Sasi Institute of Technology and Engineering (Autonomous)

2022-2026-CSE-B

Aim:

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

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++)</pre>
   if(a[i]==x)
   break;
   if(i<n)
   printf("The key element %d is found at the position %d",x,i);
   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