Ex.No.:4	LINEAR SERACH
DATE: 10.01.2025	

AIM:

To develop a C Program to search an element in an array using linear search

ALGORITHM:

STEP 1: Start the Program

STEP 2: Define a function linearsearch() to find the given key element is present or not.

STEP 3: Define a main() function

STEP 4: Get the input value for input array arr

STEP 5: Call the function linearsearch() along with input parameters.

STEP 6: Print the index position of Key element if it found

STEP 7: Stop the execution

CODING:

```
#include <stdio.h>
int linearsearch(int* arr, int n, int key)
{
    // Starting the loop and looking for the key in arr
  for (int i = 0; i < n; i++)
 {
      // If key is found, return key
      if (arr[i] == key)
 {
         return i;
   }
  }
  // If key is not found, return some value to indicate end
  return -1;
}
int main()
{
  int arr[] = { 10, 50, 30, 70, 80, 60, 20, 90, 40 };
  int n = sizeof(arr) / sizeof(arr[0]);
  int key = 30;
  // Calling linearsearch() for arr with key = 43
  int i = linearsearch(arr, n, key);
  if (i == -1)
     printf("Key Not Found");
  else
     printf("Key Found at Index: %d", i);
```

```
    return 0;
}
```

RESULT:

Thus the program is executed successfully and the given element is found using linear search.