

ASSIGNMENT-DAY-5

Question 1

1. Write the function for insertion sort.

```
// C++ program for insertion sort

#include <bits/stdc++.h>

using namespace std;

/* Function to sort an array using insertion sort*/
void insertionSort(int arr[], int n)
{
    int i, key, j;
    for (i = 1; i < n; i++)
    {
        key = arr[i];
        j = i - 1;

        /* Move elements of arr[0..i-1], that are
           greater than key, to one position ahead
           of their current position */
        while (j >= 0 && arr[j] > key)
        {
            arr[j + 1] = arr[j];
            j = j - 1;
        }
        arr[j + 1] = key;
    }

    // A utility function to print an array of size n
    void printArray(int arr[], int n)
    {
        int i;
        for (i = 0; i < n; i++)
            cout << arr[i] << " ";
        cout << endl;
    }

    /* Driver code */
}
```

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```
int main()
{
    int arr[] = { 12, 11, 13, 5, 6 };

    int n = sizeof(arr) / sizeof(arr[0]);

    insertionSort(arr, n);

    printArray(arr, n);

    return 0;
}
```