

---

MODULE *Target*

---

INSTANCE *Naturals*

INSTANCE *FiniteSets*

LOCAL INSTANCE *TLC*

---

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*

---

$Start \triangleq$

$\wedge target.state = Dead$

$\wedge target' = [target \text{ EXCEPT } !.instance = target.instance + 1,$

$!.state = Alive]$

$Stop \triangleq$

$\wedge target.state = Alive$

$\wedge target' = [target \text{ EXCEPT } !.state = Dead,$

$!.values = [p \in \{\} \mapsto [value \mapsto Nil]]]$

---

Formal specification, constraints, and theorems.

$InitTarget \triangleq$

$\wedge target = [instance \mapsto 0, state \mapsto Dead, values \mapsto [p \in \{\} \mapsto [value \mapsto Nil]]]$

$NextTarget \triangleq$

$\vee Start$

---

$\vee \textit{Stop}$

---

ASSUME  $\wedge \forall p \in \text{DOMAIN } \textit{Target.values} :$   
 $\textit{IsFiniteSet}(\textit{Target.values}[p])$

---

\ \* Modification History  
\ \* Last modified Sun *Feb* 20 09:09:52 *PST* 2022 by *jordanhalterman*  
\ \* Created Sun *Feb* 20 03:13:26 *PST* 2022 by *jordanhalterman*