

Practical-6(b)

Code:

//program for binary search using function

#include <iostream>

using namespace std;

void binary_search(int n , int s , int arr[]) //defining function

```
{
    int high=n , low=0 , i=0 , mid; //defining variables
    bool flag=false; //defining bool to check expectation
    while(high>low)
    {
        mid=(high+low)/2;
        if(arr[mid]==s) //searching in the mid position
        {
            flag=true;
            break;
        }
        else if(s<arr[mid])
        {
            high=mid;
        } //searching in the lower part of the array
        else
        {
            low=mid+1;
        } //searching in the upper part of the array
    }
}
```

```

if(flag==false)                                //checking for exeption
{
    cout << "The element not found !!";
}
else                                            //printing the final result
{
    cout << "The element found at index::" << mid;
}
}

```

```

int main()
{
    int n , s;
    cout << "Enter the number of elements::";
    cin >> n;
    int arr[n];
    cout << "Enter the elements in ascending order::";
    for(int i=0 ; i<n ; i++)
    {
        cin >> arr[i];        //taking array from the user
    }
    cout << "The array you entered::";
    for(int i=0 ; i<n ; i++)
    {
        cout << arr[i] << " ";    //printing the array
    }
    cout << endl << "Enter the element you want to search::";
    cin >> s;                    //taking the element to search
    binary_search(n , s , arr);  //using the function defined earlier
    return 0;
}

```

Output:-

 Command Prompt

```
Microsoft Windows [Version 10.0.19042.685]
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C:\Users\harsh>cd desktop

C:\Users\harsh\Desktop>Practical.exe
Enter the number of elements::5
Enter the elements in ascending order::1
3
5
7
8
The array you entered::1 3 5 7 8
Enter the element you want to search::7
The element found at index::3
C:\Users\harsh\Desktop>Practical.exe
Enter the number of elements::3
Enter the elements in ascending order::1
3
5
The array you entered::1 3 5
Enter the element you want to search::6
The element not found !!
C:\Users\harsh\Desktop>_
```

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