

## Quick Sort:

```
#include <iostream>
int Partition(int arr[],int p, int r)
{
    int temp = 0;
    int X = arr[r];
    int i = p-1;
    for(int j=p;j<=r-1;j++)
    {
        if(arr[j]<X)
        {
            i++;
            temp = arr[i];
            arr[i] = arr[j];
            arr[j] = temp;
        }
    }
    temp = arr[i+1];
    arr[i+1] = X;
    arr[r] = temp;
    return i+1;
}

void QuickSort(int arr[],int p,int r)
{
    if(p < r)
    {
        int q = Partition(arr,p,r);
        QuickSort(arr,p,q-1);
        QuickSort(arr,q+1,r);
    }
}

int main()
{
    int arr[] = {13,19,9,5,12,8,7,4,21,2,6,11};
    int arrSize = sizeof(arr)/sizeof(arr[0]);
    QuickSort(arr,0,arrSize-1);
    for(int i=0;i<arrSize;i++)
        cout << arr[i] << " ";
}
```

## Shell Sort:

```
#include <iostream>
int main()
{
    int a[10]={0};
    cout << "Enter 10 elements: " << endl;
    for(int i=0;i<10;i++)
        cin >> a[i];
    int interval = 4,j,temp,z=4;
    while(interval > 0)
    {
        for(int m=0;m<10;m++)
        {
            for(int i=0+interval+m;i<10;i=i+interval)
            {
                j=i-interval;
                temp=a[i];
                while( j>=0 && a[j]>temp )
                {
                    a[j+interval]=a[j];
                    j=j-interval;
                }
                a[j+interval] = temp;
            }
        }
        interval = interval / 2;
    }
    for(int i=1;i<10;i++)
    {
        j=i-1;
        temp=a[i];
        while( j>=0 && a[j]>temp )
        {
            a[j+1]=a[j];
            j--;
        }
        a[j+1] = temp;
    }
    cout << "Sorted: " << endl;
    for(int i=0;i<10;i++)
    {
        cout << a[i] << " "; } }
```

