



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: DB

Lab Experiment Name: Implement Linear Search Algorithm

Student Details

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Lab Date : 22/06/2022

Submission Date : 28/06/2022

Course Teacher's Name : Farhana Akter Sunny

[For Teachers use only: **Don't Write Anything inside this box**]

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

1. TITLE OF THE LAB EXPERIMENT

Implement Linear Search Algorithm

2. IMPLEMENTATION

Answer to the problem no: 1.1

Problem Statement: Implement a program of binary search with recursion

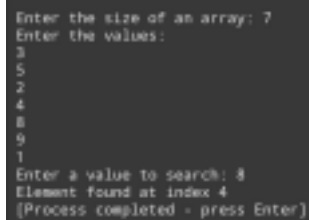
Code:

```
//Shariful islam emon 213902056

#include <stdio.h>
#include <stdlib.h>
void BinarySearch(int arr[],int num,int first,int last)
{
    int mid;
    if(first > last) {
        printf("Number is not found");
    } else
    {
        mid = (first + last)/2;
        if(arr[mid]==num) {
            printf("Element found at index %d ",mid);
            exit(0);
        }
        else if(arr[mid] > num) {
            BinarySearch(arr, num, first, mid-1);
        }
        else {
            BinarySearch(arr, num, mid+1, last);
        }
    }
}
```

```
}  
main()  
{  
    int arr[100],beg,mid,end,i,n,num;  
    printf("Enter the size of an array: ");  
    scanf("%d",&n);  
    printf("Enter the values: \n");  
    for(i=0; i<n; i++)  
    {  
        scanf("%d",&arr[i]);  
    }  
    beg=0;  
    end=n-1;  
    printf("Enter a value to search: ");  
    scanf("%d",&num);  
  
    BinarySearch(arr,num,beg,end);  
}
```

Output:

A screenshot of a terminal window showing the execution of a C program. The user enters '7' for the array size, then enters seven values: 3, 5, 2, 4, 8, 9, and 1. Then, the user enters '8' as the value to search. The program outputs 'Element found at index 4' and a prompt to press Enter.

```
Enter the size of an array: 7  
Enter the values:  
3  
5  
2  
4  
8  
9  
1  
Enter a value to search: 8  
Element found at index 4  
[Process completed - press Enter]
```