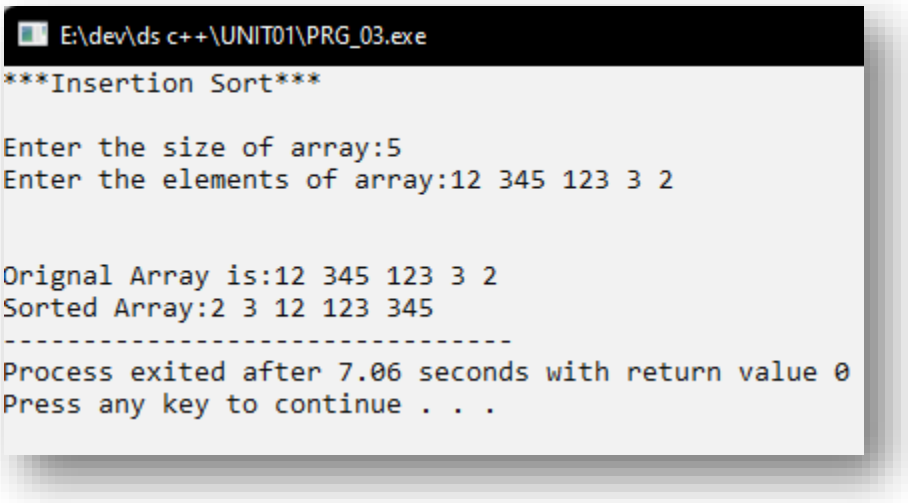
```
/*
Name: Harsh Singh
Roll NO:1262
Unit:1
Program: Insertion Sort
*/
#include<iostream>
using namespace std;
int main()
{
	int n,i;
	int A[10];
	int tmp,loc;
	cout<<"***Insertion Sort***"<<endl<<endl;
	cout<<"Enter the size of array:";
	cin>>n;
	cout<<"Enter the elements of array:";
	for(i=0;i<n;i++)
	{
		cin>>A[i];
	}
	cout<<endl<<endl;
	cout<<"Orignal Array is:";
	for(i=0;i<n;i++)
	{
		cout<<A[i]<<" ";
	}
	//Insertion Sort
	for (i=1;i<n;i++)//iteration loop
	{
		tmp=A[i];
		loc=i-1;
		while(tmp<A[loc] && loc>=0){
			A[loc+1]=A[loc];
			loc=loc-1;
		}//end of while
		//At this stage a space is available for tmp
		A[loc+1]=tmp;

	}//end of for i loop
	cout<<endl<<"Sorted Array:";
	for (i=0;i<n;i++){
		cout<<A[i]<<" ";
	}

}
```

Output:




```
/*
Name: Harsh Singh
Roll NO:1262
Unit:1
Program: Shell Sort
*/
#include<iostream>
using namespace std;
int main()
{
	int n,i;
	int A[10];
	int tmp,j,gap;
	cout<<"***Shell Sort***\n\n";
	cout<<"Enter the number of elements in the array:";
	cin>>n;
	cout<<"Enter the elements"<<endl;
	for(i=0;i<n;i++){
		cin>>A[i];
	}
	cout<<endl<<endl;
	cout<<"Orignal Array: ";
	for(i=0;i<n;i++){
		cout<<A[i]<<" ";
	}
	//Shell sort
	for(gap=n/2;gap>0;gap=gap/2)//Iterations for increment sequence
	{
		for(i=gap;i<n;i++){
			tmp=A[i];
```

```
                        for (j=i;j>=gap && tmp<A[j-gap];j-=gap)
                        {
                                A[j]=A[j-gap];
                        }//end of j loop
                        A[j]=tmp;
                }//end of for i loop
        }//end of loop
        cout<<endl<<endl;
        cout<<"Sorted Array: ";
        for(i=0;i<n;i++){
                cout<<A[i]<<" ";
        }
}//end of main
```

Output: