#include<stdio.h>

#define MAX 50

void mergeSort(int arr[],int low,int mid,int high);

void partition(int arr[],int low,int high);

int main(){

    int merge[MAX],i,n;

    printf("Enter the total number of elements: ");

    scanf("%d",&n);

    printf("Enter the elements which to be sort: ");

    for(i=0;i<n;i++){

         scanf("%d",&merge[i]);

    }

    partition(merge,0,n-1);

    printf("After merge sorting elements are: ");

    for(i=0;i<n;i++){

         printf("%d ",merge[i]);

    }

   return 0;

}

void partition(int arr[],int low,int high){

    int mid;

    if(low<high){

         mid=(low+high)/2;

         partition(arr,low,mid);

         partition(arr,mid+1,high);

         mergeSort(arr,low,mid,high);

    }

}

void mergeSort(int arr[],int low,int mid,int high){

    int i,m,k,l,temp[MAX];

    l=low;

    i=low;

    m=mid+1;

    while((l<=mid)&&(m<=high)){

         if(arr[l]<=arr[m]){

             temp[i]=arr[l];

             l++;

         }

         else{

             temp[i]=arr[m];

             m++;

         }

         i++;

    }

    if(l>mid){

         for(k=m;k<=high;k++){

             temp[i]=arr[k];

             i++;

         }

    }

    else{

         for(k=l;k<=mid;k++){

             temp[i]=arr[k];

             i++;

         }

    }

    for(k=low;k<=high;k++){

         arr[k]=temp[k];

    }

}

**Sample output:**

Enter the total number of elements: 5

Enter the elements which to be sort: 2 5 0 9 1

After merge sorting elements are: 0 1 2 5 9