

507 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

$$P = \mathbf{w}' = \mathbf{w} + 0 \uparrow (k-t) \wedge t' = t + 0 \uparrow (k-t) \\ \wedge \forall n: 0, \dots, 0 \uparrow (k-t) \cdot \mathcal{M}_{\mathbf{w}+n} = \mathcal{J}_{\mathbf{w}+n} = t+n$$

and the refinement is

$$P \Leftarrow \mathbf{if } t < k \mathbf{ then } c! t. t := t+1. P \mathbf{ else ok fi}$$