MODULE *Op*

Definition and operator for list operations.

EXTENDS *SystemModel*

$Priority \triangleq$ CHOOSE $f \in [Client \to 1 \,..\, Cardinality(Client)] : Injective(f)$

$MaxLen \triangleq Cardinality(Char) + Len(InitState)$ the max length of lists in any state

$Rd \triangleq [type : \{\text{“Rd”}\}]$
$Del \triangleq [type : \{\text{“Del”}\},\ pos : 1 \,..\, MaxLen]$ The positions (*pos*) are indexed from 1.
$Ins \triangleq [type : \{\text{“Ins”}\},\ pos : 1 \,..\, (MaxLen + 1),\ ch : Char,\ pr : Range(Priority)]$

$Op \triangleq Ins \cup Del$ The set of all operations (now we don't consider *Rd* operations).
$Nop \triangleq PickNone(Op)$

$Apply(op,\ l) \triangleq$ Apply operation *op* on list *l*.
CASE $op = Nop \to l$
□ $op.type = \text{“Rd”} \to l$
□ $op.type = \text{“Del”} \to DeleteElement(l,\ op.pos)$
□ $op.type = \text{“Ins”} \to InsertElement(l,\ op.ch,\ op.pos)$ append to the end if $op.pos = Len(l) + 1$

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