```cpp
 1: /*--------Counting Sort( O(n + k), where n is the---------
 2: -----no. of elements & k is the range of input values---*/
 3:
 4: #include<iostream>
 5: using namespace std;
 6:
 7: void inputArray(int arr[], int n)
 8: {
 9:     cout << "Enter the elements of your array: \n";
10:     for(int i = 0; i < n; i++)
11:     {
12:         cin >> arr[i];
13:     }
14: }
15:
16: void printArray(int arr[], int n)
17: {
18:     for(int i = 0; i < n; i++)
19:     {
20:         cout << arr[i] << " ";
21:     }
22: }
23:
24: void countingSort(int arr[], int n)
25: {
26:     int range = arr[0];
27:     for(int i = 1; i < n; i++)
28:     {
29:         range = max(range, arr[i]);
30:     }
31:
32:     int countArr[10] = {0};
33:     for(int i = 0; i < n; i++)
34:     {
35:         countArr[arr[i]]++;
36:     }
37:
38:     for(int i = 1; i <= range; i++)
39:     {
40:         countArr[i] += countArr[i - 1];
41:     }
42:
43:     int outputArr[n];
44:     for(int i = n - 1; i >= 0; i--)
45:     {
46:         outputArr[--countArr[arr[i]]] = arr[i];
```

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47:         }
48:
49:         for(int i = 0; i < n; i++)
50:         {
51:             arr[i] = outputArr[i];
52:         }
53: }
54:
55:
56:
57: int main()
58: {
59:     int n;
60:     cout << "Enter the length: \n";
61:     cin >> n;
62:
63:     int arr[n];
64:     inputArray(arr, n);
65:
66:     countingSort(arr, n);
67:
68:     cout << "Sorted array is: \n";
69:     printArray(arr, n);
70:
71:     return 0;
72: }
```