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MODULE *HourClock*

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This module specifies a digital clock that displays the current hour. It ignores real time, not specifying when the display can change.

EXTENDS *Naturals*

VARIABLE *hr* Variable *hr* represents the display.

$HCini \triangleq hr \in (1 \dots 12)$  Initially, *hr* can have any  
value from 1 through 12.

$HCnext \triangleq$   
The value of *hr* cycles from 1 through 12.

$hr' = \text{IF } hr \neq 12 \text{ THEN } hr + 1 \text{ ELSE } 1$

$HC \triangleq HCini \wedge \Box[HCnext]_{hr}$

The complete spec. It permits the clock to stop.

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THEOREM  $HC \Rightarrow \Box HCini$  Type-correctness of the spec.

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