**ASSIGNMENT-3**

3.1. Write a C program to sort an array of N elements using the Insertion sort algorithm.

**CODE-**

#include<stdio.h>

void insertion\_sort(int a[], int size)

{

int i,j,temp;

for(i=1;i<size;i++)

{

temp = a[i];

j=i-1;

while(j>=0 && a[j]>temp)

{

a[j+1]=a[j];

j--;

}

a[j+1]=temp;

}

}

int main()

{

int a[10],size,i;

printf("Enter the size of array-");

scanf("%d",&size);

if(size>10)

{

printf("Array overflows");

}

else

{

printf("The the size of array-%d",size);

printf("\nEnter the elements of the array-");

for(i=0; i<size; i++)

{

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

}

printf("\nThe elements of the array\n");

for(i=0;i<size;i++)

{

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

}

insertion\_sort(a,size);

printf("\nThe elements of the array\n");

for(i=0;i<size;i++)

{

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

}

}

return 0;

}

**OUTPUT-**

