Floating-Point Numbers: All Together Now!

Once all the parts of the floating-point number are obtained, converting it to decimal is just a matter of applying the following formula:

\[ 1 \times 2^e \times \text{Mantissa} = 2.5 \]

Notice that the Mantissa actually represents a fraction with an implicit 1 in front of it, instead of an integer! In addition to representing real numbers, the IEEE 754 representation can also indicate...

- the set of numbers known as denormalized numbers (including zero),
- positive or negative infinity,
- and even when something is not a number! This is called NaN.