Merge Sort:

#include <iostream>

#include <algorithm>

using namespace std;

void merge(int arr[], int l, int m, int h){

int n1=m-l+1, n2=h-m;

int left[n1],right[n2];

for(int i=0;i<n1;i++)

left[i]=arr[i+l];

for(int j=0;j<n2;j++)

right[j]=arr[m+1+j];

int i=0,j=0,k=l;

while(i<n1 && j<n2){

if(left[i]<=right[j])

arr[k++]=left[i++];

else

arr[k++]=right[j++];

}

while(i<n1)

arr[k++]=left[i++];

while(j<n2)

arr[k++]=right[j++];

}

void mergeSort(int arr[],int l,int r){

if(r>l){

int m=l+(r-l)/2;

mergeSort(arr,l,m);

mergeSort(arr,m+1,r);

merge(arr,l,m,r);

}

}

int main() {

int a[]={10,5,30,15,7};

int l=0,r=4;

mergeSort(a,l,r);

for(int x:a)

cout<<x<<" ";

}