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PAINLESS

Distinct

START

Compute number of distinct values in an array.

Programming language: C++ ▼

Human language: English ▼

Write a function

```
int solution(vector<int> &A);
```

that, given a zero-indexed array A consisting of N integers, returns the number of distinct values in array A.

Assume that:

- N is an integer within the range [0..100,000];
- each element of array A is an integer within the range [-1,000,000..1,000,000].

For example, given array A consisting of six elements such that:

```
A[0] = 2    A[1] = 1    A[2] = 1  
A[3] = 2    A[4] = 3    A[5] = 1
```

the function should return 3, because there are 3 distinct values appearing in array A, namely 1, 2 and 3.

Complexity:

- expected worst-case time complexity is $O(N \cdot \log(N))$;
- expected worst-case space complexity is $O(N)$, beyond input storage (not counting the storage required for input arguments).

Elements of input arrays can be modified.

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