$\overline{\qquad\qquad\qquad\qquad\qquad\text{MODULE } Log \qquad\qquad\qquad\qquad\qquad}$

INSTANCE $Naturals$

INSTANCE $Sequences$

LOCAL INSTANCE $IOUtils$

LOCAL INSTANCE $Json$

CONSTANT $Enabled$

CONSTANT $File$

CONSTANT $CurrState$

CONSTANT $SuccState$

$FormatOpts \triangleq$
$\quad [format \quad\quad \mapsto \text{"TXT"},$
$\quad\ charset \quad\quad \mapsto \text{"UTF-8"},$
$\quad\ openOptions \mapsto \langle \text{"WRITE"}, \text{"CREATE"}, \text{"APPEND"}\rangle]$

$Init \triangleq$
$\quad \wedge IOExec(\langle \text{"rm"}, \text{"-f"}, File\rangle).exitValue = 0$

$Log(context) \triangleq$
$\quad Enabled \Rightarrow$
$\quad\quad \text{LET } currState \triangleq [k \in \{k \in \text{DOMAIN } CurrState : \text{DOMAIN } CurrState[k] \neq \{\}\} \mapsto CurrState[k]]$
$\quad\quad\quad\quad\ succState \triangleq [k \in \{k \in \text{DOMAIN } SuccState : \text{DOMAIN } SuccState[k] \neq \{\}\} \mapsto SuccState[k]]$
$\quad\quad\quad\quad\ record \quad\ \triangleq [context \quad \mapsto context,$
$\quad\quad\quad\quad\quad\quad\quad\quad\quad\ currState \mapsto currState,$
$\quad\quad\quad\quad\quad\quad\quad\quad\quad\ succState \mapsto [k \in \{k \in \text{DOMAIN } succState : k \in \text{DOMAIN } currState \Rightarrow$
$\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad currState[k] \neq succState[k]\} \mapsto succState[k]]]$
$\quad\quad \text{IN} \quad Serialize(ToJsonObject(record) \circ \text{"\textbackslash n"}, File, FormatOpts).exitValue = 0$

$Action(action, context) \triangleq$
$\quad \wedge \ action$
$\quad \wedge \ Log(context)$

ASSUME $Enabled \in$ BOOLEAN

$\textbackslash * \text{ Modification History}$
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