MODULE *Example1_Simple*

Instantiate and model check a simple Petri Net. The net has a source place, a sink place, 1 transition, and an initial marking with 1 token in the source place.

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            ------
source -> |  t1  | -> sink
            ------
```

$Places \triangleq \{\text{“source”}, \text{“sink”}\}$ Define the net.
$Transitions \triangleq \{\text{“t1”}\}$
$Arcs \triangleq [$
$\quad source \mapsto \{\text{“t1”}\},$

$\quad t1 \mapsto \{\text{“sink”}\}$
$]$
$ArcWeights \triangleq \langle\rangle$ Unspecified arc weights default to 1.
$InitialMarking \triangleq [source \mapsto 1]$
VARIABLE *Marking*

$PN \triangleq$ INSTANCE *PetriNet* Instantiate it within a namespace.

$Spec \triangleq PN!Spec$ Make *Spec* and *Invariants* available for the config file.

$Invariants \triangleq PN!Invariants$

Properties

Eventually, we arrive as a expected final marking . . .
$ReachableMarking \triangleq PN!Reachable([sink \mapsto 1])$

and we never leave it.
$FinalMarking \triangleq PN!FinalMarking([sink \mapsto 1])$

$BoundOne \triangleq PN!Bound(1)$

$IsStateMachine \triangleq PN!IsStateMachine$