



$m = 3$ ,  $N = 121$  (number of nodes in a complete 3-ary tree)

You need to define three operations on it

1. lock(X, uid)
2. unlock(X, uid)
3. upgradeLock(x, uid)

where X the name of a node in the tree (that would be unique)  
and uid is the user who is performing the operation

Here are the definitions for the Operations: