Merge Sort

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#include<iostream.h>
#include<conio.h>
void mergesort(int a[], int, int);
void mergearray(int a[], int, int, int);
//can also be done without having a[] as a parameter of the functions as it is a global array
int a[20], n;

main() {
    int i, low, high;
    cout<<"Enter the range: ";
    cin>>n;
    cout<<"Enter the element:\n";
    for(i = 0; i < n; i++)
    cin>>a[i];

    mergesort(a, 0, n - 1);
    cout<<"The sorted arraay is:\n";
    for (i = 0; i < n; i++)
    cout<<a[i]<<" ";
}

void mergesort(int a[], int low, int high) {
    int mid;
    if (low < high) {
        mid = (low + high) / 2;
        mergesort(a, low, mid);
        mergesort(a, mid + 1, high);
        mergearray(a, low, mid, high);
    }
}

void mergearray(int a[], int low, int mid, int high) {
    int c[15], i, j, k;
    i = k = low;
    j = mid + 1;

    while ((i <= mid) && (j <= high)) {
        if (a[i] < a[j])
        c[k++] = a[i++];
```

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        else
        c[k++] = a[j++];
    }

    while (i <= mid)
    c[k++] = a[i++];

    while (j <= high)
    c[k++] = a[j++];

    for (i = low; i <= high; i++) {
        a[i] = c[i];
    }
}
```
