```java
package in.neuron.main;

public class MergeSort {
     void merge(int arr[], int p, int q, int r) {


            int n1 = q - p + 1;
            int n2 = r - q;

            int L[] = new int[n1];
            int M[] = new int[n2];

            for (int i = 0; i < n1; i++)
              L[i] = arr[p + i];
            for (int j = 0; j < n2; j++)
              M[j] = arr[q + 1 + j];


            int i, j, k;
            i = 0;
            j = 0;
            k = p;
            while (i < n1 && j < n2) {
              if (L[i] <= M[j]) {
                arr[k] = L[i];
                i++;
              } else {
                arr[k] = M[j];
                j++;
              }
              k++;
            }

            while (i < n1) {
              arr[k] = L[i];
              i++;
              k++;
            }

            while (j < n2) {
              arr[k] = M[j];
              j++;
              k++;
            }
          }

          void mergeSort(int arr[], int l, int r) {
            if (l < r) {

              int m = (l + r) / 2;

              mergeSort(arr, l, m);
              mergeSort(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)
```

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       System.out.print(arr[i] + " ");
      System.out.println();
     }

     public static void main(String args[]) {
      int arr[] = {8,6,7,9,2,4,3,1};

      MergeSort ob = new MergeSort();
      ob.mergeSort(arr, 0, arr.length - 1);

      System.out.println("Sorted array:");
      printArray(arr);


  }

}

```