

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**".

Note: Do use the **printf()** function with a **newline** character (**\n**) at the end.

Source Code:

Program509.c

```
#include<stdio.h>
void main()
{
    int a[20],i,x,n;
    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",&x);
for(i=0;i<n;++i)
if(a[i]==x)
break;
if(i<n)
printf("The key element %d is found at the position %d",x,i);
else
printf("The key element %d is not found in the array",x);
printf("\n");
}

```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Enter value of n : 5
Enter element for a[0] : 45
Enter element for a[1] : 67
Enter element for a[2] : 35
Enter element for a[3] : 28
Enter element for a[4] : 16
Enter key element : 28
The key element 28 is found at the position 3

Test Case - 2
User Output
Enter value of n : 5
Enter element for a[0] : 2
Enter element for a[1] : 7
Enter element for a[2] : 5
Enter element for a[3] : 1
Enter element for a[4] : 4
Enter key element : 2
The key element 2 is found at the position 0

Test Case - 3
User Output
Enter value of n : 4
Enter element for a[0] : 452
Enter element for a[1] : 356
Enter element for a[2] : 754
Enter element for a[3] : 127
Enter key element : 127
The key element 127 is found at the position 3

Test Case - 4
User Output
Enter value of n : 3
Enter element for a[0] : 5

Enter element for a[1] : 7
Enter element for a[2] : 3
Enter key element : 4
The key element 4 is not found in the array

Test Case - 5
User Output
Enter value of n : 3
Enter element for a[0] : 11
Enter element for a[1] : 45
Enter element for a[2] : 37
Enter key element : 25
The key element 25 is not found in the array