

Assignment 8

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Problem

Consider a set of n numbers stored in an array $A[1, \dots, n]$. You are going to store the values $A[j]$ in another set B such that for any values $A[i]$ with $i < j$, we have $A[i] < A[j]$. An example is as below: $A = [3, 5, 2, 8, 7]$. Then $B = [3, 5, 8]$.

Design an algorithm to find out B in linear time. Use amortized analysis to show your algorithm's running time.