Conversion Examples to help with **Fractional Part** of IEEE Floating Point
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Adapted from: http://sandbox.mc.edu/~bennet/cs110/flt/dtof.html
(I added **bolds** and underlines for fractional parts, and *italics* and small fonts for exponents)

Convert -1313.**3125** to IEEE 32-bit floating point format.

The integral part is $1313_{10} = 10100100001_2$. The **fractional**:

0.**3125**	× 2 =	0.625	0	Generate 0 and continue.
0.625	× 2 =	**1**.25	**1**	Generate 1 and continue with the rest.
0.25	× 2 =	0.5	0	Generate 0 and continue.
0.5	× 2 =	**1**.0	**1**	Generate 1 and nothing remains.

So $1313.\mathbf{3125}_{10} = 10100100001.\mathbf{0101}_2$.

Normalize: $10100100001.\mathbf{0101}_2 = 1.0100100001\mathbf{0101}_2 \times 2^{10}$.

Mantissa is 01001000010101000000000, *exponent is 10 + 127 = 137 = 10001001_2*, sign bit is 1.
So -1313.**3125** is 1*10001001*01001000010101000000000 = $c4a42a00_{16}$

Convert 0.**1015625** to IEEE 32-bit floating point format.

0.**1015625**	× 2 =	0.203125	0	Generate 0 and continue.
0.203125	× 2 =	0.40625	0	Generate 0 and continue.
0.40625	× 2 =	0.8125	0	Generate 0 and continue.
0.8125	× 2 =	**1**.625	**1**	Generate 1 and continue with the rest.
0.625	× 2 =	**1**.25	**1**	Generate 1 and continue with the rest.
0.25	× 2 =	0.5	0	Generate 0 and continue.
0.5	× 2 =	**1**.0	**1**	Generate 1 and nothing remains.

So $0.\mathbf{1015625}_{10} = 0.\mathbf{0001101}_2$.

Normalize: $0.\mathbf{0001101}_2 = \mathbf{1.101}_2 \times 2^{-4}$.
Mantissa is **101**00000000000000000000, exponent *is -4 + 127 = 123 = 01111011_2*, sign bit is 0.

So 0.1015625 is 0*01111011***101**00000000000000000000 = $3dd00000_{16}$

Convert 39887.**5625** to IEEE 32-bit floating point format.

The integral part is $39887_{10} = 1001101111001111_2$. The fractional:

0.**5625**	× 2 =	**1**.125	**1**	Generate 1 and continue with the rest.
0.125	× 2 =	0.25	0	Generate 0 and continue.
0.25	× 2 =	0.5	0	Generate 0 and continue.
0.5	× 2 =	**1**.0	**1**	Generate 1 and nothing remains.

So $39887.\mathbf{5625}_{10} = 1001101111001111.\mathbf{1001}_2$.

Normalize: $1001101111001111.\mathbf{1001}_2 = 1.0011011110011111\mathbf{1001}_2 \times 2^{15}$.
Mantissa is 00110111100111**1001**0000, *exponent is 15 + 127 = 142 = 10001110_2,* sign bit is 0.

So 39887.**5625** is 0*10001110*00110111100111**1001**0000 = $471bcf90_{16}$