
Algorithm 1: Merge

```
1 def merge(t, i, j, k):  
2    $\ell \leftarrow i$   
3    $r \leftarrow j$   
4   merged  $\leftarrow []$   
5   for  $m \leftarrow i$  to  $k - 1$  do  
6     if  $r = k$  or ( $\ell < j$  and  $t[\ell] \leq t[r]$ ) then  
7        $\textit{merged} \leftarrow \textit{merged} + t[\ell]$   
8        $\ell \leftarrow \ell + 1$   
9     else  
10       $\textit{merged} \leftarrow \textit{merged} + t[r]$   
11       $r \leftarrow r + 1$   
12    $t[i..k - 1] \leftarrow \textit{merged}$ 
```
