

Definition 1 (Connected Atoms). Two atoms a_i and a_j occurring in the list of atoms $L = [a_1, \dots, a_n]$ are call *connected* to each other with respect to L if one of the following conditions holds:

1. a_i and a_j share a common variable.
2. there exist an atom a_k in L , such that a_i is connected to a_k and a_k is connected to a_j .

Algorithm 1: Reorder

Input: List of atoms $[a_1, \dots, a_n]$

Output: List of atoms $[b_1, \dots, b_n]$ such that :

1. $[b_1, \dots, b_n]$ is a permutation of $[a_1, \dots, a_n]$.
2. if atoms b_i and b_j are connected, then for all k in $i + 1..j - 1$, b_i is connected to b_k and b_j is connected to b_k .

1 Let $bIndex$ be 1

2 **foreach** i in $1..n$ **do**

3 **if** a_i is not connected to any of a_{i-1}, \dots, a_1 **then**

4 Let $a_{k1}, a_{k2}, \dots, a_{km}$ be all variables connected to a_i (including a_i itself)

5 $[b_{bIndex}, b_{bIndex+1}, b_{bIndex+m}] := [a_{k1}, a_{k2}, \dots, a_{km}]$

5 $bIndex := bIndex + m$

6 **return** $[b_1, \dots, b_n]$
