DSA LAB

Lab Assignment number 16

Name: Aamir Ansari **Batch:** A **Roll no:** 01

Aim: Implementation of Binary Search

Program:

```
#include <stdio.h>

/*Array to store the list*/
int array[100];

/*Function to perform Binary Search*/
void binary_search(int n, int search)
{
   int first ,last, middle;
   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);
   }
}
void main()
{
   int c,n,search;
   printf("BINARY SEARCH\n");
   printf("Enter number of elements in list : ");
   scanf("%d", &n);
   printf("Enter %d integers\n", n);
   /*Taking the inputs*/
```

```
    for (c = 0; c < n; c++)
    {
       scanf("%d", &array[c]);
    }

    printf("Enter element to search : ");
    scanf("%d", &search);
    binary_search(n,search);
}
```

Output:

```
BINARY SEARCH
Enter number of elements in list : 5
Enter 5 integers
11
12
13
14
15
Enter element to search : 13
13 found at location 3.
```