

S.No: 1	Exp. Name: Write a Program to Search an element using Linear Search and Recursion	Date:2024-11-25
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Aim:

Write a program to search the given element from a list of elements with linear search technique using recursion.

Note: Write the functions **read1()** and **linearSearch()** in Program911a.c

Source Code:

Program911.c

```
#include <stdio.h>
#include "Program911a.c"
void main() {
    int a[20], n, pos, key;
    printf("Enter n value : ");
    scanf("%d", &n);
    read1(a, n);
    printf("Enter a key element : ");
    scanf("%d", &key);
    pos = linearSearch(a, 0, n - 1, key);
    if (pos == -1) {
        printf("The key element %d is not found\n", key);
    } else {
        printf("The key element %d is found at position : %d\n", key, pos);
    }
}
```

Program911a.c

```
void read1(int arr[], int n){
    printf("Enter %d elements : ",n);
    for(int i=0;i<n;i++){
        scanf("%d",&arr[i]);
    }
}
int linearSearch(int arr[], int left, int right, int key){
    for(int i=left;i<=right;i++){
        if(arr[i]==key){
            return i;
        }
    }
    return -1;
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter n value : 4

Enter 4 elements : 10 20 15 12
Enter a key element : 15
The key element 15 is found at position : 2

Test Case - 2
User Output
Enter n value : 6
Enter 6 elements : 2 6 4 1 3 7
Enter a key element : 5
The key element 5 is not found