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MODULE *TowerOfHanoi*

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EXTENDS *Sequences, Integers*

VARIABLE *A, B, C*

$CanMove(x, y) \triangleq \wedge Len(x) > 0$   
 $\wedge \text{IF } Len(y) > 0 \text{ THEN } Head(y) > Head(x) \text{ ELSE TRUE}$

$Move(x, y, z) \triangleq \wedge CanMove(x, y)$   
 $\wedge x' = Tail(x)$   
 $\wedge y' = \langle Head(x) \rangle \circ y$   
 $\wedge z' = z$

$Invariant \triangleq C \neq \langle 1, 2, 3 \rangle$

$Init \triangleq \wedge A = \langle 1, 2, 3 \rangle$   
 $\wedge B = \langle \rangle$   
 $\wedge C = \langle \rangle$

$Next \triangleq \vee Move(A, B, C)$  Move A to B  
 $\vee Move(A, C, B)$  Move A to C  
 $\vee Move(B, A, C)$  Move B to A  
 $\vee Move(B, C, A)$  Move B to C  
 $\vee Move(C, A, B)$  Move C to A  
 $\vee Move(C, B, A)$  Move C to B

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\ \* Modification History

\ \* Last modified Sun Apr 21 21:03:07 PDT 2019 by jasondebolt

\ \* Created Thu Apr 18 19:50:30 PDT 2019 by jasondebolt