Number = (-1)^s \* M \* 2^e

Sign Fraction Exponent

If s = 1 number is negative, else positive

M (mantissa) fraction value

-For normalized number M = [1.0, 2.0]

-Denormalized case M = [0.0, 1.0]

Advantages for representing s, m and e in a binary string:

-Bigger range, less number of bytes to encode

Range is symmetric, left most is signed bit w/ no value

Encoding E:

0000 -> m is expressed as 0.something

1 - 14 -> m is expressed as 1.\_\_\_

1111 -> m is expressed as inf, nan

\_\_\_\_ = 1.011 \* 2^-3

0100 -3 + bias

=4

Bias = 2^4 -1 =2^3 -1 = +7

20.375 -> binary

(20)b10 = (10100)b2

0.375 \* 2 = 0.75

0.75 \* 2 = 1.5

0.5 \* 2 = 1

011 in front of decimal

10100.011

1.0100011 \* 2^4

(20.375)b10 = (-1)^0 \* (1.0100011)b2 \* 2^4

N?umber = (-1)^s \* M \* 2^e

s=0

exp=1011

Frac=010