S.No: 1	Exp. Name: ***Write a Program to Search an element using Linear Search and Recursion***	Date:2024-11-21

ID: 24070521015

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 a[],int n){
   printf("Enter %d elements : ",n);
   for(int i=0;i<n;i++)
      scanf("%d",&a[i]);
   }
   int linearSearch(int a[],int i,int n, int key){
      return i==n?-1:a[i]==key? i:linearSearch(a,i+1,n,key);
}
```

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