



**Green University of Bangladesh**  
**Department of Computer Science and Engineering (CSE)**  
**Faculty of Sciences and Engineering**  
**Semester: (Summer, Year:2022), B.Sc. in CSE (Day)**

**LAB REPORT NO # 02**

**Course Title: Data Structure Lab**  
**Course Code: CSE 106      Section: PC-213DA**

**Student Details**

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<b>Lab Report Status</b>	
<b>Marks:</b> .....	<b>Signature:</b> .....
<b>Comments:</b> .....	<b>Date:</b> .....

## 1. TITLE OF THE LAB EXPERIMENT [1]

- Implement a program of Binary Search with Recursion.

## 2.OBJECTION [1]

In this problem I will discuss recursive function and how it use ?

## 3. PROCEDURE /ANALYSIS/DESIGN/PSEUDOCODE [2]

```
int RbinaryS(int a[], int start, int end, int value);
int main()
{
    int start, end, mid, i, n, value,result;
    printf("\n store the index value user input:\n");
    for (i zero to n )
    {

    }
        Call function
    if (result == -1)
    {
        printf("this value not found");
    }
    else
        printf("the position of the value:%d", i);

    return 0;
}
int RbinaryS( )
{

    while ( )
    {

        {
            return mid;
        }
        else if (a[mid] > value)
        {
            return Call function ;
        }
        else
        {
            return Call function;
        }
    }
}
```

```
return -1;
```

## **4.IMPLEMENTATION**

```
#include <stdio.h>
#include <stdlib.h>

void BinarySearch(int arr[], int num, int first, int last)
{
    int mid;

    if (first > last)
    {
        printf("Cannot Find The Number");
    }
    else
    {
        mid = (first + last) / 2;

        if (arr[mid] == num)
        {
            printf("Element Is At The Index: %d ", mid);
            exit(0);
        }
        else if (arr[mid] > num)
        {
            BinarySearch(arr, num, first, mid - 1);
        }
        else
        {
            BinarySearch(arr, num, mid + 1, last);
        }
    }
}

void main()
{
    int arr[50], beg, mid, end, i, n, num;
```

```

printf("Enter The Size Of The Given Array: ");
scanf("%d", &n);

printf("Enter The Values In Sorted Sequence \n");

for (i = 0; i < n; i++)
{
    scanf("%d", &arr[i]);
}

beg = 0;
end = n - 1;

printf("Enter The Value To Search Using Binary Search: ");
scanf("%d", &num);

BinarySearch(arr, num, beg, end);
}

```

## 5.TEST RESULT

```

Enter The Size Of The Given Array: 5
Enter The Values In Sorted Sequence
5
7
9
12
20
Enter The Value To Search Using Binary Search: 12
Element Is At The Index: 3

```

```

Enter The Size Of The Given Array: 5
Enter The Values In Sorted Sequence
5
7
9
12
20
Enter The Value To Search Using Binary Search: 10
Cannot Find The Number

```

## **6.ANALYSIS AND DISCUSSION**

1. In first problem we get the proper use of recursion and how to use it.This is the particular problem such as binary search algorithm and how to used it in recursion