

- 3.

$$\begin{aligned} & \text{10进制} \quad 2^1 + 2^2 + 2^6 + 2^4 + 2^3 \\ & = (78.75)_{10} \end{aligned}$$

16进制 001011010110
 $= (2D.6)_{16}$

$$= (19. D)_{16}$$

移码: 10010100 B

移碼 01101100B

移33 1000 0000 B

4833 10000000 B

(2) $x = (11111111 - (x \text{ 的位数}) + 1) = -10000000$
由第 1 位为 1

(3): 由第一位为0, 故补码与原数值相同 为 0.1010010
(4): 由第一位为1, $x = -(11111111 - 010111) = -0.010110$

$$(R_0)_2 = 1 \mid 000 \mid 0000 \mid 0000000000 \mid 0000 \mid 000 \mid 01 \mid = 2^{-11} \times 0.00000000000000000000$$

9. 设 x 为 int 型变量, 与 unigned int 的 len 在 for 循环中做加法时按限制转换为 unigned int 型, 数据出错导致异常

将第三行中的 $\text{int } i;$ 改为 $\text{unigned int } i;$

$$10. \begin{aligned} +1.75 &= (1.11)_2 = 0.011100 \times 4^1 = 0.000101100 \\ +19 &= (10011)_2 = 0.010011 \times 4^3 = 0.001010011 \\ -0.125 &= -(0.001)_2 = -0.1 \times 4^{-1} = 0.0111100000 \end{aligned}$$

范围: 正数: $4^{15} \times 0.11111 \approx 10^9$ 负数: $-4^{14} \times 0.11111 \approx -3 \times 10^8$
 $4^{-15} \times 0.00001 \approx 3 \times 10^{-11}$ $-4^{14} \times 0.00001 \approx -6 \times 10^{-11}$

而定点数表示范围为 $-2048 \sim 2047$

小数: $4 \times 10^{-4} \sim -1 \sim 4 \times 10^{-4}$

该浮点数表示范围远大于定点数

$$12. \begin{aligned} +1.75 &= (1.11)_2 = 1.11 \times 2^0 \rightarrow 0.01111111110000000000000000000000 \\ +19 &= (10011)_2 = 1.0011 \times 2^4 \rightarrow 0.10000110010000000000000000000000 \\ -\frac{1}{8} &= (0.001)_2 = 1 \times 2^{-3} \rightarrow 0.01111000000000000000000000000000 \\ \text{mod} &= (100000010)_2 = 1.00000010 \times 2^8 \rightarrow 0.10000110000000000000000000000000 \end{aligned}$$

$$13. 4096 = 4096 + 2 = (10000000000010)_2$$

32位补码 $\rightarrow (0000000000000000000000000000000010)_2 \rightarrow (00001002)_{16}$

IEEE754 $\rightarrow 1.00000000010 \times 2^{12} \rightarrow (01000101000000000000000000000000)_2 \rightarrow (45801000)_{16}$

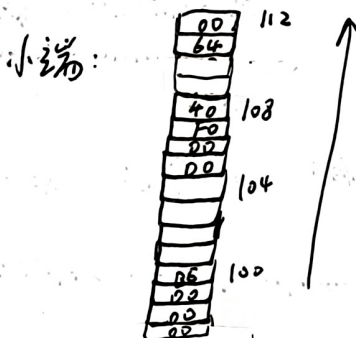
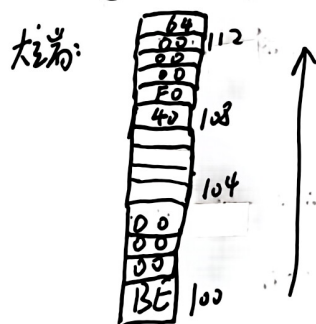
32位补码后12位与IEEE754尾数前12位

IEEE754尾数由原二进制值去除第一位后补零而来

$$17. x = (3E000000)_{16}$$

$$y = (40F00000)_{16}$$

$$z = (0064)_{16}$$



扫码使用

夸克扫描王

