S.No: 2	Exp. Name: ***Write a C program to Search a Key element using Linear search Technique***	Date:2023-04-30

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Aim:

Write a program to search a **key element** with in the given array of elements using `linear search` process.

At the time of execution, the program should print the message on the console as:

```
Enter value of n :
```

For example, if the user gives the **input** as:

```
Enter value of n : 3
```

Next, the program should print the messages one by one on the console as:

```
Enter element for a[0] :
Enter element for a[1] :
Enter element for a[2] :
```

if the user gives the **input** as:

```
Enter element for a[0] : 89
Enter element for a[1] : 33
Enter element for a[2] : 56
```

Next, the program should print the message on the console as:

```
Enter key element :
```

if the user gives the **input** as:

```
Enter key element : 56
```

then the program should **print** the result as:

```
The key element 56 is found at the position 2
```

Similarly if the key element is given as **25** for the above one dimensional array elements then the program should print the output as "**The key element 25 is not found in the array**".

Source Code:

LinearSearch.c

```
#include<stdio.h>
void main()
{
   int a[20], i, n, key, flag = 0, pos;
   printf("Enter value of n : ");
   scanf("%d", &n);
   for(i=0;i<n;i++)
   {
      printf("Enter element for a[%d] : ",i);
      scanf("%d",&a[i]);
```

```
    }
    printf("Enter key element : ");
    scanf("%d", &key);
    for(i=0;i<n;i++)
    {
       if(a[i]==key)
       {
          flag=1;
          pos=i+1;
          break;
       }
    }
    if(flag!=0)
    {
       printf("The key element %d is found at the position %d\n",key,pos-1);
    }
    else
    {
       printf("The key element %d is not found in the array\n",key);
    }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter value of n : 4
Enter element for a[0] : 1
Enter element for a[1] : 22
Enter element for a[2] : 33
Enter element for a[3] : 44
Enter key element : 22
The key element 22 is found at the position 1

Test Case - 2
User Output
Enter value of n : 7
Enter element for a[0] : 101
Enter element for a[1] : 102
Enter element for a[2] : 103
Enter element for a[3] : 104
Enter element for a[4] : 105
Enter element for a[5] : 106
Enter element for a[6] : 107
Enter key element : 110
The key element 110 is not found in the array