

CS 301 > Assignment 03:

(with example on left in shaded columns)

Note: For steps 3, 4, and 5 – you must show all your work in order to receive full credit.

1. Write your initials in lower Case	First: f	Last: p			
2. Find the DECIMAL value from the ASCII table	102	112			
3. Convert to binary, using division method:	$102/2 = 51 \text{ r:}0$ $51/2 = 25 \text{ r:}1$ $25/2 = 12 \text{ r:}1$ $12/2 = 6 \text{ r:}0$ $6/2 = 3 \text{ r:}0$ $3/2 = 1 \text{ r:}1$ $1/2 = 0 \text{ r:}1$ 1100110_2	$112/2 = 56 \text{ r:}0$ $56/2 = 28 \text{ r:}0$ $28/2 = 14 \text{ r:}0$ $14/2 = 7 \text{ r:}0$ $7/2 = 3 \text{ r:}1$ $3/2 = 1 \text{ r:}1$ $1/2 = 0 \text{ r:}1$ 1110000_2			
4. Do some binary math in a byte sized register: First – Last =? (requires 2's complement on Last)	$\begin{array}{r} 0110\ 0110 \\ +\ 1001\ 0000 \\ \hline 1111\ 0110 \end{array}$	$\begin{array}{r} 0111\ 0000 \\ 1000\ 1111 \\ +\ \underline{\hspace{1cm}}1 \\ \hline 1001\ 0000 \end{array}$			
5. Convert answer from #4 to hexadecimal by grouping binary value in bits of 4 from the the right	$\begin{array}{cc} 1111 & 0110 \\ 15 & 6 \\ & \mathbf{F6}_{16} \end{array}$				
6. Find the ASCII character in the table for this new value.					