Homework Assignment: Week 4

Write a program to print out the binary value of a 16 bit number.

Create integers i, count, and mask.

Set 'i' to a hex value of 0x1b53.

Set mask to a value of 0x8000. Why?

print a line to show the hex value of i and then the leader for the binary value like this:

\[
\text{Hex value = } 1b53 \text{ Binary=}
\]

Use a for loop to loop 16 times and print 16 digits, using count as the loop counter

To test for each digit value, bitwise and 'i' with 'mask'

when the result for the bitwise and is true, print the number '1'
when the result for the bitwise and is false, print the number '0'

then shift mask one place to the right

print a new line and then quit

Use prtscren and submit a copy of the code with the console output. Remember this course is paperless.

You also need to include the time and date information like in HW #3. Specifically (from line numbers):
2.  #include <time.h>
8.  time_t rawtime=time(NULL);
16. printf("\nBinaryPrint %s", ctime(&rawtime));

Extra: use the modulus of count and print a space after every 4th digit to make the binary easier to read

The output should look like this:

Hex value = 1b53, Binary=  0001 1011 0101 0011

The output should also include the printed date for review.

References:
A scratch example that uses 2's multiply to shift rather than bitwise shift:
http://scratch.mit.edu/projects/41941216/

Bit Masks

Bitwise Operators