LAB ASSIGNMENT - 1

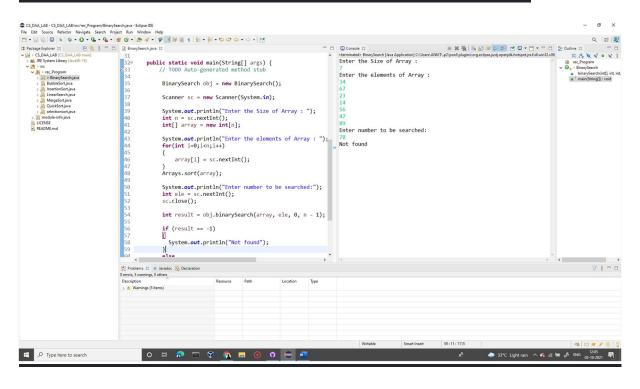
WAP FOR RECURSIVE BINARY & LINEAR SEARCH

BINARY SEARCH CODE:

```
import java.util.Scanner;
import java.util.Arrays;
public class BinarySearch {
     int binarySearch(int array[], int ele, int p, int r)
{
           while (p <= r)</pre>
           {
             int q = p + (r - p) / 2;
             if (array[q] == ele)
               return q;
             if (array[q] < ele)</pre>
               p = q + 1;
             else
              r = q - 1;
           return -1;
     }
    public static void main(String[] args) {
         // TODO Auto-generated method stub
```

```
BinarySearch obj = new BinarySearch();
          Scanner sc = new Scanner(System.in);
          System.out.println("Enter the Size of Array");
          int n = sc.nextInt();
          int[] array = new int[n];
          System.out.println("Enter the elements of
Array");
          for (int i=0;i<n;i++)</pre>
               array[i] = sc.nextInt();
          Arrays.sort(array);
          System.out.println("Enter number to be
searched:");
          int ele = sc.nextInt();
          sc.close();
          int result = obj.binarySearch(array, ele, 0, n -
1);
          if (result == -1)
            System.out.println("Not found");
          else
            System.out.println("number found at position "
+ result + " & the number is " + ele);
    }
}
```

BINARY SEARCH CODE OUTPUT:



LINEAR SEARCH CODE:

```
package rec_Program;
import java.util.Scanner;
public class LinearSearch {
     int linearRecursion(int[] arrNumber, int start, int
last, int k)
        {
           if(last < start)</pre>
              return -1;
           if(arrNumber[start] == k)
              return start;
           return linearRecursion(arrNumber, start + 1,
last, k);
     public static void main(String[] args) {
         // TODO Auto-generated method stub
         {
                LinearSearch obj = new LinearSearch();
                int a, 1, key, array[];
                Scanner sc = new Scanner(System.in);
                System.out.println("enter array length: ");
                1 = sc.nextInt();
                array = new int[1];
                System.out.println("enter " + 1 + "
elements");
                for(a = 0; a < 1; a++)</pre>
                   array[a] = sc.nextInt();
                System.out.println("Enter the key value:
");
                key = sc.nextInt();
                int index = obj.linearRecursion(array, 0, 1
- 1, key);
                if(index != -1)
                {
```

LINEAR SEARCH CODE OUTPUT:

