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23UAI309

#include<stdio.h>

void merge(int arr[],int left,int mid,int right)

{

int i,j,k;

int n1=mid-left+1;

int n2=right-mid;

int L[n1],R[n2];

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

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

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

R[j]=arr[mid+1+j];

i=0;

j=0;

k=left;

while(i<n1 && j<n2)

{

if(L[i]<=R[j])

{

arr[k]=L[i];

i++;

} else{

arr[k]=R[j];

j++;

}

k++;

}

while(i<n1){

arr[k]=L[i];

i++;

k++;

}

while(j<n2)

{

arr[k]=R[j];

j++;

k++;

}

}

void mergesort(int arr[],int left,int right)

{

if(left<right){

int mid=left+(right-left)/2;

mergesort(arr,left,mid);

mergesort(arr,mid+1,right);

merge(arr,left,mid,right);

}

}

void printArray(int arr[],int size)

{

int i;

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

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

printf("\n");

}

int main()

{

int arr[]={11,99,55,75,3,87};

int arr\_size=sizeof(arr)/sizeof(arr[0]);

printf("Given array is \n");

printArray(arr,arr\_size);

mergesort(arr,0,arr\_size-1);

printf("\nsorted array is \n");

printArray(arr,arr\_size);

return 0;

}

OUTPUT

