/\* Java program for Merge Sort \*/  
class MergeSort  
{  
   
 void merge(int arr[], int l, int m, int r)  
 {  
   
 int n1 = m - l + 1;  
 int n2 = r - m;  
  
 /\* Create temp arrays \*/  
 int L[] = new int [n1];  
 int R[] = new int [n2];  
  
 /\*Copy data to temp arrays\*/  
 for (int i=0; i<n1; ++i)  
 L[i] = arr[l + i];  
 for (int j=0; j<n2; ++j)  
 R[j] = arr[m + 1+ j];  
  
  
  
 int i = 0, j = 0;  
  
 int 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 sort(int arr[], int l, int r)  
 {  
 if (l < r)  
 {  
   
 int m = (l+r)/2;  
  
   
 sort(arr, l, m);  
 sort(arr , m+1, r);  
  
   
 merge(arr, l, m, r);  
 }  
 }  
  
 static void printArray(int arr[])  
 {  
 int n = arr.length;  
 for (int i=0; i<n; ++i)  
 System.*out.print(arr[i] + " ");  
 System.out.println();  
 }  
  
 // Driver method  
 public static void main(String args[])  
 {  
 int arr[] = {12, 11, 13, 5, 6, 7};  
  
 System.out.println("Given Array");  
 printArray(arr);  
  
 MergeSort ob = new MergeSort();  
 ob.sort(arr, 0, arr.length-1);  
  
 System.out.println("\nSorted array");  
 printArray(arr);  
 }  
}*