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1  |----- MODULE SystemModel -----|
   | Constants and related definitions describing the system model of Jupiter protocols.
5  | EXTENDS Naturals, SequenceUtils
6  |-----|
7  | CONSTANTS
8      Client,      the set of client replicas
9      Server,      the (unique) server replica
10     Msg,         the set of messages
11     Char,        the set of characters
12     InitState    the initial state of each replica

14 | ASSUME We assume that all inserted elements are unique.
15      $\wedge$   $Range(InitState) \cap Char = \{\}$  due to the uniqueness requirement
16 |-----|
17 | VARIABLES
18     cincoming,    cincoming[c]: incoming channel at the client  $c \in Client$ 
19     sincoming    incoming channel at the Server

21 | Comm  $\triangleq$  INSTANCE CSComm
22 |-----|
23 | Replica  $\triangleq$   $Client \cup \{Server\}$ 

25 | List  $\triangleq$   $Seq(Char \cup Range(InitState))$  all possible lists
26 | MaxLen  $\triangleq$   $Cardinality(Char) + Len(InitState)$  the max length of lists in any state

28 | ClientNum  $\triangleq$   $Cardinality(Client)$ 
29 | Priority  $\triangleq$  CHOOSE  $f \in [Client \rightarrow 1 .. ClientNum] : Injective(f)$ 
30 |-----|

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