MODULE *BufferStateSpace*

The buffer (*i.e.*, sequence) representation of state space used in *AJupiter*. This module defines generalized *OT* functions on operation sequences.

EXTENDS *Naturals*, *SequenceUtils*

RECURSIVE $xFormOpOps(\_, \_, \_)$ Transform *op* against an operation sequence *ops*.

$xFormOpOps(xform(\_, \_), op, ops) \triangleq$
  IF $ops = \langle\rangle$ THEN $\langle op \rangle$ Maintain and return the intermediate transformed operations.
  ELSE $\langle op \rangle \circ xFormOpOps(xform, xform(op, Head(ops)), Tail(ops))$

$xFormOpsOp(xform(\_, \_), ops, op) \triangleq$ Transform an operation sequence *ops* against *op*.
  LET $opX \triangleq xFormOpOps(xform, op, ops)$
  IN $[i \in 1 \,..\, Len(ops) \mapsto xform(ops[i], opX[i])]$

$xFormFull(xform(\_, \_), op, ops) \triangleq$
  $[xop \mapsto Last(xFormOpOps(xform, op, ops)),$
  $xops \mapsto xFormOpsOp(xform, ops, op)]$

$xFormShift(xform(\_, \_), op, ops, shift) \triangleq$ shift of *ops*
  $xFormFull(xform, op, SubSeq(ops, shift + 1, Len(ops)))$

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