```
 1  def propagateStages():
 2    initialize propagationFrontier with user annotated nodes
 3    while propagationFrontier is not empty:
 4      currentNode = propagationFrontier.dequeue
 5      visit(currentNode)
 6      for child in currentNode.children:
 7        propagationFrontier.enqueue(child)
 8      end
 9    end
10  end
11
12  def visit(node):
13    if(stageNumberMap(node).length == 0):
14      propagationFrontier.enqueue(node)
15    else if(stageNumberMap(node).length == 1):
16      if(all of node's children are ready for propagation):
17        propagate node's stage number to its children
18      else:
19        propagationFrontier.enqueue(node)
20      end
21    end
22  end
```