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// merge to given sorted arrays.cpp : This file contains the 'main'  
function. Program execution begins and ends there.  
//
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#include <iostream>  
using namespace std;  
void merge(int arr[], int l, int r, int m)  
{  
    int i, j, k;  
    int n1 = m - l + 1;  
    int n2 = r - m;  
    int* left = new int[n1]; int* right = new int[n2];  
    for (int i = 0; i < n1; i++)  
        left[i] = arr[l + i];  
  
    for (int j = 0; j < n2; j++)  
        right[j] = arr[m + j + 1];  
    i = j = 0;  
    k = l;  
    while (i < n1 && j < n2)  
    {  
        if (left[i] <= right[j]) {  
            arr[k] = left[i];  
            i++;  
        }  
        else {  
            arr[k] = right[j];  
            j++;  
        }  
        k++;  
    }  
  
    while (i < n1)  
    {  
        arr[k] = left[i];  
        i++;  
        k++;  
    }  
  
    while (j < n2)  
    {  
        arr[k] = right[j];  
        j++;  
        k++;  
    }  
}  
  
void mergeSort(int arr[], int l, int r)  
{  
    if (l < r)
```

```

    {
        int mid = (l + r) / 2;
        mergeSort(arr, l, r);
        mergeSort(arr, mid+1, r);
        merge(arr, l, r, mid);
    }
}
int main()
{
    int arr[10] = { 10,50,40,2,5,80};
    int size = sizeof(arr) / sizeof(arr[0]);
    cout << "before merge sort....." << endl;
    for (int i = 0; i < size; i++)
        cout << arr[i] << " ";

    mergeSort(arr, 0, size - 1);
    cout << "after merge sort....." << endl;
    for (int i = 0; i < size; i++)
        cout << arr[i] << " ";
}

```