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The far side of recursion.

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Summary: Recursion is somewhat of an enigma, and examples used to illustrate the idea of recursion often emphasize three algorithms: Towers of Hanoi, Factorial, and Fibonacci, often sacrificing the exploration of recursive behavior for the notion that a “function calls itself”. Very little effort is spent on more interesting recursive algorithms. This paper looks at how three lesser known algorithms of recursion can be used in teaching behavioral aspects of recursion: The Josephus Problem, the Hailstone Sequence and Ackermann’s Function.

Classification: N70 P20

Keywords: recursion; problem solving; Josephus; Hailstone; Ackermann