

Mini program:

$r \leftarrow (a+b) \times 2 - (c+d) / 2;$

if $r = 0$ then

$r \leftarrow r + 5;$

else

$r \leftarrow r + 2;$

sw $r;$

lw $r;$

0: add \$3, \$1, \$2	RD1 = 10	RD2 = 2	AluRes = 12
1: slt \$4, \$3, 1	RD1 = 12	AluRes = 24	
2: add \$7, \$5, \$6	RD1 = 4	RD2 = 6	AluRes = 10
3: slt \$2, \$7, 1	RD1 = 10	AluRes = 5	
4: sub \$5, \$4, \$2	RD1 = 24	RD2 = 5	AluRes = 19
5: xor \$0, \$0, \$0	RD1 = 0	RD2 = 0	AluRes = 0
6: beq \$5, \$0, 2	RD1 = 18	RD2 = 0	Zero = 0
7: addi \$1, \$5, 2	RD1 = 19	AluRes = 21	
8: jmp 10			
9: addi \$1, \$5, 5	RD1 = 19	AluRes = 24	
10: sw \$1, 0(\$0)	RD1 = 0	RD2 = 19	
11: lw \$6, 0(\$0)	RD1 = 0	RD2 = 0	

Tip R

Alcse:

1) Xor \$rd \$rs \$rt

RTL: $RF[rd] \leftarrow RF[rs] \wedge RF[rt]$

Ex: Xor \$6 \$4 \$5

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$RF[\$6] \leftarrow RF[\$4] \wedge RF[\$5]$

2) Slt. \$rd \$rs \$rt

RTL: if $(RF[rs] < RF[rt])$ then $RF[rd] \leftarrow 1$
else $RF[rd] \leftarrow 0$

EX: Slt \$3 \$1 \$2

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if $(RF[\$1] < RF[\$2])$ then $RF[\$3] \leftarrow 1$
else $RF[\$3] \leftarrow 0$

Tip i Alex.

5) bgez \$rs, imm

RTL: if $(RF[rs] \geq 0)$ then

$PC \leftarrow PC + 1 + S_ext(imm)$

else

$PC \leftarrow PC + 1$

bgez \$4 5

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6) bne \$rs, \$rt, imm

RTL: if $(RF[rs] \neq RF[rt])$ then

$PC \leftarrow PC + 1 + S_ext(imm)$

else

$PC \leftarrow PC + 1$

bne \$2 \$1 2

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