```
mergesort( A, lb, ub)
{ if( lb< ub)
   {  mid= (lb+ub) / 2;
   mergesort( A, lb, mid);
   mergesort(A, mid+1, ub);
   merge( A, lb, mid, ub);
   }
merge( A, lb, mid, ub)
{   i = lb;
   j = mid+1;
   k = lb;
while( i<=mid  && j<=ub)
{  if(a[i] <= a[j]
   {   b[k]= a[i];
       i++;
   }
   else
   {   b[k] = a[j];
       j++;
   }
}
   if( i > mid)
   {   while( j <=ub)
       { b[k]= a[j]; j++; k++; }
   else{  while( i <= mid)
       {  b[k]= a[i]; i++; k++;}
       }
for( k=lb; k<=ub; k++)
   { a[k] =b[k];
   }
   }
```