
Algorithm 1 Calculation of crowd layout

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1: for  $i = 0; i < height(A); i++$  do
2:   for  $j = 0; j < width(A); j++$  do
3:      $max = -Infinity;$ 
4:     for all  $k$  do
5:        $A[i][j] = k;$ 
6:        $f = f(A);$ 
7:       if  $f > max$  then
8:          $max = f;$ 
9:          $maxK = k;$ 
10:      end if
11:    end for;
12:     $A[i][j] = maxK;$ 
13:  end for
14: end for

```
