EXERCISE-8

8.Write a c program to search a number using Linear number Method.

AIM: To write a C program to search a number in an array using the Linear Search method.

Algorithm:

1. Start the program.
2. Input the number of elements in the array.
3. Input the array elements.
4. Input the number to search (key).
5. Traverse the array from index 0 to n-1:
    - If arr[i] == key, print the position and stop.
6. If the key is not found, display a message.
7. End the program.

Program code:

```
#include <stdio.h>
int main() {
   int arr[100], n, key, found = 0;
   printf("Enter number of elements: ");
   scanf("%d", &n);
   printf("Enter %d elements: ", n);
   for (int i = 0; i < n; i++)
      scanf("%d", &arr[i]);
```

```
    printf("Enter number to search: ");
    scanf("%d", &key);
    for (int i = 0; i < n; i++) {
        if (arr[i] == key) {
            printf("Element %d found at position %d (index %d)\n", key, i +
1, i);
            found = 1;
            break;
        }
    }
    if (!found) {
        printf("Element %d not found in the array.\n", key);
    }
    return 0;
}
```

Input and Output:

```
Enter number of elements: 5
Enter 5 elements: 11 22 33 44 55
Enter number to search: 44
Element 44 found at position 4 (index 3)
```

Result:

The program successfully searches and finds the given number using the Linear Search method.