Assignment #2 Questions:

2.4, 2.17: (b) part only

Assignment #2 Solution

2.4.1(b) (3 points)

lw $s0, 16($s7) //f = B[4]
sll $s0, $s0, 2 //f = f*4=B[4]*4
add $s0, $s0, $s6 //f = &A[f]=&A[B[4]]
lw $s0, 0($s0) //f = A[f]= A[B[4]]
sub $s0, $s1, $s0 //f = g – f = g – A[B[4]]

2.4.2(b)

5 instructions

2.4.3(b)

4 registers

2.4.4(b) (2 points)

f = A[1];

2.4.5(b)

No reduction possible

2.4.6(b)

2 registers, cannot be minimized

2.17.1(b) (1 point)

This instruction can be easily executed using an existing instruction. Adding it to the ISA increases complexity unnecessarily.

2.17.2(b) (1 point)

R-type

2.17.3(b) (1 point)

slt $t1, $t3, $t2
2.17.4(b) (1 point)

Two nested loops exist here. $s2$ increments by 20 with each iteration of outer loop. If $t1 = 10$ initially, final value of $s2 = 200$.

2.17.5(b) (3 points)

do
{
    temp = 10;
    do
    {
        B+=2;
        temp--;
    } while (temp > 0)
    i--;
} while (i>0)

2.17.6(b) (1 point)

33*N