

Testing of sequences by simulation

Antal Iványi and Balázs Novák

Eötvös Loránd University, Dept. of Computer Algebra

tony@compalg.inf.elte.hu

Abstract

Let ξ be a random integer vector, having uniform distribution

$$\mathbf{P}\{\xi = (i_1, i_2, \dots, i_n) = 1/n^n\} \text{ for } 1 \leq i_1, i_2, \dots, i_n \leq n.$$

A realization (i_1, i_2, \dots, i_n) of ξ is called *good*, if its elements are different. We present algorithms BACKWARD, FORWARD, LINEAR, RANDOM, TREE, GARBAGE, BUCKET which decide whether a given realization is good. We analyse the running time of these algorithms using simulation gathering data on all possible inputs for small values of n and generating random inputs for large values of n [1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11].

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