Linear Search

Problem Description: You are given with a random integer array A with its size and an element x. You need to search this element x in the given array, using linear search. Return the index of element in the input. If the element is not found in the array, return -1.
For example: Size: 7
arr[]=2 13 4 1 3 6 28
Element x: 3
For this input, output should be 4, as 3 is located at index 4.

How to approach?
Linear search means, we need to compare each element from the array A one by one with the element x starting with the leftmost element, till we find the match or we reach the end of array. If match found, return its index, and if not return -1.
Time complexity of linear search is: O(n)

Pseudo Code for this problem:

```
Function linearsearch:
  For i =0 to i less than n:
        If arr[i] is equal to x:
             Return i
  Return -1
```

- Let us dry run the code for N= 7
  - Take the array as input =7
    arr[]= 2 13 4 1 3 6 28
    Element x: 3
  - i=0
    arr[0] is not equal to 3.
  - i=1
    arr[1] is not equal to 3.
  - i=2

arr[2] is not equal to 3.

➔ i=3

arr[3] is not equal to 3.

➔ i=4

arr[4] is equal to 3.

So, return 4.

Final Output:

4