

EXTENDS *Naturals*

VARIABLES *checkup, rfidScan, testResults, examined, disease, prescribe, addToDB*

*TypeOK*  $\triangleq$

$\wedge$  *checkup*  $\in \{\text{"done"}, \text{"notDone"}\}$   
 $\wedge$  *rfidScan*  $\in \{\text{"pending"}, \text{"successful"}, \text{"unsuccessful"}\}$   
 $\wedge$  *testResults*  $\in \{\text{"undetermined"}, \text{"available"}, \text{"unavailable"}\}$   
 $\wedge$  *examined*  $\in \{\text{"done"}, \text{"notDone"}\}$   
 $\wedge$  *disease*  $\in \{\text{"undetermined"}, \text{"found"}, \text{"notFound"}\}$   
 $\wedge$  *prescribe*  $\in \{\text{"done"}, \text{"notDone"}\}$   
 $\wedge$  *addToDB*  $\in \{\text{"done"}, \text{"notDone"}\}$

*Init*  $\triangleq$

$\wedge$  *checkup* = "notDone"  
 $\wedge$  *rfidScan* = "pending"  
 $\wedge$  *testResults* = "undetermined"  
 $\wedge$  *examined* = "notDone"  
 $\wedge$  *disease* = "undetermined"  
 $\wedge$  *addToDB* = "notDone"  
 $\wedge$  *prescribe* = "notDone"

*Var*  $\triangleq \langle \textit{checkup}, \textit{rfidScan}, \textit{testResults}, \textit{examined}, \textit{disease}, \textit{prescribe}, \textit{addToDB} \rangle$

*GetResults*  $\triangleq$

$\vee$   $\wedge$  *checkup* = "notDone"  
 $\wedge$  *checkup'* = "done"  
 $\wedge$  UNCHANGED  $\langle \textit{rfidScan}, \textit{testResults} \rangle$   
 $\vee$   $\wedge$  *checkup* = "done"  
 $\wedge$  *rfidScan* = "pending"  
 $\wedge$  *rfidScan'*  $\in \{\text{"successful"}, \text{"unsuccessful"}\}$   
 $\wedge$  UNCHANGED  $\langle \textit{checkup}, \textit{testResults} \rangle$   
 $\vee$   $\wedge$  *checkup* = "done"  
 $\wedge$  *rfidScan* = "successful"  
 $\wedge$  *testResults* = "undetermined"  
 $\wedge$  *testResults'*  $\in \{\text{"available"}, \text{"unavailable"}\}$   
 $\wedge$  UNCHANGED  $\langle \textit{checkup}, \textit{rfidScan} \rangle$   
 $\vee$   $\wedge$  *checkup* = "done"  
 $\wedge$  *rfidScan* = "successful"  
 $\wedge$  *testResults*  $\in \{\text{"available"}, \text{"unavailable"}\}$   
 $\wedge$  UNCHANGED  $\langle \textit{checkup}, \textit{rfidScan}, \textit{testResults} \rangle$   
 $\vee$   $\wedge$  *checkup* = "done"  
 $\wedge$  *rfidScan* = "unsuccessful"  
 $\wedge$  UNCHANGED  $\langle \textit{checkup}, \textit{rfidScan}, \textit{testResults} \rangle$

*Diagnosis*  $\triangleq$

$\vee \wedge testResults = \text{"available"}$   
 $\wedge examined = \text{"notDone"}$   
 $\wedge examined' = \text{"done"}$   
 $\wedge \text{UNCHANGED } \langle disease \rangle$   
 $\vee \wedge testResults = \text{"available"}$   
 $\wedge examined = \text{"done"}$   
 $\wedge disease = \text{"undetermined"}$   
 $\wedge disease' \in \{ \text{"found"}, \text{"notFound"} \}$   
 $\wedge \text{UNCHANGED } \langle examined \rangle$   
 $\vee \wedge testResults = \text{"available"}$   
 $\wedge examined = \text{"done"}$   
 $\wedge disease \in \{ \text{"found"}, \text{"notFound"} \}$   
 $\wedge \text{UNCHANGED } \langle examined, disease \rangle$   
 $\vee \wedge testResults \in \{ \text{"undetermined"}, \text{"unavailable"} \}$   
 $\wedge \text{UNCHANGED } \langle examined, disease \rangle$

*Prescription*  $\triangleq$

$\vee \wedge disease = \text{"found"}$   
 $\wedge prescribe = \text{"notDone"}$   
 $\wedge prescribe' = \text{"done"}$   
 $\wedge \text{UNCHANGED } \langle addToDB \rangle$   
 $\vee \wedge disease = \text{"found"}$   
 $\wedge prescribe = \text{"done"}$   
 $\wedge addToDB = \text{"notDone"}$   
 $\wedge addToDB' \in \{ \text{"done"}, \text{"notDone"} \}$   
 $\wedge \text{UNCHANGED } \langle prescribe \rangle$   
 $\vee \wedge disease = \text{"found"}$   
 $\wedge prescribe = \text{"done"}$   
 $\wedge addToDB = \text{"done"}$   
 $\wedge \text{UNCHANGED } \langle addToDB, prescribe \rangle$   
 $\vee \wedge disease \in \{ \text{"undetermined"}, \text{"notFound"} \}$   
 $\wedge \text{UNCHANGED } \langle addToDB, prescribe \rangle$

*Next*  $\triangleq$

$\wedge GetResults$   
 $\wedge Diagnosis$   
 $\wedge Prescription$   
 $\wedge TypeOK$

*Spec*  $\triangleq Init \wedge \Box[Next]_{var}$

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$\backslash$  \* Modification History  
 $\backslash$  \* Last modified Tue Sep 28 17:44:41 IST 2021 by ubuntu  
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