

CST8134: In-lab Exercise 14

Bitwise Operations

You need to have a good understanding of the effects of the bitwise operations. Write a small program that will read in two number (say a word, 16 bits, but see below), and apply each of the dyadic (2 operands) operations to it. Then apply the monadic (one operand) to at least one of the numbers. Print the result of each operation to the screen with an identifying message:

AND (dyadic; &):	and
OR (dyadic;):	or
EOR (aka XOR; dyadic; ^):	xor
NOT (monadic; ~):	not (1's complement)
Negate (monadic; -):	neg (2's complement)

As an extension, read in the size of the number to work on (8, 16, or 32 bit) and try those variations, too.

There's no need to construct a loop, but you can do so if you wish. Decide in advance what you will use to indicate the end of your input.

You ought to be able to complete a table that looks something like this:

Input 1	Input 1	Size	AND	OR	XOR	NOT	NEG

Your screen might look like:

```
Enter size (B, W, L): W
```

```
Enter first number: 0030
```

```
Enter second number: 0010
```

```
Results
```

```
AND      0010      NOT  0030      FFCF
```

```
OR       0030      NEG  0030      FFD0
```

```
EOR     0020
```

Show your source code for the program and some of its output to your lab instructor before the end of your lab period.