

6961 Amusement Park

An amusement park is planning a special offer for their opening day. At the exit from every ride, there is an arrow pointing at some ride (possibly the same one). The first person to arrive at each ride after the gates open will enjoy free rides for the day, but only as long as she follows the arrows from one ride to the next.

The owners want to determine how many free rides they will give away. They assume that a customer will take the free rides as long as each ride is new: once the arrow points to a ride she has already taken, she will get bored and leave. Also, a customer cannot be first at more than one ride.

Input

The input consists of an arbitrary number of records, but no more than 20. Each record starts with a line containing an integer N , the number of rides, which are numbered from 1 to N . This is followed by a line containing N integers, a_1 to a_N , separated by spaces. The arrow at the exit from ride i points to ride a_i . The end of input is marked by a line containing only the value '-1'.

In all test cases, $1 \leq N \leq 100000$.

Output

For each test case, output a line containing the total number of free rides that will be given away. Note that the answer might not fit in a 32-bit integer.

Sample Input

```
5
2 3 2 5 2
-1
```

Sample Output

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14
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