**DS Algorithm Essentials | December 2020**

**Assignment Day 5 | 29th December 2020**

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**Question 1**

1. **Write the function for insertion sort.**

**Code:**

**#include<stdio.h>**

**void insertionSort(int a[],int number) {**

**int i,j,temp;**

**for(i=1;i<=number-1;i++)**

**{**

**for(j=i;j>0 && a[j-1]>a[j];j--)**

**{**

**temp=a[j];**

**a[j]=a[j-1];**

**a[j-1]=temp;**

**}**

**}**

**}**

**int main()**

**{**

**int a[100], number, i;**

**printf("\n Please Enter the total Number of Elements : ");**

**scanf("%d",&number);**

**printf("\n Please Enter the Array Elements : ");**

**for(i=0;i<number;i++)**

**scanf("%d",&a[i]);**

**insertionSort(a,number);**

**printf("\n Insertion Sort Result : ");**

**for(i=0;i<number;i++) {**

**printf("%d \t",a[i]);**

**}**

**printf("\n");**

**return 0;**

**}**