//Merge-sort

#include<stdio.h>

void simplemerge(int a[],int lb,int endoffirst,int ub)

{

int i=lb;

int asort[100];

int k=0,t=0,z;

int j=endoffirst+1;

while(i<=endoffirst && j<=ub)

{

if(a[i]<a[j])

{

asort[k++]=a[i++];

}

else

{

asort[k++]=a[j++];

}

}

while(i<=endoffirst)

{

asort[k++]=a[i++];

}

while(j<=ub)

{

asort[k++]=a[j++];

}

for( z=lb;z<=ub;z++ )

{

a[z]=asort[t++];

}

}

int mergesort(int a[],int lb,int ub)

{

int mid;

if(lb==ub)

{

return a[lb];

}

else

{

mid=(ub+lb)/2;

mergesort(a,lb,mid);

mergesort(a,mid+1,ub);

simplemerge(a,lb,mid,ub);

}

}

int main()

{

int size,i;

int a[100];

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

scanf("%d",&size);

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

{

printf("Enter element No. %d :",i+1);

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

}

mergesort(a,0,size-1);

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

{

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

}

return 0;

}

Output:

