

Linear Search

Linear Search is defined as a sequential search algorithm that starts at one end and goes through each element of a list until the desired element is found, otherwise the search continues till the end of the data set. It is the easiest searching algorithm.

Given an array `arr[]` of `N` elements, the task is to write a function to search a given element `x` in `arr[]`.

Examples:

Input: `arr[] = {10, 20, 80, 30, 60, 50, 110, 100, 130, 170}`, `x = 110`;

Output: 6

Explanation: Element `x` is present at index 6.

Input: `arr[] = {10, 20, 80, 30, 60, 50, 110, 100, 130, 170}`, `x = 175`;

Output: -1

Explanation: Element `x` is not present in `arr[]`.

Search an Element in an array:

Follow the below idea to solve the problem:

Iterate from 0 to `N-1` and compare the value of every index with `x` if they match return index.

Follow the given steps to solve the problem:

Start from the leftmost element of `arr[]` and one by one compare `x` with each element of `arr[]`

If `x` matches with an element, return the index.

If `x` doesn't match with any of the elements, return -1.

Below is the implementation of the above approach:

```
using System;

class GFG {
    public static int search(int[] arr, int x)
```

```
{
    int N = arr.Length;
    for (int i = 0; i < N; i++) {
        if (arr[i] == x)
            return i;
    }
    return -1;
}

// Driver's code
public static void Main()
{
    int[] arr = { 2, 3, 4, 10, 40 };
    int x = 10;

    // Function call
    int result = search(arr, x);
    if (result == -1)
        Console.WriteLine(
            "Element is not present in array");
    else
        Console.WriteLine("Element is present at index "
            + result);
}
}
```