
Algorithm 1: Feasibility Check

Input: $M_{(p,i)}$: of modules in panel p at current i ;
 P : of panels; S : of strings;
 Q_M : minimum of modules per-string;
Output: Feasibility Result;
Conf: Configuration Result;

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1 for each  $k$  ( $1 \leq k \leq S - 1$ ), Panel  $p$  do
2   | Loss[ $p, k$ ] =  $M_{(p, S-k)} - M_{(p, S-(k+1))}$ 
3 end
4 ( $p_0^*, p_1^*, \dots, p_{P-1}^*$ ) sorted by lexicographical permutation in terms of
   Loss;
5 for each  $j$  ( $S \geq j \geq 2$ ) do
6   | for each  $p^*$  do
7     | if  $\sum M_{(p^*, j)} \geq Q_M$  then
8       | while  $M_{(p_n^*, j)} == 0, (0 \leq n \leq P - 1)$  do
9         |   release Panel  $p_n^*$  in  $p^*$ 
10      | end
11      | if  $\sum M_{(p^*, j)} == Q_M$  then
12        |   Conf =  $M_{(p^*, j)}$ 
13      | else
14        |   Do Panel Swap
15      | end
16    | else
17      |   Feasibility = No
18    | end
19  | end
20 end
21  $p_x^*$  if  $\sum M_{(p^*, 1)} \geq Q_M$  then
22   | Feasibility = Yes;
23   | Conf = select +  $M_{(p^*, 1)}$ 
24 else
25   | Feasibility = No
26 end
```

Algorithm 2: Panel Swap

Input: $M_{(p^*,j)}$, Q_M
Output: Conf

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1 Over =  $\sum M_{(p^*,j)}$  -  $Q_M$  ;
2 if  $M_{(p_y^*,j)} == Over$ , for each Panel  $y$  in  $p^*$  then
3   | release Panel  $p_y^*$  in  $p^*$ ;
4   | Conf =  $M_{(p^*,j)}$  ;
5 else
6   | for each panel  $y$ ,  $y$  in  $p^*$  do
7     | if  $\sum M_{(p_y^*,j)} == 3$  and  $M_{(p_y^*,j)} == 1$  then
8       |   Swap Panel  $p_x^*$  and Panel  $p_y^*$ ,
9       |    $M_{(p_x^*,j)} == 3, x > y$ 
10    | end
11    | if  $\sum M_{(p_y^*,j)} == 3$  and  $M_{(p_{y1}^*,j)} == 1, M_{(p_{y2}^*,j)} == 2$  then
12      |   Swap Panel  $p_x^*$  and [ Panel  $p_{y1}^*, p_{y2}^*$  ],
13      |    $M_{(p_x^*,j)} == 3, x > y1 > y2$ 
14    | end
15    | if  $\sum M_{(p_y^*,j)} == 2$  and  $M_{(p_y^*,j)} == 1$  then
16      |   Swap Panel  $p_x^*$  and Panel  $p_y^*$ ,
17      |    $M_{(p_x^*,j)} == 2, x > y$ 
18    | end
19  | end
20  Conf =  $M_{(p^*,j)}$ 
21 end
```
