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CS 311

Lab 02

Computation

1. a. 33 = 2 \* 16^1 + 1 \* 16^0

Base-16 number = 21 (or 0x21)

b. 70 = 4 \* 16^1 + 6 \* 16^0

Base-16 number = 46 (or 0x46)

c. 126 = 7 \* 16^1 + 14 \* 16^0

Base-16 number = 7e (or 0x7e) (14 = e)

d. step 1: 32.125 = 100000.001 in base 2 = 1.00000001 \* 2^5 (scientific notation)

step 2: sign (+) = 0, bias+ exponent = 127 + 5 = 132 = 10000100 (in base 2), value = 00000001 (remove the 1 in front)

step 3: number in base-2 = 0 | 10000100 | 00000001000 = 0100 0001 0000 0000 1000 = 42008 (in base-16) or 0x42008000 (00800042 in reversed version)

e. 20 bytes array (each value initialized to 10) = 20 bytes of A in base-16 (A=10). In the listing file, it can be written as 0A <rept>

f. 32452 = 7 \* 16^3 + 14 \* 16^2 + 12\* 16^1 + 4 \* 16^0

Base-16 number = 7ec4 ( or 0x7ec4) (c47e in reversed version)