Float, Double and Long Double

For representing fractional numbers.

For example: 3.14, 0.678, -3276.789, 0.0000009999 etc

Float, Double and Long Double

Float -> 4 bytes = 32 bits

Double -> 8 bytes = 64 bits

Long Double -> 12 bytes = 96 bits

Size of these data types totally depends from system to system.

Float, Double and Long Double

Float -> IEEE 754 Single Precision Floating Point

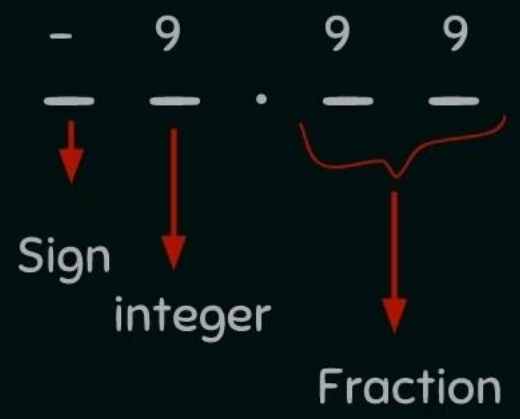
Double -> IEEE 754 Double Precision Floating Point

Long Double -> Extended Precision Floating Point

Overview on Fixed and Floating point

Fixed Point Representation

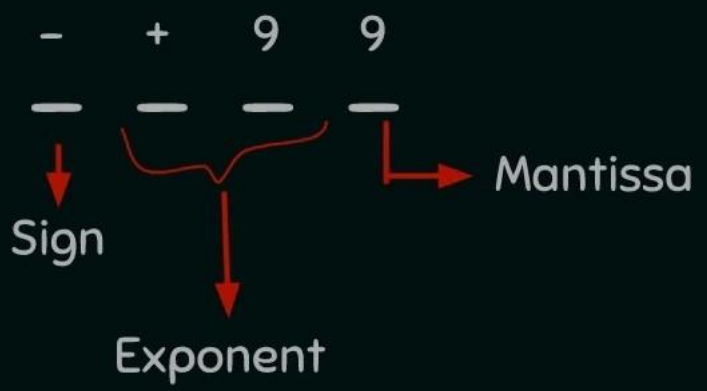
Example:



Minimum value = -9.99
Maximum value = $+9.99$

Floating point representation:

Example:



Formula = $(0.M) * Base^{Expo}$
Minimum value = $-(0.9) * 10^{+9}$
Maximum value = $+(0.9) * 10^{+9}$