─────────────────── MODULE *Log* ───────────────────

INSTANCE *Naturals*

INSTANCE *Sequences*

LOCAL *IOUtils* $\triangleq$ INSTANCE *IOUtils*

LOCAL *Json* $\triangleq$ INSTANCE *Json*

CONSTANT *Enabled*

CONSTANT *File*

CONSTANT *CurrentState*

CONSTANT *SuccessorState*

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

Init $\triangleq$
  $\land IOUtils!IOExec(\langle$ "rm", "-f", *File*$\rangle).exitValue = 0$

Log(context) $\triangleq$
  Enabled $\Rightarrow$
    LET *current* $\triangleq [k \in \{k \in$ DOMAIN *CurrentState* : DOMAIN *CurrentState*$[k] \neq \{\}\} \mapsto CurrentState[k]]$
      successor $\triangleq [k \in \{k \in$ DOMAIN *SuccessorState* : DOMAIN *SuccessorState*$[k] \neq \{\}\} \mapsto SuccessorSta$
      record $\triangleq [context \quad \mapsto context,$
              $current \quad \mapsto current,$
              $successor \mapsto [k \in \{k \in$ DOMAIN *successor* : $k \in$ DOMAIN *current* $\Rightarrow current[k] \neq suc$
    IN $\quad \land IOUtils!Serialize(Json!ToJsonObject(record), File, FormatOpts).exitValue = 0$
        $\land IOUtils!Serialize($ "\n", *File*, *FormatOpts*$).exitValue = 0$

Action(action, context) $\triangleq$
  $\land \quad action$
  $\land \quad action \Rightarrow Log(context)$

ASSUME *Enabled* $\in$ BOOLEAN

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