Course Name: A Level (1st Sem) Subject: CO

Topic: Number Representation Contd. Date: 27-04-20

IEEE 754 32-Bit method:

Ex. 2- Represent the number (-497.75) in 32 bit register using IEEE 754 method.

Here the number is (-497.75). Its integer part is 497 and fractional part is .75

Step1- We convert the binary of both parts.

$(497)_{10} = (111110001)_2$ & $(.75)_{10} = (11)_2$

Hence the entire number becomes $(-497.75)_{10} = (111110001.11)_2$

Step2- We normalize the converted binary in to the [m x r^e] format. For this, we move the decimal point to the extreme left leaving one single 1 omitted.

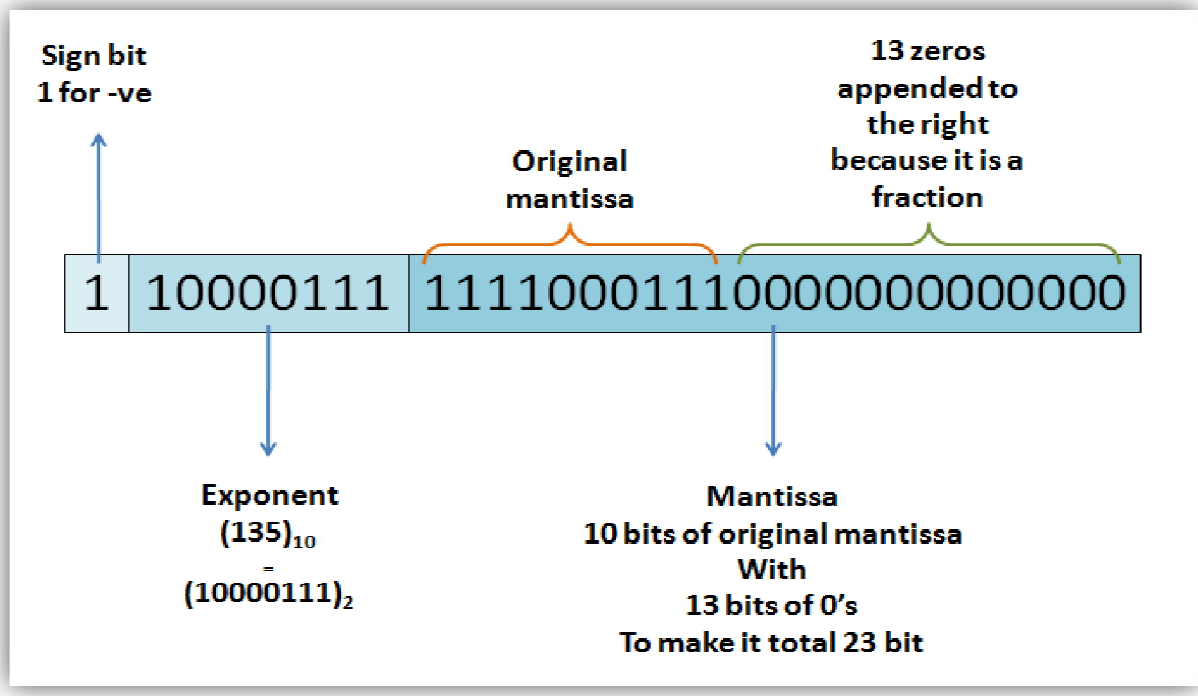
Thus it becomes 1.1111000111×2^8 {since the decimal point has been moved 8 places left}

Step3- We prepare our parts for representation.

The sign = 1 {for negative}

Mantissa = 1111000111 {the fractional part leaving the MSB 1 omitted}

Exponent = (8 + 127) = 135 {See the NOTE}



Assignment:

1. Represent the number (-1374.1250) in 32 bit register using IEEE 754 method.