Count Distinct in an Array

Given an unsorted array **arr[]** of length **N**, The task is to count all distinct elements in **arr[]**.

Examples:

> Input : arr[] = {10, 20, 20, 10, 30, 10}
>
> ***Output :*** *3*
>
> ***Explanation:*** *There are three distinct elements 10, 20, and 30.*
>
> ***Input :*** *arr[] = {10, 20, 20, 10, 20}*
>
> ***Output :*** *2*

Naive Approach:

> Create a count variable and run two loops, one with
> counter i from 0 to N-1 to traverse arr[] and second with
> counter j from 0 to i-1 to check if ith element has appeared before.
> If yes, increment the count.

```
#include<iostream>
using namespace std;

int countDistinct(int a[], int n)
{
    int count = 0;
    bool isDistinct = true;
    for(int i = 0; i < n; i++)
    {
        isDistinct = true;
        for(int j = i-1; j >= 0; j--)
        {
            if(a[i]==a[j])
            {
```

```
                isDistinct = false;
                break;
            }
        }
        if(isDistinct==true)
        {
            count ++ ;
        }
    }
    return count;
}

int main()
{
    int n;
    cin >> n;
    int a[n];
    for(int i = 0; i < n; i ++)
    {
        cin >> a[i] ;
    }
    cout << countDistinct(a,n);
    return 0;
}
```

INPUT -

```
31 2 3
```

OUTPUT -

```
3
```