Assignment\_2 Solution (Prof. N. Chen)

2.12.1 0x50000000

(Prof. Chen’s note: if you look at the most significant hex numbers, you have 0x8+0xd)

2.12.2 overflow

2.12.3 0xB0000000

Prof. Chen’s note: This question is a bit tricky. The way to understand it is that the hardware uses the add mechanism to perform a subtraction. How? What we want here is to subtract $s1 which is equivalent to adding a negated $s1. Given that $s1 has a value of 0xd0000000. What is a negated $s1 value? Knowing questions is more important than knowing answers!

2.12.4 no overflow

2.12.5 0xD0000000

2.12.6 overflow

2.14 r-type, add $s0, $s0, $s0

Prof. Chen’s note: need to learn how to read the green sheet

2.15

i-type, 0xAD490020

Prof. Chen’s note: need to learn how to read the green sheet

2.24

jump: no, beq: no

2.39

lui $t1, most\_significant\_16\_bits

ori $t1, $t1, least\_significant\_16\_bits

(Note: LUI – Load Upper Immediate; ORI – bitwise OR Immediate)

2.40

No. Reason: again, pay attention to the root cause of the problem (don’t focus on how to fix the problem right from the beginning; if you don’t understand the root cause, don’t bother to fix it!)