

```
1 import java.io.*;
2
3 class Client
4 {
5     //Binary Search Method - return the position where the element was found
6     public static int binarySearch(int arr[], int x)
7     {
8         int low = 0;
9         int high = arr.length - 1;
10        int mid = 0;
11
12        while (low <= high)
13        {
14            mid = (low + high) / 2; //Mid
15
16            if (arr[mid] < x)
17            {
18                low = mid + 1;        //Low
19            }
20            else if (arr[mid] > x)
21            {
22                high = mid - 1;        //High
23            }
24            else
25            {
26                return mid;
27            }
28        }
29        return -1;
30    }
31
32    public static void main(String[] args) throws IOException
33    {
34        DataInputStream reader = new DataInputStream(System.in);
35
36        //Start with a list of sorted numbers
37        int[] arr = {1, 3, 5, 7, 9, 10, 11, 12, 14, 16, 18};
38
39        System.out.print("What number would you like to search the list for? ");
40        int x = Integer.parseInt(reader.readLine());
41
42        int pos = binarySearch(arr, x);
43
44        //We didn't find the number
45        if (pos == -1)
46        {
47            System.out.println("I'm sorry. I could not find the number you were looking
48            for.");
49        }
50        else
51        {
52            System.out.print("The value " + x + " was found. It has index ");
53            System.out.print(pos + " in the list.\n");
54        }
55 }
```