Tute 7

COMP1521 24T1

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content

- 2's complement
- ieee 754
- more bitwise

2's complement

binary to decimal

if msb is 0, convert to decimal as normal.
if msb is 1, $-1 \times (\ binary + 1)$, then convert to decimal

decimal to binary

if positive, convert to binary as normal
if negative, negate and add 1, the convert to binary.

it's always negate and 1, in that order!

IEE-754

$$(-1)^sign \times (1 + frac) \times 2^{exp-127}$$

exp is determined by the 8 bits following the sign bit (as a value in the range 0..255)

frac is determined by the least significant 23 bits, negative 2nd powers

https://www.h-schmidt.net/FloatConverter/IEEE754.html