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Maximum sublist subproduct problem

Specification of a function solving the *maximum sublist product* problem

Precondition (of the function), *i.e.*, initial execution state: One argument is passed to the function, namely, a list of floating-point numbers.

Postcondition (of the function), *i.e.*, final execution state: The function returns a sublist, *i.e.*, a contiguous part of the original list, such that the product over all elements of the sublist is as large as possible.

Example: For the list given by

x = [0.76, **–1.55, –2.07, 1.57, –0.52, –2.6**, 0.75],

it is the sublist x[1: 6] = [–1.55, –2.07, 1.57, –0.52, –2.6] with the product 6.8105.

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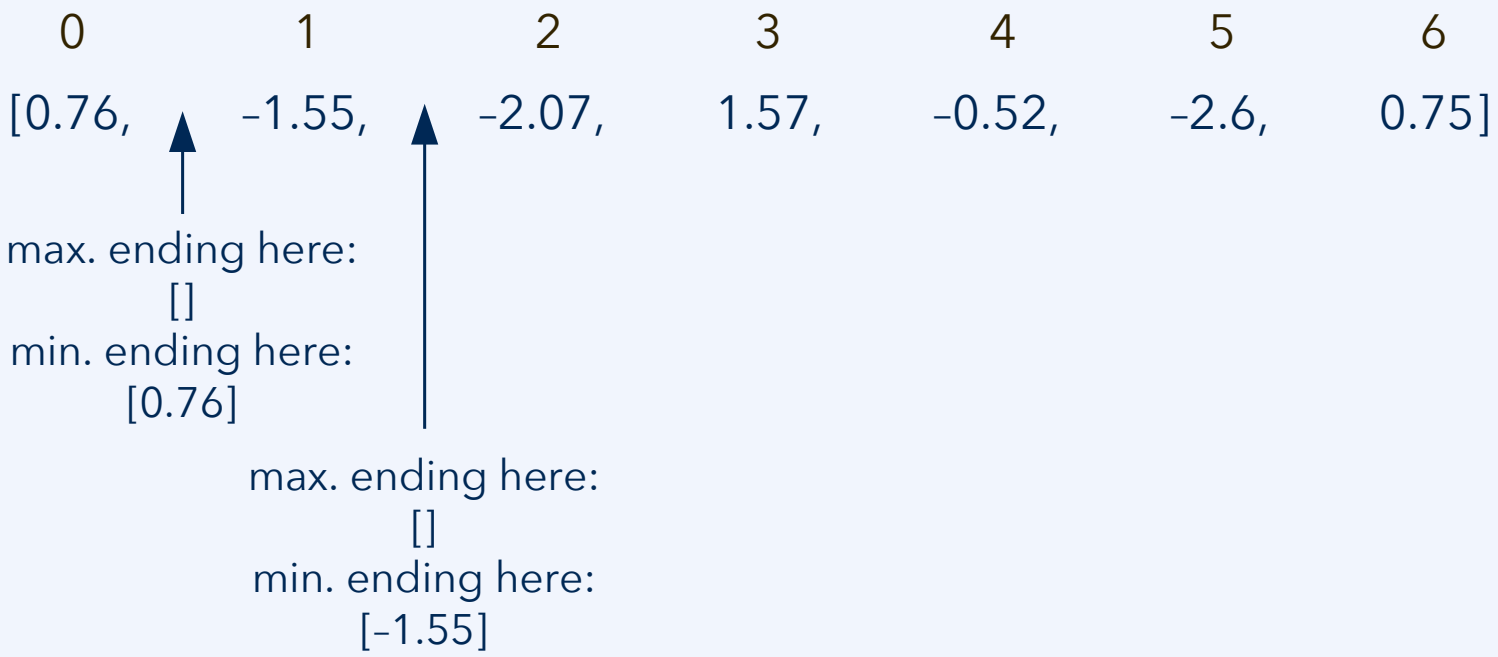
Brute-force algorithm: Trivial. But it scales with $O(n^3)$.

Kadane's algorithm for the maximum product



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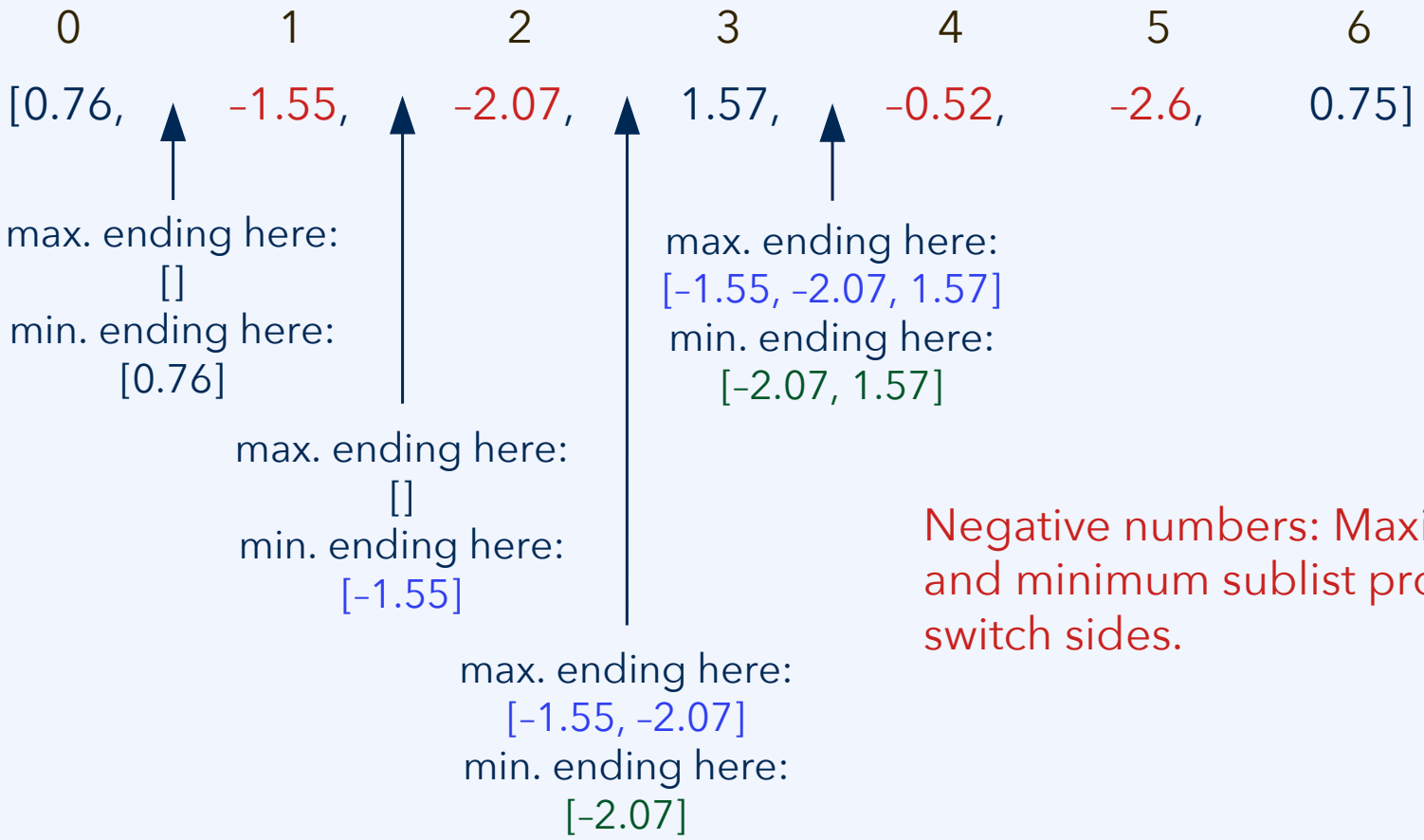

Negative numbers: Maximum and minimum sublist product switch sides.

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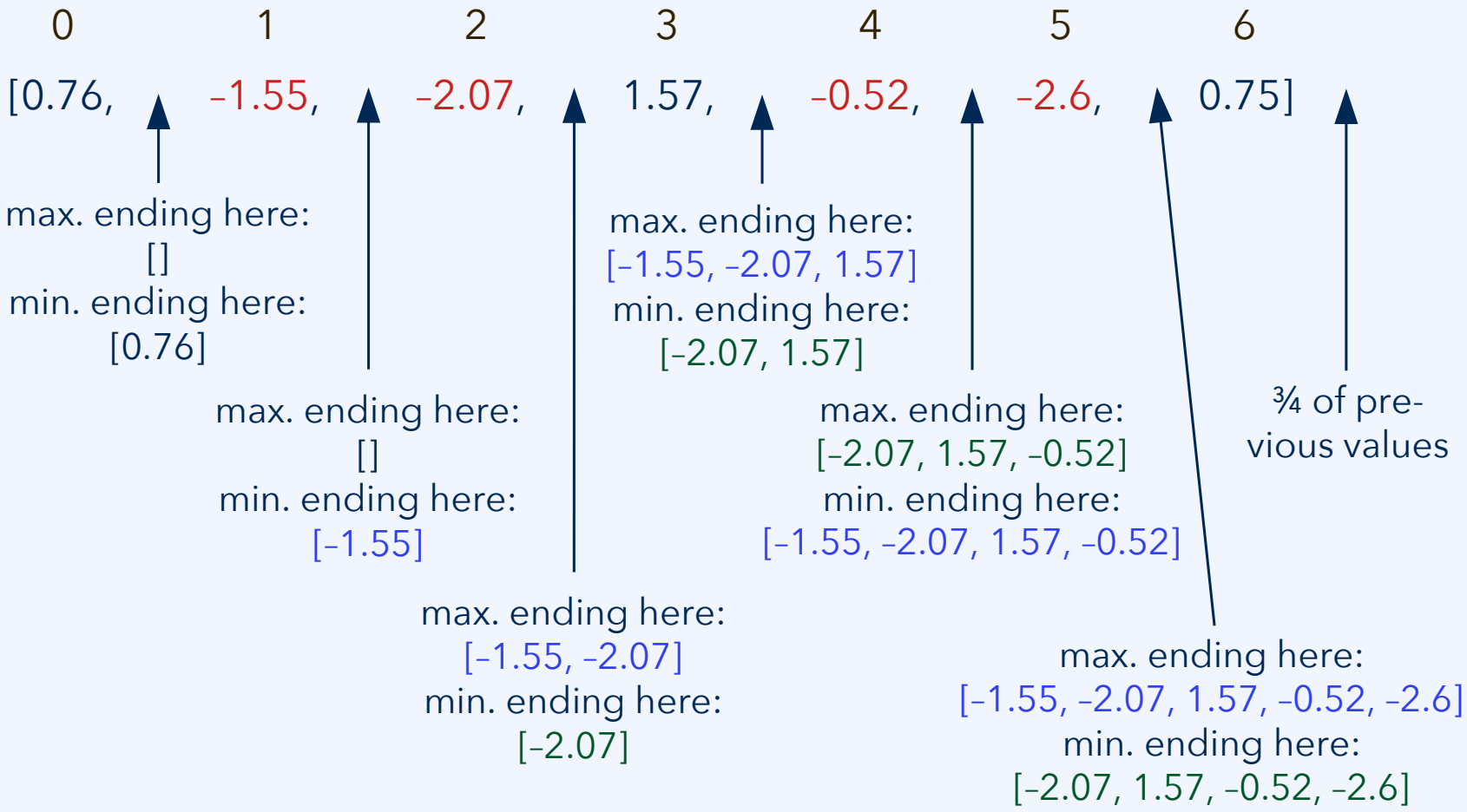

Implementation details: maximum-sublist-product notebook.

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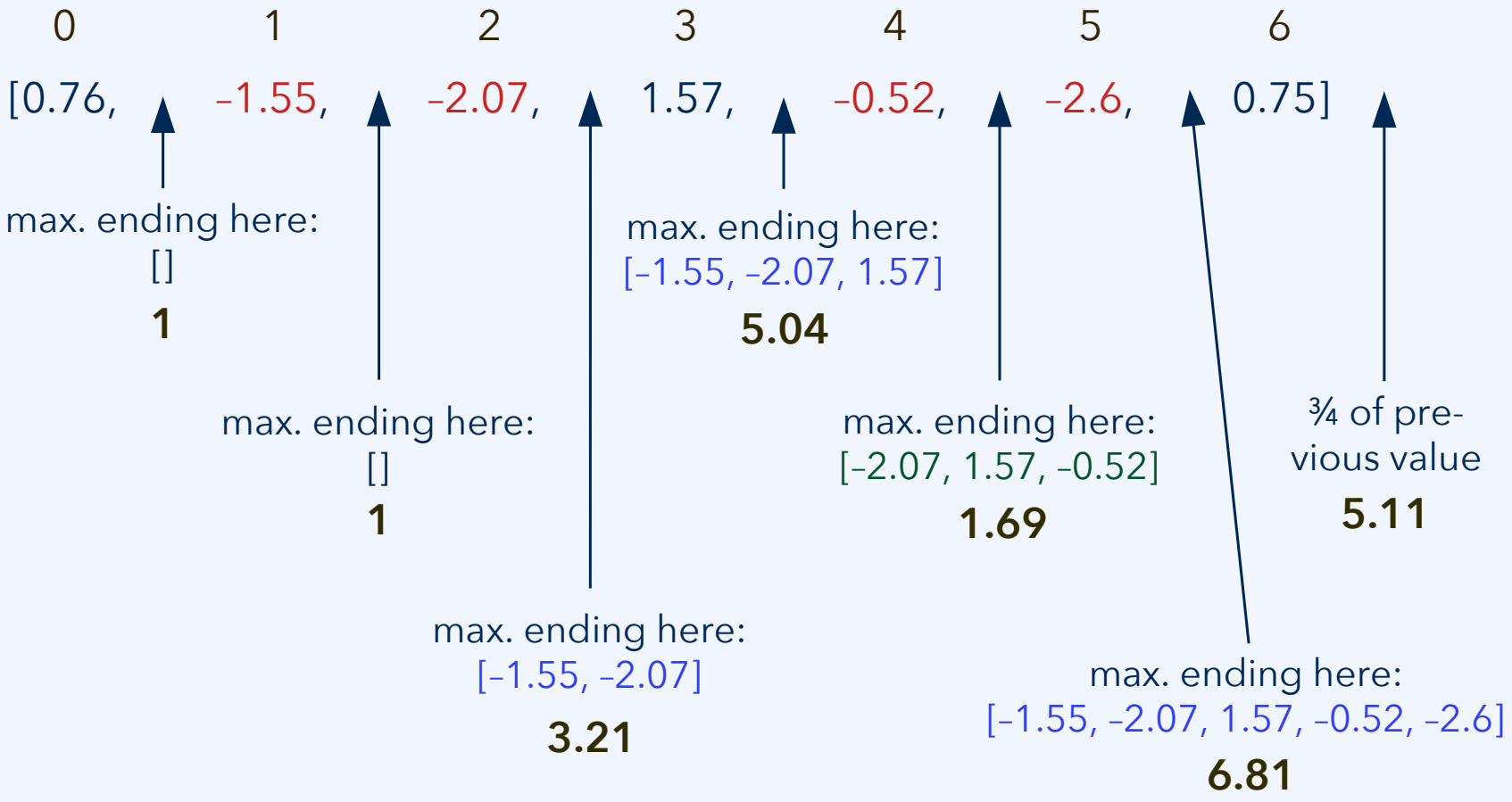

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