Kyler Little
CPT_S 260

Homework #6

1. Convert the digit number 13.248 into single precision number (I want 32 bits representation of 13.248).

13.248 is 1101.11111000. Shift the decimal over so it becomes 1.110111111000 x 10^3. Adjust exponent appropriately by adding 127. The remaining 23 bits become 110111111000 followed by zeros.

Result:

0 | 1000 0010 | 101 1111 1000 0000 0000 0000

2. In class, we have seen that, using only 32-bit adder, we can draw a block diagram implementing a 32-bit multiplier. Please draw a similar block diagram so that using only 64 bit adder, a 64-bit multiplier can be implemented.

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3. (source code sent to your TA) Write a MIPS program that can print out the cubic root of 3 up to the precision of 10^{-3} . You shall use Newton's method. The correct answer should be 1.442.
SENT TO TA!