

## Linear Search

**Note : Because here we are discussing about Searching. So, my intention is to complete Searching concept completely.**

**Linear Search : (Not an application of DAC)**

**input : An array of n elements and what element "x" we want to search in an array**

**output : Position of an element x if it is found and if it is not present in the array then our function will return -1**

**n -> number of elements in an array**

```
LinearSearch(int arr[], int x){  
    for(i=0;i<n;i++){          O(n)  
        if(arr[i] == x){  
            System.out.println(i);  
        }  
    }  
  
    return -1;  
}
```

**Discussion about the Best case(anything which is close to starting element of an array), Worst case(close to last element in an array) and average case time complexity**

**Best Case :  $O(1)$**

**Worst Case :  $O(n)$**

**Average Case :  $O(n)$**