

Assignment-6

Implement a binary search algorithm in Java that takes a sorted array of integers and a target value, and returns the index of the target if found or -1 if not found.

```
package datastructures.searchingAlgorithms;
```

```
import java.util.Scanner;
```

```
public class BinarySearchDemo {
```

```
    static int binarySearch(int a[],int low,int high, int ele) {  
        while(low<=high) {  
            int mid=(low+high)/2;  
            if(a[mid]==ele)  
                return mid;  
            else {  
                if(a[mid]>ele)  
                    high=mid-1;  
                else  
                    low=mid+1;  
            }  
        }  
        return -1;  
    }  
}
```

```
    public static void main(String[] args) {  
        Scanner sc=new Scanner(System.in);
```

```
System.out.print("Enter number to search : ");
int ele=sc.nextInt();
int a[]= {1,2,3,4,5,6,7,8};
int low=0;
int high=a.length-1;
int result=binarySearch(a,low,high,ele);
if(result!=-1)
    System.out.println("Element found at index
:"+result);
else
    System.out.println("Element not found");
}

}
```