─────────────────── MODULE *Target* ───────────────────

INSTANCE *Naturals*

INSTANCE *FiniteSets*

LOCAL INSTANCE *TLC*

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  An empty constant
CONSTANT *Nil*

Target is the set of all targets and their possible paths and values.

Example: $Target \triangleq$ [
    $values \mapsto$ [
      $path1 \mapsto \{$"value1", "value2"$\}$,
      $path2 \mapsto \{$"value3"$\}$]
CONSTANT *Target*

  Represents a target running state
CONSTANT *Alive*

  Represents a target not running state
CONSTANT *Dead*

  A record of target states
VARIABLE *target*

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$Start \triangleq$
    $\land target.state = Dead$
    $\land target' = [target \text{ EXCEPT } !.instance = target.instance + 1,$
                          $!.state = Alive]$

$Stop \triangleq$
    $\land target.state = Alive$
    $\land target' = [target \text{ EXCEPT } !.state \quad = Dead,$
                           $!.values = [p \in \{\} \mapsto [value \mapsto Nil]]]$

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Formal specification, constraints, and theorems.
$InitTarget \triangleq$
    $\land target = [instance \mapsto 0,\ state \mapsto Dead,\ values \mapsto [p \in \{\} \mapsto [value \mapsto Nil]]]$

$NextTarget \triangleq$
    $\lor Start$

$\lor\ Stop$

ASSUME $\ \land\ \forall\, p \in$ DOMAIN $\mathit{Target.values}:$
$\mathit{IsFiniteSet(Target.values[p])}$

\ * Modification History
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