9. Binary Negative Numbers

Converting positive binary to negative binary

Say we want to create the binary number of -5

1. Take the positive binary representation of 5

Let's do this in a 4-bit format

2^3	2^2	2^1	2^0
0	1	0	1

So that means the 5 is 0101 in 4 bit binary.

2. Flip the bits so 1 becomes 0 and 0 becomes 1

2^3	2^2	2^1	2^0
1	0	1	0

Hence the binary representation of -5 is 1010 in 4 bit binary. To interpret this, the leftmost bit (the most significant bit) is 1, which represents a negative number. The remaining bits 1010 represent the absolute value of the number which in this case is 5 in binary.

Converting negative binary to positive binary

To do convert negative binary to positive binary number you just flip the bits back from 0s to 1s and 1s to 0s. For example, the binary number for -5 is 1010, flipping the bits would make the binary number of +5 become 0101

See Also:
1. Binary and Data
10. Binary Fractions