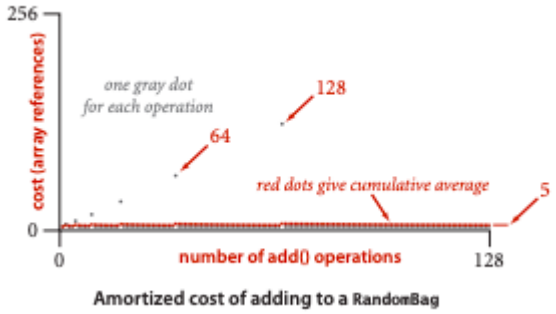
元リンク

Amortized Time　（ならし解析）

$$N + 4 + 8 + 16 + \ldots + 2N = 5N - 4$$

199 page http://www.albertstam.com/Algorithms.pdf



Amortized cost of adding to a RandomBag

Proposition E. In the resizing array implementation of `Stack` (ALGORITHM 1.1), the average number of array accesses for any sequence of operations starting from an empty data structure is constant in the worst case.

Proof sketch: For each `push()` that causes the array to grow (say from size N to size $2N$), consider the $N/2 - 1$ `push()` operations that most recently caused the stack size to grow to k, for k from $N/2 + 2$ to N. Averaging the $4N$ array accesses to grow the array with $N/2$ array accesses (one for each push), we get an average cost of 9 array accesses per operation. Proving that the number of array accesses used by any sequence of M operations is proportional to M is more intricate (see EXERCISE 1.4.32)

一緒に実装してみよう

再帰関数

Demo

実際に書いてみよう