

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:

Hex value = 1b53 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 `prtscreen` 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](#)