

# DATA STRUCTURE AND PROGRAM DESIGN LAB – 01B

1B. Write a program to implement a Binary Search algorithm. Write a search function which takes a SearchList as its first parameter and a Comparable as its second. If either parameter is null, or if the SearchList is empty, you should return NULL. implement the following algorithm:

- Examine the value in the middle of the current array and print it.
- If the midpoint value is the value that we are looking for, return true
- If the value that we are looking for is greater than the midpoint value, adjust the current array to start at the midpoint and print the index.
- if the value that we are looking for is less than the midpoint value, adjust the current array to end at the midpoint and print the index.
- Continue until you find the value, or until the start reaches the end,

## SAMPLE OUTPUT:

The screenshot shows a terminal window with the following output:

```
PS C:\Users\Ankush\OneDrive\Desktop\DSPD-LAB> gcc Practical-1B.c
PS C:\Users\Ankush\OneDrive\Desktop\DSPD-LAB> ./a.exe
Enter the range of the array: 3
Enter 3 sorted elements of array:
1
4
5
Enter element to search: 5
first of array is 1
last of array is 3
Mid of array is 2
The array is:
1 4 5

first of array is 1
last of array is 3
Mid of array is 2
The array is:
1 4 5

The element 5 is located at position 3.
PS C:\Users\Ankush\OneDrive\Desktop\DSPD-LAB>
```