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. A computer can only request one one-way message at a time. And only this will make the reader realize to what extent this problem is far from trivial.

The Solution

The common store consists of:

"Boolean array b[i..N]; integer k"

The integer k will satisfy 1 < k < 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

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