**public** **class** DivideandConquer {

**private** **static** **int**[] *inputsequence* = {4,2,1,3,7,6,5,8};

**public** **void** mergesort(**int**[] inputsequence, **int** p, **int** r) {

**if**(p<r)

{

**int** q = (p+r)/2;

System.***out***.println("Q is "+q);

mergesort(inputsequence, p, q);

mergesort(inputsequence, q+1,r);

merge(inputsequence,p,q,r);

}

}

**public** **void** merge(**int**[] inputsequence,**int** p, **int** q, **int** r)

{

**int** n1 = q-p+1;

**int** n2 = r-q;

**int** i,j;

**int**[] L1 = **new** **int**[n1];

**int**[] L2 = **new** **int**[n2];

**for**(**int** k=0;k<=n1;k++)

{

L1[k]= inputsequence[p+k-1];

}

**for**(**int** m=0;m<=n2;m++)

{

L2[m]= inputsequence[q+m];

}

L1[n1+1]= 100;

L2[n2+1]= 100;

i=1;

j=1;

**for**(**int** s=p;s<=r;s++)

{

**if**(L1[i]<=L2[j])

{

inputsequence[s]=L1[i];

i=i+1;

}

**else**

{

inputsequence[s]=L2[j];

j=j+1;

}

}

}

**public** **static** **void** main(String[] args) {

// **TODO** Auto-generated method stub

**int** p,q,r;

p = 0;

r = *inputsequence*.length-1;

q = (r-p)/2;

System.***out***.println("p is : "+p+" q is : "+q+" r is :"+r);

DivideandConquer dc = **new** DivideandConquer();

dc.mergesort(*inputsequence*,p,r);

System.***out***.println(*inputsequence*);

}

}