At its core, binary is a means of using the physical manipulation of electric signals by the means of switches to perform mathematical computation. It's a fascinating thing to see how all the complex programs that we use daily are the result of billions of switches flicking on and off at imperceivable fast speeds to manipulate tiny voltage levels that correspond to either a 1 or a 0. (Binary numbers: What's it all about?, n.d.)

Seeing how important power of 2 calculations - and as a result math in general - are to how computers function, it explains the emphasis many programming focused learning programs and occupations have on understanding math as much as high level programming languages. Initially, I'd assume that such a long string of characters would be complicated to calculate, however seeing how it relates so simply to powers of 2, I understand how the use of 1's and 0's ends up being a perfect solution for infinite possibilities.

01010100 01101000 01100001 01101110 01101011 00100111 01110011 00100000 01100110 01101111 01110010 00100000 01110010 01100101 01100001 01100100 01101001 01101110 01100111 00100001

References

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