Haiqiang Zou

((n&(n-1)) == 0)

As you scratch your head, she says “this returns true if n is either zero or a power

of 2.”

Is she correct in her claim?

She is correct

When n = 0, n-1 is equal to -1. However, since we are doing an and Bitwise operator, the compile will turn -1 into a 2s complement binary which will is all 1s. When you Bitwise a 0 and all 1 in Binary the outcome will always

For N greater then 0 and also a power of 2. In binary the number will only have 1 bit that is 1 and rest is all 0. But if you convert the n-1 into binary it will have the same amount of bits as the N but with the first bit 0 and the rest 1. Therefore if you &bitwise operator it, the result will always be 0;

If you use a N that is not a power of 2, and &bitwise with N-1. There will always be a bit that is 1 in the result, therefore it is not 0.