Rajalakshmi Engineering College

Name: Ganeshkumar A P
Email: 240801079@rajalakshmi.edu.in
Roll no: 2116240801079
Phone: 9345144827
Branch: REC
Department: I ECE FA
Batch: 2028
Degree: B.E - ECE

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) {
    for(int i = 1; i < n; i++) {
        int key = arr[i];
        int j = i - 1;

        // Shift elements that are greater than key to the right
        while(j >= 0 && arr[j] > key) {
            arr[j + 1] = arr[j];
            j--;
        }

        arr[j + 1] = key;
    }
}

// Function to print the array
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***