2.Writing a program in Java implementing the binary search algorithm

```
package OnlinePractice4;

import java.util.Scanner;

class BinarySearch {

	int binarySearch(int arr[], int l, int r, int x)

	{

		while (l <= r) {

			int mid = (l + r) / 2;

			if (arr[mid] == x) {

				return mid;

			} else if (arr[mid] > x) {

				r = mid - 1;

			} else {

			l = mid + 1;

			}

		}

		return -1;

	}

	public static void main(String args[])

	{

		BinarySearch ob = new BinarySearch();

		Scanner sc = new Scanner(System.in);

		System.out.println("Enter size to array : ");

		int n =sc.nextInt();

		System.out.println("Enter array element : ");

		int arr[] = new int[n];

		for(int i = 0 ; i<arr.length ;++i) {
```

```
            arr[i]=sc.nextInt();
        }
        System.out.println("Enter Position : ");
        int x = sc.nextInt();

        int result = ob.binarySearch(arr, 0, n - 1, x);

        if (result == -1)
            System.out.println("Element not present");
        else
            System.out.println("Element found at index " +
result);
    }
}
```

output-

```
Enter size to array :
4
Enter array element :
6
2
5
1
Enter which Element Search :
5
Element found at position 2
```