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.

$\exists\, seq \in Seq(S) : \forall\, s \in S : \exists\, n \in 1 \,..\, Len(seq) : seq[n] = s$

$Cardinality(S) \triangleq$

Cardinality is defined only for finite sets.

LET $CS[T \in \text{SUBSET } S] \triangleq$ IF $T = \{\}$ THEN 0
ELSE $1 + CS[T \setminus \{\text{CHOOSE } x : x \in T\}]$
IN $CS[S]$