The Room Party part1

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DoorLocked= unlock.DoorUnlocked+checkDoor.'locked.DoorLocked;
DoorUnlocked= lock.DoorLocked+checkDoor.'unlocked.DoorUnlocked;

*keeps track of how many students are inside and its status
Room0=status.'empty.Room0+knock.'checkDoor.
(locked.'block.Room0+unlocked.'enter.Room1);
Room1=status.'someone.Room1+knock.'checkDoor.
(locked.'block.Room1+unlocked.'enter.Room2)+exit.Room0;
Room2=status.'party.Room2+knock.'checkDoor.
(locked.'block.Room2+unlocked.'enter.Room3)+exit.Room1;
Room3=status.'party.Room3+exit.Room2;

Student0=wakeAStudent.'knock.(enter.'studentWait.StudenteEsci
+block.'studentWait.Student0);
StudenteEsci=wakeAStudent.'exit.'studentWait.Student0;

Student1=wakeAStudent.'knock.
(enter.'studentWait.StudenteEsci1+block.'studentWait.Student1);
StudenteEsci1=wakeAStudent.'exit.'studentWait.Student1;

Student2=wakeAStudent.'knock.
(enter.'studentWait.StudenteEsci2+block.'studentWait.Student2);
StudenteEsci2=wakeAStudent.'exit.'studentWait.Student2;

*This altrenates between dean and students
S1=studentWait.'fineTurnoStudente.
('dean.'wakeDean.S2+'student.'wakeAStudent.S1);
S2=deanWait.'fineTurnoDean.('student.'wakeAStudent.S1+'dean.'wakeDean.S2);
Start='student.'wakeAStudent.S1+'dean.'wakeDean.S2;

Dean=wakeDean.'status.(empty.'lock.'deanWait.DeanSearching
+someone.'deanWait.Dean+party.'lock.'deanWait.DeanFineParty);
DeanFineParty=wakeDean.'status.(someone.'deanWait.DeanFineParty
+party.'deanWait.DeanFineParty+empty.'unlock.'deanWait.Dean);
DeanSearching=wakeDean.'unlock.'deanWait.Dean;

P=(Dean|Room0|DoorUnlocked|Student0|Student1|Start)\{status,empty,party,someo
ne,unlock,lock,knock,checkDoor,exit,enter,locked,unlocked,
block,wakeDean,wakeAStudent,studentWait, deanWait};
*Spec
Spec='student.'fineTurnoStudente.Spec+'dean.'fineTurnoDean.Spec;

*test can output bad
Test=student.TS+dean.TD;
TS=fineTurnoStudente.Test+dean.bad.0+fineTurnoDean.bad.0;
TD=fineTurnoDean.Test+student.bad.0+fineTurnoStudente.bad.0;
*P2 should never output bad
P2=(Test|P)\{student,dean,fineTurnoStudente,fineTurnoDean};
```

Satisfied	1008 ms	P ≈ Spec
Satisfied	430 ms	Test ⊨ PB PB min= <<bad>>T or <<->>PB
Unsatisfied	4977 ms	P2 ⊨ PB PB min= <<bad>>T or <<->>PB
Satisfied	452 ms	P ⊨ NoDeadLock NoDeadLock max= <->T and [-] NoDeadLock