Write a program to repeatedly print the current time, up until some given time.

After trying the question, scroll down to the solution.
Assuming time is an extended integer, and the given time is \( k \), including recursive time, the specification is

\[
P = w' = w + 0^\uparrow(k-t) \land t' = t + 0^\uparrow(k-t) \\
\land \forall n: 0 \ldots 0^\uparrow(k-t): M_{w+n} = T_{w+n} = t+n
\]

and the refinement is

\[
P \iff \begin{cases} t < k & \text{then } c! t. \ t := t+1. \ P \text{ else } \text{ok} \end{cases}
\]