Disorder Test X57031_en

In a strictly increasing ordered sequence of integers $x_0, \ldots, x_r$ (such as 5, 8, 12, 20 for example) each element is strictly larger than the previous one: $x_i > x_{i-1}$ for all $i > 0$, that is, $x_{i-1} - x_i < 0$.
A k-ordered sequence is a sequence where $x_{i-1} - x_i < k$ for all $i > 0$. Thus, a strictly increasing sequence is 0-ordered, and a sequence that is increasing but maybe not strictly (like -3, -1 -1, 4, 4, 7 for example) is 1-ordered.
Larger values of k represent bounded disorder: k bounds how smaller than its predecessor each element can be.
Write a function *disorder_test*(k, ls) that receives a nonnegative integer k and a list ls of integers and checks whether ls is k-ordered, that is, returns `True` if ls is k-ordered, and `False` otherwise.

Observation

Only the function will be evaluated. If your submission includes a main program (e.g. with testmod), it must be either commented out or inside a condition "`if __name__ == '__main__'`"

Problem information

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