



班级: 计网

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科目: 汇编

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1.

描述	Binary	M	E	Value
负 0	10000000	0.0	-2	-0.0
正无穷	01110000	\	\	$+\infty$
	01100110	1.375	3	+11
最小正规格化数	00010000	1.0	-2	+0.25

2.

$(x < y) == (-x > -y)$	N	$((x > 1) < 1) < x$	Y
$((x + y) < 4) + y - x = 17 * y + 15 * x$	Y	$(double)(float)x == (double)x$	N
$\sim x + \sim y + 1 == \sim(x + y)$	Y	$dx + dy == double(y + x)$	N
$ux - uy == -(y - x)$	Y	$dx + dy + dz == dz + dy + dx$	Y
$(x > 0) \parallel (x < ux)$	N		

3. (1) $E = 2, M = 1.25, f = 0.25, V = 5.0$ exp: $\underbrace{100 \dots 001}_{k-2 \text{ 位}}, \text{frac: } 01 \underbrace{00 \dots 000}_{n-2 \text{ 位}}, S = 0$

(2) 分情况讨论:

① $n \leq 2^{k-1} - 1$ 此时, $E = n, M = 2 - 2^{-n}, f = 1 - 2^{-n}, V = 2^{n+2} - 1$ $S = 0, \text{exp} = (n-1 + 2^{k-1})_2, \text{高位补0}; \text{frac} = \underbrace{1111 \dots 111}_{n \text{ 位}}$ ② $n > 2^{k-1} - 1$ 此时, $E = 2^{k-1}, M = 2 - 2^{1-2^{k-1}}, f = 1 - 2^{1-2^{k-1}}, V = 2^{2^{k-1}} - 1$ $S = 0, \text{exp} = \underbrace{1111 \dots 1110}_{k-1 \text{ 位}}, \text{frac} = \underbrace{1111 \dots 111}_{2^{k-1}-1 \text{ 位}} \underbrace{000 \dots 000}_{n+1-2^{k-1} \text{ 位}}$ (3) $E = 2 - 2^{k-1}, M = 1.0, f = 0.0, V = 2^{2^{k-1}}$ $S = 0, \text{exp} = \underbrace{000 \dots 0001}_{k-1 \text{ 位}}, \text{frac} = \underbrace{000 \dots 000}_{n \text{ 位}}$

4. ① %rcx ② %rax

5. 符号数比较; $\sim(SF \wedge OF) \wedge ZF$ 代表 $SF = OF$ 且 $ZF = 0$ 。跳转时前后不相等, 故 $ZF = 0$; 若两数同正负, 则 $SF = OF = 0$; 若前正后负, 若无溢出则 $SF = OF = 0$, 否则 $SF = OF = 1$, 故需满足 $SF = OF$ 。因此用 $\sim(SF \wedge OF) \wedge ZF$ 。6. likely(x) 表示 x 发生的几率大, 因此 x 不成立时才发生跳转 (因为 je/jne 耗时长)
unlikely(x) 表示 x 发生几率小, 因此 x 成立时跳转。故生成序列不同。