```
--algorithm Bakery
{ variable num = [i \in Procs |-> 0], flag = [i \in Procs |-> FALSE];
  process (p \in Procs)
    variables unchecked = {}, max = 0, nxt = 1 ;
    { ncs: while (TRUE)
            { e1:        either { flag[self] := ~ flag[self];
                                  goto e1 }
                         or      { flag[self] := TRUE;
                                   unchecked := Procs \ {self} ;
                                   max := 0
                                 } ;

              e2:    while (unchecked # {})
                       { with (i \in unchecked)
                           { unchecked := unchecked \ {i};
                             if (num[i] > max) { max := num[i] }
                           }
                       };
              e3:    either { with (k \in Nat) { num[self] := k } ;
                              goto e3 }
                     or      { with (i \in {j \in Nat : j > max})
                                 { num[self] := i }
                             } ;
              e4:    either { flag[self] := ~ flag[self] ;
                              goto e4 }
                     or      { flag[self] := FALSE;
                               unchecked := Procs \ {self}
                             } ;
              w1:    while (unchecked # {})
                       {     with (i \in unchecked) { nxt := i };
                             await ~ flag[nxt];
                       w2: await \/ num[nxt] = 0
                                 \/ <<num[self], self>> \prec <<num[nxt], nxt>> ;
                             unchecked := unchecked \ {nxt};
                       };
              cs:    skip;   \* the critical section;
              exit: either { with (k \in Nat) { num[self] := k } ;
                             goto exit }
                    or      { num[self] := 0 }
            }
    }
}
```