S.No: 5	Exp. Name: ***Write a Program to Search an element using Linear Search and Recursion***	Date:2023-04-28

Aim:

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

Note: Write the functions **read()** 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);
   read(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 read(int a[],int  n)
{
   int i;
   printf("Enter %d elements : ",n);
   for(i=0;i<n;i++)
   {
      scanf("%d",&a[i]);


   }
}
int linearSearch(int a[],int lb,int ub,int key)
{
   int i;
   for(i=lb;i<=ub;i++)
   {
      if(a[i]==key)
      {
         return i;
         break;
      }
   }
```

```
    if(i>ub)
    {
       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

ID: 22K61A05H6