Computer Organization and Assembly Language

Sections:

Instructors:

Problem 1:
Write a procedure that receives a number in AX, counts the number of ones in its binary representation,
and returns this count in BX. Have it do this using no more than seven instructions.

Problem 2:
Convert the following C code to equivalent assembly language code:

```
if(a<b+c)
{
do
{
if ( b == c ll a < b )
a += b;
c- -;
}while (c>0);
if( a == 0 && b== 0 )
c++;
}
```

Problem 3

Consider the following fragment of assembly code:

```
array dw 7,6,5,4
count dw 4
...
xor ax,ax
stc
mov cx,count
mov si,offset array
label1: adc ax,word ptr [si]
add si,2
loop label1
label2:
```

a) What will be the value in AX when control reaches label2?

b) What is the purpose of the line:

xor ax,ax

c) Write an efficient and functionally equivalent code segment for the line:

loop label1