CSC332          Fall 2018               HW6 (TST instruction)  
  
Due Mon Dec 3.  
  
Consider the following solutions to the critical section   
problem with two processes i and j. The given code is for process i; the code of process j is symmetrical.   
  
For each of the following properties, state whether it is satisfied or not (YES or NO). In case your answer is YES, give an explanation.   
In case the answer is NO, give an appropriate example that proves your answer.   
In either case, your answer should be in 100 words or less.  
(a) mutual exclusion (b) liveness (c) fairness  
  
  
  
  
Q1.  
Class vars:  
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        bool X;   
        bool busy= false;  
          
lock(i)  
---------------------------------------  
          
L1:     while (true)   
{L2:    X = TST(busy);   
 L3:     if (not X) break;  
} /\*loop ends\*/  
  
unlock(i)  
---------------------------------------  
  
L4:     busy = false;

* Yes
* Yes
* No

Q2.  
Class vars  
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        bool waiting[i]=false;  
bool waiting[j]=false;  
bool busy =false;    
  
/\*intuitively, busy==false means that there is no one in the critical section\*/  
  
Lock(i)  
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L1:     waiting[i]= TST(busy);  
  
L2:     while (waiting[i]); /\* loop ends here.\*/  
  
Unlock(i)  
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L3:     busy = false;

Q3.  
Class vars  
-------------  
          
bool busy =false;    
  
/\*intuitively, busy==false means that there is no one in the critical section\*/  
  
Lock(i)  
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L1:     while(TST(busy)AND TST(busy) );/\*loop ends here.\*/  
  
Unlock(i)  
------------  
  
L2:     busy = false;