CMPS396W

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1 Assignment 2

Our objective is to fix the mutex to be live using eshmun and also to have $EG(N1)$ and $EG(N2)$. In my model, we start at a start state S0 with (N1,N2) where no process is trying to enter its critical section. Afterword, we can transition to either a state where Process 1 is trying to access the critical section or Process 2 is trying to access the critical section. When a process is trying to access the critical state we set F to indicate his turn, so if we have a state where (T1,T2,F1) then Process 1 can enter the critical section. However, after the process enter the critical section it must set the turn to the other process to ensure "No starvation".
The following represents the resulting model:

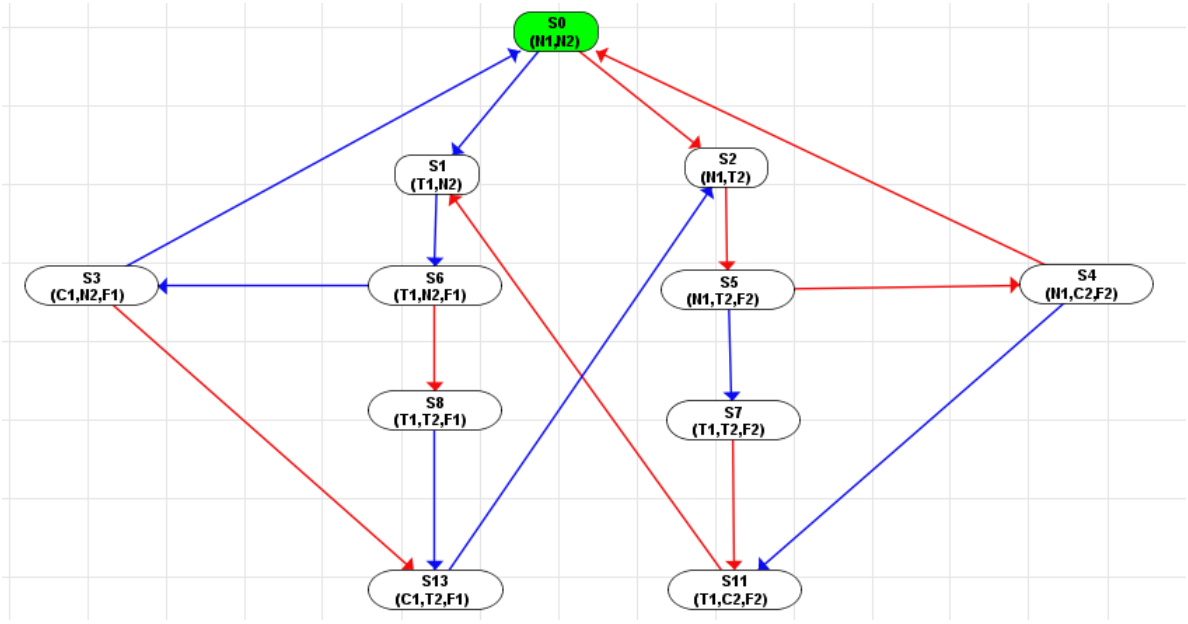

Figure 1: Model

This repaired model ensures liveness since our concurrent system is making progress despite the fact that its concurrently executing components ("processes") that may have to "take turns" in critical sections. And If a process is trying to enter its critical section while the second isn't that process can directly enter its critical section.