

```
1 package Project;
2
3 public class LongestIncreasingSubsequent {
4
5     public static int LIS(int[] arr, int i, int n, int prev)
6     {
7         //base case : nothing is remaining
8         if (i == n)
9         {
10             return 0;
11         }
12         //case1: exclude the current element and process the remaining element
13         int excl = LIS(arr, i + 1, n, prev);
14
15         //case2: include the current element if it is greater than the previous element is LIS
16         int incl = 0;
17         if (arr[i] > prev)
18         {
19             incl = 1 + LIS(arr, i + 1, n, arr[i]);
20         }
21
22         //return the maximum of the above two choices
23         return Integer.max(incl, excl);
24     }
25
26     public static void main(String[] args) {
27         int[] arr = {1, 4, 9, 20, 14, 43, 65, 13, 34, 22, 55, 12};
28         System.out.println("The Lenght of the LIS is " + LIS(arr, 0, arr.length, Integer.MIN_VALUE));
29     }
30 }
31
32 }
33
```

<terminated> LongestIncreasingSubsequent [J...
The Lenght of the LIS is 6