## Hint

You can find the required inductive invariant by suitably modifying the invariant *Inv* of the atomic bakery algorithm. First run TLC on the algorithm to see why *Inv* is not an invariant, and make the necessary modifications to make it an invariant. (This will be easier if you split the second conjunction of *Inv* into the conjunction of 7 separate formulas and have TLC check that each of them is an invariant.) After you have obtained an invariant, use TLC to check if it's an inductive invariant and modify it until it is. You should try to do this on a very small model, with $N \leftarrow 2$ and $Nat \leftarrow 0\,..\,2$.

CLOSE