

Revisiting Matching Across Two Arrays

On Problem Set 4, you were asked for a better than brute force solution to the problem of finding the number of elements in common between two arrays. Our assumptions were that the arrays contained comparable values, so they could be sorted but that they were not already sorted, and that each array's entries were unique. They were strings in that problem but they can be any type of element that is comparable.

ALGORITHM INTERSECTIONSIZE(A, B)

//Input: $A[0..n - 1]$, comparable values

//Input: $B[0..m - 1]$, comparable values

//Output: the numbers of values that appear in both A and B

The brute-force approach:

Three approaches using presorting:

But what if we also know that our elements can reasonably be inserted into a hash table?