

# Rajalakshmi Engineering College

Name: Divya darshini S  
Email: 241501051@rajalakshmi.edu.in  
Roll no: 241501051  
Phone: 6383045036  
Branch: REC  
Department: I AIML FA  
Batch: 2028  
Degree: B.E - AI & ML

Scan to verify results



## NeoColab\_REC\_CS23231\_DATA STRUCTURES

### REC\_DS using C\_Week 6\_COD\_Question 2

Attempt : 1  
Total Mark : 10  
Marks Obtained : 10

#### Section 1 : Coding

##### 1. Problem Statement

Nandhini asked her students to arrange a set of numbers in ascending order. She asked the students to arrange the elements using insertion sort, which involves taking each element and placing it in its appropriate position within the sorted portion of the array.

Assist them in the task.

##### ***Input Format***

The first line of input consists of the value of n, representing the number of array elements.

The second line consists of n elements, separated by a space.

##### ***Output Format***

The output prints the sorted array, separated by a space.

Refer to the sample output for formatting specifications.

### **Sample Test Case**

Input: 5

67 28 92 37 59

Output: 28 37 59 67 92

### **Answer**

```
#include <stdio.h>
```

```
void insertionSort(int arr[], int n) {
```

```
    int i, key, j;
```

```
    for (i = 1; i < n; i++) {
```

```
        key = arr[i];
```

```
        j = i - 1;
```

```
        while (j >= 0 && arr[j] > key) {
```

```
            arr[j + 1] = arr[j];
```

```
            j--;
```

```
        }  
        arr[j + 1] = key;
```

```
    }
```

```
}
```

```
void printArray(int arr[], int n) {
```

```
    for (int i = 0; i < n; i++) {
```

```
        printf("%d ", arr[i]);
```

```
    }
```

```
}
```

```
int main() {  
    int n;  
    scanf("%d", &n);  
    int arr[n];  
    for (int i = 0; i < n; i++) {  
        scanf("%d", &arr[i]);  
    }  
  
    insertionSort(arr, n);  
    printArray(arr, n);  
    return 0;  
}
```

**Status :** Correct

**Marks : 10/10**