Write a program to read an infinite sequence, and after every even number of inputs, to output a binary value saying whether the second half of the input so far is a repetition of the first half.

Let the reading channel be \( c \), and let the writing channel be \( d \). The specification is \( S \), defined as

\[
S = \forall n: \text{nat} \cdot \text{hd}_{wd+n} = \text{hd}_{rc+rc+n} = \text{hd}_{rc+rc+2n}
\]

Let \( f \) (first) and \( s \) (second) be string variables, and define specification \( P \) as

\[
P = \text{NOT YET DONE}
\]

The refinements are

\[
S \iff f := \text{nil}. \ s := \text{nil}. \ P
\]
\[
P \iff d! f = s. \ c?. \ s := s; c. \ c? \cdot f := f; s_0. \ s := s_1; \ldots; s; c. \ P
\]