

```
1 import java.util.Random;
2 import java.util.Scanner;
3
4 public class sortAndSearch {
5     public static void main(String[] args) {
6         int[] numbers = new int[50];
7         Random rand = new Random();
8
9         for (int i = 0; i < numbers.length; i++) {
10             numbers[i] = rand.nextInt(101);
11         }
12
13         System.out.println("Unordered list:");
14         for (int number : numbers) {
15             System.out.print(number + " ");
16         }
17         System.out.println();
18
19         Scanner scanner = new Scanner(System.in);
20         System.out.print("Enter a number to search for: ");
21         int searchValue = scanner.nextInt();
22
23         int position = linearSearch(numbers, searchValue);
24         if (position != -1) {
25             System.out.println("Number found at position: " + position);
26         } else {
27             System.out.println("Number not found.");
28         }
29
30         bubbleSort(numbers);
31
32         System.out.println("Ordered list:");
33         for (int number : numbers) {
34             System.out.print(number + " ");
35         }
36         System.out.println();
37
38         position = linearSearch(numbers, searchValue);
39         if (position != -1) {
40             System.out.println("Number found at position: " + position);
41         } else {
42             System.out.println("Number not found.");
43         }
44
45         scanner.close();
46     }
47
48     public static int linearSearch(int[] array, int value) {
49         for (int i = 0; i < array.length; i++) {
50             if (array[i] == value) {
51                 return i;
52             }
53         }
54         return -1;
55     }
56
57     public static void bubbleSort(int[] array) {
58         int n = array.length;
59         for (int i = 0; i < n - 1; i++) {
60             for (int j = 0; j < n - i - 1; j++) {
61                 if (array[j] > array[j + 1]) {
62                     // swap array[j+1] and array[j]
63                     int temp = array[j];
64                     array[j] = array[j + 1];
65                     array[j + 1] = temp;
66                 }
67             }
68         }
69     }
70 }
71
```

OUTPUT:

```
<terminated> sortAndSearch [Java Application] C:\Users\DELL\p2\pool\plugins\org.eclipse.jdt\openjdk.hotspot.jre.full.win32.x86_64.22.0.1.v20240426-1149\jre\bin\javaw.exe (20 Aug 2024, 9:07:44 am - 9:07:52 am) [pid: 4144]
Unordered list:
85 11 65 41 82 61 68 7 69 14 7 28 43 17 0 17 60 81 38 34 62 32 9 34 15 13 48 61 34 46 33 2 7 93 56 43 29 39 58 2 91 55 89 43 7 29 47 79 50 15
Enter a number to search for: 33
Number found at position: 30
Ordered list:
0 2 2 7 7 7 9 11 13 14 15 15 17 17 28 29 29 32 33 34 34 38 39 41 43 43 43 46 47 48 50 55 56 58 60 61 61 62 65 68 69 79 81 82 85 89 91 93
Number found at position: 19
```