Activity 3

Wednesday, August 30, 2023 3:37 PM

a = 0x80 b = 0x1E C = 0xC3

a = 0b 1000 0000

b = 0b 0001 1110

C = 0b 1100 0011

Expression	Hand Calculation	Program Output
`d = a & b;`	0x00	0x00
`d = b & c;`	0x02	0x02
`d = b & 0xF0;`	0x10	0x10
`d = c & 0x01;`	0x01	0x01
`d = c & ~b;`	0xC1	0xC1
`d = c & !b;`	0x00	0x00

0xF0 = 11110000

0x01 = 00000001

~b = 11100001

!b = 00000000

~X: takes one's complement

!X: takes the inverse. inverse of any number is 0.

Expression	Hand Calculation	Program Output
`d = a | b;`	0x9E	0x9E
`d = b | c;`	0xDF	0xDF
`d = b | 0xF0;`	0xFE	0xFE
`d = c | 0x01;`	0xC3	0xC3
`d = c | !b;`	0xC3	0xC3

Expression	Hand Calculation	Program Output
`b << 1`	0x3c	0x 3c
`b << 4`	0x E0	0x E0
`b << 8`	0x00	0x 00
`b >> 1`	0x0F	0x 0F
`b >> 4`	0x01	0x01

X << n moves bits n times to the right.

X >> n moves bits n times to the left.

Expression	Hand Calculation	Program Output	TRUE/FALSE
`~b`	0x E1	0x E1	True
`!b`	0x00	0x00	False
`!(!b)`	True	0x01	True
`a && b`	True	0x01	True
`b && c`	True	0x01	True
`a || b`	True	0x01	True
`(a + b) == (a | b)`	True	0x01	True
`~b != b`	True	0x01	True