#include <iostream>

using namespace std;

void Merge(int \*a, int small, int big, int half)

{

int i, j, k, temp[big-small+1];

i = small;

k = 0;

j = half + 1;

while (i <= half && j <= big)

{

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

{

temp[k] = a[i];

k++;

i++;

}

else

{

temp[k] = a[j];

k++;

j++;

}

}

while (i <= half)

{

temp[k] = a[i];

k++;

i++;

}

while (j <= big)

{

temp[k] = a[j];

k++;

j++;

}

for (i = small; i <= big; i++)

{

a[i] = temp[i-small];

}

}

void MergeSort(int \*a, int small, int big)

{

int half;

if (small < big)

{

half=(small+big)/2;

MergeSort(a, small, half);

MergeSort(a, half+1, big);

Merge(a, small, big, half);

}

}

int main()

{

int n, i;

cout<<"\nEnter the number of data element to be sorted: ";

cin>>n;

int arr[n];

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

{

cout<<"Enter element "<<i+1<<": ";

cin>>arr[i];

}

MergeSort(arr, 0, n-1);

cout<<"\nSorted Data ";

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

cout<<"->"<<arr[i];

return 0;

}