

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

```

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 |