

Equivalence in Sets

ZPRAC-16-17-Lab5

[30 Points]

Consider an array A of size N containing the first N whole numbers ($0, 1, 2, \dots, N-1$) as its elements (in some order). Notice that any element $A[i]$ of this array will also be a whole number from 0 to $N-1$. Given a particular array A of size N , we define a subset $S \subseteq \{0, 1, \dots, N-1\}$ to be an equivalence set if for every $i \in S$, $A[i] \in S$. Given a number k in S , find the size of the smallest equivalence set containing k .

Input Format:

First line contains N and k , where N is the size of array A .

Second line contains N space separated integers, which are a permutation of $S = \{0, 1, \dots, N-1\}$.

Constraints:

$1 < N < 1000$

Output Format:

Print the size (number of elements) in the smallest equivalence set containing k .

Examples:

Input:

4 1

1 2 0 3

Output:

3

Explanation:

The smallest equivalence set is $E = \{0, 1, 2\}$ because:

$A[1] = 2$ belongs to E

$A[2] = 0$ belongs to E

$A[0] = 1$ belongs to E

Adding $A[3] = 3$ to this set will also make it an equivalence set, but it will not be the smallest such set.