```
//Sorting of elements using Divide and Conquer algorithm
/*Output:
5 6 7 11 12 13*/
public class MergeSort
{
        void merge(int arr[], int l, int m, int r)
        {
                int n1 = m - l + 1;
                int n2 = r - m;
                int L[] = new int [n1];
                int R[] = new int [n2];
                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();
        }
        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);
        }
}
```