EECE.2160: ECE Application Programming
Programming Assignment #3: A 1-Bit Boolean Calculator

Basic Description of Boolean Operators

The C language supports three binary Boolean operations: AND, OR, and XOR. These operations use the binary operators shown below. (Remember that a binary operator works with two values.)

Boolean operation	C bitwise operator	Example expression
AND	&	X & Y
OR	|	A | 0
XOR (exclusive or)	^	1 ^ B

Since this assignment deals only with 1-bit values, you only need to understand how these operations handle the values 0 and 1. The table below—called a truth table— shows the outcome for all three operators on all possible pairs of 1-bit values:

X	Y	X & Y	X | Y	X ^ Y
0	0	0	0	0
0	1	0	1	1
1	0	0	1	1
1	1	1	1	0

Remember, you do <u>not</u> need to write conditional statements to implement these truth tables—simply use the appropriate operator (&, |, ^) with your input variables.