Ex.No.:5	BINARY SERACH
DATE: 10.01.2025	

AIM:

To develop a C Program to search a given element using Binary Search

ALGORITHM:

STEP 1: Start the Program

STEP 2: Get the input values in an array and get the value for the element to be find.

STEP 3: Find the middle element and compare with the given value

STEP 4: If given value is greater then search it in the right half sub array

STEP 5: If given value is smaller then search it in the left half sub array

STEP 6: Print the Location of the given element if found

STEP 7: Stop the execution

CODING:

```
#include<stdio.h>
int main()
{
   int c, first, last, middle, n, search, array[100];
   printf("Enter number of elements\n");
   scanf("%d",&n);
   printf("Enter %d integers\n", n);
   for ( c = 0 ; c < n ; c++ )
      scanf("%d",&array[c]);
   printf("Enter value to find\n");
   scanf("%d",&search);
   first = 0;
   last = n - 1;
   middle = (first+last)/2;
   while( first <= last )
   {
      if ( array[middle] < search )
         first = middle + 1;
      else if ( array[middle] == search )
      {
         printf("%d found at location %d.\n", search, middle+1);
         break;
      }
      else
         last = middle - 1;
      middle = (first + last)/2;
   }
```

```
    if ( first > last )
        printf("Not found! %d is not present in the list.\n", search);
    return 0;
}
```

RESULT:

Thus the program executed successfully and the given element is found using Binary Search.