

## Sourcecode:

```
lis.java x
1 package com.simplilearn.demo;
2 class lis {
3     static int max_ref;
4
5     static int _lis(int arr[], int n)
6     {
7
8         if (n == 1)
9             return 1;
10
11         int res, max_ending = 1;
12         for (int i = 1; i < n; i++) {
13             res = _lis(arr, i);
14             if (arr[i - 1] < arr[n - 1] && res + 1 > max_ending)
15                 max_ending = res + 1;
16         }
17
18         if (max_ref < max_ending)
19             max_ref = max_ending;
20         return max_ending;
21     }
22
23     static int lis(int arr[], int n)
24     {
25
26         max_ref = 1;
27         _lis(arr, n);
28         return max_ref;
29     }
30
31     public static void main(String args[])
32     {
33         int arr[] = { 10, 22, 9, 33, 21, 50, 41, 60, 80 };
34         int n = arr.length;
35         System.out.println("Length of lis is :"+ lis(arr, n) );
36     }
37 }
38
39
40
41
42
```

## Outputs:

1. When the array is{10,22,9,33,21,50,41,60,80}:

```
Problems @ Javadoc Declaration Console x
<terminated> lis [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (01-Apr-2022, 9:53:49 am - 9:53:55 am) [pid: 12092]
Length of lis is :6
Writable Smart Insert 42 : 1 : 710
```

2. When the array is {60,18,29,43,11,70,51,10,90}:

```
Problems @ Javadoc Declaration Console x
<terminated> lis [Java Application] C:\Program Files\Java\jdk-15.0.2\bin\javaw.exe (01-Apr-2022, 9:57:43 am - 9:57:47 am) [pid: 16240]
Length of lis is :5
```