1. Find the single precision floating number representation of the following decimal numbers:
2. 1.125
3. 6.53125
4. -5.546875

[answer.] (a ) The binary scientific representation of 1.125 is 1.001. So, sign bit is 0,exponent is 0, fraction is 0.001. By the standard, each field is 0, 01111111, and 00100000000000000000000, respectively. So the number represented in hex is 0x3FB00000.

(b). Sign bit is 0,exponent is 2, fraction is 0.1010001. By the standard, each field is 0, 10000001, and 101 0001 0000 0000 0000 0000. So the number represented in hex is 0x40D10000.

(c). Its -101.100011. Sign bit is 1, exponent is 2, fraction is 0.01100011. By the standard, each field is 1, 10000001, and 011 0001 1000 0000 0000 0000. So the number represented in hex is 0xC0B18000.

1. Review the computer model we studied (in Wednesday’s lecture). Answer possible questions from the students. Focus on the difference between the address and the value at the address.
2. Review the concept of array: the elements in an array is stored continuously in the memory, each element is of the same size, given the address of the first element, all elements can be found.
3. Review the instructions we have learned:

add, sub, lw, sw,

and write code segment to do

$t0 = A[$t2];

A[$t2+1] = $t0 + $t1;

where the starting address of array A is in $s0, and A[$t2] represents the 3th element in A if $t2 == 3. You are only allowed in this problem to access $t0, $t1, $t2, $s0 but you do not have to worry about saving them.

add $t2, $t2, $t2

add $t2, $t2, $t2

add $t2, $t2, $s0

lw $t0, 0($t2)

add $t0, $t0, $t1

sw $t0, 4($t2)