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┌────────────────── MODULE FiniteSets ───────────────────┐
LOCAL INSTANCE Naturals
LOCAL INSTANCE Sequences
Imports the definitions from Naturals and Sequences, but doesn't export them.

 $IsFiniteSet(S) \triangleq$ 
A set  $S$  is finite iff there is a finite sequence containing all its elements.
 $\exists seq \in Seq(S) : \forall s \in S : \exists n \in 1 \dots Len(seq) : seq[n] = s$ 

 $Cardinality(S) \triangleq$ 
Cardinality is defined only for finite sets.
LET  $CS[T \in SUBSET\ S] \triangleq$  IF  $T = \{\}$  THEN 0
ELSE  $1 + CS[T \setminus \{CHOOSE\ x : x \in T\}]$ 
IN  $CS[S]$ 
└──────────────────┘

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