Solution of a Problem in Concurrent Programming Control

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A number of mainly independent sequential-cyclic processes with restricted means of communication with each other can be made in such a way that at any moment one and only one of them is engaged in the "critical section" of its cycle. And only this will make the reader realize to what extent this problem is far from trivial.

The Solution

The common store consists of:

\[
\text{"Boolean array } b, c[1:N]; \text{ integer } k"
\]

The integer \( k \) will satisfy \( 1 \leq k \leq N \), \( b[i] \) and \( c[i] \) will only be set by the \( i \)th computer; they will be inspected by the others. It is assumed that all computers are started well outside their critical sections with all Boolean arrays.

computer can only request one one-way message at a time.