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Fibonacci beyond binary recursion

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Abstract. The Fibonacci series is a classical algorithm taught in computer science, usually implemented in some programming language. It is hard to find a programming textbook which doesn't touch on Fibonacci, and its most common use is in the illustration of binary recursion. There are also many ways of tailoring the basic algorithm in order to implement it. This paper discusses some novel algorithms, which help address some of the limitations of binary recursion, but also illustrate how differing algorithms can be pedagogically beneficial. We introduce a simple algorithm for accurately calculating any Fibonacci number.

Key words and phrases: Fibonacci, algorithms, binary recursion, accurate algorithms.

ZDM Subject Classification: M50, D40, I30.

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