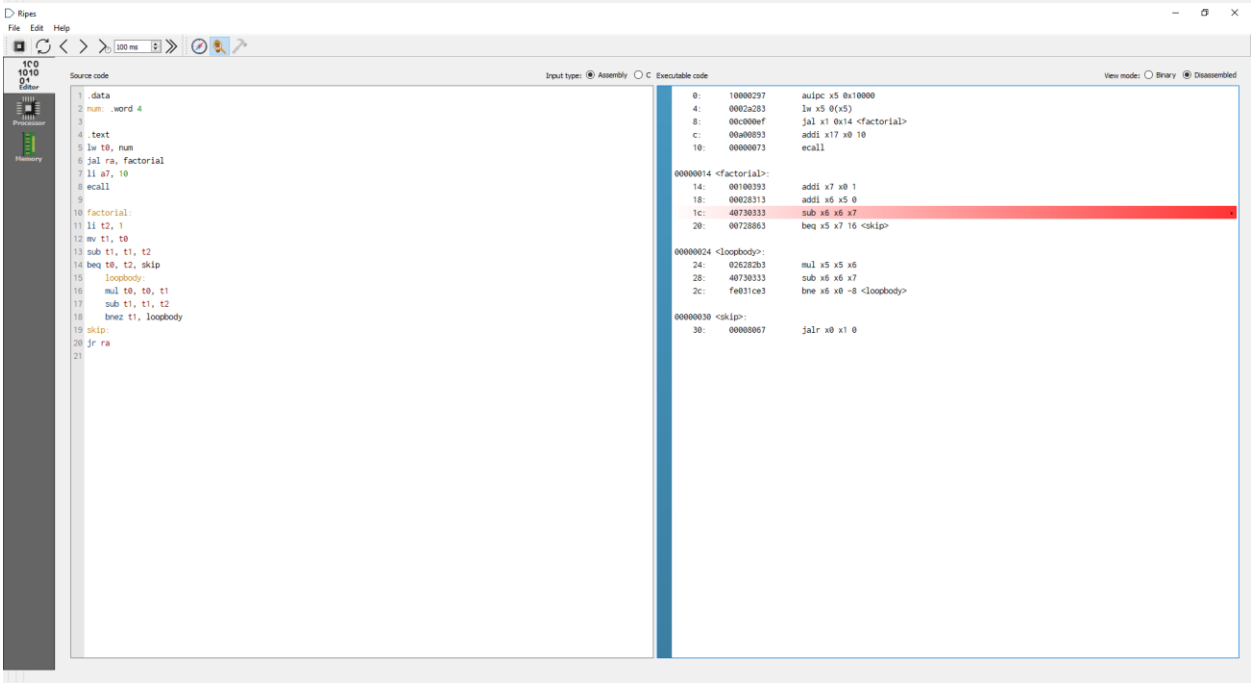
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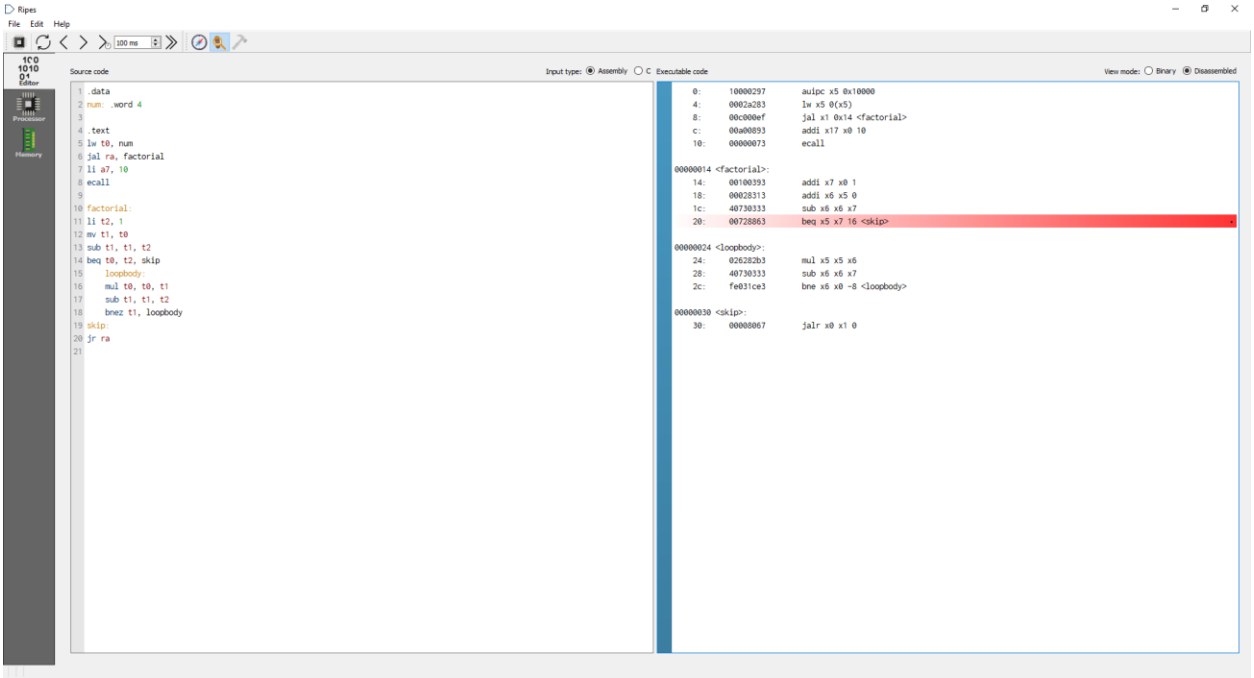
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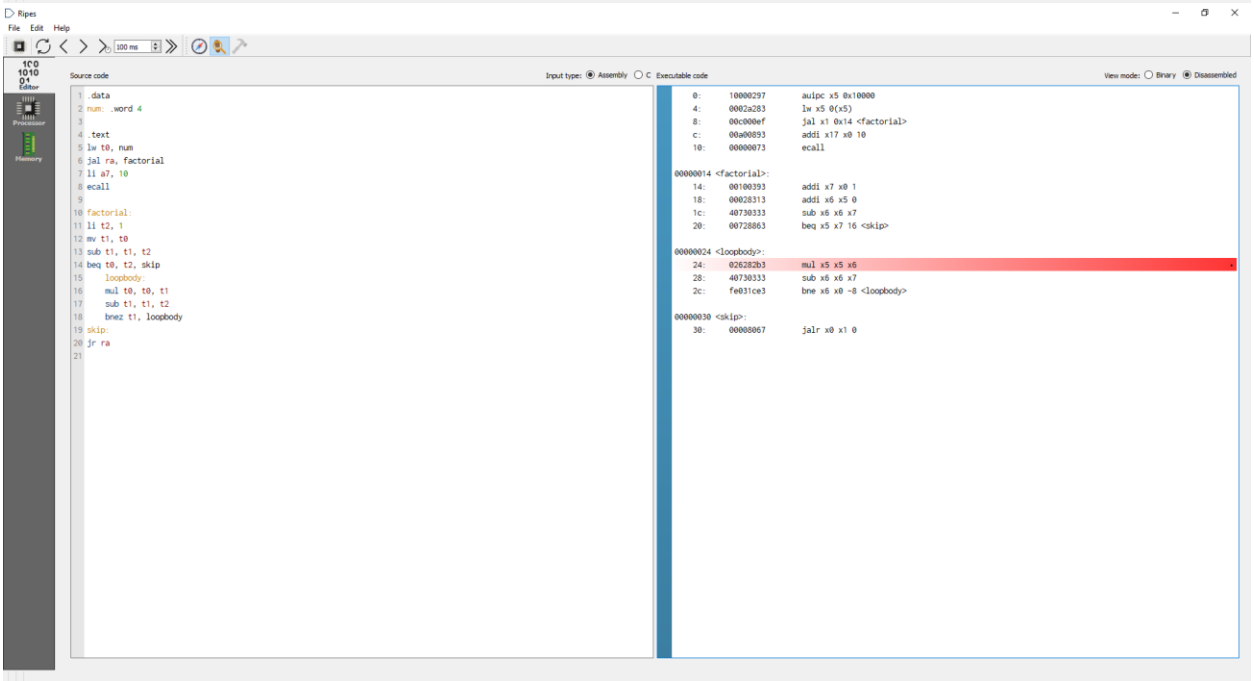
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1 .data
2 num: .word 4
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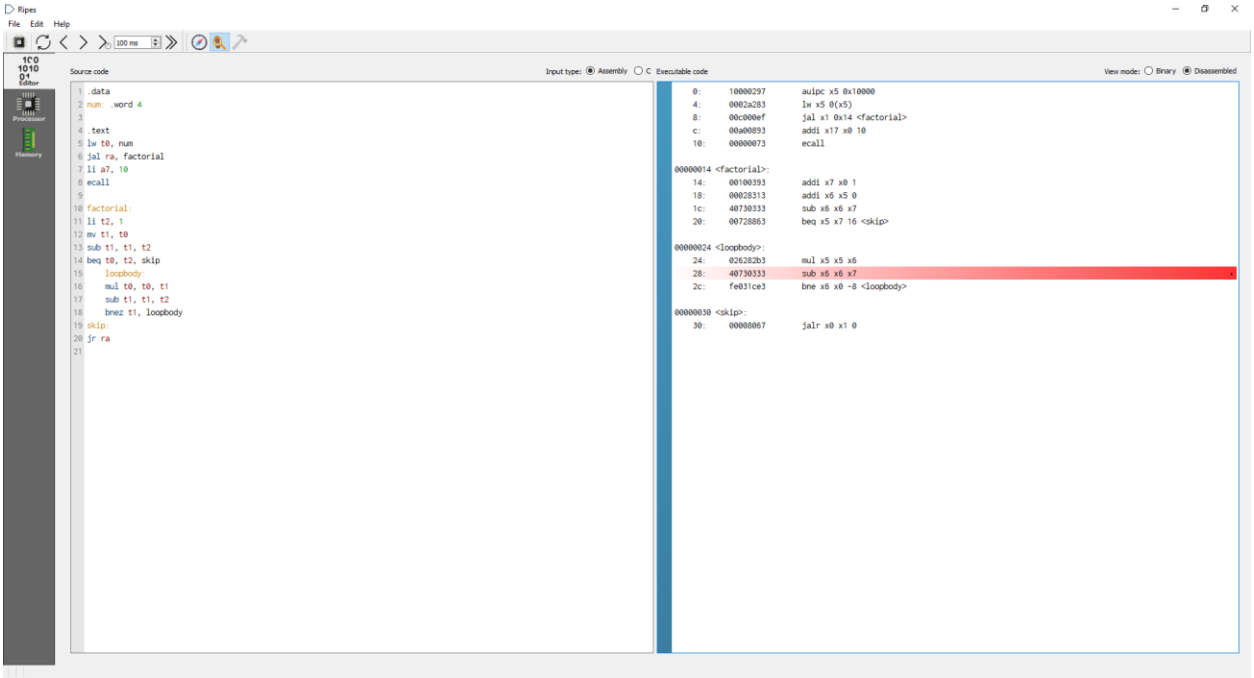
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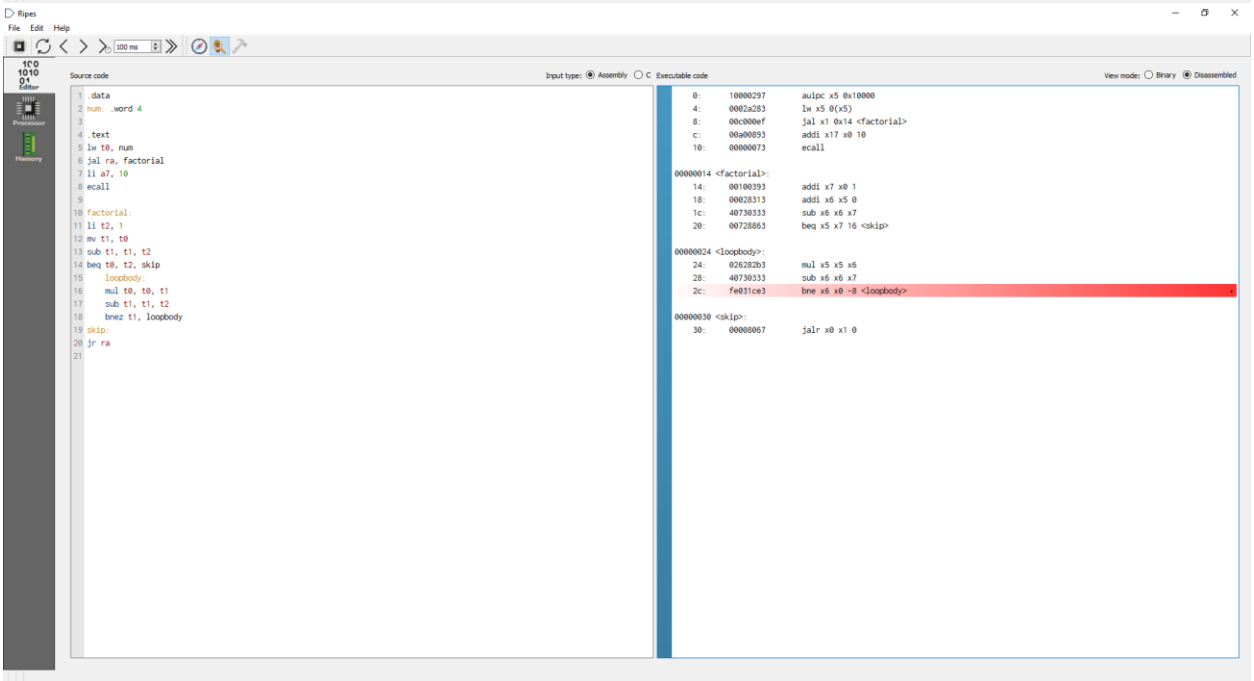
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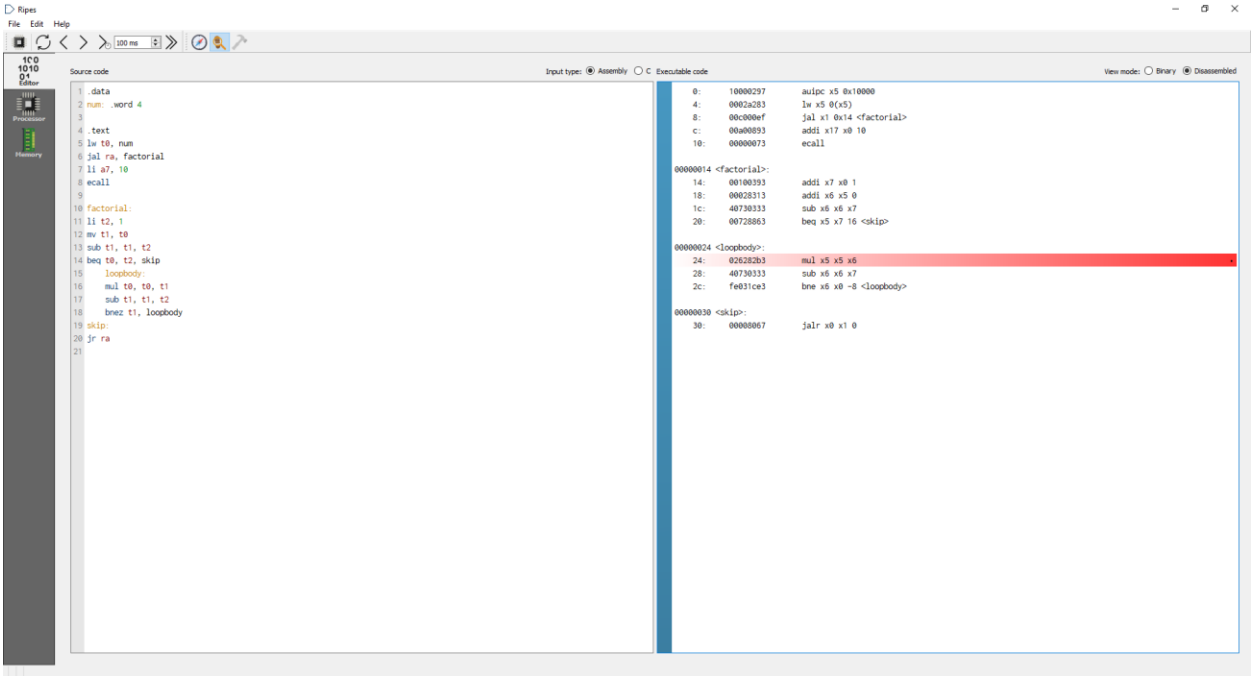
Ripes
File Edit Help
100 ms
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Processor
Memory
Source code
Input type: Assembly C
Executable code
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1 .data
2 num: .word 4
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4 .text
5 lw t0, num
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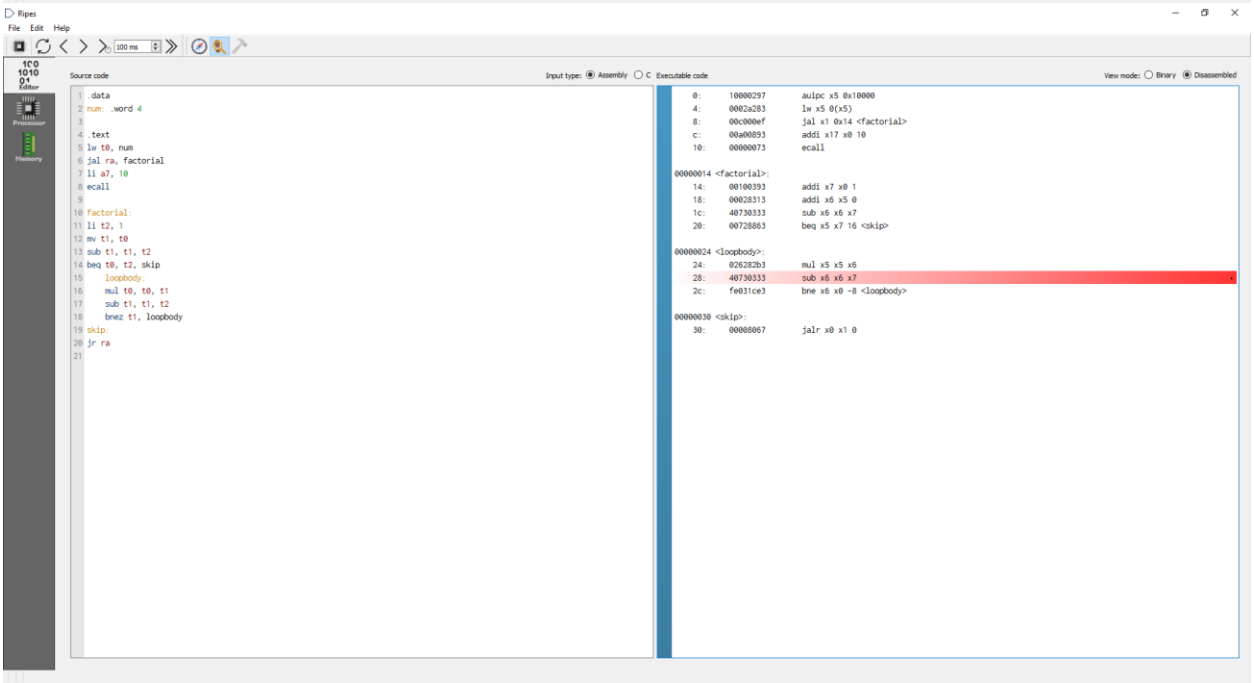
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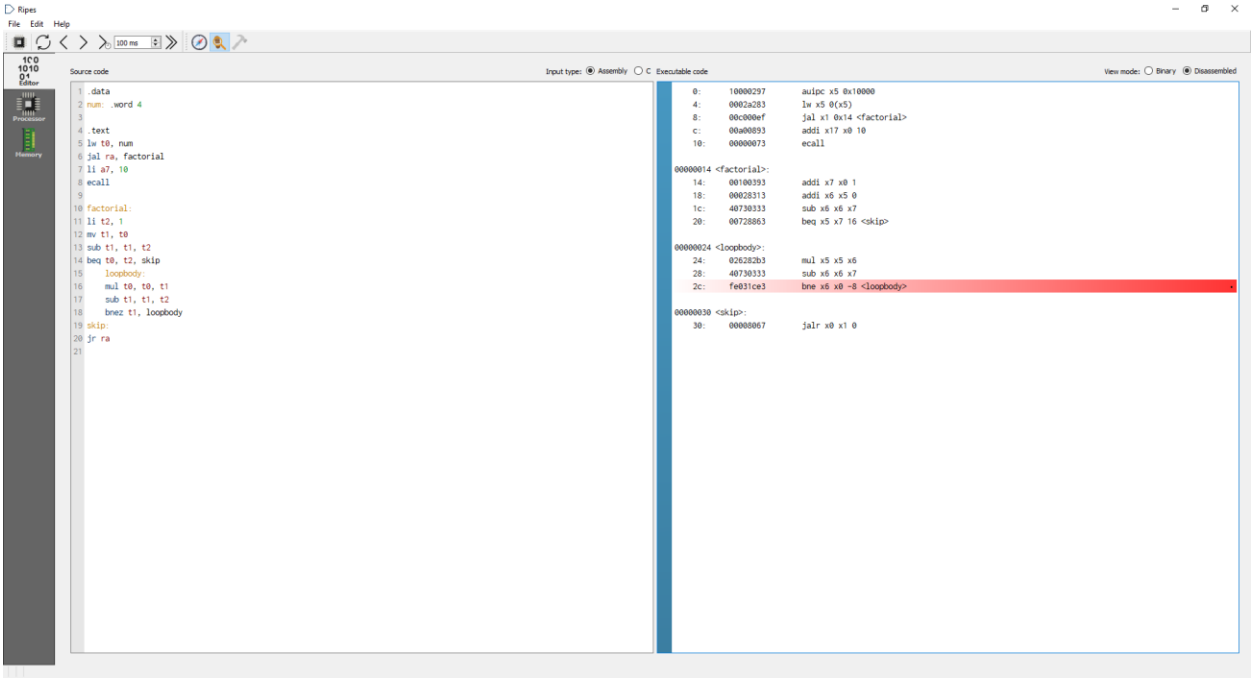
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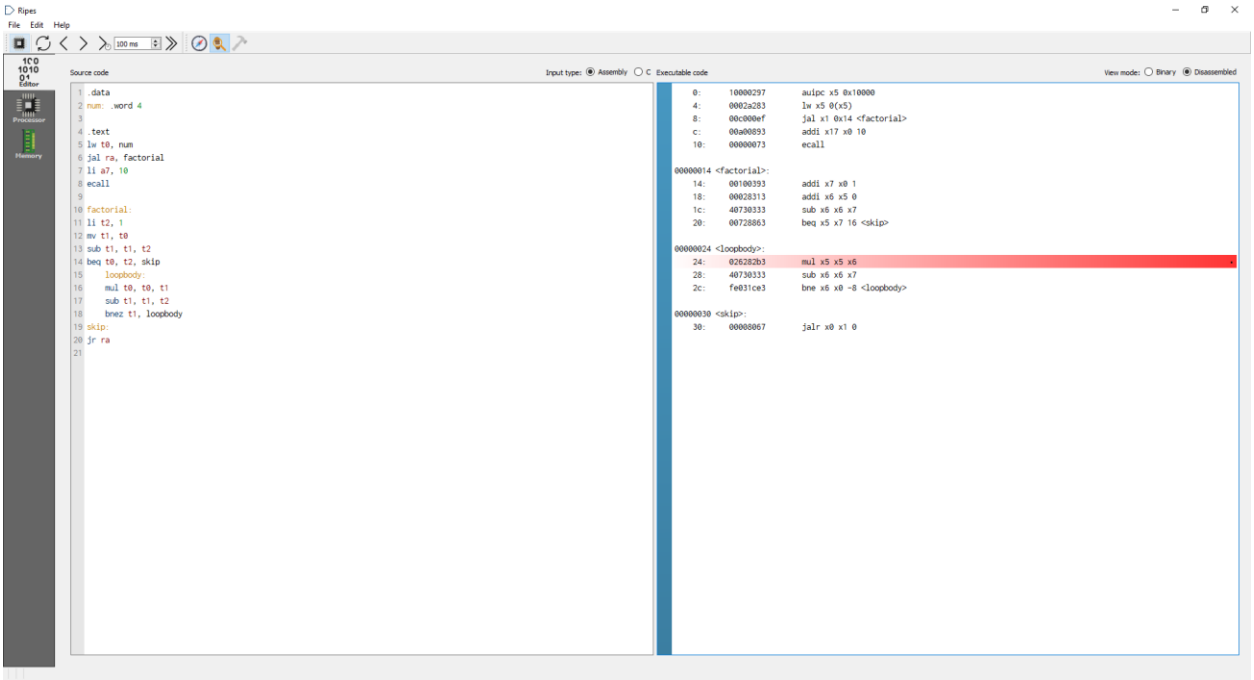
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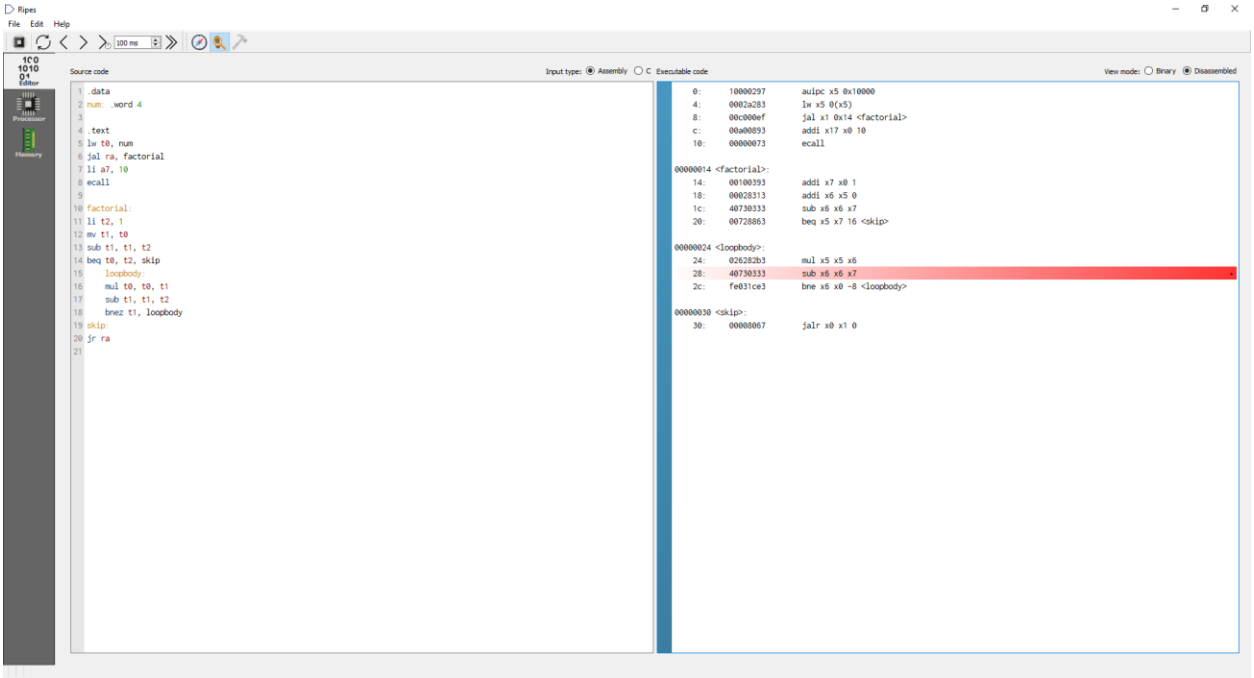
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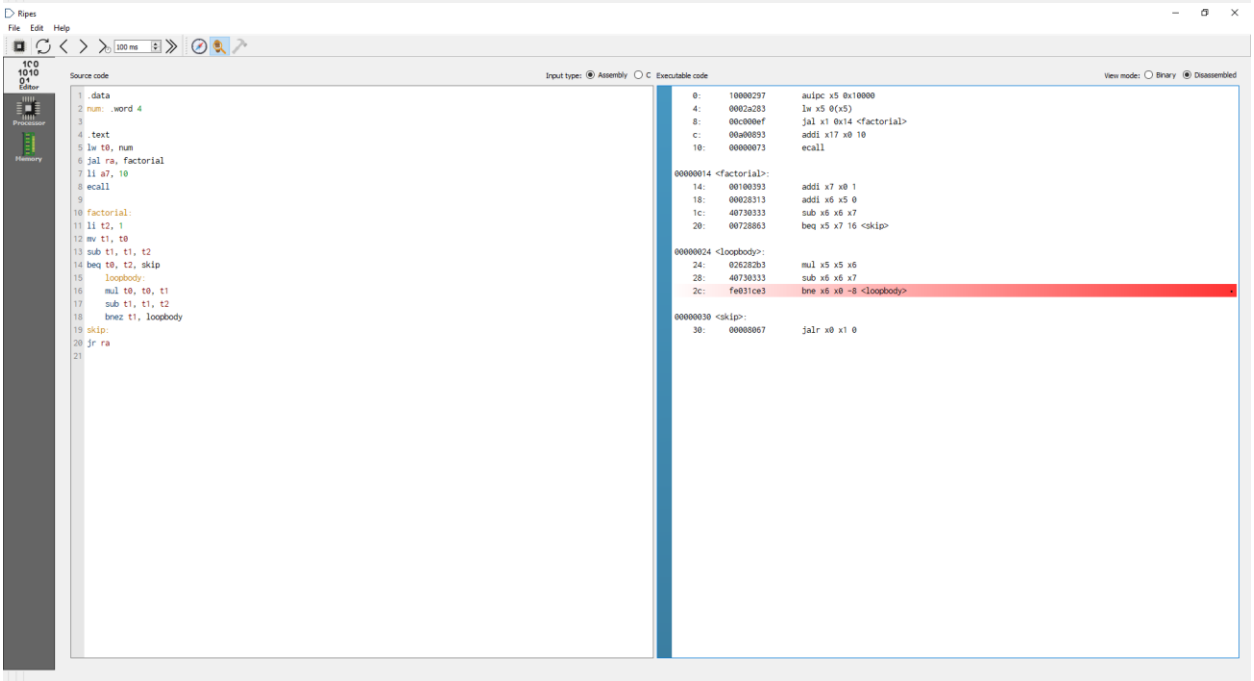
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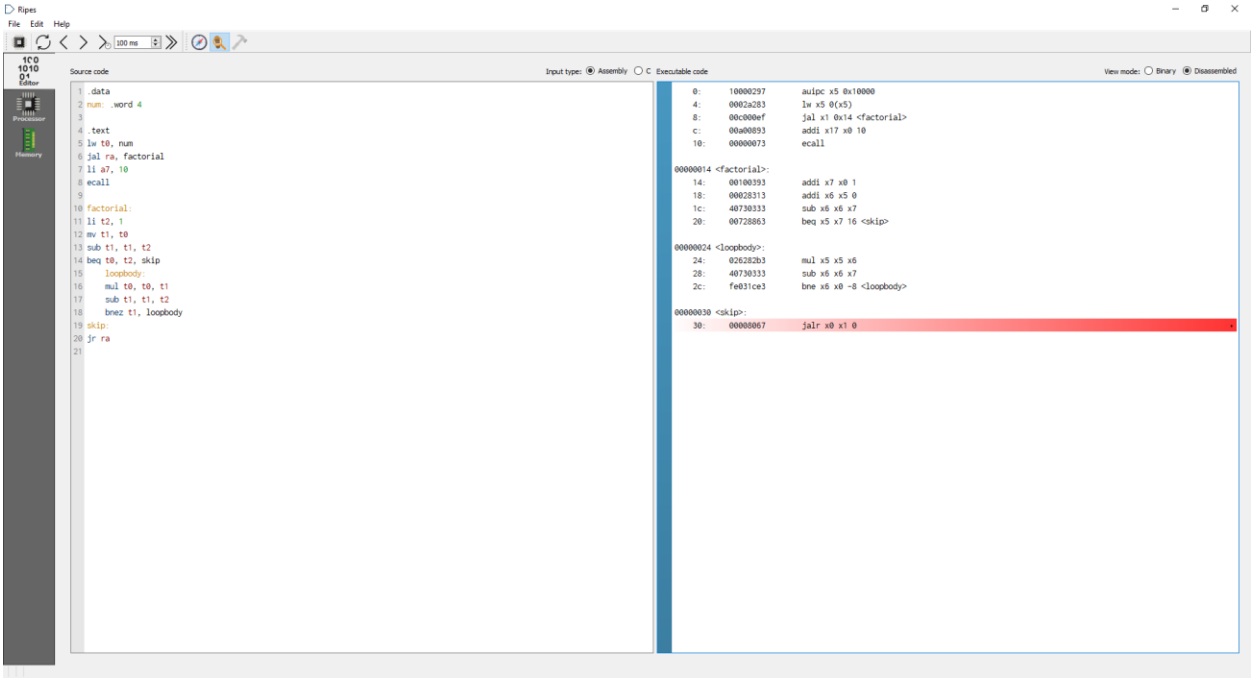
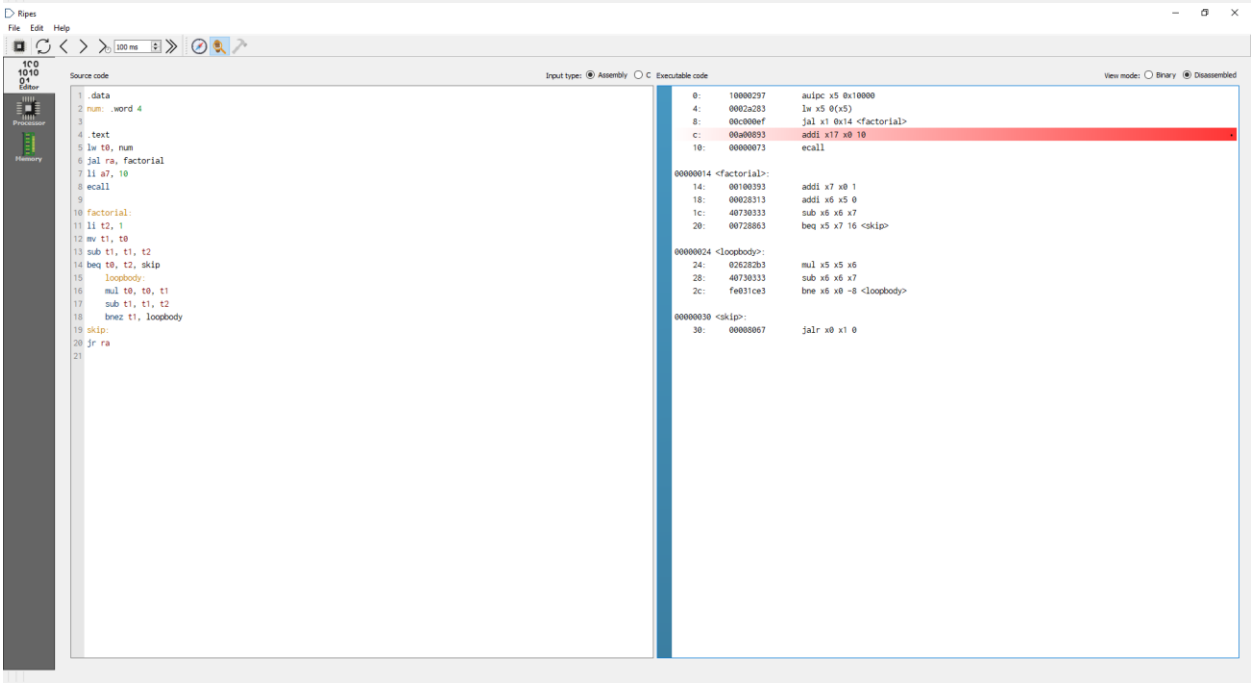
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0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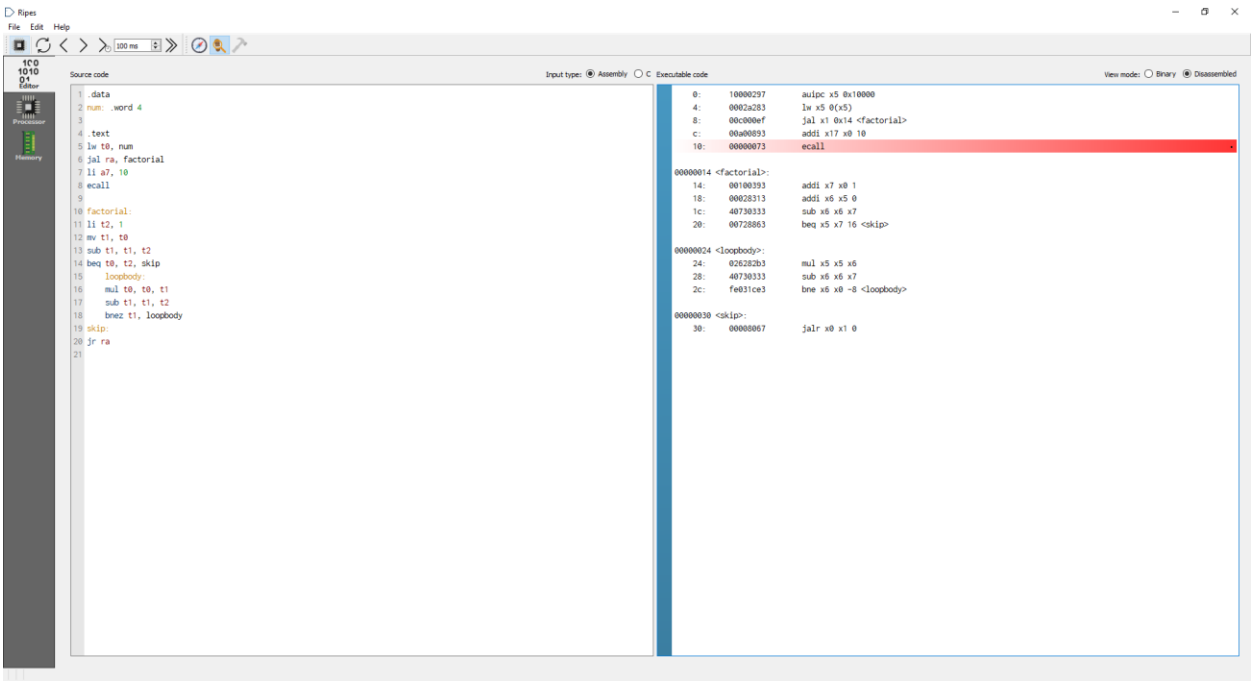
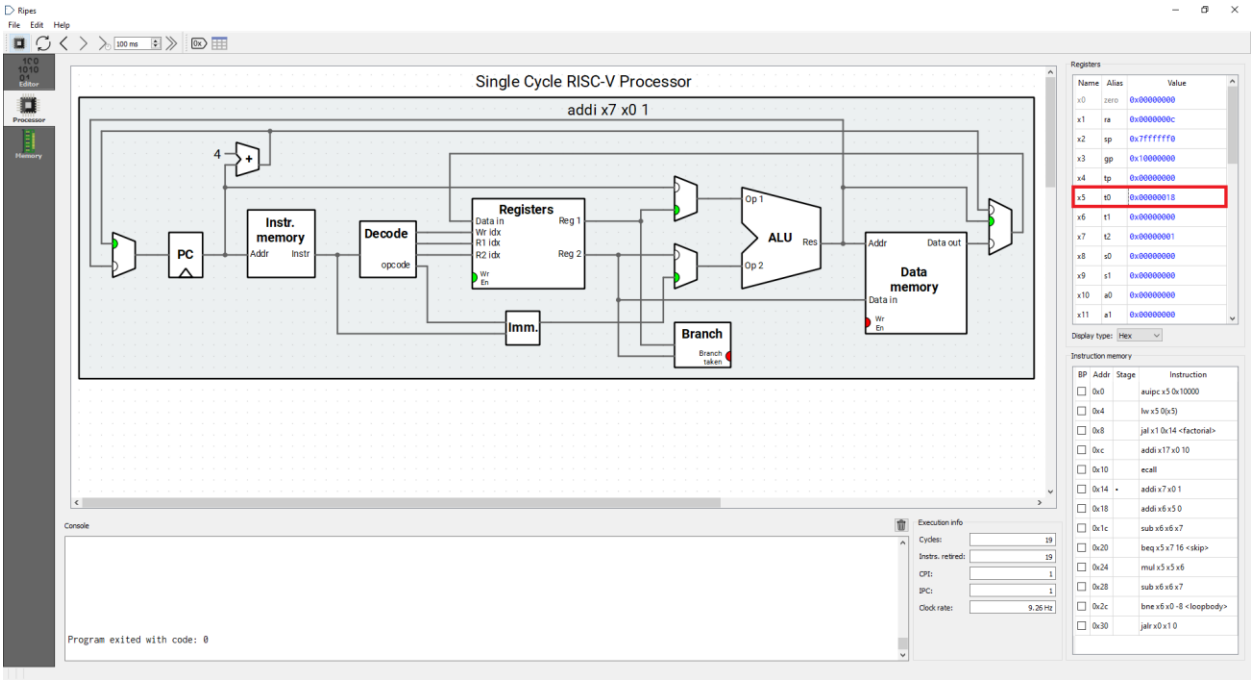
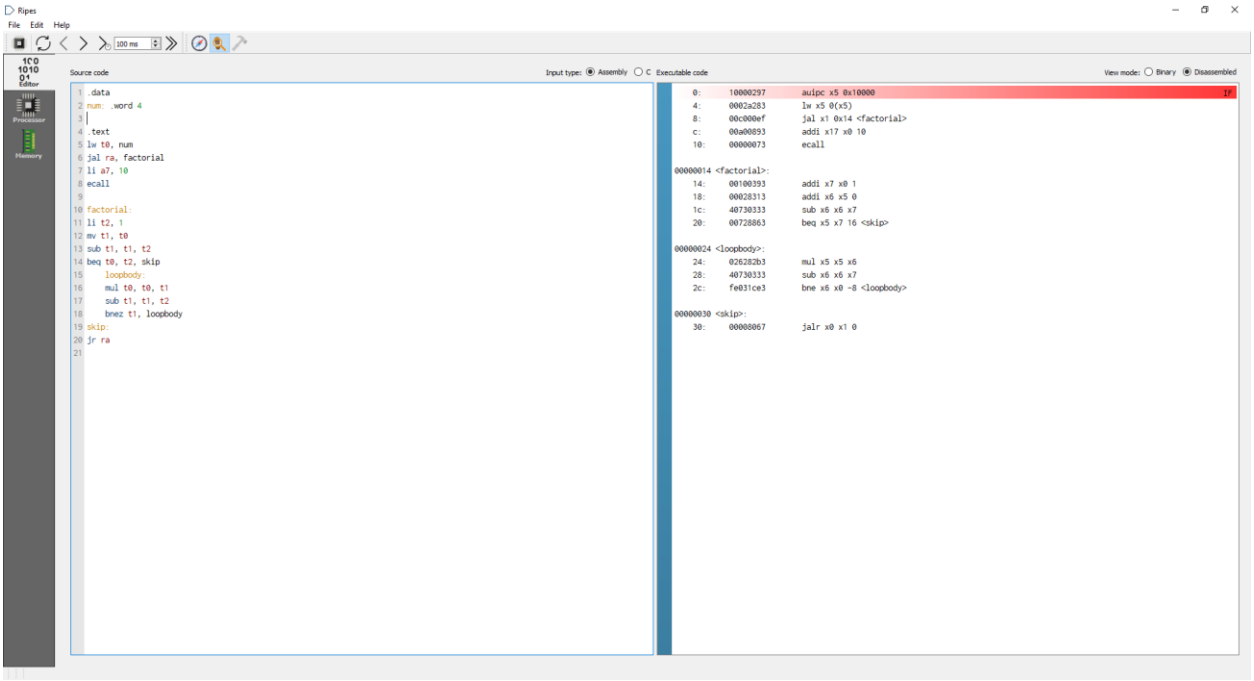
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0

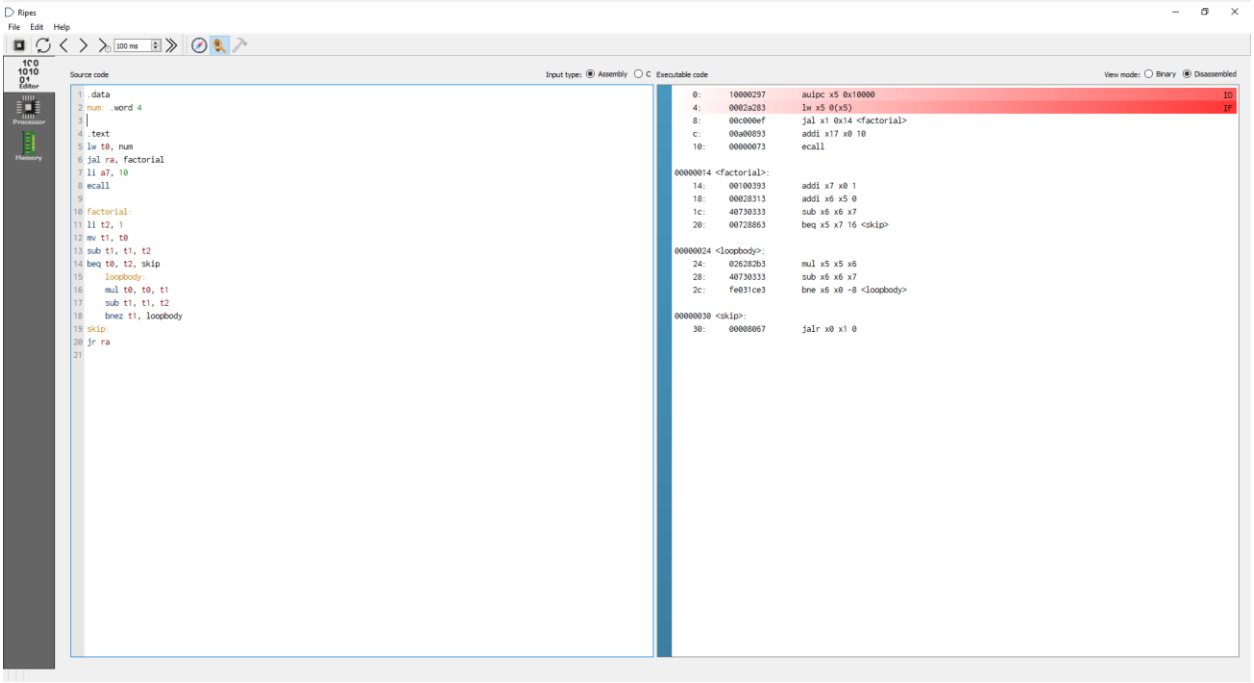


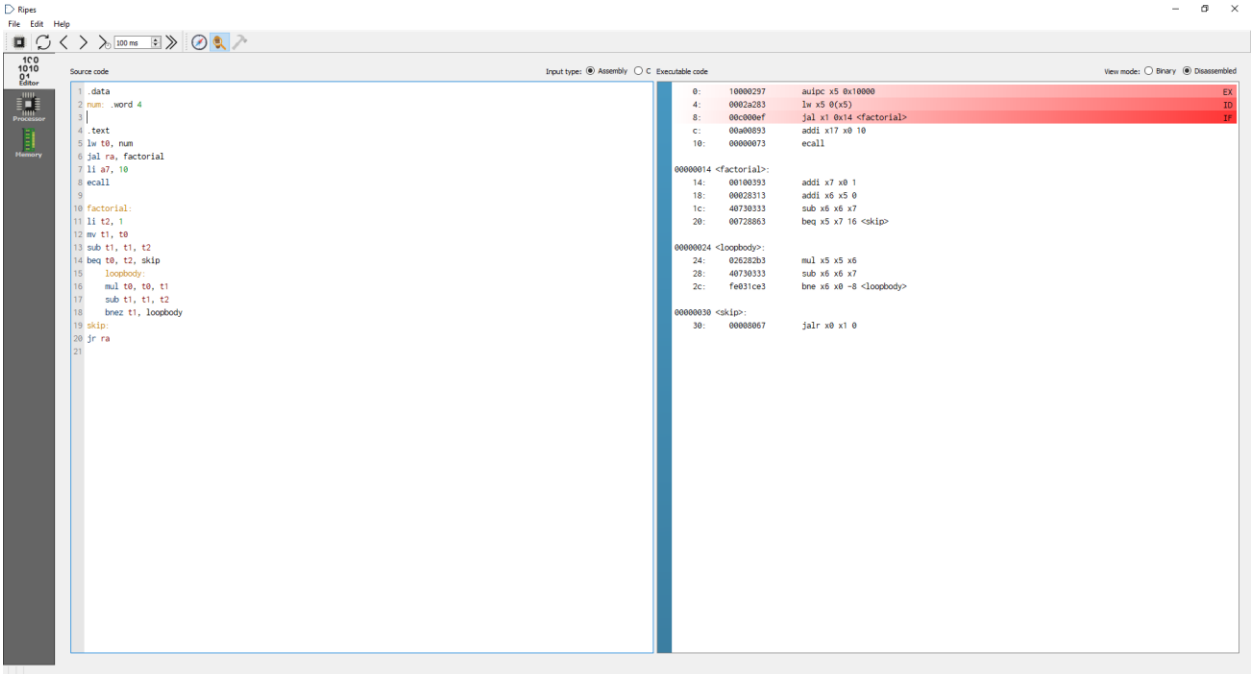
SINGLE STAGE PROCESSOR STAGES:

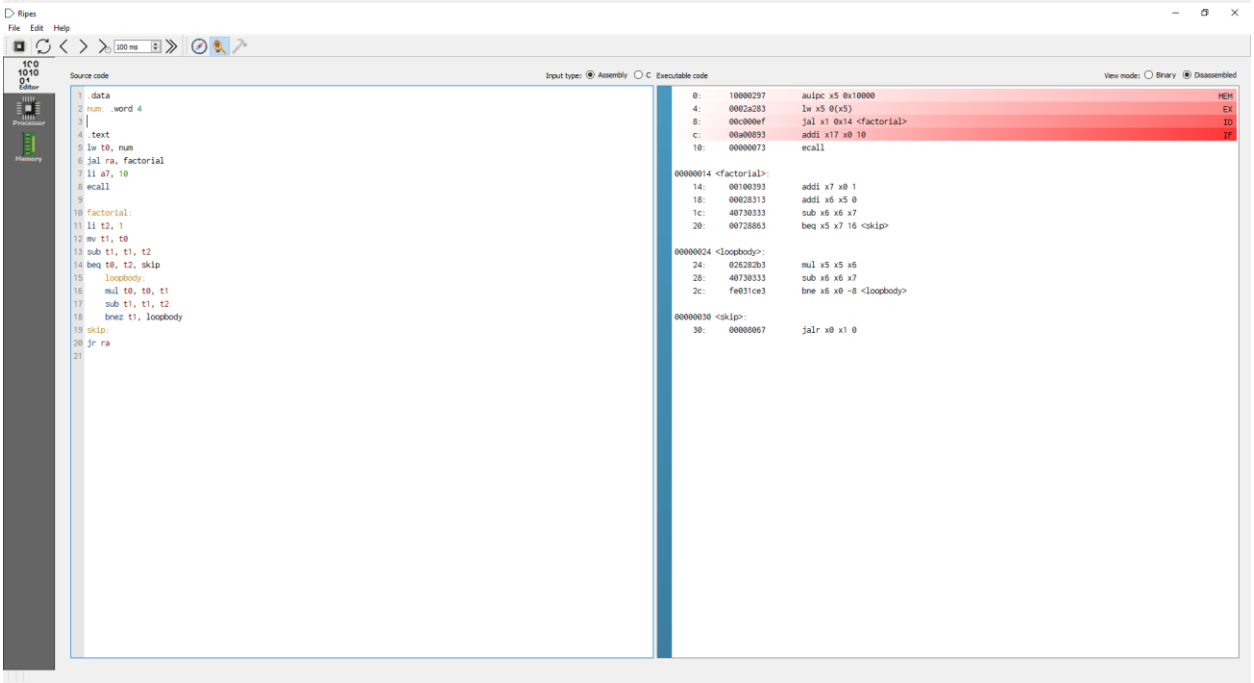


5 STAGE PROCESSOR:






Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000 EX
4: 0002a283 lw x5 0(x5) ID
8: 00c000ef jal x1 0x14 <factorial> IF
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000 MEM
4: 0002a283 lw x5 0(x5) EX
8: 00c000ef jal x1 0x14 <factorial> ID
c: 00a00893 addi x17 x0 10 IF
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
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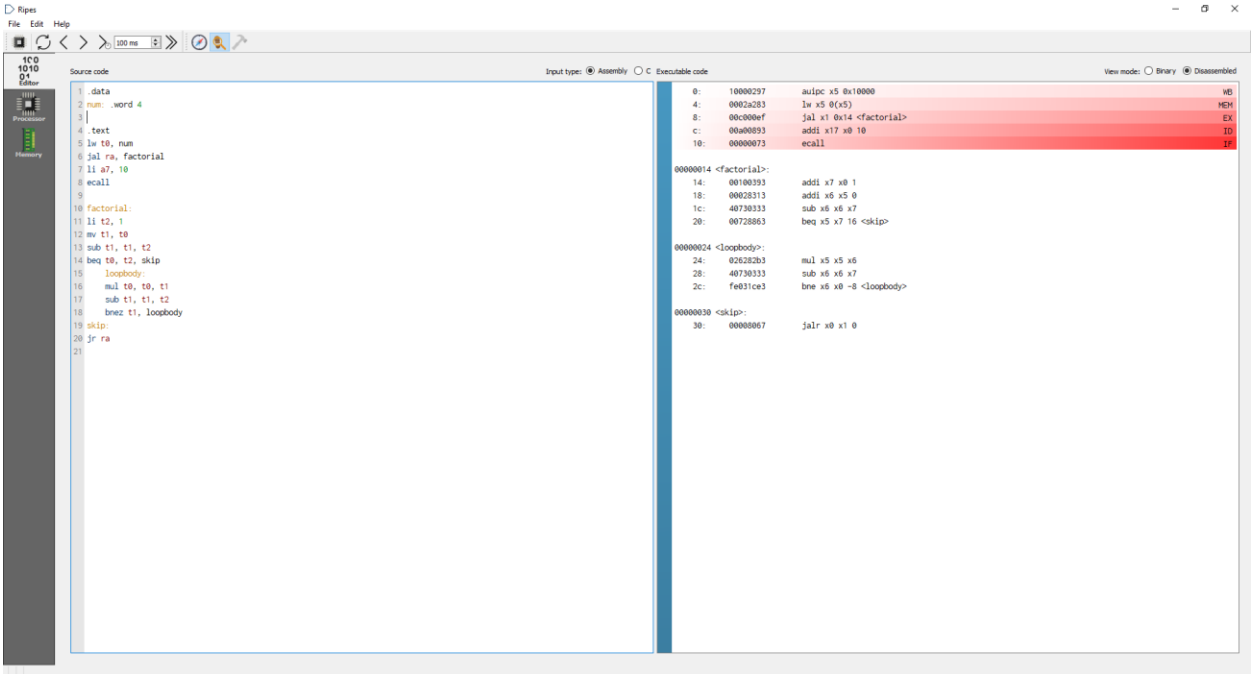
30: 00008067 jalr x0 x1 0


Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000 WB
4: 0002a283 lw x5 0(x5) MEM
8: 00c000ef jal x1 0x14 <factorial> EX
c: 00a00893 addi x17 x0 10 ID
10: 00000073 ecall IF
00000014 <factorial>:
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20: 00728863 beq x5 x7 16 <skip>
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28: 40730333 sub x6 x6 x7
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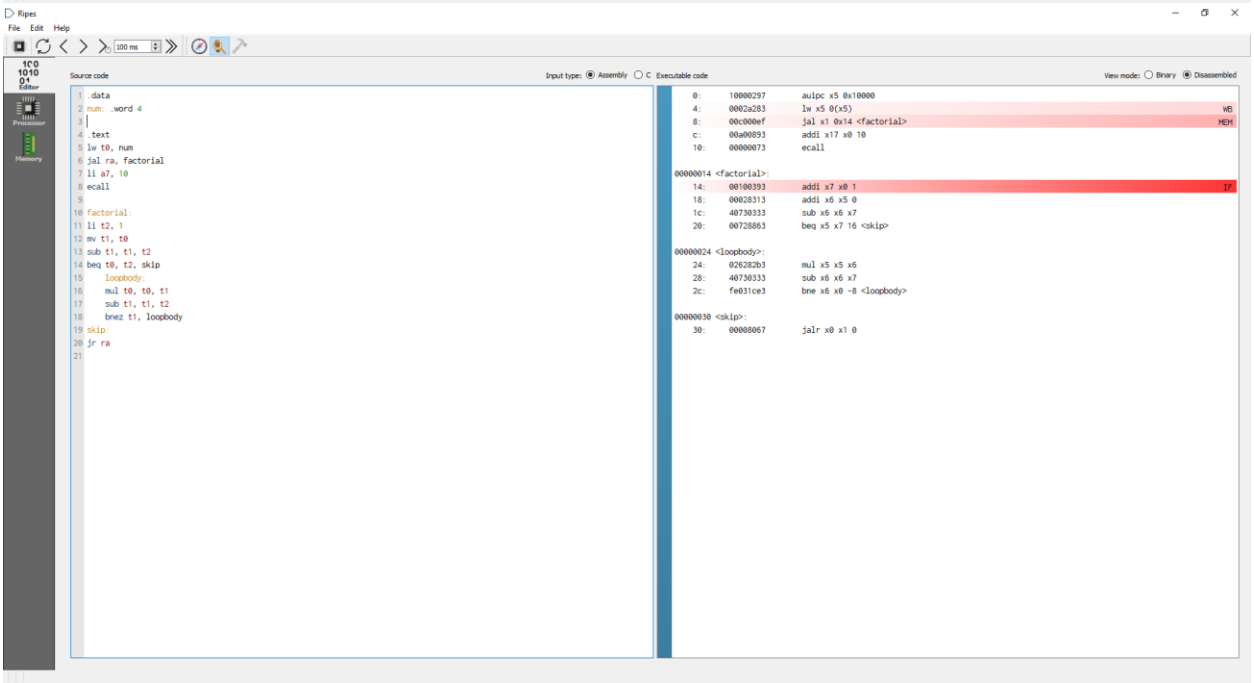
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5) WB
8: 00c000ef jal x1 0x14 <factorial> MEM
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
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1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
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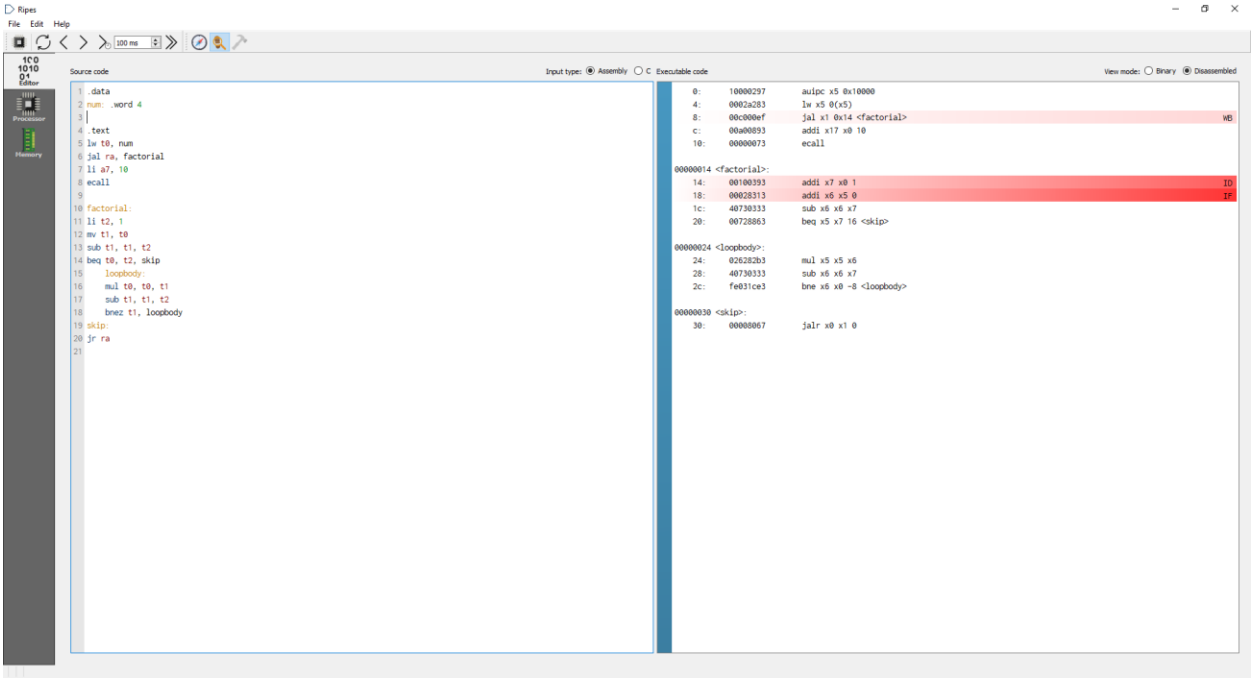
Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
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10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial> WB
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1 ID
18: 00028313 addi x6 x5 0 IF
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
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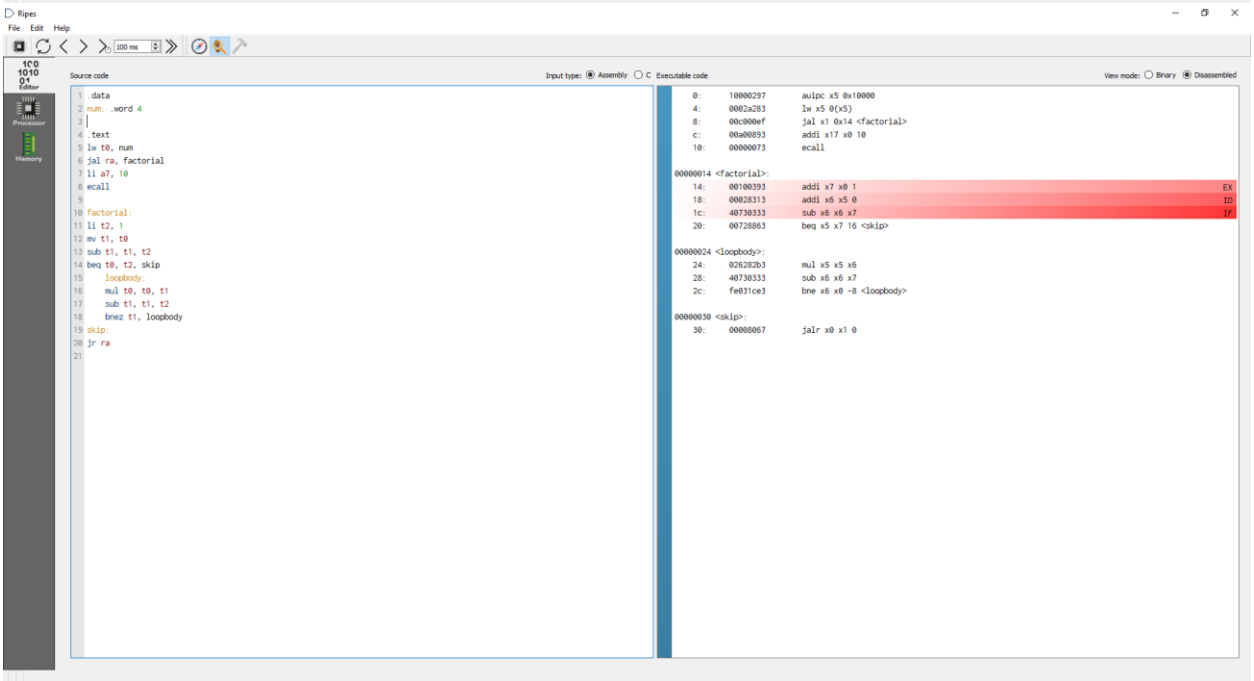
Ripes
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Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1 EX
18: 00028313 addi x6 x5 0 ID
1c: 40730333 sub x6 x6 x7 IF
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
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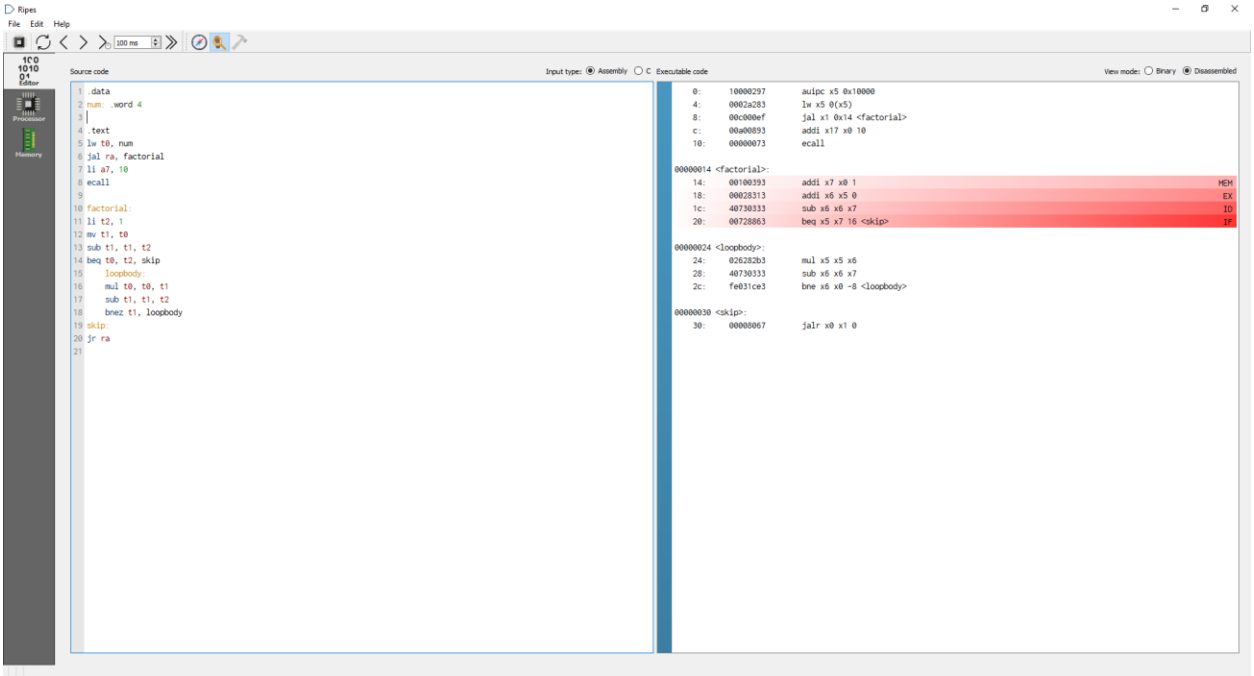
Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
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14: 00100393 addi x7 x0 1 MEM
18: 00028313 addi x6 x5 0 EX
1c: 40730333 sub x6 x6 x7 ID
20: 00728863 beq x5 x7 16 <skip> IF
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24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
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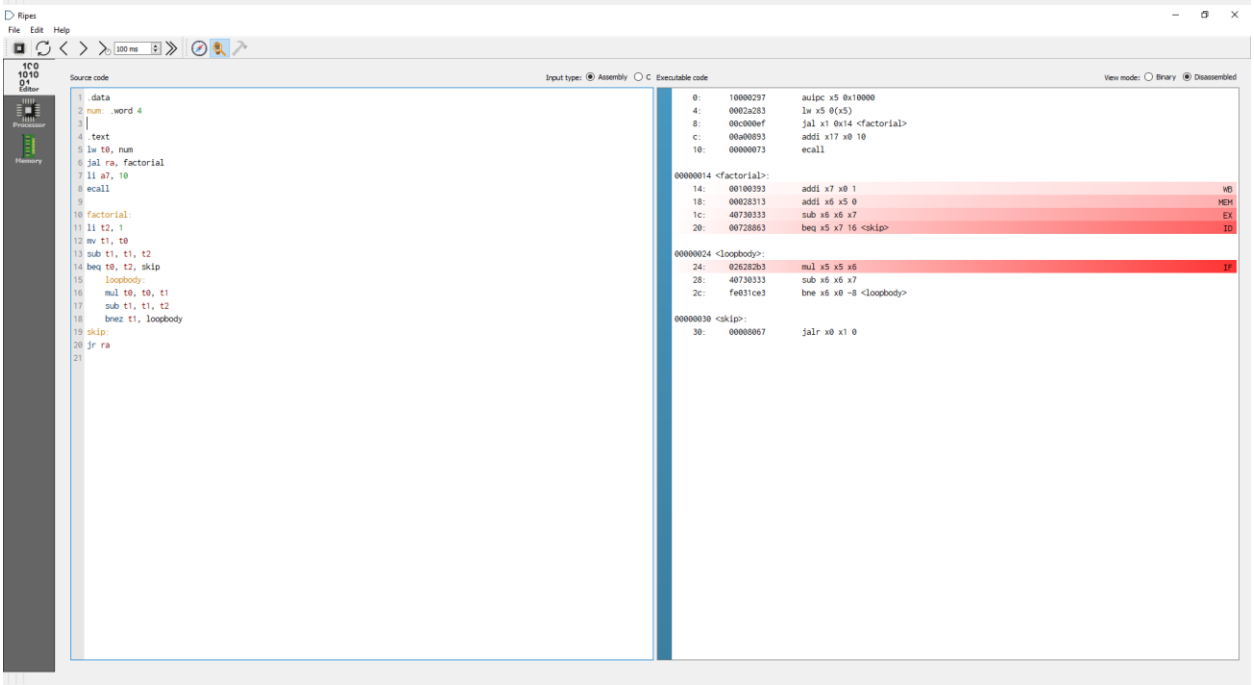
Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1 WB
18: 00028313 addi x6 x5 0 MEM
1c: 40730333 sub x6 x6 x7 EX
20: 00728863 beq x5 x7 16 <skip> ID
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6 IF
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
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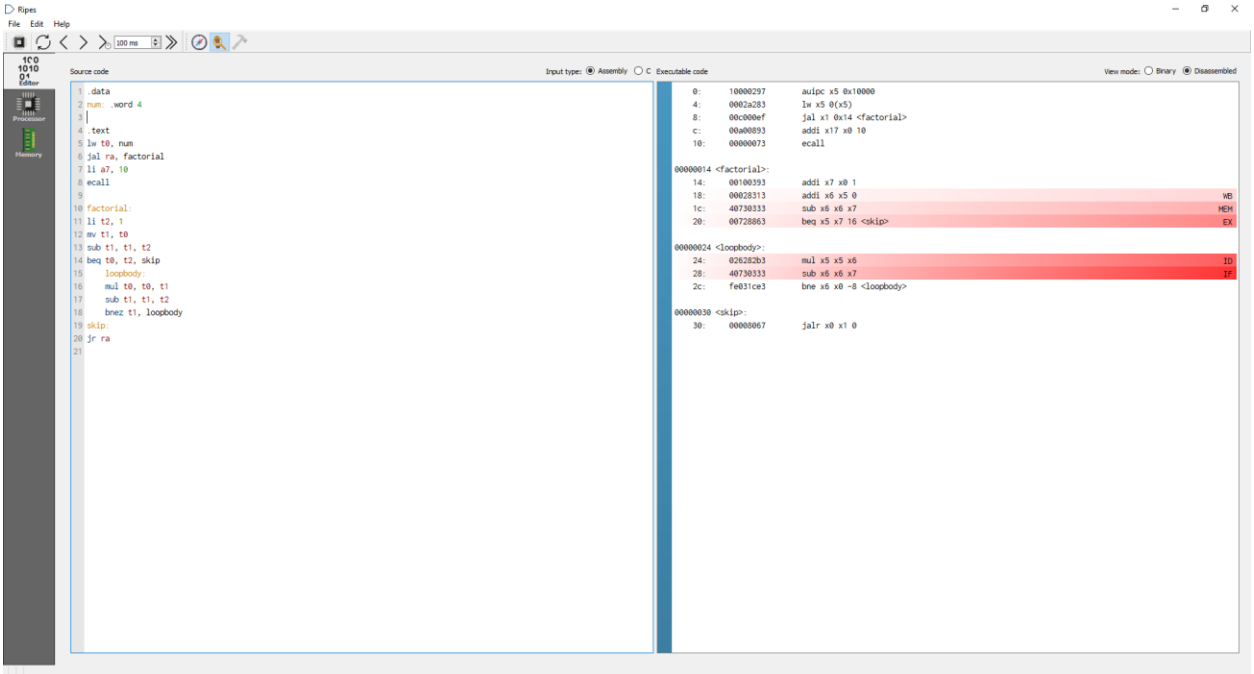
Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0 WB
1c: 40730333 sub x6 x6 x7 MEM
20: 00728863 beq x5 x7 16 <skip> EX
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6 ID
28: 40730333 sub x6 x6 x7 IF
2c: fe031ce3 bne x6 x0 -8 <loopbody>
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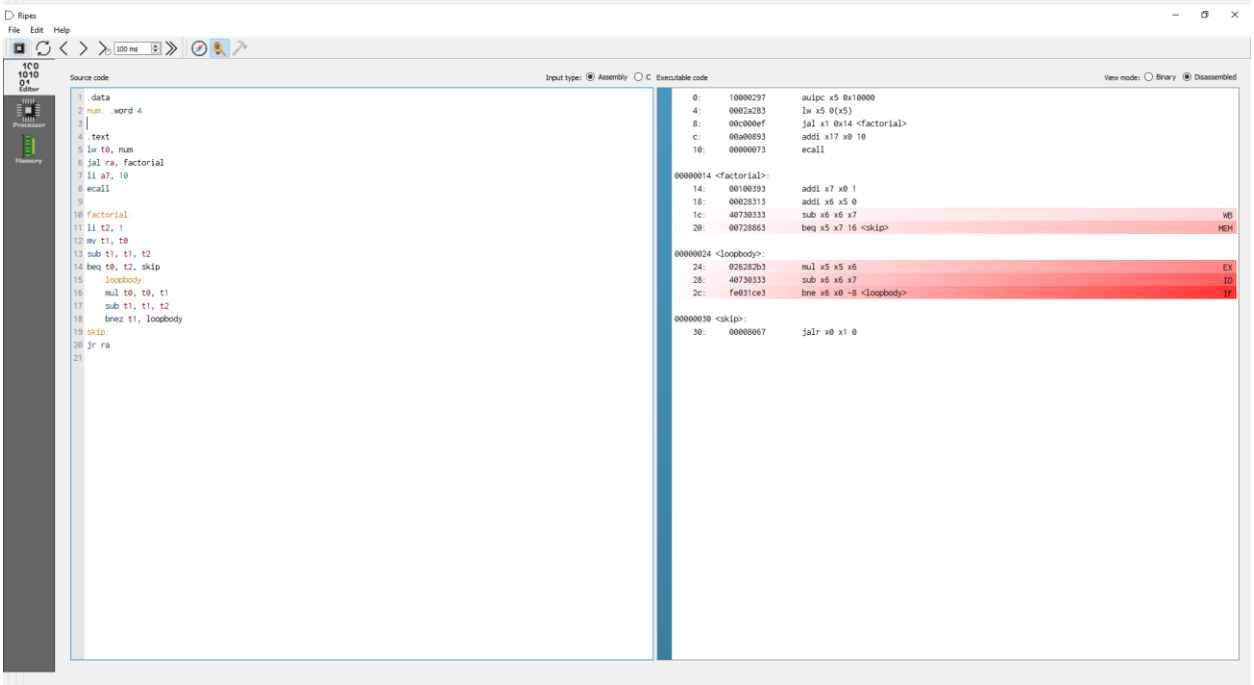
Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7 WB
20: 00728863 beq x5 x7 16 <skip> MEM
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6 EX
28: 40730333 sub x6 x6 x7 ID
2c: fe031ce3 bne x6 x0 -8 <loopbody> IF
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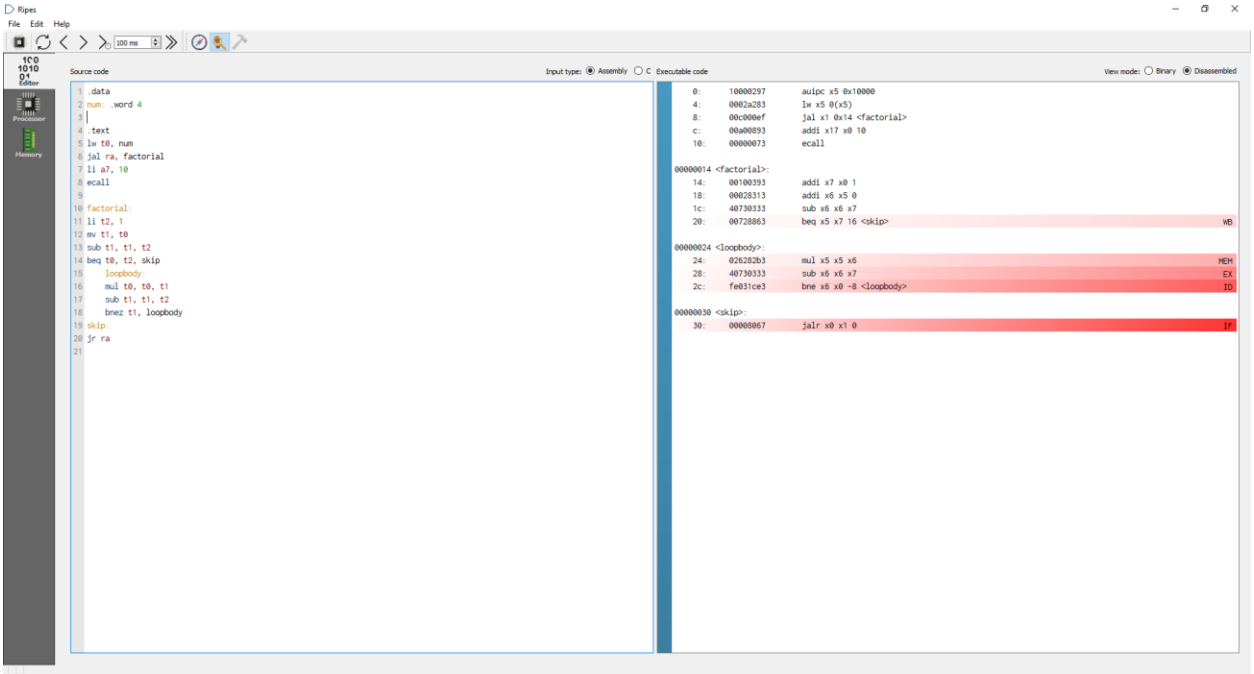
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip> WB
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6 MEM
28: 40730333 sub x6 x6 x7 EX
2c: fe031ce3 bne x6 x0 -8 <loopbody> ID
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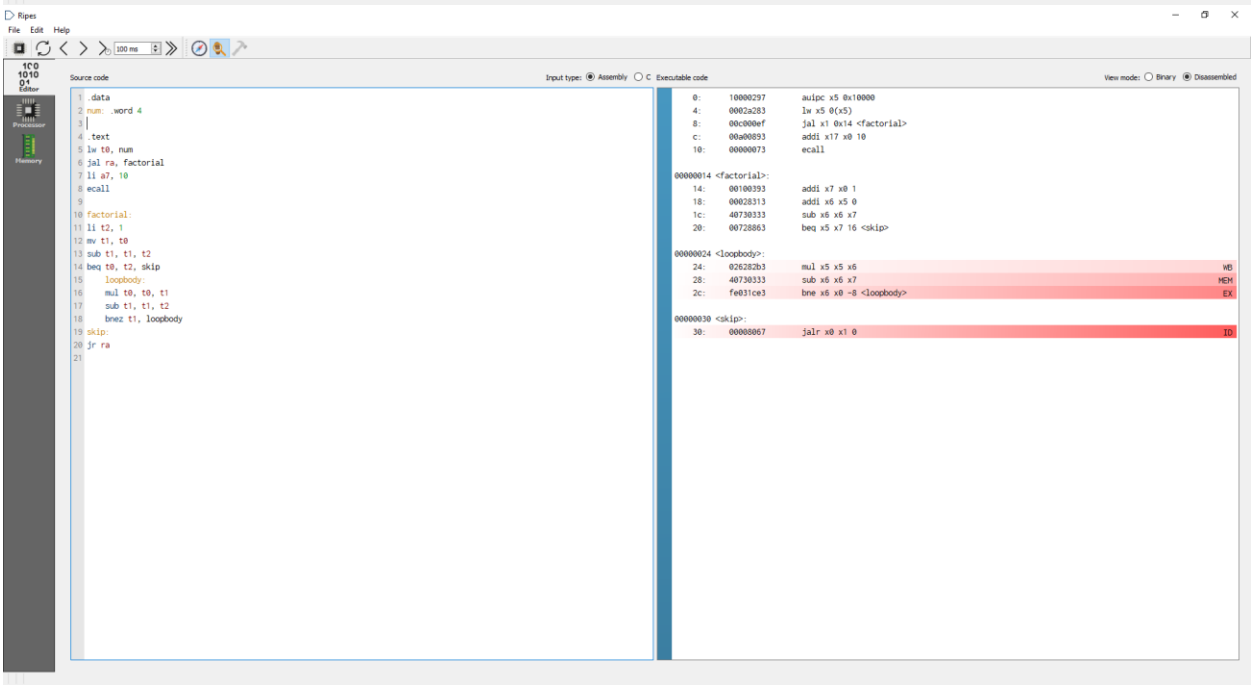
30: 00008067 jalr x0 x1 0 IF


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6 WB
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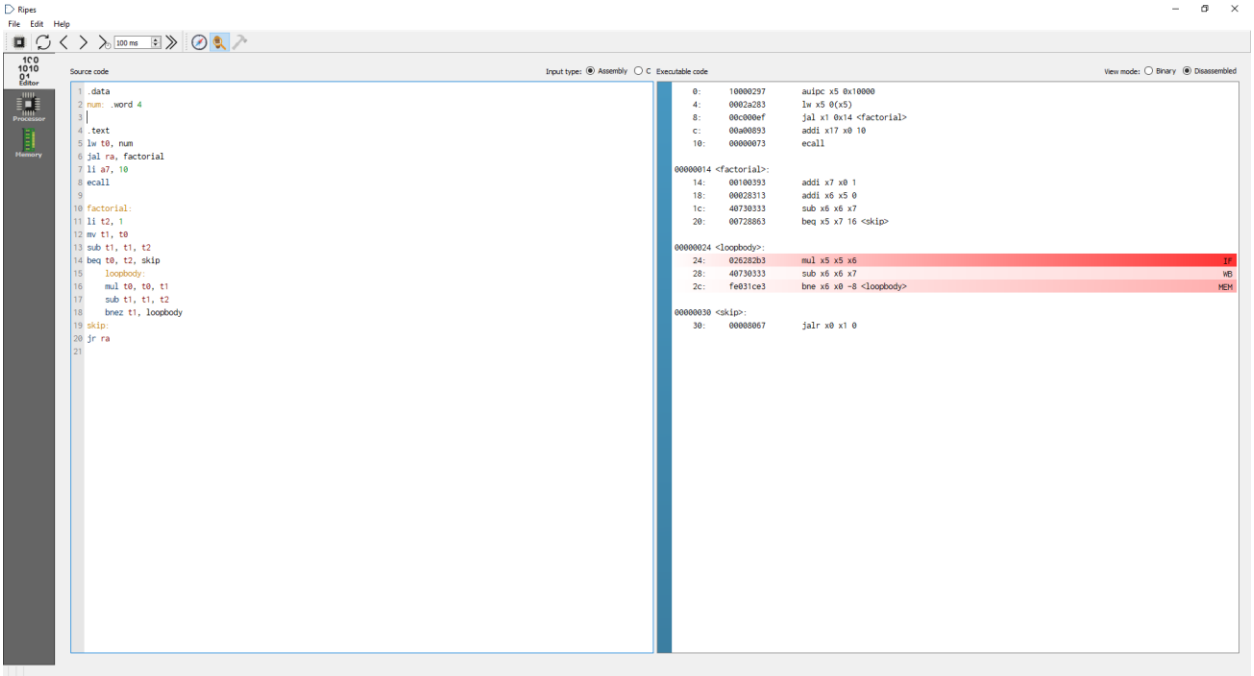
Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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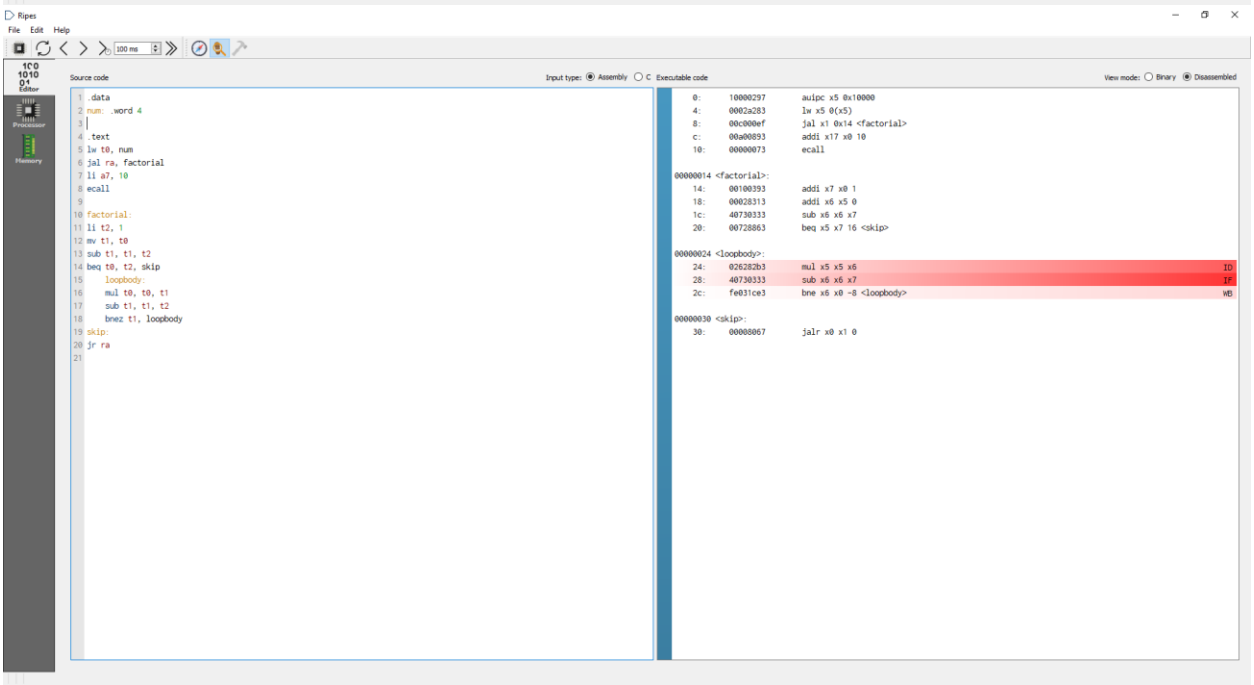
24: 026282b3 mul x5 x5 x6 IF
28: 40730333 sub x6 x6 x7 WB
2c: fe031ce3 bne x6 x0 -8 <loopbody> MEM
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
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100 ms
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Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
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c: 00a00893 addi x17 x0 10
10: 00000073 ecall
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1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6 ID
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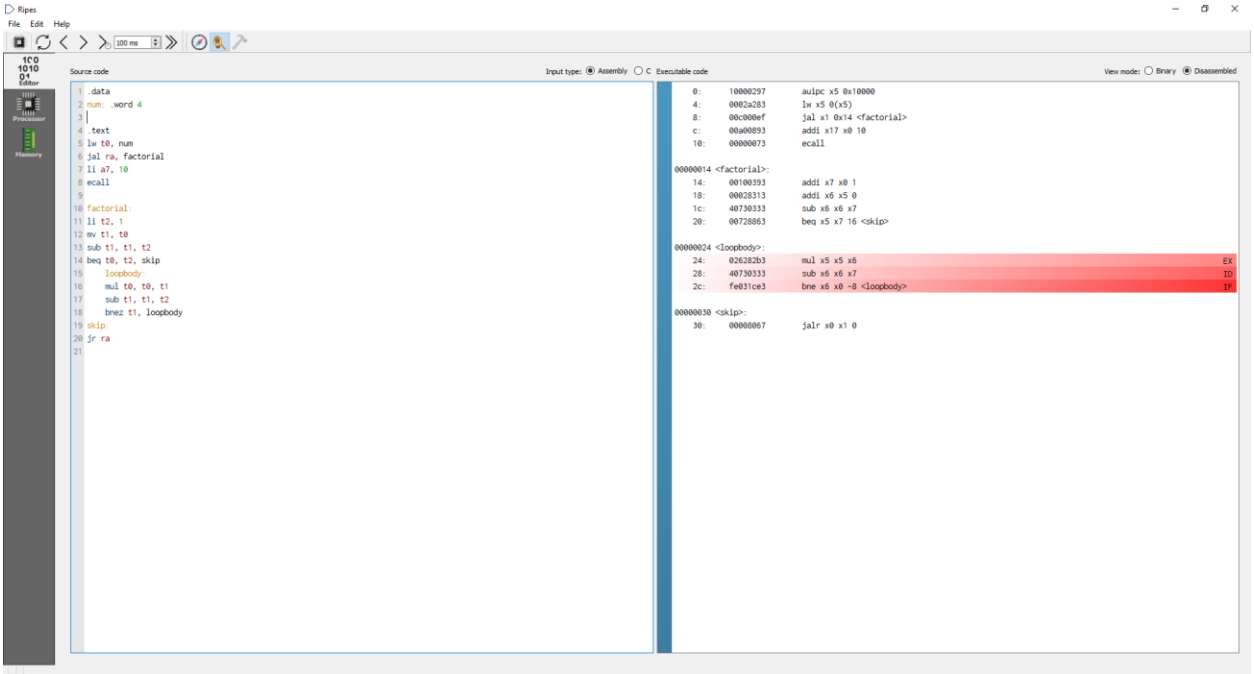
Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
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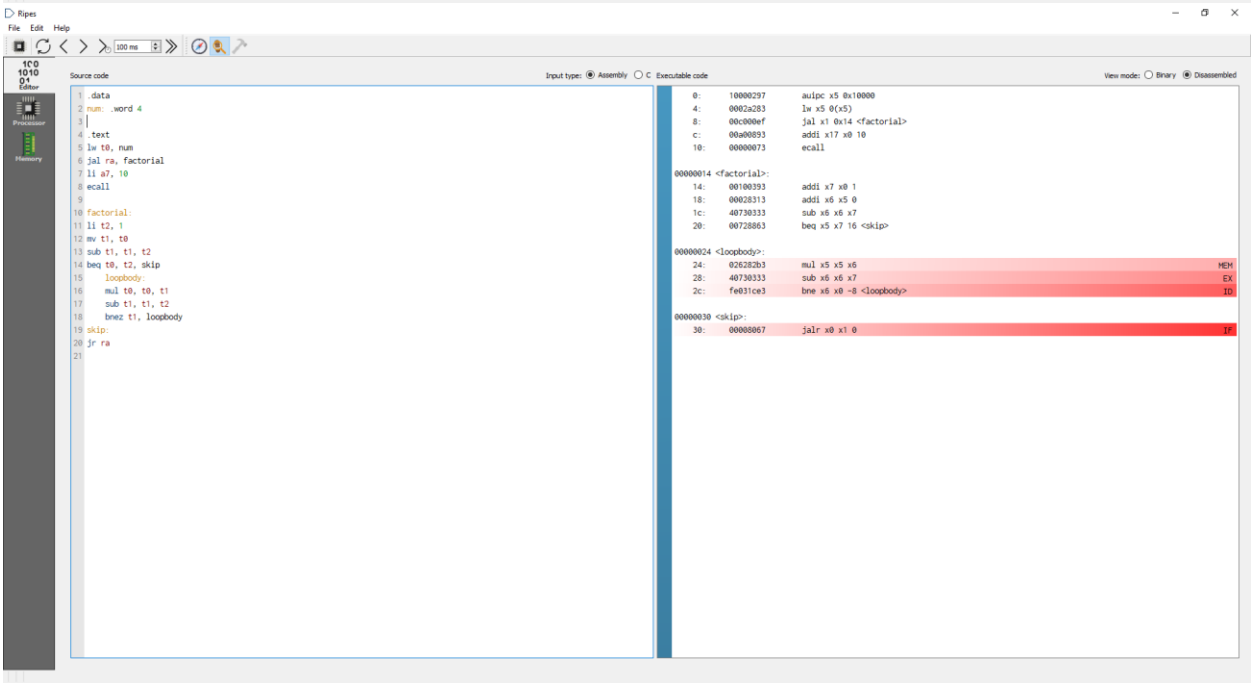
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6 EX
28: 40730333 sub x6 x6 x7 ID
2c: fe031ce3 bne x6 x0 -8 <loopbody> IF
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6 MEM
28: 40730333 sub x6 x6 x7 EX
2c: fe031ce3 bne x6 x0 -8 <loopbody> ID
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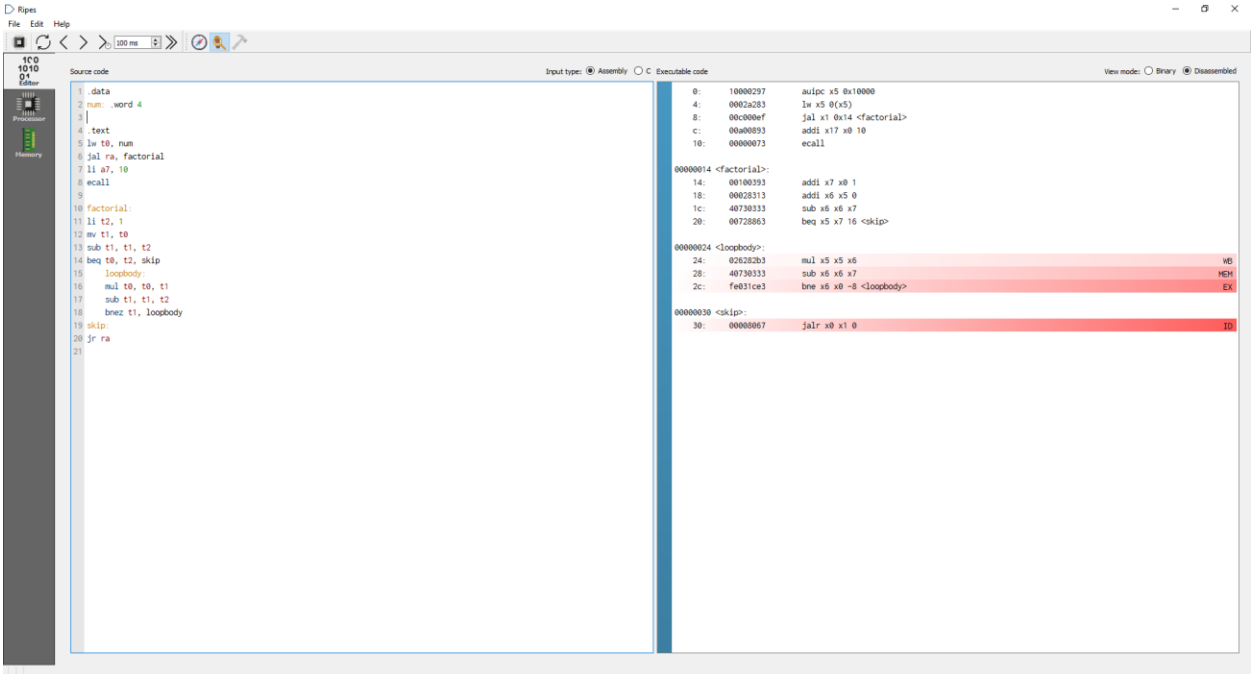
Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
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1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6 WB
28: 40730333 sub x6 x6 x7 MEM
2c: fe031ce3 bne x6 x0 -8 <loopbody> EX
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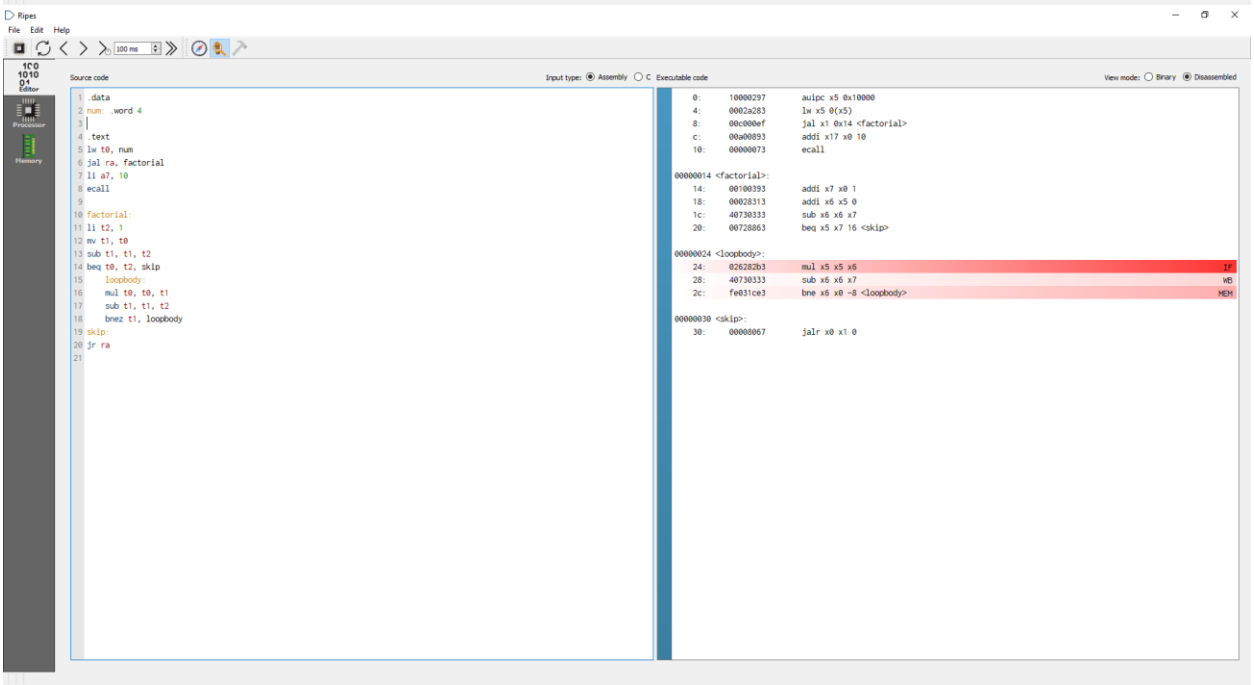
30: 00008067 jalr x0 x1 0 ID


Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
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2 num: .word 4
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4 .text
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6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
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13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
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17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
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28: 40730333 sub x6 x6 x7 WB
2c: fe031ce3 bne x6 x0 -8 <loopbody> MEM
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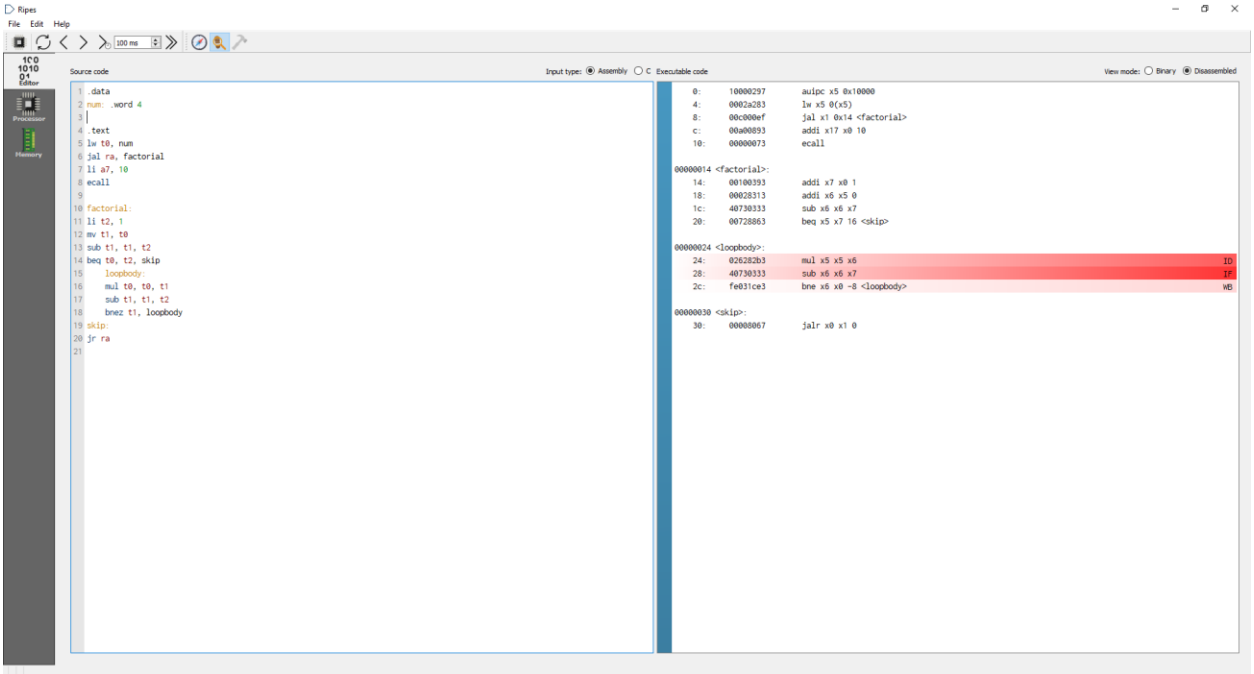
Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
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10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
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1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6 ID
28: 40730333 sub x6 x6 x7 IF
2c: fe031ce3 bne x6 x0 -8 <loopbody> WB
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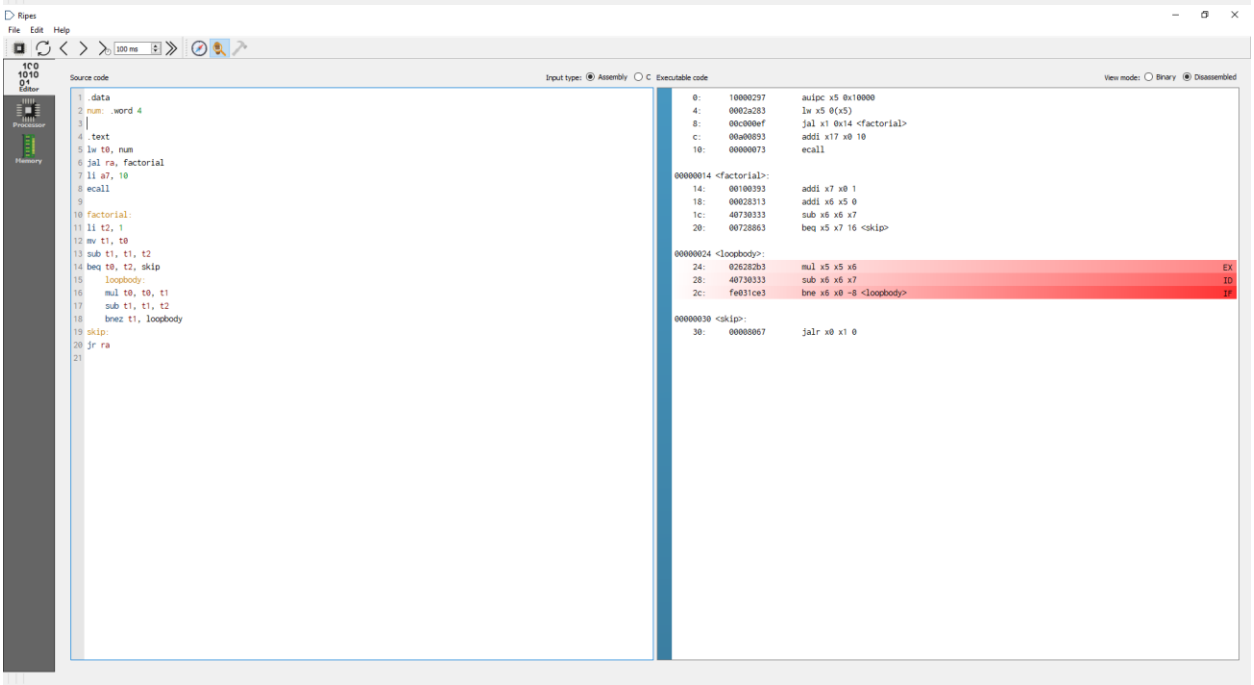
Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
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4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
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18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6 EX
28: 40730333 sub x6 x6 x7 ID
2c: fe031ce3 bne x6 x0 -8 <loopbody> IF
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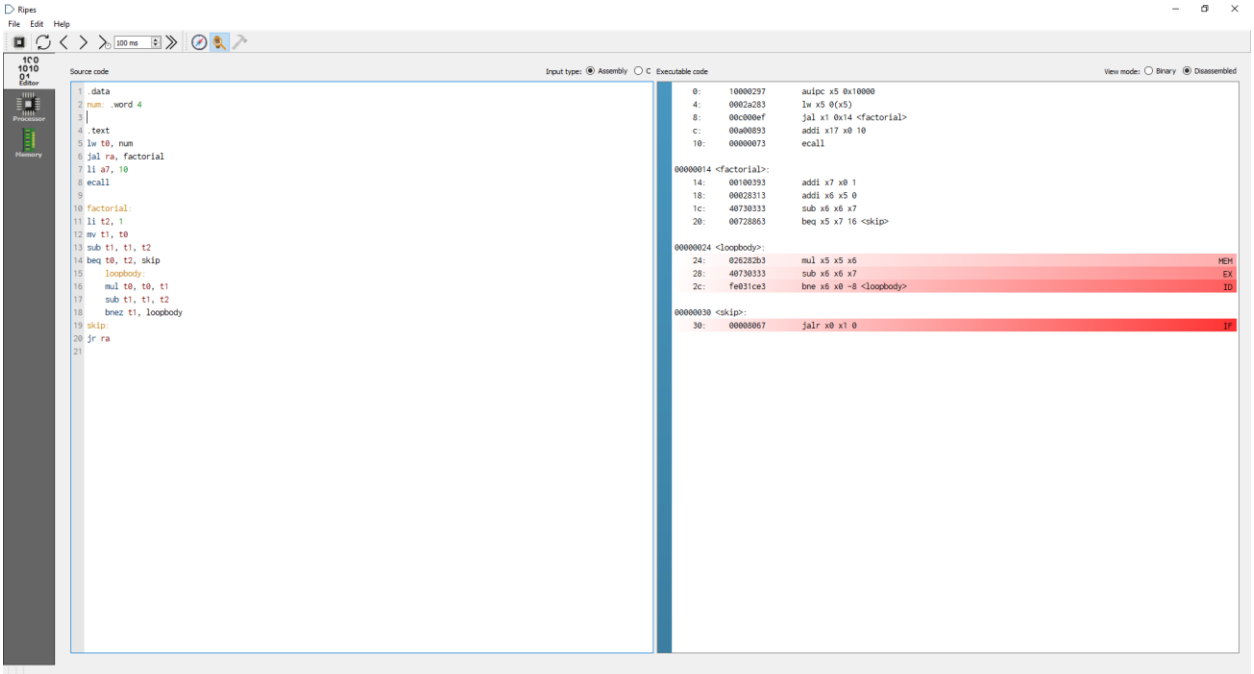
Ripes
File Edit Help
100 ms
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Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
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5 lw t0, num
6 jal ra, factorial
7 li a7, 10
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10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
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c: 00a00893 addi x17 x0 10
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18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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2c: fe031ce3 bne x6 x0 -8 <loopbody> ID
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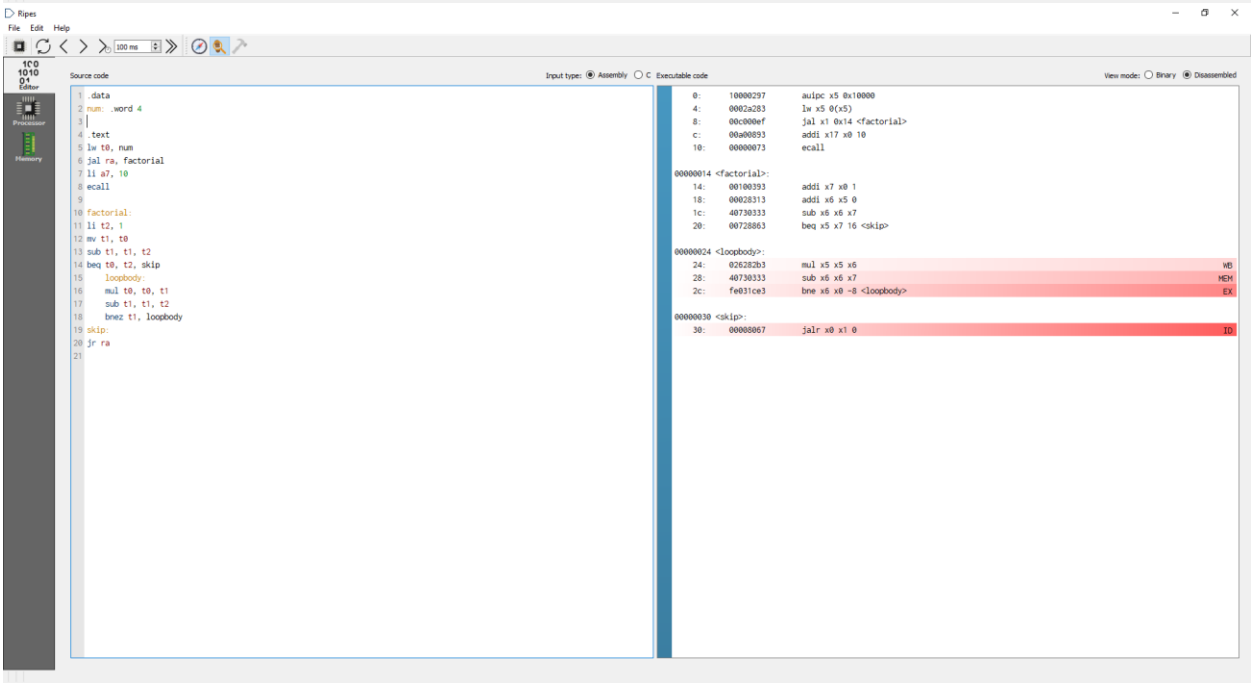
Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6 WB
28: 40730333 sub x6 x6 x7 MEM
2c: fe031ce3 bne x6 x0 -8 <loopbody> EX
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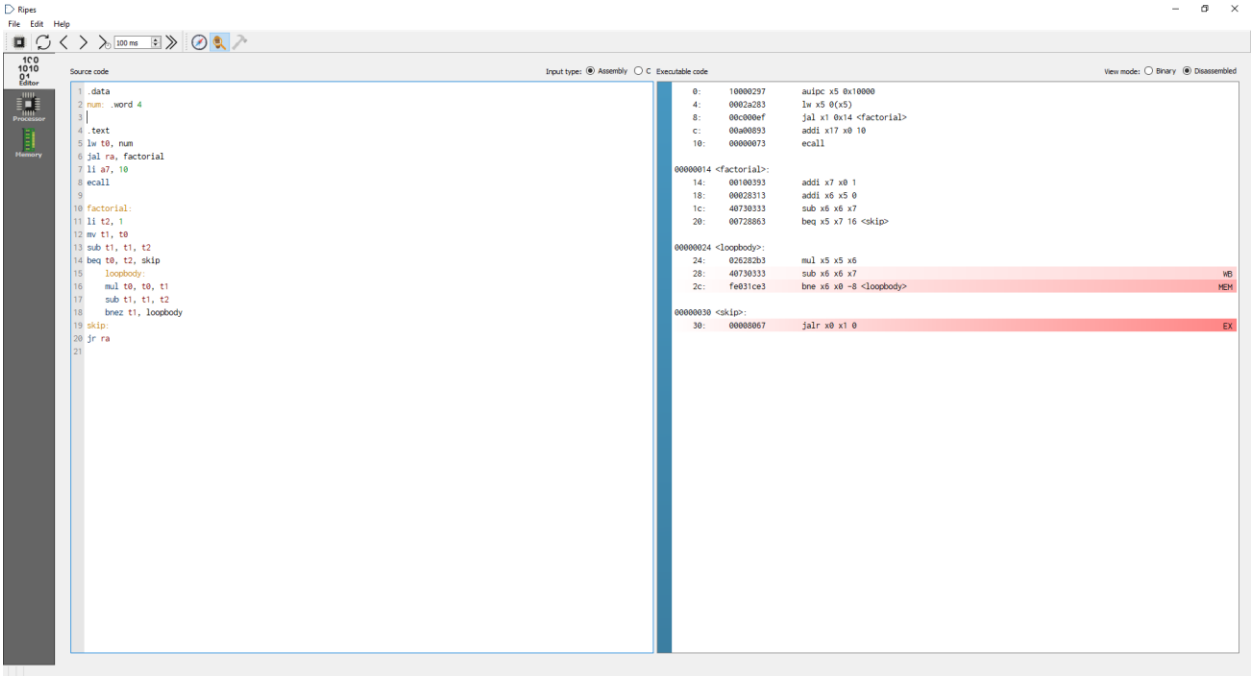
Ripes
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100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7 WB
2c: fe031ce3 bne x6 x0 -8 <loopbody> MEM
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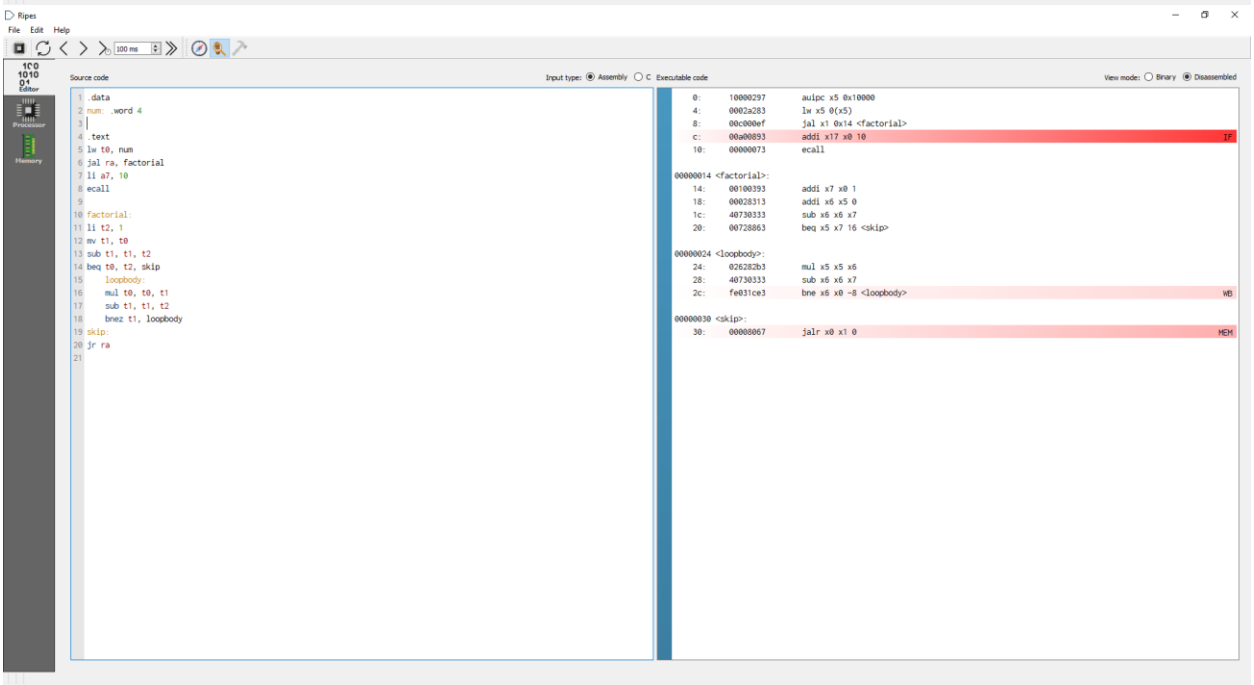
Ripes
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100 ms
Editor
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Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
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4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
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11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10 IF
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00000014 <factorial>:
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18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6
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2c: fe031ce3 bne x6 x0 -8 <loopbody> WB
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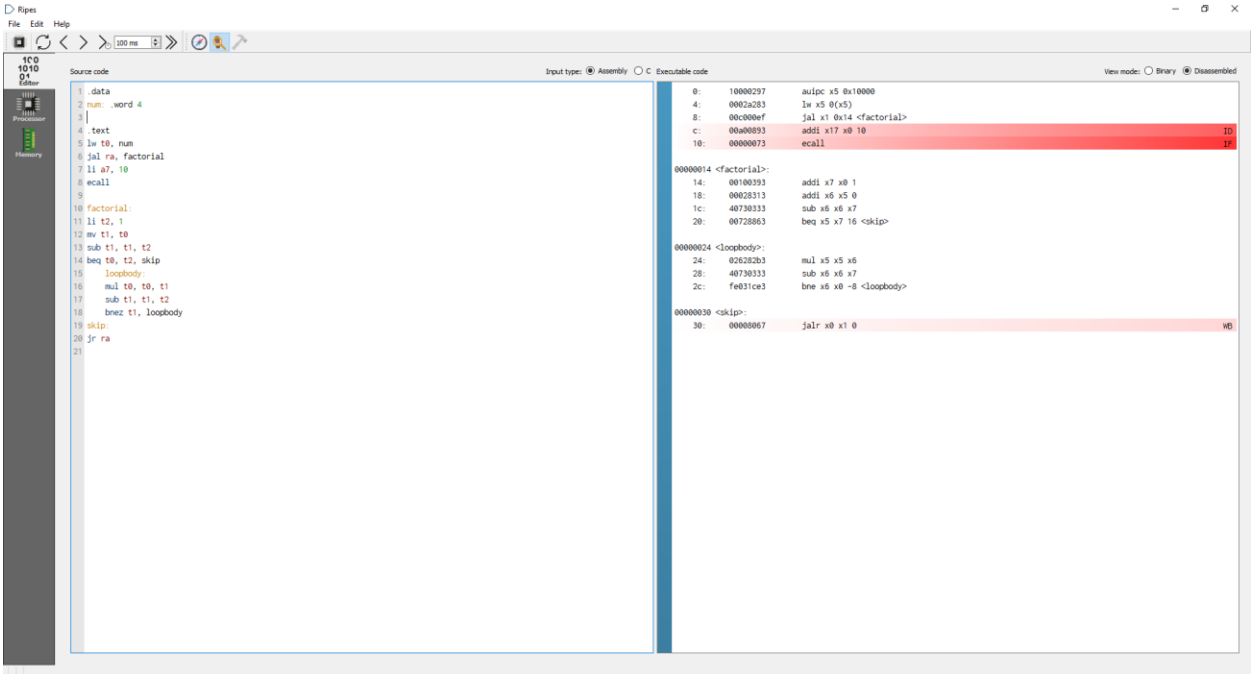
Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
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7 li a7, 10
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10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10 ID
10: 00000073 ecall IF
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
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24: 026282b3 mul x5 x5 x6
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2c: fe031ce3 bne x6 x0 -8 <loopbody>
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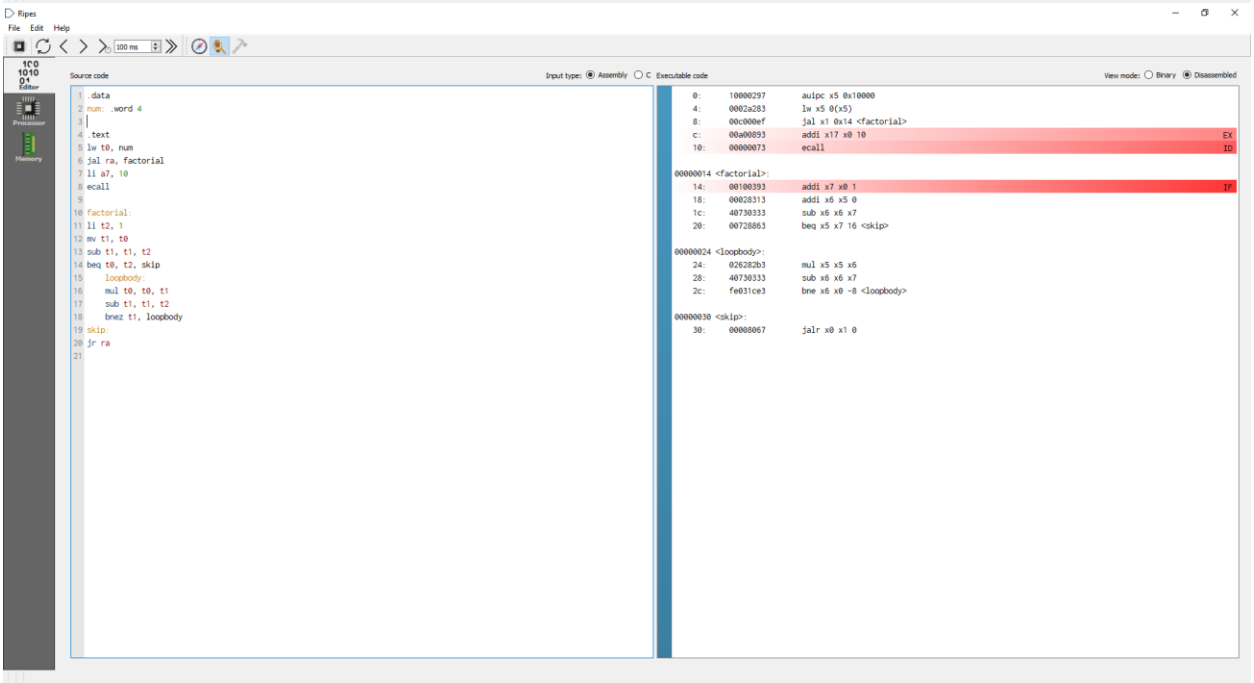
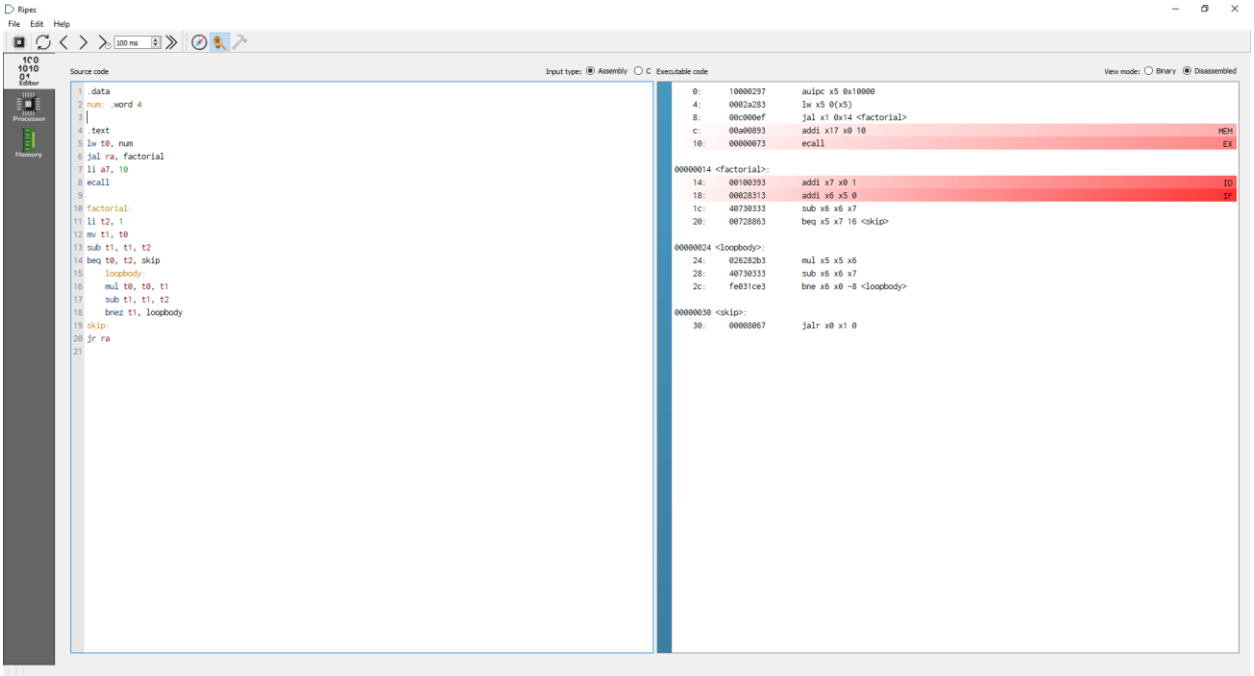
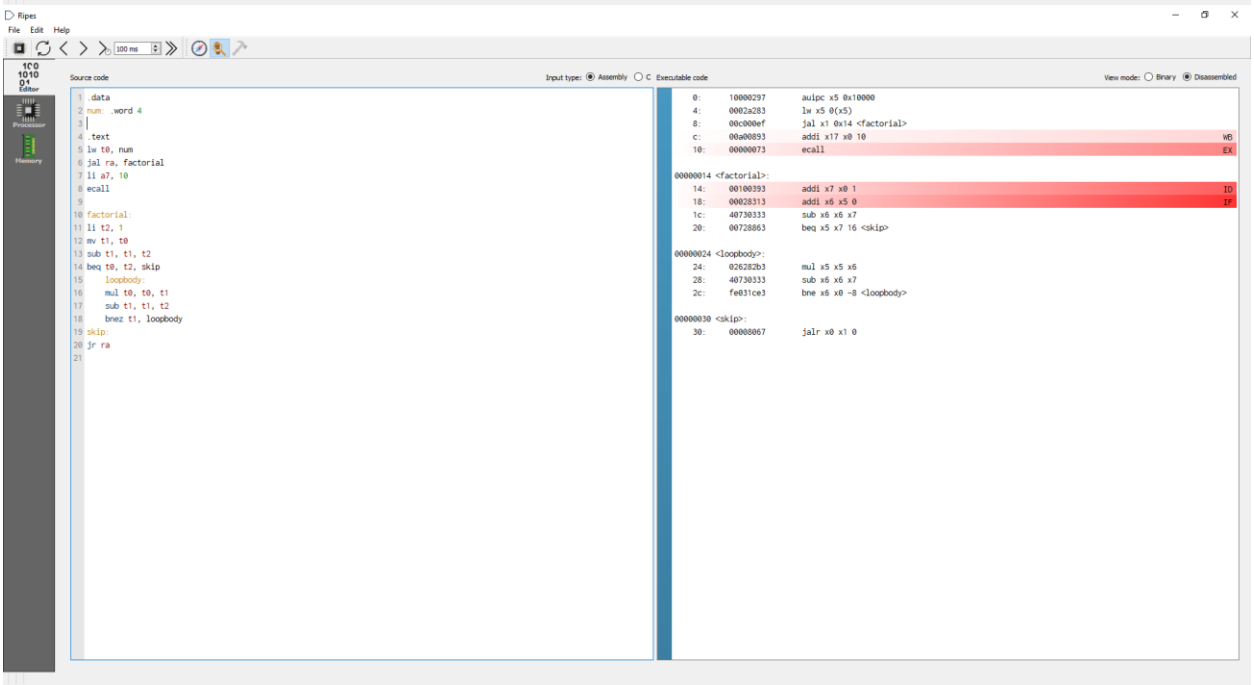
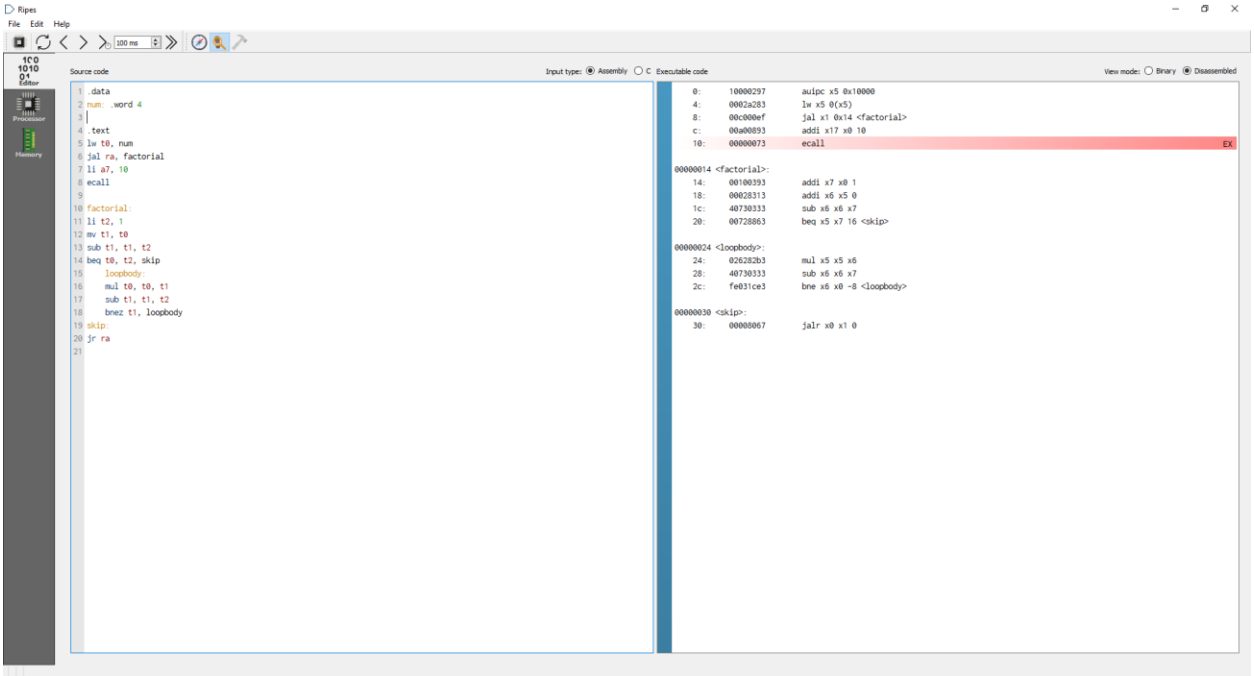
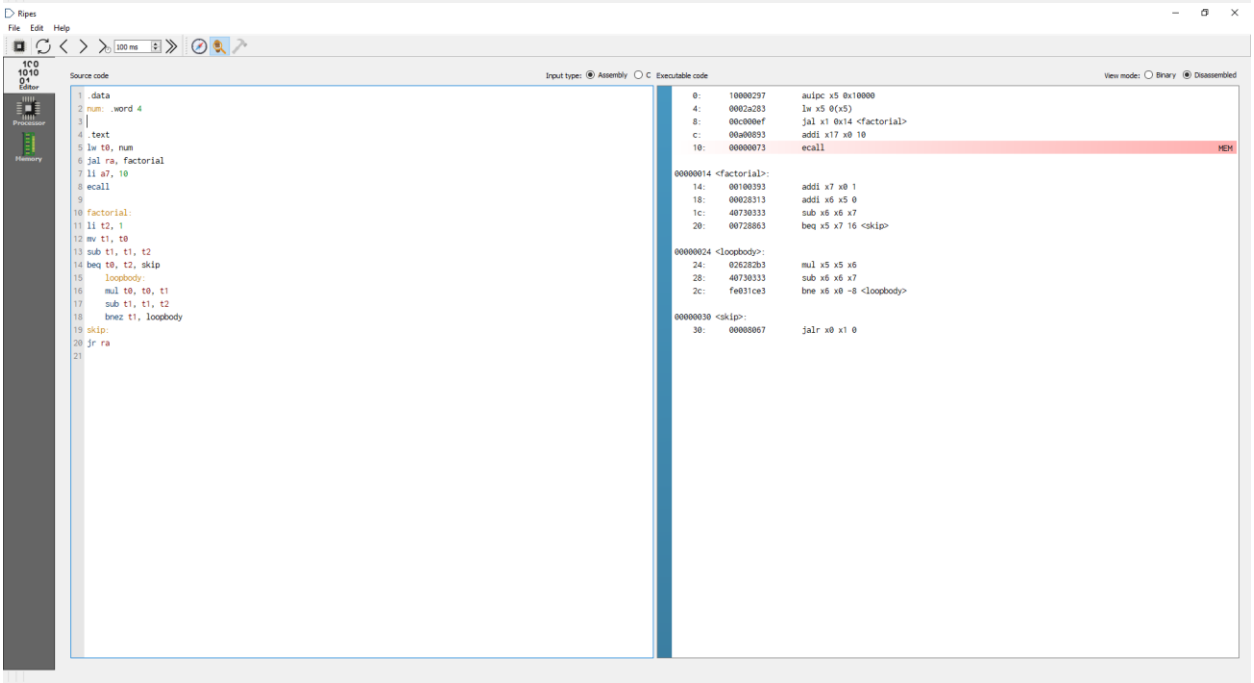
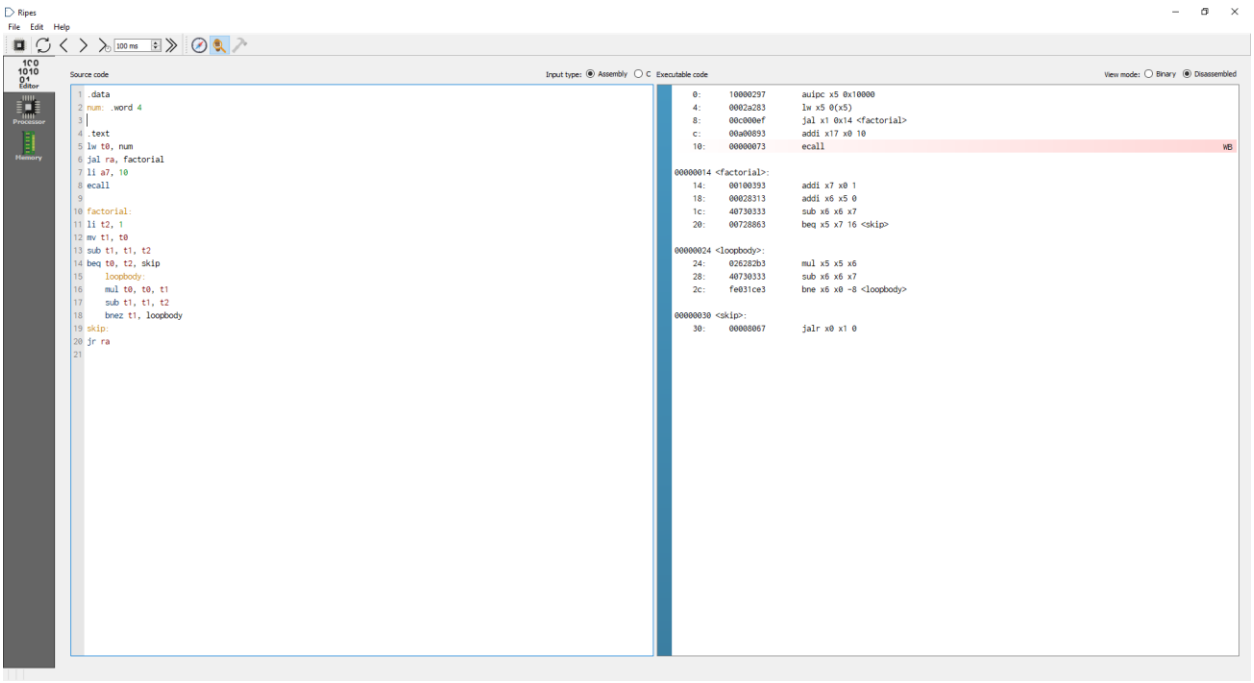

Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10 EX
10: 00000073 ecall ID
00000014 <factorial>:
14: 00100393 addi x7 x0 1 IF
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10 MEM
10: 00000073 ecall EX
00000014 <factorial>:
14: 00100393 addi x7 x0 1 ID
18: 00028313 addi x6 x5 0 IF
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10 WB
10: 00000073 ecall EX
00000014 <factorial>:
14: 00100393 addi x7 x0 1 ID
18: 00028313 addi x6 x5 0 IF
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall EX
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0


Ripes
File Edit Help
100 ms
Editor
Processor
Memory
Source code
Input type: Assembly C
Executable code
View mode: Binary Disassembled
1 .data
2 num: .word 4
3
4 .text
5 lw t0, num
6 jal ra, factorial
7 li a7, 10
8 ecall
9
10 factorial:
11 li t2, 1
12 mv t1, t0
13 sub t1, t1, t2
14 beq t0, t2, skip
15 loopbody:
16 mul t0, t0, t1
17 sub t1, t1, t2
18 bnez t1, loopbody
19 skip:
20 jr ra
21
0: 10000297 auipc x5 0x10000
4: 0002a283 lw x5 0(x5)
8: 00c000ef jal x1 0x14 <factorial>
c: 00a00893 addi x17 x0 10
10: 00000073 ecall MEM
00000014 <factorial>:
14: 00100393 addi x7 x0 1
18: 00028313 addi x6 x5 0
1c: 40730333 sub x6 x6 x7
20: 00728863 beq x5 x7 16 <skip>
00000024 <loopbody>:
24: 026282b3 mul x5 x5 x6
28: 40730333 sub x6 x6 x7
2c: fe031ce3 bne x6 x0 -8 <loopbody>
00000030 <skip>:
30: 00008067 jalr x0 x1 0



5 STAGE PROCESSOR STAGES: