//Quick Sort

#include<iostream>

using namespace std;

int Partition(int a[], int p, int q){

//p and q are left and right.

int i, j, X;

//Left pivot Point

X = a[p];

i = p;

for(j=p+1; j<=q; j++){

if(a[j]<X){

i=i+1;

int temp = a[i];

a[i] = a[j];

a[j] = temp;

}

}

int temp = a[i];

a[i] = a[p];

a[p] = temp;

return i;

}

int Quick\_Sort(int a[], int p, int q){

if(p<q){

int m=Partition(a, p, q);

Quick\_Sort(a, p, m-1);

Quick\_Sort(a, m+1, q);

}

}

int main(){

int n;

cout<<"Enter the numer of elements: ";

cin>>n;

int a[n];

int i;

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

cout<<"Enter the element: ";

cin>>a[i];

}

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

Quick\_Sort(a, 0, n-1);

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

cout<<a[i]<<" ";

}

cout<<endl;

return 0;

}

