

input : A bitmap Im of size $w \times l$
output : A partition of the bitmap
parameter: A parameter for the algorithm
special treatment of the first line;
for $i \leftarrow 2$ **to** l **do**
 special treatment of the first element of line i ;
 for $j \leftarrow 2$ **to** w **do**
 $left \leftarrow \text{FindCompress}(Im[i, j - 1]);$
 $up \leftarrow \text{FindCompress}(Im[i - 1,]);$
 $this \leftarrow \text{FindCompress}(Im[i, j]);$
 if *left compatible with this* **then** // $O(left, this) == 1$
 if $left < this$ **then** $\text{Union}(left, this);$
 ;
 else $\text{Union}(this, left);$
 ;
 end
 if *up compatible with this* **then** // $O(up, this) == 1$
 if $up < this$ **then** $\text{Union}(up, this);$
 ;
 // this is put under up to keep tree as flat as possible
 else $\text{Union}(this, up);$
 ;
 // this linked to up
 end
 end
 foreach *element e of the line i* **do** $\text{FindCompress}(p);$
end

Algorithm 1: disjoint decomposition

1 testing