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Session-4

Project: Longest increasing subsequence

Project objective:As developer,Write program to find the longest increasing sunsequence.

Background of the problem statement:

As developer,Write a java code to find the longest increasing sunsequence froma list of random numbers.

Sourcecode:

```
package com.simplilearn.session7;

public class LIScode {
    static int lis(int arr[], int n)
    {
        int lis[] = new int[n];
        int i, j, max = 0;

        for (i = 0; i < n; i++)
            lis[i] = 1;

        for (i = 1; i < n; i++)
            for (j = 0; j < i; j++)
                if (arr[i] > arr[j] && lis[i] < lis[j] + 1)
                    lis[i] = lis[j] + 1;
        for (i = 0; i < n; i++)
            if (max < lis[i])
                max = lis[i];

        return max;
    }

    public static void main(String args[])
    {
        int arr[] = { 10, 22, 9, 33, 21, 50, 41, 60 };
        int n = arr.length;
        System.out.println("Length of lis is " + lis(arr, n) + "\n");
    }
}
```

```
1 package com.simplilearn.session7;
2
3 public class LIScode {
4     static int lis(int arr[], int n)
5     {
6         int lis[] = new int[n];
7         int i, j, max = 0;
8
9         for (i = 0; i < n; i++)
10             lis[i] = 1;
11
12         for (i = 1; i < n; i++)
13             for (j = 0; j < i; j++)
14                 if (arr[i] > arr[j] && lis[i] < lis[j] + 1)
15                     lis[i] = lis[j] + 1;
16
17         for (i = 0; i < n; i++)
18             if (max < lis[i])
19                 max = lis[i];
20
21         return max;
22     }
23 }
```

```
9         for (i = 0; i < n; i++)
10             lis[i] = 1;
11
12         for (i = 1; i < n; i++)
13             for (j = 0; j < i; j++)
14                 if (arr[i] > arr[j] && lis[i] < lis[j] + 1)
15                     lis[i] = lis[j] + 1;
16
17         for (i = 0; i < n; i++)
18             if (max < lis[i])
19                 max = lis[i];
20
21         return max;
22     }
23
24     public static void main(String args[])
25     {
26         int arr[] = { 10, 22, 9, 33, 21, 50, 41, 60 };
27         int n = arr.length;
28         System.out.println("Length of lis is " + lis(arr, n) + "\n");
29     }
30 }
```

Output:

```
<terminated> LIScode [Java Application] C:\Users\My PC\p2\pool\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_17.0.2.v20220201-1208\jre\bin\javaw.exe (Mar 30, 2022, 7:12:07 PM - 7:12:11 PM)
Length of lis is 5
```