```
----------------------␣MODULE␣BoundedBuffer␣----------------------
EXTENDS␣Integers,␣Sequences,␣ISequences
␣
CONSTANT␣N,␣Msg,␣Input
ASSUME␣/\␣N␣\in␣Nat␣\␣{0}
␣␣␣␣␣␣␣/\␣Input␣\in␣ISeq(Msg)
␣
a␣(+)␣b␣==␣(a␣+␣b)␣%␣2*N
a␣(-)␣b␣==␣(a␣-␣b)␣%␣2*N
␣
(***************************************************************
--algorithm␣BBuf␣{
␣␣␣variables␣in␣=␣Input,␣out␣=␣<<␣>>,
␣␣␣␣␣␣␣␣␣␣␣␣␣␣buf␣\in␣[0..(N-1)␣->␣Msg],␣p␣=␣0,␣c␣=␣0;
␣
␣␣␣process␣(Producer␣=␣"P")
␣␣␣␣{␣p1:␣while␣(TRUE)
␣␣␣␣␣␣␣␣␣␣␣␣{␣await␣p␣(-)␣c␣#␣N␣;
␣␣␣␣␣␣␣␣␣␣␣␣␣␣buf[p␣%␣N]␣:=␣IHead(in);
␣␣␣␣␣␣␣␣␣␣␣␣␣␣in␣:=␣ITail␣(in)␣;
␣␣␣␣␣␣␣␣␣␣␣␣␣␣p␣:=␣p␣(+)␣1
␣␣␣␣␣␣␣␣␣␣␣␣}
␣␣␣␣}
␣
␣␣␣fair␣process␣(Consumer␣=␣"C")
␣␣␣␣{␣c1:␣while␣(TRUE)
␣␣␣␣␣␣␣␣␣␣␣␣{␣await␣p␣#␣c␣;
␣␣␣␣␣␣␣␣␣␣␣␣␣␣out␣:=␣Append(out,␣buf[c␣%␣N])␣;
␣␣␣␣␣␣␣␣␣␣␣␣␣␣c␣:=␣c␣(+)␣1
␣␣␣␣␣␣␣␣␣␣␣␣}
␣␣␣␣}
}
***************************************************************)
===============================================================
```