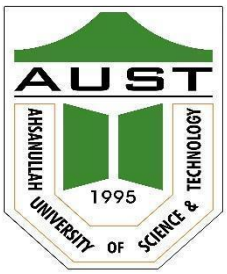

Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

Course No : **CSE2214**
Course Title : **Assembly Language Programming Sessional**
Assignment No : **02**
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Submitted To : **Ms. Tahsin Aziz & Ms. Samiha Sharmin Shimmi**

Submitted By-
Group : **A_2**
Name : **Minhajul Islam Jim**
Id : **17.01.04.001**
Section : **A**

A Suppose that a byte contains the ASCII code of an upper case letter, what hex number should be added to it to convert it to lower case.

⇒ The ASCII value of upper case 'A' in hexa is 41.

For converting ASCII code of an upper case letter to lower case letter in decimal value 32_{10} should be added. So now we should convert 32_{10} in hexa decimal value.

$$\begin{array}{r|l} 16 & 32 \\ \hline 16 & 2 \quad 0 \\ \hline & 0 \quad 2 \end{array}$$

So the hexa value $(20)_{16}$.

so lower case 'a' will be 61 in hexa decimal number.

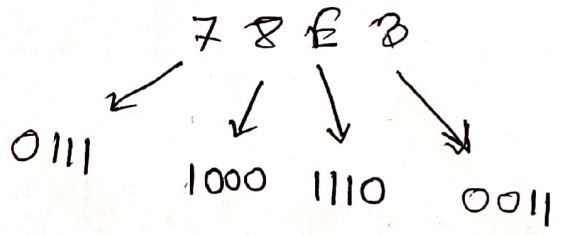
—o—

For each of the following 16 bit signed numbers, tell whether it is positive or negative.

2.1 7 8 E 3 H

2.2. 9 A C 4 H

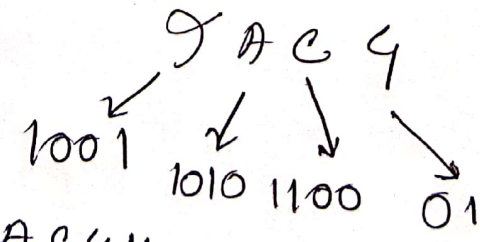
⇒ 7 8 E 3 H



$78E3H = (0111\ 1000\ 1110\ 0011)_2$,

As the Most-significant bit (MSB) is 0 so this is positive.

⇒ 9 A C 4 H.



$9ACAH = (1001\ 1010\ 1100\ 0100)_2$

As the MSB is 1 so this is negative signed.

Give the unsigned and signed decimal interpretations of each of the following 16 bit or 8 bit numbers.

3.1. 7FFEh

3.2 7F##h.

⇒ 7FFEH

Unsigned.

$(7FFE)_{16} = (?)_{10}$.

$\Rightarrow 7 \times 16^3 + F \times 16^2 + F \times 16^1 + E \times 16^0$

$\Rightarrow 7 \times 16^3 + 15 \times 16^2 + 15 \times 16^1 + 14 \times 16^0$

$\Rightarrow 28672 + 3840 + 240 + 14$

$\Rightarrow (32766)_{10}$.

-Signed.

7 F F E

/ 1 \ —

0111 1111 1111 1110

As the MSB is 0 so this positive number so the decimal value is $(32766)_{10}$.

⇒ 7FH.

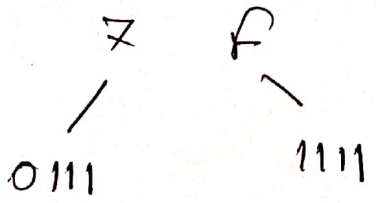
Unsigned

$$(7F)_{16} = (?)_{10}.$$

$$\Rightarrow 7 \times 16^1 + 15 \times 16^0$$

$$\Rightarrow (127)_{10}.$$

signed.



so $(7F)_{16} = (0111\ 1111)_2$

Here, MSB is 0 so this is positive. and the decimal number of 7FH is 127d.

—o—