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4/16/18
CS 219

HW8

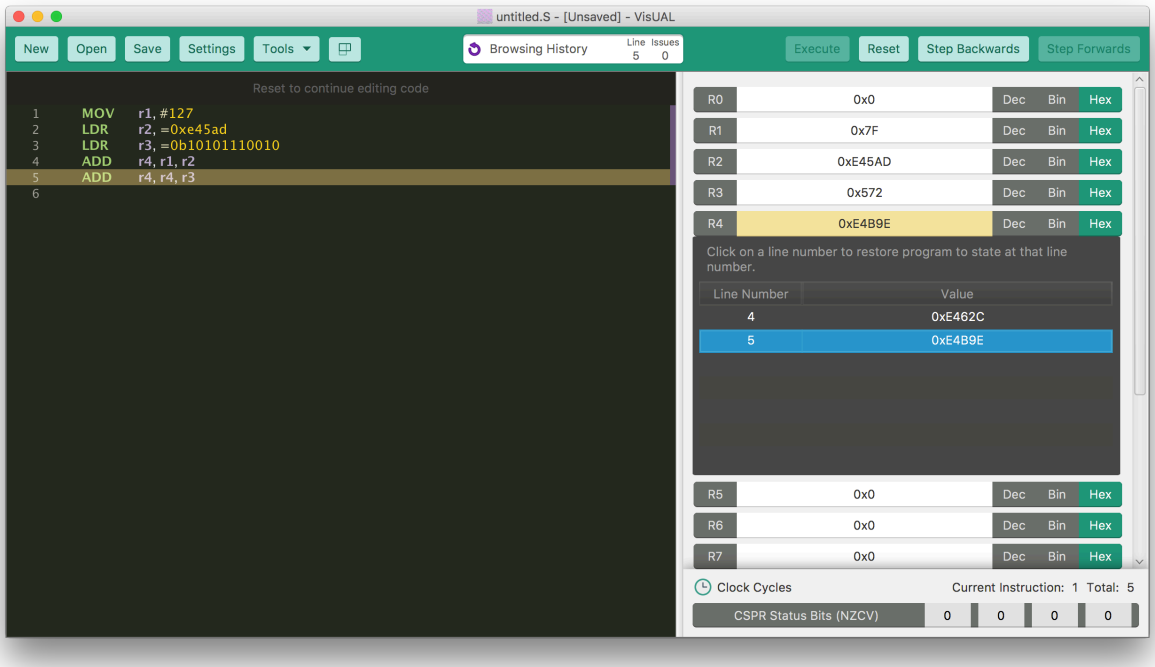
4.1)

a) r3 stores the value that comes from adding r12 to r5
- I'm trying to learn what happens when using the ADD instruction in assembly.
b) r3 = r5 + r5
- I'm trying to learn the value returned by a specific ADD instruction of r5 and r5.
c) r3 = r3 + r3
- I'm trying to learn the value returned by a specific ADD instruction of r3 and r3.

4.2)

a) this results in the value of r2 being copied into r11, meaning r11 stores the value of what r2 was storing.
- I'm trying to learn what happens when using the MOV instruction in assembly.
b) now r4 contains the value of 28.
- I'm trying to learn the effect of the MOV instruction in assembly with r4 and #28 supplied.
c) r3 would not change since copying itself into itself will not cause a state change.
- I'm trying to learn what happens when copying a register into itself.

4.3)



I obtained the total of 0xE4B9E for the summation of these three numbers.
- I'm trying to learn how to add numbers in ARM assembly, especially ones of different memory sizes.

4.4)

a) After this instruction is executed the value in register r5 would be 0x0E74 since it would hold the value of the subtraction of decimal 209 from 0x0F45.

- I'm trying to learn the effect of the SUB instruction in assembly with r5, r2 and #209 supplied.

b) After this instruction is executed the value in register r5 would be 0x8C since it would hold the value of the subtraction of 0x045 from decimal 209.

- I'm trying to learn the effect of the RSB instruction, similar to SUB but from the right number now.

c) The problem that arises is that the value stored in r5 will be negative. This means it will need to be stored in two's complement representation. R5 would equal 209 – 0x0F45 which equals decimal -3700 or 0xF18C.

- I'm trying to learn the effect of the RSB instruction and how to represent the result in two's complement representation.

4.5)

a) the value in r8 would be the negative of 0xF4 which is 0x0B

- I'm trying to learn the effect of the MVN instruction on a register with a numeric value.

b) r3 would hold the summation of 0xFFFF and 0x045 which equals 0x0048 with an included overflow flag

- I'm trying to learn the effect of the ADD instruction, in this case with numbers that would cause an overflow.

c) r6 would be an incremented version of the previous value in r6. If r6 was 1, r6 would now be 2.

- I'm trying to learn the effect of the ADD instruction, in this case in a similar use case of incrementing a number value.