**Merge Sort**

#include<iostream>

using namespace std;

void marge(int arr[], int l, int K,int m, int r)

{

int i, j, k;

int n1= m-l+1;

int n2= r-m;

int L[n1],R[n2];

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

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

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

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

i=0;

j=0;

k=l;

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 l, int r)

{

if(l<r)

{

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

mergeSort(arr, l, m);

mergeSort(arr,m+1, r);

merge (arr, l, m, r);

}

}

void printArray(int A[], int size)

{

int i;

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

cout<<A[i]<<" ";

cout<<endl;

}

int main()

{

int n,i;

cout<<"Enter size of array: ";

cin>>n;

int arr[n];

cout<"Enter Array Element: ";

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

{

cin>>arr[i];

}

mergeSort (arr, 0, n-1);

cout<<"\nSorted array is \n";

printArray(arr, n);

return 0;

}